
FUNAFUTI WATER SURVEY REPORT 2022

Tuvalu Water Scarcity Project, Tuvalu Climate Change Department



1. Background

Managing Water Scarcity through Strengthened Water Resource Management Project in Tuvalu is the second phase of the previous Strengthening Water Security in the Vulnerable Island States that aim to improve the water resource storage system to enhance resilience in communities. This regional project covers 5 Islands which are Cook Island, Kiribati, Marshall Islands, Tokelau, and Tuvalu. The project's long-term goal is for communities to be less susceptible to water scarcity. This project is funded by New Zealand's Ministry of Foreign Affairs and Trade and implemented by the Pacific Community (SPC). This report is submitted to the Climate Change Department of the Ministry of Finance.

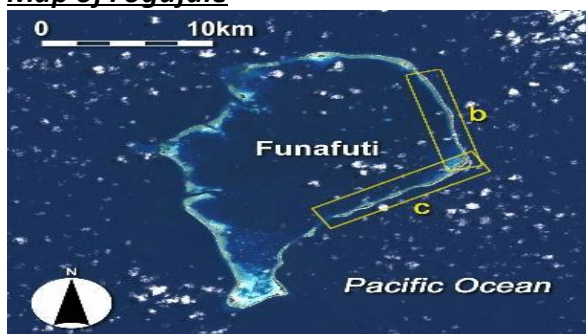
2. Introduction

The Funafuti household water survey was carried out for one week from 24th to 28th May 2021, and 10 surveyors carried out the survey. The sole purpose of the household water survey was to collect data and information about the conditions of water storage and catchment system at the household and communal assets in Funafuti. As the Tuvalu Water Investment Plan needs solid and up-to-date data and information on the current storage capacity on each island of Tuvalu. The survey is a preliminary step towards the achievement of the investment plan.

This survey mainly focused on Fogafale, which is the main settlement of Funafuti. Hence the surrounding islets of Funafuti were not included in this water survey. Communal buildings and government offices were not included in this survey however, this information can be retrieved from the PWD.

Funafuti's rainfall patterns changes with wind direction. During the wet season from November to April, wind shifts to westerly and north-westerly winds bring in good amounts of rainfall. The same for the dry season, wind changes to normal trade winds from the east, resulting in less rainfall received by Funafuti. The average rainfall for Funafuti is 3,200 mm per year, with a peak between December and March when rainfall is equal to or greater than 300mm per month, and a minimum between May and October when it drops below 250mm per month. However, with climate change altering these seasons, Funafuti and the whole of Tuvalu might experience a lot of changes to its rainfall patterns in the future.

Map of Fogafale



3. Results

3.1 Summary of the survey

The household covered in the survey were all private houses and government-owned houses, not including housing resided by ministers. The population was categorized into adults who are 18 years and above and children, from 17 years to infant. The average population per household is 7 according to the survey that was carried out, and the agreed usage rate per person per day is 14 liters of water according to Tuvalu Public Health's standards.

Funafuti Water Survey Analysis	
Population	5671
Household	701
Tanks	1549
Estimated capacity of 1549 tanks	Average of 10,000 liters tanks
TOTAL storage capacity	15,490,000 L
Water available	2,731 Liters per person available
With 10L/person/day	273 days

Figure 3.1 Shows the Funafuti population concerning the number of the tank's capacity

3.2 Household storage distribution

On Fogafoale the common water tank capacity is 10,000 Liters. Households use plastic water tanks to store rainwater. The table below shows an average of 2 tanks per household for Fogafoale, in which each household has an average capacity of 7 persons.

District	No. of Tanks	No. of Houses	Average per household
Alapi	249	101	2
Fakaifou	232	121	2
Fale PIFS	62	24	2
Folokovao	13	5	2
Kavatoetoe	172	84	2
Lofeagai	210	110	2
Luapou	11	2	2
Nanumasa	54	23	2
Palagi road	21	9	2
Sagatua	21	2	2
Saumalie	19	8	2

Senala	234	104	2
Tealapae	32	14	2
Teavamago	15	7	2
Teone	80	36	2
Teutua	4	3	2
Tokotuu	32	15	2
Vaiaku	73	27	2
Vailiki	8	3	2
Valovalo	7	3	2

Figure 3.2 Average number of tanks per household, and the number of houses.

3.3 Detail Analysis for the different districts on Funafuti

A brief analysis of the total population per district and the number of tanks highlighting the leak and not used tanks that needed to be repaired.

District	No. of household	Adult (men/women)	Children	Tank	Plastic	Concrete	Leak/not use tank
Kavatoetoe	82	220/222	252	152	123	29	16
Lofeagai	113	273/284	298	199	175	24	15
Alapi	102	257/253	293	253	186	67	24
Senala	104	278/276	286	241	160	81	37
Fakaifou	116	325/302	326	295	209	85	48
Vaiaku	29	81/93	87	76	61	15	5
Teone	37	98/110	124	72	64	8	12
Luapou	2	7/10	11	6	3	3	1
Folokovao	4	8/9	17	5	4	1	0
PIF government housing	24	46/59	71	46	0	46	0
Matafenua	1	3/4	4	3	3	0	1
Nanumasa	23	54/65	78	57	40	17	11
Palagi Rd	10	35/22	28	28	26	2	3
Saumalei	9	18/20	23	18	17	1	2
Tealapae	14	33/45	41	22	15	7	5
Teavamago	7	20/17	25	13	10	3	2
Teutua	3	11/11	13	7	7	0	0
Tokotuu	16	25/30	33	26	22	4	5
Vailiki	3	8/9	10	7	5	2	1

Figure 3.3 Detail summary of population per district and number of tanks needed to be repaired.

3.4 Condition valuation of water storage

The repair works require are plumbing works that need to fix and repair these leaking water tanks and damaged gutters. Many households do not use these leaked water tanks, however, they will use these tanks once been repaired and are good to store water. The 11% of tanks needed to repair is equivalent to 188 tanks.

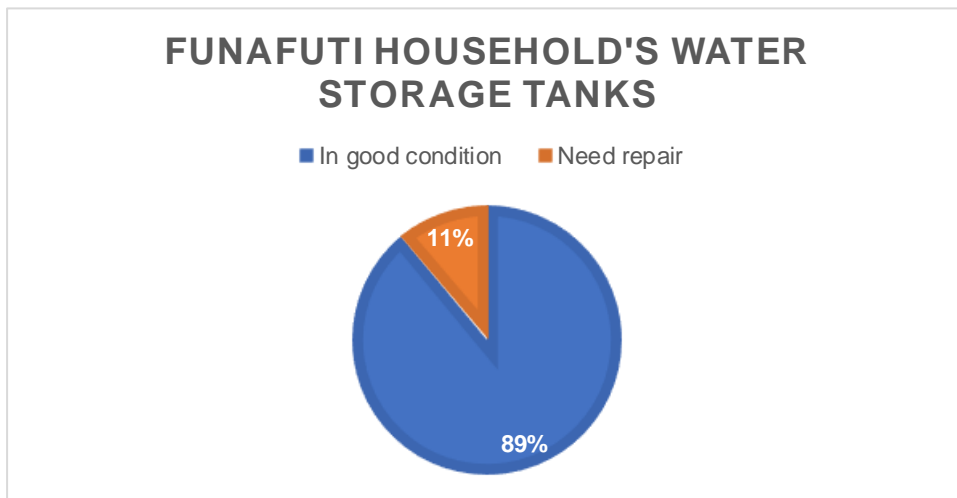


Figure 3.4 Conditions of water tanks on Fogafale, Funafuti.

4. Conclusion

Given the result shown above, it is vital to consider the proportional difference between the Funafuti populations concerning the number of water storage tanks. It shows that many households still require water storage tanks due to damaged water storage systems and not enough water tanks as a result of financial issues, lack of repairing skills, etc. The tables that are shown above also depict the number of storage tanks and catchment systems that need proper repair. The repair works include the patching of leaking water tanks and fixing of gutters and pipes. The project team and relevant key stakeholders especially the PWD water unit will work together in doing repair works on water tanks in Funafuti. The leak and not-used tanks are the main targets for the repair works that are needed to be fixed and repaired. Although the average number of tanks shows that for every household there are 2 tanks, it is still not enough for many households taking into account the drought period and the number of people living per household.