Ecosystem Goods and Services Valuation Report

Mataniko Watershed Catchment

2022

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Abbreviations

EBA	Ecosystem Base Adaptation
EGS	Environment Goods and Services
ESSI	Ecological Solutions Solomon Islands
EST	Ecosystem Services Toolkit
GEF	Global Environment Facility
GIS	Geospatial Information System
Ha	Hectare
IUCN	International Union for Conservation of Nature
IW-R2R	International Waters Ridge to Reef
MECDM	Ministry of Environment, Climate Change and Disaster Management and Meteorology
NDS	National Development Strategy
PA-BAT	Protected Areas Benefit Assessment Tool
PES	Payment for Ecosystem Services
R2R	Ridge to Reef
SIG	Solomon Islands Government
SPREP	Secretariat of the Pacific Regional Environment Programme
TESSA	Toolkit for Ecosystem Service Site-based Assessment

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EXECUTIVE SUMMARY

The Consultant carried out work on the Mataniko Catchment Ecosystem Goods and Services valuation from the 19th of May 2021 to 07th July 2021. Survey fieldwork was conducted on 70 households randomly selected from twelve (12) communities along the Mataniko Watershed area, starting from Renlau informal settlement at the lower catchment area to Lelei informal settlement at the upper catchment area of the Mataniko River. The household surveys aimed to estimate the value of ecosystem goods and services in the Mataniko Catchment.

Consequently, the study estimated the total monetary value of ecosystem goods in the Mataniko Catchment at a little over US$402,000 a year; the value of ecosystem services is unknown. There was potential difference comparing ecosystem goods valuation of the three ecosystems, with terrestrial ecosystem goods valuation dominating at over US$360,000, followed by coastal ecosystem at close to US$30,000 and freshwater ecosystem at around US$14,000.

The study adopted a basic economic valuation approach, which rely on combination of revealed and stated preference methods, as well as cost-based approaches. The report referenced other tools available that provide for the determination of quick estimates and capturing the values of the ecosystem goods and services – examples: ecosystem services toolkit (EST), toolkit for ecosystem service site-based assessment (TESSA), and protected areas benefit assessment tool (PA-BAT).

There are limitations in the study and worth considering before the results can be reliably used to guide preparation of strategic policies and management plans. There was limited accessibility to, or lack of new data for Environment Goods and Service (EGS) valuation. The study did not collect both market and non-market information and use and non-use values, which are important datasets for EGS valuation. Rather, the study only concentrated on household surveys to collect market and use values of three (3) selected ecosystems – terrestrial ecosystem (forest, agriculture), freshwater ecosystem (flora/fauna), and coastal (beach, intertidal zones). Therefore, the information collected was incomplete for capturing full inventory of goods and services valuation estimates for the Mataniko Catchment.

In 2018, a similar study was also being conducted by the SPREP on the Ecosystem Based Adaptation Assessment in the whole of Honiara, Solomon Islands. This study set out to identify and determine the whole ecosystem goods and services that are available for residents and other informal settlements within the Honiara City boundary. The study did not extend to cover the full valuation of ecosystem goods and services documented for Honiara. Nonetheless, the results provide useful reference in the conduct of the Mataniko catchment valuation.

The household survey in the current study has a wider scope and some of the data might are estimates or best guess and based on actual facts and statistics. For example, the watercress plant is introduced and growing only several locations along the Mataniko River, which provide alternative and subsistence food provision for local communities. At the Mataniko watershed area, there was no watercress aquaculture farms or even an area along the river where the watercress is growing naturally. This is one of the factors which have prompted the need for the ecosystem valuation to be carried out in specific locations along the Mataniko Watershed area.

Notwithstanding, the results in this study provide useful starting points and inputs in the preparation of the Mataniko Integrated Catchment Management Plan, and to fulfill the project theme, "Integrating watershed and coastal area management for strengthened water resource protection and coastal hazard reduction in Honiara, Solomon Islands". It is recommended that a more complete and comprehensive ecosystem goods and services valuation of the Mataniko Catchment can be carried out to better inform strategic policies and plans into the future.

1   INTRODUCTION

In early 2020 the Ministry of Environment, Climate Change, Meteorology and Disaster Management, through the Solomon Islands International Waters Ridge to Reef (IW R2R) Project, commissioned a consultancy to undertake an Ecosystem Goods and Service (EGS) Valuation for the Mataniko watershed catchment. The rationale of the GEF/SPC IW R2R Project Implementation in the Solomon Islands is reflected in its title, "Integrating watershed and coastal area management for strengthened water resource protection and coastal hazard reduction in Honiara, Solomon Islands".

The Ecological Solutions Solomon Islands (ESSI) consulting entity was selected and following brief inception and planning meetings, commenced household surveys targeting seventy (70) households randomly selected from twelve (12) select communities along the Mataniko catchment from 19th May to 7th July 2021.

Generally, the Ecosystem Goods and Service Valuation for the Mataniko Watershed communities is very important to support the Solomon Islands Government's long-term policies and legislative frameworks on Environment and the Biodiversity Protection and Restoration. For instance, the Solomon Islands Government (SIG) approved National Development Strategy (NDS) 2016-2035 working document objective four, which supports the mitigation and adaptation efforts towards the negative impacts of climate change, resilient developments, and disaster risk management. The results of this study will contribute towards the greater achievements of the entire NDS 2016-2035 framework of the SIG within the specified time schedule by the year 2035. The study investigated three main ecosystems of the Mataniko Watershed, which are: - forest ecosystem, water ecosystem and the terrestrial ecosystem.

The household survey was carried out using simple methodologies coupled with other community approach techniques to retrieve the specific information relevant for the study. The study encountered several setbacks and challenges during the course of this study. The details on limitations are provided briefly in the executive summary section earlier and later sections of this report.

Furthermore, this report is predominantly focused on how each of the surveyed households within the respective communities have utilized the goods and the services of the Mataniko catchment ecosystems. It is generally established that the dependency and utilization of ecosystem goods and services is linked to effective participation in a range of micro economic activities that supported the livelihoods and alternative earnings. Therefore, the household surveys aim at collecting market and resource use data, which in turn, dataset will be analyzed to generate estimates of economic monetary values.

For instance, relevant data from household surveys and interviews can help with the calculation of the economic value to consume garden food compare with the monetary values that would have spent on direct purchase at the Honiara Central Main Market, for daily and monthly consumption, as an example.

2   OBJECTIVE

The two objectives of the study are: -

   a. To have an overall view on how the Mataniko Watershed communities are utilizing the ecosystem goods and services; and

   b. To carry out a valuation of the ecosystem goods and services in the Mataniko Watershed communities.

3   LIMITATION

This study encountered the following limitations: -

- Certain interviewees tend to ask for money in exchange for information for the survey which if not handled properly may lead to inaccurate information to questions;

- The unpredictable weather pattern (rain) of the country disrupting planned schedule to conduct the survey;

- The number of households planned for interviews at each community reduced from ten (10) to around 5-7 houses;

- Limited access to non-market and non-use resources dataset; if this data was available and added on to market and resource use data should generate a more complete accurate evaluation of ecosystem goods and services;

- The whole study is dependent on household surveys and interviews; a valuation of the SPREP study on documented goods and services for Honiara and scaled down to Mataniko Catchment alone would be more ideal; and

- There are IUCN ecosystem valuation reports for the Solomon Islands published and available; this study could have benefited from the use of those past studies and use the same methods for accurate comparison.

4   METHODOLOGY

For this survey, the consultants gathered the information from the communities on the basis of applying simple approaches. The first approach was on the identification of the communities and the informal settlements who are living along the Mataniko River and those that are in close proximity to the Mataniko River. After identification of the communities and the informal settlements, a list of the community names was generated. Based on the list of the community names, the identification of the number of households took place. Since most of these communities have been involved in various surveys with other different organizations such as the Oxfam and SPREP in the past, they have setup their own community committees whereby they have appointed a Chairperson or a community representative who was in charge of any outside activities that was to be carried out within their respective communities. Secondly, after identifying the communities with their official communal representatives, a contact point was established and the delivery of the invitation letter for the community participation was distributed to them. The chairpersons then inform their respective community households on the proposed survey and the expected dates that the survey team will visit their households. Prior to these arrangements with the communities, the survey matrix was developed in preparation for the survey fieldwork. Then finally, the proceeding of this survey can go ahead after the community representatives has given the authority for the survey team to conduct the EGS survey within their communities. Hence, the other methodologies such as observation, interviews and photograph snap shots were taken during the actual survey to fulfill the requirements of this task.

5   SURVEY HOUSEHOLD POPULATION

The number of households that was determined for the survey was one hundred (100) households, however, only seventy (70) households was surveyed based on the allowable timeframe for this survey. This is 0.7% out of the total number of determined households at 1% which is more than half of the required household number. The researcher used the non-randomized research technique to assist in the determination of the appropriate sample number of households to survey amongst selected communities.

6 SCOPE

The survey starts from Lelei community at the upper catchment area and extends down to Renlau community at the river mouth area by the sea. There are twelve (12) communities that are being identified for this Ecosystem Goods and Service Valuation along the Mataniko watershed area. The survey excludes Tanakio community, which was situated further up the river catchment area as shown on the map Figure 1. It was considered too difficult working in this community.

Figure 1. The map below shows the location of the study sites. *Source (GIS Unit, MECDM, 2021)*

The communities surveyed are listed on Table 1 and the common ecosystems considered for this survey are listed on Table 2. However, due to unforeseen circumstances, only 3 out of the 9 ecosystems listed in the table were surveyed.

Table 1. List of Communities Surveyed within the Mataniko Watershed.

No.	Communities		
1	Lelei	7	Kena Hill
2	Tuaruhu	8	Vara reek
3	Ngalitatae	9	Number 3
4	Marble Street	10	Fijian Quarter
5	9 Ridge	11	Renlau
6	Musona	12	Koa Hill

Table 2. Types of Ecosystems observed in the survey.

1. Terrestrial	**4.** Urban Land Use	**7.** Customary Land Use
2. Forest	**5.** Coral Reefs	**8.** Grass Land Use
3. Streams/Rivers	**6.** Lakes/Wetlands	**9.** Air

7 RESULTS

7.1 Total Number of interviewed Households

Table 3 presents the total number of houses that were interviewed at each selected community along the Mataniko watershed area. There were seventy (70) houses surveyed in twelve (12) communities. The number of houses in these communities' range between 5 and 7.

Table 3. Summary table of the number of households and communities in the survey.

Total Number Of Household Surveyed	
Name of Community	**No. of Household**
9 Ridge	5
Koa Hill	6
Tuvaruhu	7
Lelei	5
Musona	6
Ngalitatae	6
Marble street	6
Vara Creek	6
Number 3	5
Fijian Quarter	5
Renlau	6
Kena Hill	7
Total household	**70**

7.2 Summary table showing the average sex aggregation data for each of the surveyed communities

Table 4 shows the average sex aggregated data of the households surveyed in selected communities. The sex disaggregated data of the households surveyed in selected communities, and the total numbers of males and females across average households can be found in Annex C.

Table 4. Average sex aggregated data of the households surveyed in selected communities.

Community	Total No. of households surveyed	Av. Number of males	Av. Number of females
Renlau	6	5.3	5.3
Ridge	5	3.2	4.8
Koa Hill	6	4.3	6

Community	Total No. of households surveyed	Av. Number of males	Av. Number of females
Tuvaruhu	7	4.7	6
Lelei	5	3.2	3.8
Musona	6	3.8	3.3
Vara Creek	6	4	5
Number 3	5	6.6	9
Fijian Quarter	5	7.4	10.8
Cana Hill	7	3.4	5

7.2.1 Local Population Statistics

During the course of this survey, the estimated population data was also retrieved from the visited sites along the Mataniko watershed area.

Table 5. Estimated Population of the communities within the Mataniko Watershed.

No.	Name of community	Total number of households (estimate)	Average number of household members	Total population
1	Tuvaruhu	About180	5	More than 800
2	Lelei	22	5	Less than 115
3	Ngalitatae	22	7	150
4	Musona	21	5	110
5	Marble street	58	5	Less than 300
6	Nine (9) ridge	100	5	500
7	Cana hill	75	5	Less than 400
8	Vara Creek	65	5	About 320
9	Number 3	68	5	About 334
10	Fijian quarter	22	5	110
11	Koa hill	240	7	1700
12	Renlau	95	5	475
	Total	968	64	5,314

Total number of Survey household	Total number of household members (estimate)	Total number of survey household in % (Actual)
70	968	7.2%

Note

1. This data was retrieved from the Community Elders and the chiefs who have resided within the identified communities for more than 20 years.
2. People who moved into these communities on a short-term basis, for example, renting residential homes are not counted.
3. Empty houses with non-occupants are not counted.
4. This data was based on the actual estimates that was done with the community chairperson(s) and the chiefs during the survey.

7.3 Types of Ecosystems

The study found three (3) ecosystems; Forest, Water/River and Coastal Ecosystem that was primarily used and accessed by the Mataniko watershed communities. This was lower compared to the nine (9) ecosystems originally identified in the planning stage and documented in chapter 6 of this report. These three (3) ecosystems have provided some of the needed goods and services for the communities in terms of supporting their livelihoods whilst living in Honiara. These are specified in the sections below.

7.3.1 Ecosystem Goods

Several households within the surveyed communities have utilized and benefited from the Mataniko catchment ecosystem goods as set out below in Table 6.

Table 6. Types of goods that are provided by each of the three (3) ecosystems.

ECOSYSTEM	GOODS
a. Forest	Timber, firewood, traditional medicines, bush materials, sago palm, source of food-wild pigs, possum, ara'arana (heron bird), leaves for motu (lovo),turmeric and ginger.
b. Fresh Water/River	Source of food fish, mussels, eels, freshwater prawns, kangku, source of drinking water, riverbank gravels, stones, and sand.
c. Coastal	Source of marine food fish (buma, roma, katukatu, mamula, shark and stingray), prawns, eels, Sand, and gravel.

Based on the study findings, there was a significant decrease in the number of ecosystem goods in the Mataniko watershed area. This was a foregone conclusion due to the rapid growth of the local population in the area as a result of increased urbanization rates. As a result, there was a greater demand for housing and informal settlements, putting more pressure on the harvesting and extracting of ecosystem goods, resulting in its depletion within the Mataniko watershed area.

According to the SPREP assessment report (EBA Options Assessment and Masterplan for Honiara, 2018), *"Honiara is experiencing rapid rural- urban migration, predominantly in informal settlements that are highly exposed to the multiple natural hazards, overcrowding and lack of basic service provisions. In both the upper and lower catchments, many households are largely subsistence-based relying heavily on the ecosystem services for their water and food provisions, shelter, income-generation and overall health and well-being."* This confirms the current situation at the Mataniko Watershed area as well as it also faces the same problems as experienced within other parts of Honiara.

7.3.2 Ecosystem Services

Table 7. Types of provisioning services offered by the Mataniko catchment system.

ECOSYSTEMS	ECOSYSTEM SERVICES
a. Forest	• Supports forest habitats and biodiversity. • Protects soil losses from erosions and stabilization of land. • Supports reforestation and botany. • Support livelihoods of species population through the provision of food supply, firewood, and timber. • Supports flora and fauna distribution and speciation. • Supports the regulatory function of the natural carbon and nutrient cycles. • Supports the logging and milling industry. • Supports cultural identifications-cultural taboo sites. • Support the provision of waste management. (toilet and sanitation). • The provision of raw bush materials-sago palm leaves and wood for housing.

ECOSYSTEMS	ECOSYSTEM SERVICES
b. Fresh Water/River	• Supports freshwater habitats and biodiversity. • Provision of smooth flow and efficient water channeling. • Supports provision of freshwater replenishment • Support the normal hydrological processes. • Supports flora and fauna distribution and speciation. • Supports the regulatory function of the natural underwater carbon and nutrient cycles. • Supports the recreational purposes such as bathing and swimming. • Supports cultural identifications-cultural taboo sites. • Support the provision of waste management. (soak way, toilet, and sanitation). • Support the tourism sector through river trekking to the waterfall. • Provision of income generation- River crossing on rafts and the sale of freshwater goods such as prawns and mussels. • Provision of residential waste disposals for plastics and trashcans. • Provision of river gravel, sand, and stones for residential and commercial use. • Provision of rock breakdown-gobbles, gravels, sand.
c. Coastal	• Supports terrestrial habitats and biodiversity. • The beach supports the provision of renewable energy replenishment rates. • Provision of protecting the shoreline from coastal erosion. • Regulating flood control and climate regulation. • Provision of supporting normal hydrological cycle. • Supports the flora and fauna distribution and speciation. • Supports the regulatory function of the natural carbon and nutrient cycles. • Supports the recreational purposes such as bathing, swimming, beach soccer, beach volleyball and other water sports such as water ball. • The provision of cultural identifications and taboos-such as the saltwater people and the shark calling. • Support the provision of waste management. (soak away, toilet and sanitation). • Support the tourism sector through surfing and sailing. • Provision of income generation- the sale of seafood such as katukatu, buma, roma, mud crab and mussels. • Provision of residential and commercial waste disposals-wreckages, plastics, and trash cans. • Provision of natural production of gravel and sand for residential and commercial use such as brick construction and fine sand for concrete wall plastering of residential homes. • Kastom medicines provided by coastal plants such as Raruro plants to cast out sea evil spirits. • Provision of artisanal fisheries. • Provision of wave strength reduction.

For this subsection, the survey found that there were several significant services offered through the Mataniko catchment ecosystems. Most of these services provisionally support both the natural biological diversity of flora and fauna species and the human population of the Mataniko watershed communities. The study, however, is unable of to perform valuation of these ecosystem services in the Mataniko River but the information obtained can be used as baseline information for future studies.

7.3.3 Key Summary of Ecosystem Goods Valuation

The Ecosystem Goods within the table are derived from the surveyed households of the selected communities along the Mataniko watershed areas. Based on the information collected and documented from the household surveys, it is possible to suggest that the Forest ecosystem along the Mataniko River has been significantly used. Most of this forest ecosystem usage was for collection of firewood for household cooking whilst other usage are raw bush materials and timber for housing and leaf thatch for outdoor kitchens.

Table 8. Summary table of the Ecosystem Goods Valuation (i.e., estimated monetary values)

ECOSYSTEM	Type of goods	Est. Average No. of Household	Est. Average No. Of people/household	Est. Average No. Of items required/household	EST. Total Hectare	Local Monetary value/goods item/SBD/YR 2021	Total average local value for 6 mtns	Total average local annual value	Total local monetary value /SBD	Total monetary value in USD
Forest	Sawn Timbers (e.g., 4x2x12ft-single piece)	10	5	50 pieces	1	$42	$630,000	$1,260,000	$1,260,000	$157,500
	Bundle Firewood	20	5	1	0.5	$30	$9,000	$18,000	$18,000	$2,250
	Kastom medicine	5	5	2	0.5	$50	$7,500	$15,000	$15,000	$1,875
	Bush materials (swing vines,)	5	5	5	1	$100	$75,000	$150,000	$150,000	18,750
	Bush Materials (wood)	10	5	50 pieces	2	$30	$450,000	$900,000	$900,000	112,500
	Sago Palm leave bundle	10	5	5	0.5	$300	$225,000	$450,000	$450,000	$56,250
	Wild pigs	10	5	1	1	$100	$30,000	$60,000	$60,000	$7,500
	Araárana (heron bird)	1	5	1	1	$50	$1,500	$3,000	$3,000	$375
	1x Possum	1	5	1	1	$100	$3,000	$6,000	$6,000	$750
Land	1x heap Turmeric	10	5	2	0.5	$10	$3,000	$6,000	$6,000	$750
	1x heap Ginger	10	5	2	0.5	$10	$3,000	$6,000	$6,000	$750
River/ Freshwater	Fish	5	5	2	0.5	$10	$1,500	$3,000	$3,000	$375
	Eel	5	5	1	0.5	$10	$750	$1,500	$1,500	$187.50
	Prawn	10	5	2	0.5	$50	$15,000	$30,000	$30,000	$3,750
	Mussels	10	5	1	1	$20	$6,000	$12,000	$12,000	$1,500
	Kangku	5	5	2	1	10	$3,000	$6,000	$6,000	$750

ECOSYSTEM	Type of goods	Est. Average No.of Household	Est. Average NO. Of people/household	Est. Average NO. Of items required/household	EST. Total Hectare	Local Monetary value/ goods item/ SBD/ YR 2021	Total average local value for 6 mtns	Total average local annual value	Total local monetary value /SBD	Total monetary value in USD
	Sand	5	5	10 bags	0.5	$20	$15,000	$30,000	$30,000	$3,750
	Stones	5	5	10 bags	0.5	$10	$7,500	$15,000	$15,000	$1,875
	Gravel	5	5	10bags	0.5	$10	$7,500	$15,000	$15,000	$1,875
	Brick	5	5	50 bricks	0.5	$10	$37,500	$75,000	$75,000	$9,375
	Bag sand sales	5	5	20 bags	0.5	$20	$30,000	$60,000	$60,000	$7,500
Coastal (Beach/ Intertidal zone)	Fish (buma)	5	5	20	0.5	$20	$30,000	$60,000	$60,000	$7,500
	Fish (katukatu)	5	5	2 heaps	0.5	$20	$3,000	$6,000	$6,000	$750
	Fish (Mamula)	5	5	1	0.5	$50	$3,750	$7,500	$7,500	$937.50
	Fish (Shark)	5	5	1	0.5	$100	$7,500	$15,000	$15,000	$1,875
	Sting ray	5	5	1	0.5	$50	$3,750	$7,500	$7,500	$937.50

Note

1. Forest Ecosystem
   - Timber SBD$3.50 per lineal meter 12 ft = SBD$42.00 per pieces
   - Slaughtered wild pig =SBD$100.00 per plastic
   - Sago palm leaves for thatch roofing SBD$300.00 per bundle unit
2. All the values are taken from the current local market value of year 2021.
3. Note that time was not calculated in because the value will increase enormously
4. The Hectare (Ha) refers to the certain space or area in distance that the goods can be found and collected

8 SUMMARY OF MATANIKO ECOSYSTEM GOODS AND SERVICES VALUATION

Despite its limitations, the Ecosystem Goods and Services valuation survey for the Mataniko Watershed Communities has been a great success for the GEF/SPC IWR2R Project Implementation in the Solomon Islands. The study identified three (3) main ecosystems where the communities along the Mataniko watershed have used to support their livelihoods including benefiting from the provisioning of ecosystem services. The results will assist and provide opportunities for further comprehensive EGS valuation but most importantly, the analysis and trends emerging from the study are already informative and useful for the project implementing partner institutions to work on strategic interventions to safeguard the three (3) vulnerable ecosystems of the Mataniko watershed area.

The study found relatively few ecosystem goods remaining within the Mataniko watershed area. This is due to the high level of exploitation and usage along with corresponding environmental disturbances which have occurred to date. For instances, land clearance for residential homes and gardening, informal settlements, urbanization, and the high population growth, which have put higher demands and pressure on the supply rates of the ecosystem goods and services.

The increasing human activities in clearing the ecosystem and demands for the ecosystem goods within the Mataniko Watershed have put a lot of pressures on ecosystem to sustain the goods provided. At the sometime Mataniko watershed is highly degraded with a very slow rate of replenishments of ecosystem services. For example, the slow break down level of organic matters in the river for aquatic nutrient cycling. This is largely influenced by the ongoing heavy discharge of human and animal waste disposals into the Mataniko River from the residential and other informal settlement population who live up stream.

In conclusion, this study has collected and documented some of the important Payment for Ecosystem Services (PES) data that will support the facilitation of future R2R investments and practical interventions into the area. This would safeguard the Mataniko catchment ecosystem goods and services from further depletion and provide quick remedies or mitigation for ecosystem recovery.

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ANNEX A: PHOTOGRAPHS OF THE SURVEY

Community Reps of Renlau and Fijian Quarter Community

ANNEX B: SURVEY MATRIX

MATANIKO ECOSYSTEM VALUATION SHEET					
1. GENERAL INFORMATION					
a. Name of Community:		b. Date:		c. Time:	
d. Name of Community Representative:					
e. Name of Interviwee:		f. Name of Researcher:			
g. No. of People living in household:		h. No.of Males		i. No. of Females	

2. ECOSYSTEM DETAILS				
a. : Type of ecosystem used:	1. Terrestrial(Coast/B		2. Forest	3. River/Stream
	4. Urban land use		5. Coral reefs	6. Lakes/ Wetlands
	7. Customary land use		8. Grassland use	9. Air

3. ECOSYSTEM SERVICES DETAILS	
a. : Name of ecosystem:	
b. Services Provided:	Page 1

4. ECONOMIC BENEFIT			
a. Type of economic activity:		b. Value of daily sales ($):	
c. Value of monthly sales ($):		d. Value of annual sales ($):	
e. Daily consumption:		f. Monthly consumption:	

ANNEX C

Sex disaggregated data of the households surveyed in selected communities, generally showing similar number of males and females across average households. The results suggest the level of dependency on the Mataniko catchment ecosystem goods and services to meet subsistence needs, not only by communities residing by the river but the whole population of Honiara and in areas close by the river.

Table 9. Renlau Community

Household Number	No. of Males	No. of Females	Total
1.	4	7	11
2.	5	3	8
3.	7	2	9
4.	5	3	8
5.	4	5	9
6.	7	12	19
Total	32	32	64

Table 10. Ridge Community

Household Number	No. of Males	No. of Females	Total
1.	4	6	10
2.	3	5	8
3.	4	7	11
4.	3	4	7
5.	2	2	4
Total	16	24	40

Table 11. Koa Hill Community

Household Number	No. of Males	No. of Females	Total
1.	9	12	21
2.	3	5	8
3.	3	4	7
4.	3	3	6
5.	4	7	11
6.	4	5	9
Total	26	36	62

Table 12. Tuvaruhu Community

Household Number	No. of Males	No. of Females	Total
1.	6	5	11
2.	5	7	12
3.	5	5	10
4.	5	7	12
5.	4	5	9
6.	3	5	8
7.	5	8	13
Total	**33**	**42**	**75**

Table 13. Lelei Community

Household Number	No. of Males	No. of Females	Total
1.	4	5	9
2.	3	4	7
3.	3	2	5
4.	4	5	9
5.	2	3	5
Total	**16**	**19**	**35**

Table 14. Musona Community

Household Number	No. of Males	No. of Females	Total
1.	4	5	9
2.	5	3	8
3.	4	3	7
4.	5	3	8
5.	3	3	6
6.	2	3	5
Total	**23**	**20**	**43**

Table 15. Vara Creek Community

Household Number	No. of Males	No. of Females	Total
1.	3	5	8
2.	4	3	7
3.	3	3	6
4.	4	5	9
5.	6	8	14
6.	4	6	10
Total	**24**	**30**	**54**

Table 16. Number 3 Community

Household Number	No. of Males	No. of Females	Total
1.	5	7	12
2.	4	3	7
3.	11	15	26
4.	9	15	24
5.	4	5	9
Total	**33**	**45**	**78**

Table 17. Fijian Quarter Community

Household Number	No. of Males	No. of Females	Total
1.	7	7	14
2.	3	11	14
3.	3	6	9
4.	15	20	35
5.	9	10	19
Total	**37**	**54**	**91**

Table 18. Cana Hill Community

Household Number	No. of Males	No. of Females	Total
1.	4	7	11
2.	3	4	7
3.	3	4	7
4.	3	4	7
5.	3	5	8
6.	4	5	9
7.	4	6	10
Total	24	35	59