

Document Number 4.0	TITLE W+ Monitoring Report Template Version 1.2	ORIGINAL DATE 30 November 2014
DOCUMENT MANAGER W+ Standard Coordinator		REVISION 1: 13/11/2017 REVISION 2: 18/09/2018
APPROVAL W+ Standard Committee	FILE LOCATION (S) W+/W+ Program Document Templates and on www.wplus.org	

MONITORING REPORT

WATER BUS /GLOBOLOGY

Project Title	Water Bus/Globology
Project Start Date	2010
Project End Date	Continuous
Monitoring Report number	01
Date of Report	14 December 2021
Project ID	01-2021
Monitoring Period	November 2019 to November 2021
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PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

Context

Globology is a company that has been providing ferry services to islands within Lake Victoria since 2010 through its Water Bus ferry. The community in this region is a fishing community, and fish trade constitutes their main source of income generation. While men do the fishing, majority of women are fish mongers. Before the commencement of services of the Water Bus ferry, women fish mongers experienced business losses because they could not deliver on time and they have no storage facility to prevent it from going bad. This was also the case among many small-scale entrepreneurs who reportedly experienced missed opportunities. The winds and storms were experienced regular and in some occasion all the goods would be thrown into the lake to prevent the canoes from sinking. In other situations, water would spoil the groceries and no compensation would be made.

Before the introduction of the Water Bus service, mobility in the Islands was limited to services by wooden canoes that were used mainly for fishing while also transporting passengers. Given the recurrent violent winds and storms, the wooden canoes were vulnerable to accidents, and occasionally capsized, posing great risks to passengers.

The small size of the canoes also limited the number of passengers and goods that could be transported, and required longer travel times. Even if passengers could negotiate sufficient space for themselves and their goods one-way, there was no guarantee that they could return the same day, because of the limited number of passengers that a canoe can accommodate, or storms could shut down travel altogether. This made travel expensive, uncomfortable, time consuming, and unpredictable.

Benefits associated with the Water Bus

The Water Bus is a modern water transport that connects previously isolated islands to each other and the mainland. It provides enhanced safety and convenient mobility to the local island residents. The associated benefits include reduced harassment to women users, changing public norms towards women as 'professionals' through the presence of increasing number of them who work on the Water Bus as staff and pilots; increased job options for more women to become employed as the company plans to expand its operations in the coming years. For women who reside on the islands, the service provides opportunities for them to grow their incomes, while providing easier access to education for their children, and health facilities available on the mainland.

The Water Bus serves approximately 400 passengers a day, which amounts to 144,000 individuals a year. The majority of Water Bus users are women small- business entrepreneurs who sell fish to the mainland, and import items for sale in their islands.



Results and key findings

The Time and Income/Assets W+ Domains were applied to measure the changes to women's lives. The following is a summary of findings in the two Domains.

Time savings

- Average annual time savings for women who use the Water Bus is 24850 minutes or 414 hours
- **This amounts to a 72% change from baseline conditions**
- The total number of women beneficiaries is 400

Income & Assets

- The total change in income/assets for Water Bus users is KS 1961
- **This amounts to a change of 58% from baseline conditions**
- The total number of women beneficiaries is 400

Satisfaction with the Water Bus service

- Reallocation of time saved to leisure, working on the farm, assisting children with homework
- 51% of women users reported an increase in income, and 71% reported being able to grow their business as a result of increased income generated through the use of the Water Bus
- women users of Water Bus reported that they were able to generate additional income and assets from the time saved through using the Water Bus. Education of their children is one of the most important assets invested by users of Water Bus.
- A very small number of women reported challenges in the form of needing more assistance from Water Bus staff in loading and unloading heavy goods. However, the majority of women users cited satisfaction with the service.

1.2 Project Developer

Organization name	Water Bus/Globology
Contact person	Annie Wanjiru
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1.3 Other Entities Involved in the Project

Organization name	WOCAN
Role in the project	W+ Measurement
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Title	Executive Director
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1.4 Project Start Date

The Water Bus service was initiated in 2010.

1.5 Project Crediting Period

15 November 2019 – 15 November 2021

1.6 Project Location

Fangano Island, Homa Bay County, Kenya

1.7 Title and Reference of W+ Methods

Measuring women's Time saving and Income and Assets generated through the services of the Water Bus

2 IMPLEMENTATION STATUS

2.1 Implementation Status of Project Activities

The project is ongoing, as the service of the company is ongoing.

2.2 Where applicable, describe how non-double counting measures are being implemented.

NA

2.3 Where applicable, describe how non-permanence risk factors are being monitored and managed.

NA

2.4 Methodology Deviations

There were no W+ methods deviations

2.5 Project Description Deviations

NA

3 DATA AND PARAMETERS

3.1 Data and Parameters Available

Data / Parameter	Number of women beneficiaries
Data unit	Wc.p
Qualitative data	NA
Description	The average number of women a day who use the Water Bus
Source of data	W+ Time survey
Justification of choice of data or description of measurement methods and procedures applied	<p>The sample size parameters are as follows:</p> <ul style="list-style-type: none"> • Population size = 400 • Assumed proportion 20% • Level of acceptable error = 5% • Level of significance= 95% • Required sample size – 153 • Final minimum required sample size = 160 <p>Two sets of surveys were applied: users of the Water Bus, and to non -users to serve as a control population.</p>
Purpose of the data	The purpose pf the data was to establish the time savings by users of the Water Bus by comparing it to non-users
Comments	NA

3.2 Data and Parameters Monitored

Time Method

Indicator	Wcp
Data unit(s)	Total number of beneficiaries
Description	Average number of women travelers a day
Source of data	Water Bus records
Description of methods to collect information and procedures to be applied	Local enumerators were trained to apply the survey questionnaire.
Purpose of the data	This corresponds to the time savings formula
Comments	NA

Indicator	TsTravel
Data unit(s)	Average one-way travel
Description	Average one-way travel to the mainland
Source of data	Survey
Description of methods to collect information and procedures to be applied	Local enumerators were trained to apply the survey questionnaire.
Purpose of the data	This corresponds to the time savings formula
Comments	NA

Indicator	TTsu
Data unit(s)	Total time spent on travel
Description	Time spent on two way travel
Source of data	Survey



Description of methods to collect information and procedures to be applied	Local enumerators were trained to apply the survey questionnaire.
Purpose of the data	This corresponds to the time savings formula
Comments	NA

Income and Assets Method

Indicator	Wcp
Data unit(s)	Total number of beneficiaries
Description	Average number of women travelers a day
Source of data	Water Bus records
Description of methods to collect information and procedures to be applied	Local enumerators were trained to apply the survey questionnaire.
Purpose of the data	This corresponds to the income/assets formula
Comments	NA

Indicator	A
Data unit(s)	Increase in income when project is operating (Water Bus)
Description	Established by comparing income and assets survey results of users with that of non-users, calibrated on a per person basis
Source of data	Survey
Description of methods to collect information and procedures to be applied	Local enumerators were trained to apply the survey questionnaire.
Purpose of the data	This corresponds to the income/assets formula
Comments	NA

Indicator	B
Data unit(s)	Average funds saved per month over past year
Description	Established by comparing results of users versus non-users vs baseline (non-users) and calibrated on a per person basis
Source of data	Survey
Description of methods to collect information and procedures to be applied	Local enumerators were trained to apply the survey questionnaire.
Purpose of the data	This corresponds to the income/assets formula
Comments	NA

3.3 Monitoring Plan

a- Time saving

Results Chain	OUTCOME	INDICATORS
Outputs	Increased discretionary time	The increase in time savings is significant to allocate to other activities
Immediate Outcomes	The time savings is reallocated meaningfully	Travel time saved that can be spent in helping children with their studies, undertaking income generating activities, participating in social and recreational activities
End outcomes	Increased decision making by women	NA

b- Income and Assets

Results Chain	OUTCOME	INDICATORS
Outputs	Increased incomes	Large proportion of women perceived that their income have increased



Immediate Outcomes	Increased in assets	Time saved through using Water Bus provided opportunities for women to generate additional income and assets.
End outcomes	Increase perception of well being	Women users perceived better well being through using Water Bus

C- Do No Harm indicators

Indicators	More than 75% of women users reported that they did not face any problems in using the Water Bus.
Question (s)	Did you encounter any problems or challenges in using Water Bus? What type of problems/challenges did you face? Have you experienced any accident while using the Water Bus?

4 W+ RESULTS

4.1 Results

W+ Domain	Time
Indicator	Hours of time saved Increased discretionary time available
Description	Time saved was determined by calculating the differences between the transport time of Water Bus users vs. non-users, who are still using traditional canoes.
Situation	
Prospects	NA

Income and Assets Method



W+ Domain	Income and Assets
Indicator	Increase in income and assets from sales of products facilitated by Water Bus transport services.
Description	The introduction of Water Bus for crossing the lake has saved time for women. Time savings were allocated to productive, reproductive and community activities. Water bus users were able to grow their business and therefore increase their income and assets.
Situation	The Water Bus ferry service is ongoing and plans to expand to other islands.
Prospects	To make sure passengers enjoy their journey in the Water Bus, some services could be introduced including: <ul style="list-style-type: none"> • Enroute travel entertainment like TV • Medical services for emergency • Catering services • Selling drinking water • Wireless internet access

4.2 Summary Analysis of Results

4.2.1. Current Performance

A modern water transport was introduced and connects previously isolated islands to each other and the mainland. The Water Bus has enhanced safe and convenient mobility to the local island residents. The Water Bus serves approximately 400 passengers a day, which amounts to 144,000 individuals a year. The majority of Water Bus users are women small- business entrepreneurs who sell fish to the mainland, and import items for sale in their islands.

4.2.2. Calculation of the percent of change

Sample size

In total, 166 women were surveyed individually, including 77 non-users and 89 users. Users sampled were from the villages of Sena and Yokia. Non-users for this survey are located in Ugina site where Water Bus previously served.

Sampling frame

Following the W+ sample guidelines we have calculated the samples required for the Water Bus intervention. For this the larger sample size scenario is followed in which level of significance is set at 95% and acceptable error is at 5%. The following table details the sample size determination.

Table 1 : Sampling details

Population size =	400
Assumed proportion	20%
Level of acceptable error	5%
Level of Significance	95%
Required Sample Size	153
Final Minimum Required Sample Size	160

Calculation of W+ Time

Table 6 below shows annual two -way travel time spent by the Water Bus user compared to time spent by non- users (use other forms of water transport).

The annual travel time (for categories of users and non-users) is calculated by multiplying the average two-way time spent to cross the lake by the total number of days in a year and frequency of travel per day. This results in users spending 9485 minutes for travel annually. By comparison, non-users spent 34,335 minutes annually.

Average travel time spent on travel in a year by respondent type

Respondent type	Total annual two way travel time in minutes				
	n	Mean	Std. Dev.	Min	Max
User	89	9485	8798	720	43200
Non User	77	34335	19498	8640	103680

The table below compares the total number of travel minutes annually of users and non-users:

User	Calculation	Description
Wc,p	400	Total beneficiaries of Water Bus service
TS travel	46	Average one-way travel time to reach the other side of the lake using Water Bus
TTsu(USER)	9485	Total annual time spent for travel by women using the Water Bus
Non -User		
Wc,p	400	Total number of beneficiaries of non - Water Bus service
TS travel	168	Average one-way travel time to reach the other side of the lake for non- users of Water Bus



TTsnu(NON-USER)	34335	Total time spent in travel by a women using other than Water Bus for travel
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Final W+ Calculation of Percent of Change

In order to calculate the percent change in travel time from baseline we calculated the average time saved by users compared to that of non-user women and then divide it by baseline value (travel time for non -users in this case). The table below details the calculation:

W+ Time

Average time saved by Users annually (in Minutes) (TTs-TTsnu)	24850
Percentage Change from baseline [(TTs-TTsnu)/Ttsnu]*100	72%
Total beneficiaries (Wc,p)	400

Calculation of W+ Income and Assets Results

The total increase in income and assets for women using the Water Bus is calculated by comparing the increase in their income/assets with those of non-users of the Water Bus.

Increase in income is equal to 5343 Kenya Shilling - 3382 Kenya Shilling = 1961 Kenya Shilling

Percentage of change = (Income of beneficiaries - Income of non beneficiaries) *100/ Income of non beneficiaries

Here non-users are the control group as no baseline data is available.

Average income of Water Bus user and non-user households

	n	Average Income (Kenya Shilling)	Std Dev
User	89	5343	4682
Non-User	77	3382	3506
Total	166	4433	4280

Percentage of change calculation = $[(400 \times 5343) - (400 \times 3382)] \times 100 / (400 \times 3382) = 58\%$

Table 2: W+ calculation for income domain

Income change (User income -Non-User income)	1961
Percentage Change	58%
Total beneficiaries (Wc,p)	400



Signature of Preparer

This W+ Monitoring Report was prepared by:

Barun Gurung
Name

14 December 2021
Date

A handwritten signature in blue ink that reads 'B. Gurung.' The signature is written in a cursive, slightly slanted style. Below the signature is a horizontal line.

Signature

APPENDIX

Detailed Analysis of Findings

Time Method

Reasons for lake - crossings

Residents of Mbita subcounty travel across the lake frequently to sell and buy goods, and visit family. On average, Water Bus users crossed the lake five times in a month, while non-users of Water Bus crossed the lake four times a month using other means of transport.

Average travel days in month of user and non-user households

Respondent type	Average travel days in a month				
	n	Mean	Std. Dev.	Min	Max
User	89	4.82	4.38	1	20
Non-User	77	4.42	2.47	1	12

Average frequency of travel in a day

Respondent type	Average travel days in a month				
	n	Mean	Std. Dev.	Min	Max
User	89	1.78	0.49	1	4
Non-User	77	1.99	0.11	1	2

Purpose for crossing the lake

	Non User		User		Total	
	No	%	No	%		
For work purpose	7	9%	11	12%	18	11%
For selling/buying things	66	86%	74	83%	140	84%
Going to medical center	52	68%	29	33%	82	49%
Visit family	69	90%	52	58%	121	73%
Recreational visit	0	0%	10	11%	10	6%

Reallocation of time saved

	User	
	No	%
Helping children with their studies	27	30%
Working in the field	40	45%
Income generating activities	41	46%
Social activities	14	16%
Recreational activities	44	49%

Income & Assets Method

The primary sources of income for Water Bus users is differs from non-users. Over half of the non-users (50%) reported their primary source of income was generated from informal business practices, while users (46%) operate as full time businesses.

Primary source of income

	Non User		User		Total	
	No	%	No	%		
Agriculture	11	14%	8	9%	19	11%
Business/professional	3	4%	41	46%	44	27%
Home-based of informal business	41	53%	16	18%	57	34%
Non-agricultural labour		0%	2	2%	2	1%
OTHER		0%	5	6%	5	3%
Remittances		0%	1	1%	1	1%
Selling fish	20	26%	9	10%	29	17%
Selling other goods	2	3%	7	8%	9	5%
Total	77	100%	89	100%	166	100%

Due to the use of Water Bus instead of other means of transportation in crossing the lake, more than 55% of women users confirmed that their income increased last year and in the past years.

Has your income increased due to the use of Water Bus?

	Last year		Past years	
	No	%	No	%
No	34	38%	35	39%
Not sure	5	6%	5	6%
Yes	50	56%	49	55%



Total	89	100%	89	100%
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From the 55% users who reported increases in income, 31% of the respondents said the increase was significant, while 6% said it was minimal.

	%
Minimal amount	6%
Significant amount	31%
Some	63%

The analysis shows that the time saved through using Water Bus provided opportunities for women to generate additional income and assets. For 88% of the women users of Water Bus, the additional income is used for the education of their children. Only primary and secondary schools are present in Mbita. For their college studies, children have to go to other cities.

Use of additional income

	Users	
	No	%
Purchase assets	22	45%
Re-invest in income-generation/business	15	31%
Education	43	88%
Household goods	33	67%
Technology/communication		-
Entertainment or Recreation	5	10%
Others	2	4%

More than 70% of women users feel that they were able to grow their business with the additional income they got while using Water Bus. When comparing average monthly income between control group and beneficiaries, women from the control group report an average monthly income of 3400 kshilling while women beneficiaries report an average monthly income of 5342 Kshilling. For them, this increase is significant.

Benefits from additional income

	Users (89)		RANK
	No	%	
Increased input into household decisions	28	31%	medium
Increased participation in community decisions	16	18%	medium

Greater income equality in household	18	20%	medium
Growing your business	63	71%	medium
Extra time for income-generating activities	40	45%	medium
Health benefits	1	1%	medium
Well-being of family	7	8%	medium

They stated that their assets, mainly durable and non -durable household goods, have increased.

Increased assets

	Users (47)	
	No	%
Land and Natural Resources	4	9%
House	14	30%
Agricultural goods	13	28%
Communication and technology assets	3	6%
Durable household goods	20	43%
Non durable household assets	19	40%
Water and sanitation facilities	3	6%
Financial	11	23%
Feeling of well being	4	9%
Others specify	2	4%

Do no harm assessment

The Do no harm assessment was drawn from asking questions to the Water Bus users (1) Did you encounter any problems or challenges in using Water Bus? and (2) what type of Problems/challenges did you face? (3) Have you experienced any accident while using the Water Bus? and (4) If yes, did it cost you to spend your own money on medical cost?

More than 75% of women users reported that they did not face any problems in using the Water Bus. (see table 19)

Table 3: Did you encounter any problems or challenges in using Water Bus?

	No	%
No	68	76%



Yes	21	24%
Total	89	89

Out of the 21 users who responded that they have already faced problems, 48% reported the need for assistance from Water Bus staff to load and unload their goods. Other challenges reported was the high fares and charges for extra luggage.

What type of problems/challenges did you face?

	Users (21)	
	No	%
High fare of Water Bus	8	38%
Non availability sometimes	2	10%
Technical problems during the travel in Water Bus	2	10%
Lost time for waiting the Water Bus	0	0%
Harassment during the travel	10	48%
Others	5	24%

When asked about the incidents they have already experienced while using the Water Bus, 78% of users stated that they did not experience any incidents during their travel in Water Bus.

Incidents experiences while using the Water Bus

	Users	
	No	%
Accident	3	3%
Loss of goods	10	11%
Damage of good	4	4%
Sexual harrassment		0%
Others	9	10%
None	69	78%