UGANDA NATIONAL WOMEN'S FISH ORGANIZATION (UNWFO)

IUCN BRIDGE

THE WOMEN ARTISANS SAFEGUARDING HEALTH AND ECOSYSTEMS (WASHE) PROJECT

BASELINE STUDY REPORT

Sio-Malaba-Malakisi Basin, Busia District, Uganda

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The Sio-Malaba-Malakisi shoreline at Busia District, where cultivation runs to the wetland edge and the river discharges into Lake Victoria

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All photographs were taken during baseline fieldwork at Nalyoba, Maduwa A and Majanji A between 12 and 16 March 2026. Charts were generated from the analysed KAP dataset and from the Buikwe Water Authority laboratory results.

Acronyms and Abbreviations

Acronym	Meaning
AFO	Assistant Fisheries Officer
BMU	Beach Management Unit
BRIDGE	Building River Dialogue and Governance Programme
BWA	Buikwe Water Authority
CDO	Community Development Officer
DCDO	District Community Development Officer
DFO	District Fisheries Officer
DWO	District Water Officer
ESMS	Environmental and Social Management System
FGD	Focus group discussion
FPIC	Free, Prior and Informed Consent
GBV	Gender-based violence
GESI	Gender equality and social inclusion
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IEC	Information, education and communication
IUCN	International Union for Conservation of Nature
KAP	Knowledge, attitudes and practices
KII	Key informant interview
LC1	Local Council One
NEMA	National Environment Management Authority
NTU	Nephelometric turbidity unit
NWSC	National Water and Sewerage Corporation
PWD	Person with disability
SMM	Sio-Malaba-Malakisi
TNTC	Too numerous to count
UGX	Uganda Shillings
UNWFO	Uganda National Women Fish Organization
VSLA	Village Savings and Loan Association
WASH	Water, sanitation and hygiene
WASHE	Women Artisans Safeguarding Health and Ecosystems

Executive Summary

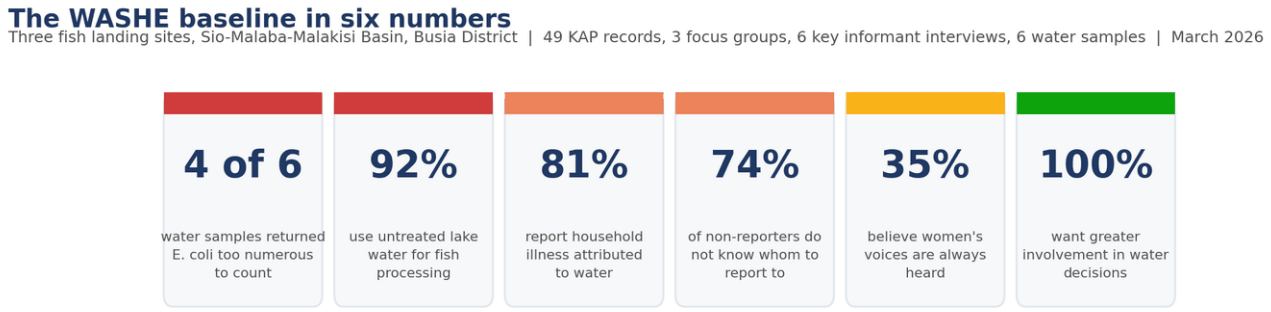


Figure 1: The WASHE baseline in six numbers.

Background

The Women Artisans Safeguarding Health and Ecosystems (WASHE) project is an eight-month Women Leadership Grant awarded to the Uganda National Women Fish Organization (UNWFO) under Phase 5 of the IUCN Building River Dialogue and Governance (BRIDGE) Programme. The project operates at three fish landing sites in the Ugandan portion of the Sio-Malaba-Malakisi (SMM) transboundary basin, in Busia District: Nalyoba in Busime Sub-county, and Maduwa A and Majanji A in Majanji Sub-county. Its goal is to establish women in the basin as recognised stewards of freshwater resources, driving community-led improvements in water quality and inclusive governance.

This baseline study establishes the pre-intervention position against which project outcomes will be measured at endline in July 2026. It also tests the problem statement on which the project was designed, and identifies contextual realities that should shape the remaining implementation period.

Methods

A mixed-methods cross-sectional design was applied between 11 and 17 March 2026. Forty-nine Knowledge, Attitudes and Practices (KAP) questionnaires were analysed from the three landing sites, alongside three focus group discussions with 30 women, six key informant interviews with district and sub-county officials, three participatory mapping exercises, and transect walks. Six lake water samples, two per landing site, were collected and analysed in partnership with Buikwe Water Authority.

Principal findings

The lake water is faecally contaminated at every site. Escherichia coli was returned as too numerous to count in four of six samples, with at least one such result at each of the three landing sites, against a national and World Health Organization standard of zero organisms per 100 millilitres. Faecal coliforms were additionally detected at Maduwa and Nalyoba. Turbidity at Nalyoba, at 22 and 26 NTU, and at Majanji, at 28 and 18 NTU, exceeded the 5 NTU drinking water limit by between three and a half and five and a half times, while Maduwa returned 4 NTU at both points. Electrical conductivity was low throughout, between 151.8 and 199.4 microsiemens per centimetre, confirming that the salinity problem afflicting district boreholes is a groundwater rather than a surface water phenomenon.

Concern is near universal but technical literacy is absent. Eighty-eight per cent of respondents were very concerned about water quality at their landing site, and 98 per cent understood that water can appear clean yet remain unsafe. However, only 44 per cent had ever heard the term "water quality monitoring", falling to 13 per cent at Nalyoba, and 43 per cent could neither name a water protection rule nor recognise the concept of monitoring. The Assistant Fisheries Officer confirmed that no water quality monitoring programme of any kind currently operates at any landing site in the sub-counties.

Practice diverges sharply from awareness. Ninety-two per cent draw processing water from the lake and 92 per cent apply no treatment of any kind, so 86 per cent of the sample handles fish with untreated surface water. Just over half clean or gut fish at the water's edge or standing in the lake, and 45 per cent both use untreated lake water and gut fish at the shoreline. Fish waste is most often thrown on the ground near the landing site (45 per cent) or fed to animals (39 per cent), with a further 10 per cent returned directly to the lake.

The economic and health burden is already recognised by the community. Eighty-three per cent stated that water quality affects the fish they handle, of whom 94 per cent cited faster spoilage and 40 per cent cited customer complaints or refusal to buy. Eighty-one per cent reported household illness attributed to water, principally typhoid (47 per cent), diarrhoea (42 per cent) and bilharzia (26 per cent). Twenty respondents quantified spoilage losses in kilogrammes for the preceding month, totalling 1,405 kg against a median reported weekly income of UGX 40,000.

Reporting pathways have collapsed. Sixty-three per cent had never reported a water quality problem, and 74 per cent of those gave "did not know who to report to" as the reason. Seventy-one per cent had rarely or never attended a meeting on water, sanitation or fisheries. All three focus groups independently reported that district officials had never visited their landing site.

Governance structures are in transition. The Beach Management Units under which 84 per cent of respondents still name their landing site committee were dissolved, replaced first by unappointed "elders" and, during the fieldwork period, by a Fisheries Beach Management Committee of seven members constituted under a seven-day verbal directive with no written instrument. Two of the seven positions are reserved for women. Below district level there is no environment officer anywhere in the structure.

Perceived agency is high but institutionally unanchored. Seventy-three per cent were very confident they could identify polluted water and 65 per cent were very confident they could report it, yet the same respondents could not name the office to which a report would go. Only 35 per cent believed women's voices are always heard in water and fisheries decisions, falling to 19 per cent at Nalyoba where 44 per cent answered "never". The barriers cited mirror the IUCN GESI analysis for the basin: lack of education or knowledge and lack of confidence (53 per cent each), men not taking women seriously (49 per cent), women not being informed of meetings (41 per cent), inconvenient meeting times (39 per cent) and domestic time poverty (37 per cent).

Demand for the intervention is unambiguous. Ninety-eight per cent wanted training in water quality monitoring and 100 per cent wanted greater involvement in water and fisheries decisions.

Conclusions

The baseline validates the problem statement on which WASHE was designed and sharpens it in three respects. First, the binding constraint is not concern or willingness but the absence of any institutional channel through which community observation can travel: the deficit is one of information architecture rather than of motivation. Second, the pollution burden at these sites is substantially transboundary and upstream in origin, involving River Sio inflow, agricultural runoff, cage aquaculture and gold mining in Buteba and Tiira, so community monitoring must be framed as evidence generation for a basin-scale problem rather than as local clean-up. Third, women's exclusion at these sites operates less through formal prohibition, since two committee seats are now reserved, than through information asymmetry, meeting scheduling and confidence, which are the barriers the project is best positioned to address.

Nine recommendations for the remaining implementation period are set out in Section 8, of which the most consequential are the establishment of a named and tested reporting line from Champions to the District Water Officer and District Fisheries Officer, the activation of the dormant sub-county grievance redress committees, and the sequencing of Champion training to precede rather than follow community dialogues.

1. Introduction

1.1 The BRIDGE Programme and the Women Leadership Grant

The Building River Dialogue and Governance (BRIDGE) Programme, implemented by the International Union for Conservation of Nature (IUCN), supports transboundary water governance in more than twenty shared river basins. The programme treats water as an entry point for cooperation, ecosystem conservation and sustainable development, and rests on the premise that governance arrangements integrating diverse knowledge systems prove more resilient and more legitimate than those that do not.

Notwithstanding this premise, women remain underrepresented in leadership and technical roles across water, fisheries, sanitation and environmental governance structures, including in basins where they are the primary users and managers of the resource. The fifth phase of BRIDGE therefore established a Women Leadership Grant facility to catalyse women-led solutions in freshwater governance, contributing to BRIDGE Outcomes 1 and 3.

1.2 The Sio-Malaba-Malakisi Basin

The Sio-Malaba-Malakisi (SMM) Basin is a transboundary sub-basin of the Nile shared between Uganda and Kenya and forming part of the wider Lake Victoria Basin. The Sio River rises south-west of Bungoma in Kenya, runs along the common border and discharges into Lake Victoria, draining a catchment of 1,450 square kilometres. The Lwakhakha and Malakisi rivers rise on Mount Elgon and join to form the Malaba River, which discharges into Lake Kyoga across a catchment of 3,780 square kilometres.

The basin population was estimated at four million as of 2020, with poverty rates between 30 and 60 per cent and annual population growth of 2 to 5 per cent. Agriculture employs approximately 85 per cent of basin residents and accounts for the largest consumptive water use at 40.1 per cent, followed by rural industry at 32 per cent and fisheries or aquaculture at 19.3 per cent. On the Ugandan side the basin covers Busia, Tororo and Bududa districts. Busia District alone records 46,899 persons with disabilities, some 22.3 per cent of the district population, a prevalence that has material implications for inclusive project design.

The basin faces landscape degradation and loss of water quality driven by intensive cultivation, sand harvesting, soil erosion and weak enforcement of environmental regulation. Water and land related conflicts arising from sediment transport and river siltation have been documented, alongside encroachment of gazetted forests and wetlands for additional agricultural land.



Plate 1: Women carrying processed fish and household loads at a Busia landing site. Boats, laundry, domestic water collection and fish handling share the same few metres of shoreline.

1.3 The WASHE project

The Women Artisans Safeguarding Health and Ecosystems (WASHE) project positions women not as beneficiaries but as knowledge producers and advocates for freshwater governance. It is implemented by the Uganda National Women Fish Organization (UNWFO), building on established engagement with women fish workers, and runs from December 2025 to July 2026.

Overall goal: to empower women in the Sio-Malaba-Malakisi basin as recognised stewards of freshwater resources, driving community-led water quality improvements and inclusive governance for sustainable fisheries and community wellbeing.

The three specific objectives are:

1. SO1: build the capacity of women champions to monitor water quality and identify practical, community-led solutions to pollution and poor sanitation at landing sites;
2. SO2: increase community awareness of the link between water quality, fish safety and livelihoods, promoting best practice in fish handling and waste management;
3. SO3: advocate for women's formal inclusion in local water, sanitation and hygiene and fisheries management planning.

1.4 Purpose and objectives of the baseline

The baseline establishes pre-intervention data against which all project outcomes will be measured, and generates strategic insight to refine implementation. Its four objectives are to establish quantitative and qualitative benchmarks for project indicators; to validate or challenge the problem statement underpinning the project; to identify contextual realities affecting implementation; and to generate preliminary evidence for the forthcoming policy brief.

1.5 Baseline study questions

Domain	Key questions
Water quality	What is the current state of water quality at key points across the three landing sites? What are the visible and reported sources of pollution?
Knowledge and awareness	What do women fish processors know about water quality, pollution sources, and the links to fish spoilage and health?
Practices	What are the current fish handling, water use and waste disposal practices at landing sites?
Governance and agency	What is the current level of women's participation in local water and fisheries decision-making structures? What barriers do they perceive?
Livelihoods	What economic losses do women attribute to poor water quality, through fish spoilage and reduced market access?

2. Methodology

2.1 Study design

A mixed-methods cross-sectional design was applied, combining quantitative data from structured survey responses and water quality parameters, qualitative data from focus group discussions, key informant interviews and participatory observation, and geospatial data from participatory mapping of pollution sources. All strands were triangulated to test convergence, divergence and gaps. Self-reported practices from the KAP survey were compared against transect walk observation and against the accounts given in focus groups, on the expectation that social desirability would bias self-report in a favourable direction.

2.2 Study sites

Three fish landing sites were purposively selected along the Ugandan shoreline of Lake Victoria at the mouth of the River Sio, in Busia District. Site codes used in the data collection instruments are retained in this report alongside site names.

Site code	Landing site	Parish and sub-county	Administrative note
Site A	Nalyoba	Bwanikhe Parish, Busime Sub-county	Access to the lake partially obstructed by papyrus; no functioning committee reported
Site B	Maduwa A	Majanji Sub-county	Receives direct inflow from the River Sio
Site C	Majanji A	Majanji Sub-county	Partially served by a National Water and Sewerage Corporation reservoir; borehole water saline

2.3 Study population, sampling and realised sample

The study population comprised women fish processors and traders operating at the three landing sites, together with district and sub-county officials holding oversight of water, fisheries, environment and community development. Sampling was purposive for the KAP survey and key informant interviews, and convenience-based for focus groups conducted at landing sites during peak activity hours.

Component	Population	Planned sample	Realised sample
KAP survey	Women fish processors and traders at three landing sites, plus a triangulation sample of men	30 women	52 questionnaires administered; 49 records available for analysis
Water quality testing	Household water abstraction points at three landing sites	9 to 12 points	6 points, 2 per site, analysed by Buikwe Water Authority; results received
Focus group discussions	Women at landing sites not selected as Champions	3 FGDs of 8 to 10 women	3 FGDs, 29 women in total
Key informant interviews	District and sub-county officials, committee members	4 to 6 KIIs	6 KIIs completed
Participatory and governance mapping	Community members and leaders	All three sites	3 mapping exercises with transect walks completed

The realised KAP sample of 49 records is distributed as 16 at Nalyoba, 17 at Maduwa and 16 at Majanji. The March 2026 progress report records 52 questionnaires administered, of which 39 were with women and 13 with men. Three completed instruments were not present in the dataset transmitted for analysis. All frequencies in this report are therefore calculated on the 49 analysed records and denominators are stated for each variable, since item non-response varies.

Sex was not captured as a coded variable in the questionnaire. Sex-disaggregated frequencies could not therefore be produced from the survey data, and the disaggregation reported here relies on the participation records held in the March 2026 progress report. This is a design fault in the instrument rather than in the fieldwork, and Section 8 recommends its correction before the endline.

2.4 Data collection tools

Tool	Volume	Content and administration
KAP survey questionnaire	49 analysed	Seven sections covering identification, demography and socio-economic profile, knowledge of water quality and pollution, attitudes and perceptions, current practices, awareness of governance structures, and interviewer observation. Administered face to face, 30 to 40 minutes.
Water quality testing log	6 points	pH, turbidity, temperature, and where laboratory capacity permitted E. coli, total suspended solids and chemical parameters. Sampling with Buikwe Water Authority.
Focus group discussion guide	3 FGDs, 29 participants	Six themes: community profile and livelihoods; water quality challenges; health and economic effects; current practices and coping; governance and decision-making; community-identified solutions. All-female groups, 60 to 90 minutes.
Key informant interview guide	6 KIIs	Semi-structured. Role and mandate, pressing water quality challenges, existing monitoring systems, governance structures, women's participation, engagement and grievance mechanisms, and views on community-led monitoring.
Participatory mapping and governance mapping tools	3 sites	Transect walks led by Champions to identify pollution points; community sketch mapping of social and governance structures; identification of formal and informal power holders.
Translation glossary	1	Local-language approximations for technical terms in Samia, Luganda and Lusoga, developed to control meaning drift during administration.

Interviews were conducted in Luganda (41 per cent), Lusamia (39 per cent), English (12 per cent), Lusoga and Lugwere (4 per cent each), with one interview conducted through a translator. The linguistic spread across a single district of three landing sites is itself a finding, and bears on the design of information, education and communication materials.



Plate 2: KAP questionnaire administered face to face at Maduwa.

Plate 3: Focus group discussion with women at a landing site, March 2026.

2.5 Key informants

Informant	Institution	Principal contribution
District Water Officer	Busia District Local Government	Water quality mandate and testing regime; salinity and borehole failure; National Water and Sewerage Corporation coverage; the unresolved black water incident
District Fisheries Officer	Busia District Local Government	Dissolution of Beach Management Units and constitution of successor committees; drivers of declining catch; reserved positions for women
Senior Environment Officer	Busia District Local Government	Transboundary wetland management planning; wetland gazettement; enforcement gaps and the absence of sub-county environment staffing
District Community Development Officer	Busia District Local Government	Grievance redress architecture; gold mining and mercury use by women; village savings and loan associations
Assistant Fisheries Officer	Busime Sub-county	Absence of any water quality monitoring programme; fish kill reporting chain; barriers to women's participation; conditions for recognising community monitoring
Sub-county representative	Busime	Water supply economics and the district resource envelope; abstraction and treatment as the alternative to drilling

2.6 Data management and analysis

Completed questionnaires were entered into site-level workbooks in a question-by-respondent matrix. For analysis, records were transposed to a respondent-level dataset of 49 cases and 55 variables. Open and semi-open responses were coded into analytic categories by keyword matching against the response options printed on the instrument, with residual responses assigned to an explicit "other or unclear" category. Multiple-response items were tabulated as counts of mentions with the number of responding cases as the denominator, so column totals exceed 100 per cent by design. Descriptive statistics were produced overall and disaggregated by site.

Focus group and key informant transcripts were subjected to thematic analysis, with coding for recurrent themes, contradictions between sources, and community-identified solutions. Governance mapping outputs were analysed for formal structures, informal power holders, decision-making pathways and relations with district institutions.

2.7 Ethical considerations

Informed consent was obtained before every interview using a standard script explaining purpose, voluntary participation and the right to withdraw. Consent was recorded for 48 of 49 KAP records, with one instrument left blank on this item. No personal identifiers are reproduced in this report and findings are presented in aggregate, except where officials spoke in their institutional capacity and agreed to attribution by office. Community ownership was addressed through the commitment to validate findings with Champions before finalisation. All community engagement followed Free, Prior and Informed Consent principles consistent with the IUCN Environmental and Social Management System.

One ethical observation arising from the fieldwork should be recorded. Respondents at all three sites articulated expectations of material provision, particularly piped water. Facilitators consistently framed the baseline as a first step rather than a delivery mechanism, but the risk of raised expectation is real and is carried forward as an implementation risk in Section 8.

2.8 Limitations

Limitation	Description	Effect on interpretation
Single-round water quality sampling	Six samples were analysed in one evening run between 17:30 and 19:10. pH, dissolved oxygen, GPS coordinates and the testing date were not recorded, and site codes on the laboratory log conflict with those on the survey instrument.	Results support comparison between sites but not across seasons. The endline must replicate evening timing and should record the omitted parameters and coordinates.
Sex not coded in the instrument	The questionnaire records no sex variable, and respondent identifiers are not systematically gendered.	Sex-disaggregated KAP frequencies could not be produced. Disaggregation relies on separate participation records.
Selection bias in the Champion cohort	A portion of the KAP sample comprises women selected as future Champions, who may be more motivated, articulate or connected than the wider population.	Knowledge and confidence values may be biased upward. Focus groups with non-Champions were used to capture a wider range of experience.
Seasonality	Fieldwork was conducted in March 2026, in a single season. Respondents describe pronounced seasonal variation, including upwelling events known locally as kaliro and wind events known as empoma.	Single-round water quality and spoilage values do not capture the full annual pollution burden. The July endline should be read against this constraint.
Governance structures in flux	Beach Management Units were dissolved and successor committees were being constituted during the fieldwork period under a seven-day directive.	Governance mapping captures a moving target. The fluidity is reported as a finding rather than treated as measurement error.
Social desirability	Self-reported practice may understate poor practice and overstate awareness.	Self-reports were triangulated against transect walk observation and focus group accounts, which in several instances contradicted survey responses.
Quantification of losses	Fish volumes and spoilage were reported in heterogeneous units, including kilogrammes, basins, trays and heaps, with no standard conversion available.	Loss estimates are reported for the kilogramme subset only and are indicative rather than representative.
Sample size	Forty-nine records across three sites support descriptive analysis only.	No inferential testing was performed and site differences are reported as observed rather than as statistically significant.

3. Findings: Community Profile and Context

3.1 Demographic profile

Respondents were on average 40.5 years old, with a median of 39 and a range of 22 to 75 years. Sixty per cent fell in the 31 to 50 band, 21 per cent were aged 18 to 30 and 19 per cent were over 50. Eighty-three per cent were married, 9 per cent widowed, 4 per cent divorced or separated and 2 per cent single.

Educational attainment is low and constitutes a first-order constraint on any technically framed intervention. Forty-eight per cent had some primary education only, 9 per cent had completed primary and 9 per cent had no formal education, so 65 per cent had not progressed beyond primary level. Thirty-three per cent had some secondary education and one respondent had completed secondary. This distribution corroborates the IUCN gender analysis finding that low literacy prevents women from taking advantage of project opportunities, and it dictates that monitoring protocols be pictorial, demonstrative and delivered in local languages.

Highest level of education	Nalyoba	Maduwa	Majanji	Total (n=46)
No formal education	2	0	2	4 (9%)
Some primary	8	10	4	22 (48%)
Completed primary	1	1	2	4 (9%)
Some secondary	5	4	6	15 (33%)
Completed secondary	0	0	1	1 (2%)

3.2 Position in the fish value chain

Respondents had spent a mean of 12.7 years in fish processing or trading, with a median of 10 years and a range of 1 to 40 years. This is a long-tenured population with substantial observational knowledge of change in the resource over time.

Sixty-five per cent identified as fish traders or sellers, 15 per cent as processors engaged in smoking, frying or drying, 12 per cent as restaurant, hotel or bar operators, 10 per cent as fishers and 8 per cent in ancillary roles including net selling and brokerage. The gendered division described in every focus group is consistent and unambiguous: men fish, women handle everything that happens after the fish lands.

> *“Fish processing and trading are activities for women and men are fishermen.”*
> Focus group discussion, Majanji

The District Fisheries Officer confirmed this pattern from the institutional side, observing that female participation in capture fishing is rare, which he attributed to mindset rather than to formal cultural restriction, while noting that women dominate all offshore activity in trade and processing. Focus groups at Maduwa and Majanji stated without exception that men provide no assistance with domestic work, with one Majanji respondent describing shared family responsibility as the sole contrary case.

3.3 Income and economic vulnerability

Reported weekly income from fish-related activity was highly dispersed. Among the 41 respondents who gave a figure that could be interpreted as a weekly amount, the median was UGX 40,000 with a range from UGX 5,000 to UGX 1,000,000. The upper values derive from a small number of larger-volume traders at Majanji handling several hundred kilogrammes per week. The distribution is strongly right-skewed, and the median is the appropriate measure of the typical position.

Eighty-one per cent reported at least one other source of income, of which 69 per cent named crop farming, principally cassava, maize, beans and rice. Petty trade and vending accounted for 18 per cent, food service for 8 per cent, water vending for 5 per cent and livestock for 3 per cent. Diversification is therefore near universal, but it is diversification into equally climate-exposed activity rather than into activity that hedges against water-related shocks.

Two structural shocks emerged from the qualitative data that bear on women's income at these sites. First, the suspension of silver cyprinid (mukene) fishing on Lake Victoria, imposed in 2024 and confirmed by the District Fisheries Officer as still in force, has removed a processing and trading niche in which women were heavily represented. Several Majanji respondents described mukene trading in the present tense before the ban was confirmed institutionally, indicating that the loss is recent and keenly felt.

> *"A respectable number of women was working in trading and processing silver fish, but right now it is illegal to fish mukene on Lake Victoria."*
> Focus group discussion, Majanji

Second, declining catch has compressed margins across all three sites. A Maduwa participant of twenty years' standing described a period when a single fisher could land two 100 kg bags, against present conditions in which stocks have fallen while the number of traders, processors and transporters has risen. A Majanji participant who married into the landing site in 1986 listed Nile perch, tilapia, silver fish, lungfish and catfish as formerly abundant species that her children have never seen in quantity, and reported that the largest Nile perch now weigh 20 to 30 kg against 80 kg formerly.

3.4 Water supply context

None of the three sites has a reliable safe water supply, and the reasons differ by site in ways that matter for programming.

At Nalyoba, focus group participants stated that the lake is the only source. Attempts by government to develop groundwater failed, with participants reporting that boreholes struck saline water. The District Water Officer confirmed the underlying hydrogeology: salinity is a serious constraint around the lake, and it is worst in Majanji and Busime sub-counties, with several installed sources having become, in his words, white elephants. He further reported excess phosphates, nitrates and iron in the Busime area, with iron making laundry uneconomic because it consumes soap, driving households back to unsafe surface sources.

At Majanji, a National Water and Sewerage Corporation reservoir of 450 cubic metres serves part of the trading centre from a lake abstraction and treatment plant. Focus group participants reported paying UGX 200 for a twenty-litre jerrycan. A distinct and consequential barrier emerged in both community and district accounts: households distrust the piped supply because they know it is abstracted from the lake, and are willing to pay UGX 500 for borehole water they consider clean, while declining treated tap water at a lower price.

> *"They are just fooling us, picking water from the lake, putting it in pipes so that we have it at home. But for us we believe only borehole water is clean water."*
> Position reported by respondents at Maduwa and Majanji, relayed in the District Water Officer interview

The District Water Officer's assessment was direct: the mindset of the population requires sensitisation on water quality parameters, because the treated tap supply is safe by virtue of the treatment chain, while the raw lake water they prefer is not. This mismatch between perceived and actual safety is one of the clearest and most actionable findings of the baseline, and it maps onto WASHE Specific Objective 2.

On sanitation, the district has constructed two-stance latrines at Majanji and at Nalyoba. The Assistant Fisheries Officer nonetheless reported that latrine availability has not displaced open defecation into the lake, which she attributed to entrenched practice rather than to infrastructure deficit.

4. Findings: Water Quality Status



Plate 4: Stagnant, discoloured water at the shoreline where canoes are moored and households draw water. Community respondents describe this condition as seasonal, driven by River Sio inflow, upwelling and wind.

4.1 Instrumented water quality results

Lake water samples were collected at two points per landing site and analysed in partnership with Buikwe Water Authority. Six samples were analysed in total, covering turbidity, temperature, nitrates, electrical conductivity, faecal coliforms and Escherichia coli, together with a visual observation of clarity. Analysis was conducted by a single technician across a continuous sampling run between 17:30 and 19:10.

Parameter	Nalyoba 1	Nalyoba 2	Maduwa 1	Maduwa 2	Majanji 1	Majanji 2
Sampling time	18:10	18:30	17:30	17:50	18:50	19:10
Turbidity (NTU)	22	26	4	4	28	18
Temperature (°C)	24.8	24.9	24.9	24.7	24.6	24.8
Nitrates (mg/l, as recorded)	30	80	10	5	15	15
Electrical conductivity (µS/cm)	151.8	151.9	163.3	155.3	199.4	197.3
Faecal coliforms (per 100 ml)	0	2	15	10	0	0
Escherichia coli (per 100 ml)	0	TNTC	0	TNTC	TNTC	TNTC
Visual observation	Cloudy	Cloudy	Clear	Clear	Muddy	Muddy

Table: Baseline lake water quality results, March 2026. TNTC denotes too numerous to count. Nitrate values are reproduced as recorded on the laboratory log, where the reporting unit is stated inconsistently as sodium nitrite in five of six samples and sodium nitrate in one.

4.1.1 Microbiological contamination

The microbiological results are the most consequential finding of the baseline. Escherichia coli was returned as too numerous to count in four of the six samples, including at least one sample at every one of the three landing sites. The Uganda national standard and the World Health Organization guideline value for E. coli in water intended for human consumption is zero organisms per 100 millilitres. A result of too numerous to count denotes contamination so heavy that individual colonies cannot be enumerated, and it is diagnostic of recent faecal input. Faecal coliforms were additionally detected at Maduwa at 15 and 10 organisms per 100 millilitres and at Nalyoba at 2 organisms per 100 millilitres, against a standard of zero.

Set against the practice data in Section 5.3, this result defines the central public health problem at these sites. Ninety-two per cent of respondents draw processing water directly from the lake and 92 per cent apply no treatment of any kind. The water in which fish are washed, and from which households draw for domestic use, carries faecal contamination at every site tested. The pattern also corroborates the community and institutional accounts of open defecation into the lake, of latrine provision that has not displaced the practice, and of human waste and sewage as the most frequently cited pollution source at 78 per cent.

It further supplies the missing evidential link in respondents' own reasoning. Eighty-one per cent reported household illness attributed to water, principally typhoid at 47 per cent and diarrhoea at 42 per cent, both of which are faecal-oral in transmission. The laboratory results confirm the exposure pathway the community had inferred from experience.

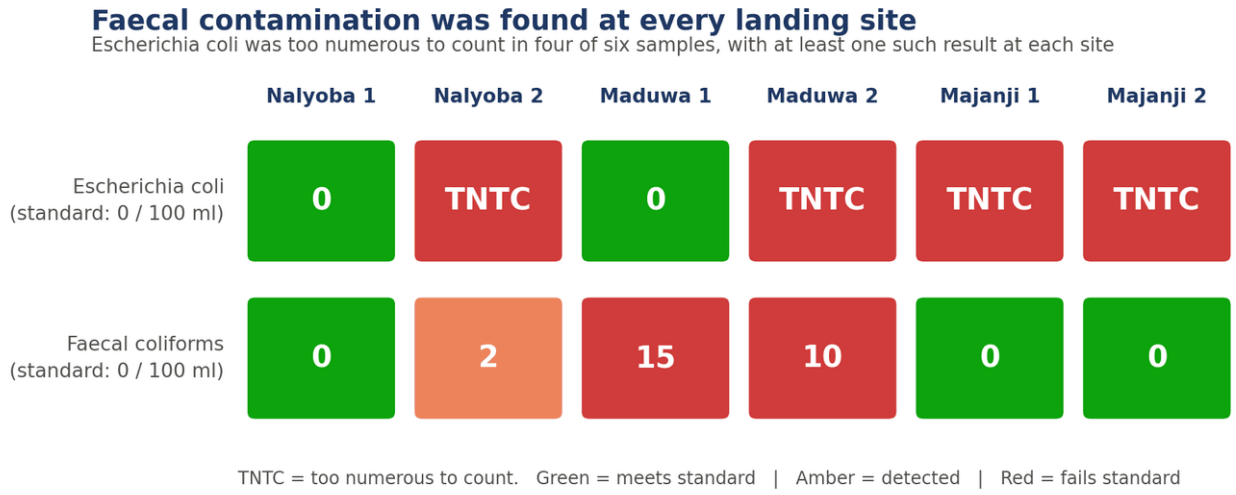


Figure 2: Microbiological results against national and World Health Organization standards.



Plate 5: Children filling jerrycans directly from the lake at Nalyoba.



Plate 6: Domestic water carried from the landing site, unfiltered and untreated.

4.1.2 Turbidity

Turbidity varied sharply by site. Maduwa returned 4 NTU at both points, within the 5 NTU limit applied to water intended for human consumption under the East African drinking water standard. Nalyoba returned 22 and 26 NTU and Majanji returned 28 and 18 NTU, between three and a half and five and a half times that limit. The visual observations recorded by the technician track the instrumented values without exception, with Maduwa noted as clear, Nalyoba as cloudy and Majanji as muddy.

Two points follow. First, elevated turbidity impairs disinfection and shelters micro-organisms from inactivation, so the turbidity and microbiological findings compound one another rather than standing separately. Second,

the correspondence between technician observation and instrument reading is itself an argument for the feasibility of community monitoring: the visual cue that Champions can be trained to recognise tracked the measured value in all six samples. This is a demonstrable and locally generated justification for the approach WASHE proposes.

The site pattern is at first sight counter-intuitive, in that Maduwa receives direct inflow from the River Sio and yet returned the lowest turbidity. Two explanations are consistent with the wider data. Sampling took place in a single evening run and captured one moment in a system that respondents describe as strongly episodic, governed by rainfall, upwelling and wind. Forty-three per cent of respondents judged that water quality had worsened over the preceding month, but among Maduwa respondents several noted improvement from a markedly worse condition some three months earlier. A single round cannot distinguish a genuinely cleaner site from a temporarily quiescent one.

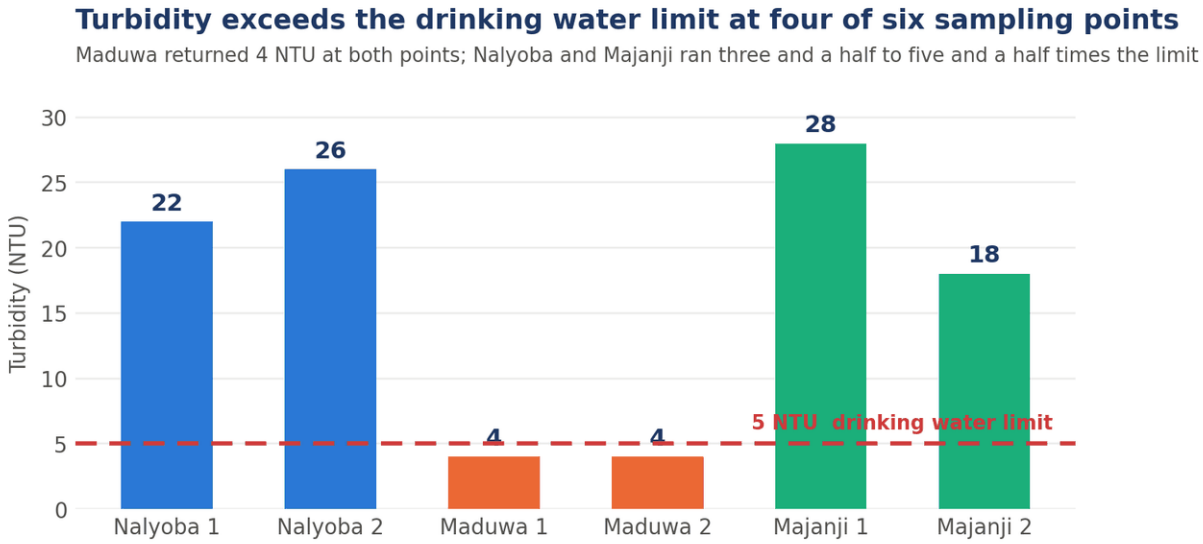


Figure 3: Turbidity by sampling point against the 5 NTU drinking water limit.

4.1.3 Nutrients, conductivity and temperature

Nitrate values were highest at Nalyoba, recorded at 30 and 80 milligrammes per litre, against 10 and 5 at Maduwa and 15 at both Majanji points. The reporting unit on the laboratory log is stated inconsistently, as sodium nitrite for five samples and sodium nitrate for one, and the values cannot therefore be compared with confidence against the national limits of 45 milligrammes per litre for nitrate and 3 milligrammes per litre for nitrite. Subject to that qualification, the Nalyoba readings warrant verification, being between two and sixteen times the values recorded elsewhere in the same sampling run. Nutrient enrichment is the mechanism the Assistant Fisheries Officer identified as the cause of the 2025 fish kill, arising from soil erosion combined with cage aquaculture, and Nalyoba is the site at which respondents most frequently reported deteriorating conditions.

Electrical conductivity ranged from 151.8 to 199.4 microsiemens per centimetre across all six samples, values that are low and that indicate limited dissolved solids. This is a material finding in its own right. The salinity problem that has rendered several district boreholes unusable, described by the District Water Officer as affecting Majanji and Busime in particular, is a groundwater phenomenon and is not present in the lake water itself. The community preference for borehole water over treated piped water, recorded in Section 3.4, is therefore founded on a perception that the laboratory data does not support: the groundwater carries the salinity problem, while the surface water carries the microbiological one, and treatment addresses the latter.

Temperature was effectively uniform across all six samples, between 24.6 and 24.9 degrees Celsius. This is unsurprising within a single evening sampling run and provides no discrimination between sites. It does not

capture the upwelling events known locally as kaliro, which respondents associate with elevated temperature, fish kills and accelerated spoilage, and which occur episodically rather than continuously.

4.1.4 Data quality observations

Four gaps in the laboratory record should be noted, since they bear on the comparability of the July 2026 endline.

- pH was specified as a core parameter in the baseline study plan but was not recorded for any of the six samples. Dissolved oxygen was likewise specified as optional and was not recorded, notwithstanding its direct relevance to the fish kill mechanism described by the Assistant Fisheries Officer.
- The testing date was not entered on the log, and GPS coordinates were not recorded for any sampling point despite the study plan requiring geo-location of each point. Without coordinates, the endline cannot be guaranteed to resample the same locations.
- Sampling was conducted between 17:30 and 19:10. The baseline study plan specified testing at the same time of day, in the morning, across all sites to ensure consistency. Evening sampling is internally consistent across the six samples and therefore supports comparison between sites, but the endline must replicate the evening timing if it is to support comparison over time.
- Site codes on the laboratory log do not correspond to those used in the KAP instrument. The log records Maduwa as Site C and Majanji as Site B, whereas the survey instrument assigns Site B to Maduwa and Site C to Majanji. Landing site names, which head each block of the laboratory log, have been treated as authoritative throughout this report. A single site coding convention should be adopted across all instruments before the endline.

Recommended action: request pH and dissolved oxygen values from Buikwe Water Authority if they were measured but not transcribed; verify the Nalyoba nitrate readings and confirm the reporting unit; and record GPS coordinates for all six sampling points before the July 2026 endline.

4.2 The institutional monitoring vacuum

The most significant water quality finding of this baseline is not a parameter value but the absence of any monitoring system to generate one. Asked what systems or programmes currently exist for monitoring water quality at landing sites, the Assistant Fisheries Officer for Busime Sub-county answered without qualification.

> *"Right now, we don't have any programme available, and we haven't conducted any water quality monitoring at any landing site."*
>
> Key informant interview, Assistant Fisheries Officer, Busime Sub-county

The District Water Officer holds a clear statutory mandate to ensure that water supplied to communities meets national and World Health Organization standards, and conducts quarterly bacteriological and physical testing as required by the Ministry of Water and Environment, with escalation to a regional laboratory for parameters beyond district capacity. That mandate attaches to supplied water sources, however, and not to the lake and shoreline points from which 92 per cent of respondents actually draw processing water. The landing sites therefore sit in a genuine institutional gap: they are monitored by neither the water department, whose mandate covers supplied sources, nor the fisheries department, whose mandate covers the fish rather than the water.

A further indication of system weakness is the unresolved black water episode. The District Water Officer described an incident in which parts of the district, extending to the municipality, received black water; samples were taken by the Ministry and sent for analysis; and no result was ever returned. A second black water episode affecting the landing sites was noted during the same period, with the cause similarly unestablished.

Community members at Maduwa described the same phenomenon independently, reporting that water had turned dark with a bad smell some three months before the survey.

4.3 Community-reported water quality indicators

Community observation was collected independently of the laboratory analysis, and the two converge. Reported indicators are internally consistent across the three sites and across data collection methods, and they track the instrumented results reported in Section 4.1. Ninety-eight per cent of respondents affirmed that water can look clean and still be unsafe, indicating that the community does not equate clarity with safety.

The indicators respondents use to judge contamination are sensory and biological rather than chemical.

Reported sign of contamination	Nalyoba	Maduwa	Majanji	Total (n=49)
Bad smell	15	17	8	40 (82%)
Unusual colour, cloudy, green or brown	14	11	13	38 (78%)
Floating waste or debris	13	13	9	35 (71%)
People getting sick after using it	15	11	6	32 (65%)
Dead fish	12	10	4	26 (53%)
Skin itching or rashes	1	1	0	2 (4%)

Table: Signs used by respondents to identify contaminated water. Multiple response; percentages exceed 100.

Focus groups produced a consistent seasonal account. During the rainy season, runoff and soil erosion turn the water brown, and inflow from the River Sio carries debris into the lake. Filamentous algal blooms, known locally as semutudhu at Maduwa and omulukhi or amulohki at Nalyoba and Majanji, turn the water green and generate a strong odour detectable at distance. In the dry season, thermal upwelling known locally as kaliro raises water temperature, kills fish and produces the odour of decomposition. Strong wind events, termed empoma at Majanji, destabilise the water column and darken the water.

> *"When it rains, water from the Sio River flows into the lake, turning its colour dark and brown. Occasionally it turns green and emits a foul odour. During this time it is not suitable for consumption."*
> Focus group discussion, Maduwa

This community account is corroborated by the technical explanation given by the Assistant Fisheries Officer, who reported that district follow-up on a 2025 fish kill established that soil erosion combined with cage fish farming had raised lake fertility to the point of algal proliferation, which reduces light penetration, depletes dissolved oxygen and asphyxiates fish. The convergence of community observation and technical diagnosis on the same causal chain is a significant baseline finding: it demonstrates that community-generated evidence at these sites is diagnostically reliable, which is the central premise of the WASHE theory of change.

4.4 Perceived pollution sources

Respondents identified multiple concurrent pollution sources, with human waste and sewage, upstream river inflow and wind-driven disturbance, and soil erosion each cited by more than three-quarters of the sample.

Perceived pollution source	Nalyoba	Maduwa	Majanji	Total (n=49)
Human waste and sewage	16	12	10	38 (78%)
River Sio inflow, wind and wave action	15	11	12	38 (78%)
Soil erosion and mud from runoff	15	10	12	37 (76%)
Plastic waste and litter	12	12	7	31 (63%)

Perceived pollution source	Nalyoba	Maduwa	Majanji	Total (n=49)
Fish waste and guts	12	5	5	22 (45%)
Agricultural runoff, fertilisers and pesticides	4	6	5	15 (31%)
Industrial waste from factories	1	2	11	14 (29%)
Washing, bathing and vehicle cleaning at the shoreline	2	1	3	6 (12%)
Algae and water hyacinth	0	3	1	4 (8%)
Chemicals used in fishing	1	2	1	4 (8%)
Do not know	0	1	0	1 (2%)

Table: Perceived main sources of water pollution. Multiple response; percentages exceed 100.

Two site-level patterns merit attention. Industrial waste was cited by 11 of 16 respondents at Majanji against 3 of 33 at the other two sites, consistent with Majanji's proximity to the border trading centre and to processing activity. Fish waste was cited by 12 of 16 respondents at Nalyoba against 10 of 33 elsewhere, which aligns with the practice data in Section 5.3 showing that Nalyoba disposes of fish waste on the ground near the landing site far more frequently than the other sites.

4.5 Pollution sources outside community line of sight

The key informant interviews surfaced three material pollution pathways that no community respondent identified, and that a community monitoring system designed only around visible shoreline sources would systematically miss.

Gold mining. The District Community Development Officer reported artisanal gold mining in Buteba Sub-county and Tiira Town Council, in which women predominate as casual labourers performing the sieving stage using mercury mixed with soil and water. He stated that watercourses along the mining belt are consistently polluted, that discharge reaches the River Sio and the River Mpologoma, and that boreholes in the vicinity are drying up as a consequence of mining activity.

> *"It is the women now who do the sieving using mercury. And you know the effect that mercury has on the fish, because all these dirty waters end up into those big water bodies. And that is where fish is caught."*
> Key informant interview, District Community Development Officer

This finding is doubly significant. It identifies a pollution pathway with severe implications for fish safety and human health, and it identifies a second population of women in the basin who are simultaneously the agents and the primary victims of that pollution. Neither the project design nor any community respondent had previously connected the two.

Destructive fishing and chemical use. The District Fisheries Officer identified destructive fishing gear as the primary driver of declining catch, with overfishing subsidiary, and reported the use of a poisonous plant preparation in the rivers during dry periods that stuns fish for collection. The Senior Environment Officer separately described a traditional technique in which riverbank reeds are cut and pushed into the channel to create fish traps, so that the vegetation stabilising the bank is removed to catch fish, contributing to bank collapse extending 10 to 20 metres in places. He also reported poison use in the rivers. Community respondents referred to chemical use by only 8 per cent, and the project coordinator recorded suspicion of furadan use during the fieldwork.

Sand mining. The District Fisheries Officer reported that sand mining in the lake is believed to damage fish breeding areas, but that departmental follow-up reaches a dead end because sand mining falls between the natural resources and production departments. This is a jurisdictional gap of the kind the WASHE advocacy component is positioned to expose.

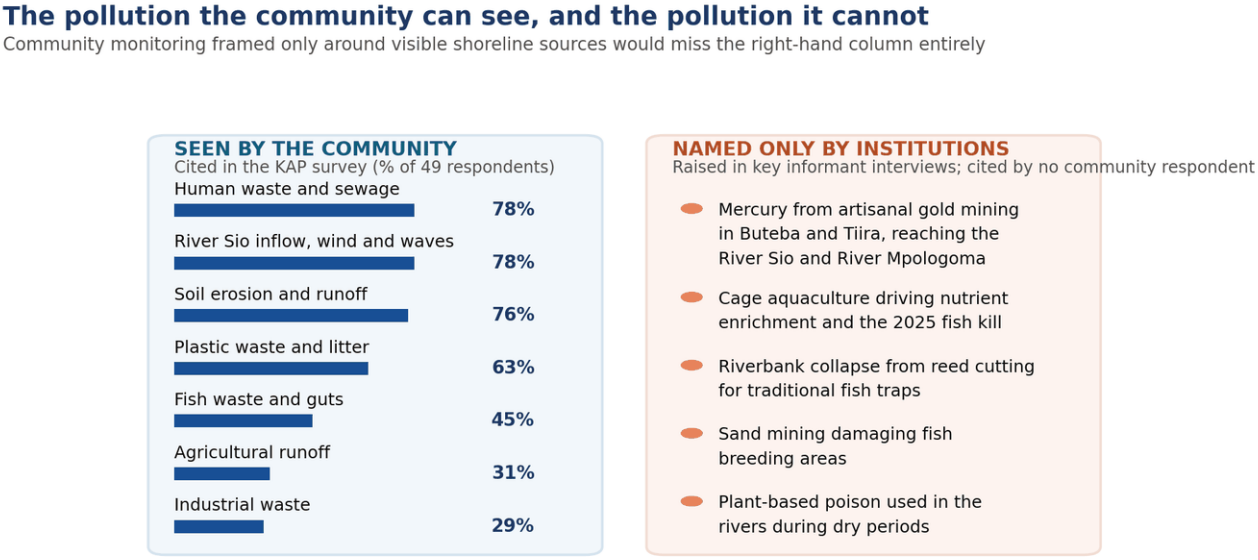


Figure 4: Pollution sources visible to the community, set against those named only by district technical staff.

5. Findings: Knowledge, Attitudes and Practices

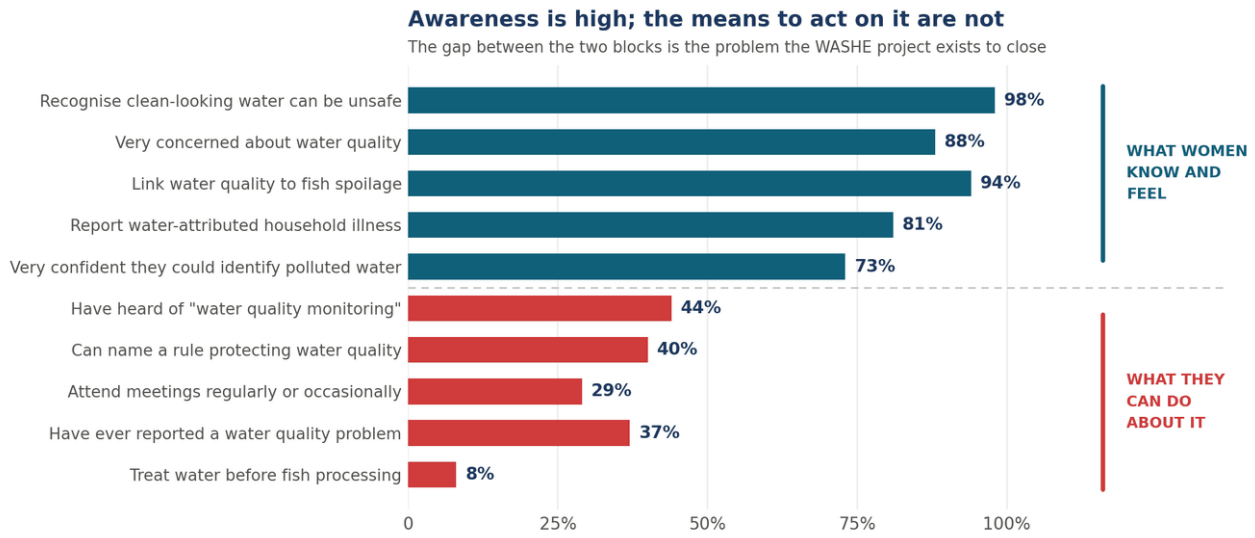


Figure 5: The distance between what women know and what they are able to do about it.

5.1 Knowledge

Conceptual understanding of water safety is present, but technical and institutional literacy is largely absent. Asked what clean water means, respondents gave functional and health-referenced definitions: water that does not cause sickness, water that is boiled, water without germs or particles, water fit for drinking and domestic use. Ninety-eight per cent recognised that water may look clean and remain unsafe.

Beyond this point, knowledge falls away sharply.

Knowledge indicator	Yes	No	Denominator
Has heard the term "water quality monitoring"	21 (44%)	27 (56%)	48
Knows of any law or rule protecting water quality in Uganda	19 (40%)	29 (60%)	48
Recognises that water can look clean but be unsafe	47 (98%)	1 (2%)	48

The site distribution of monitoring awareness is stark. At Nalyoba only 2 of 16 respondents had heard the term, against 12 of 17 at Maduwa and 7 of 15 at Majanji. Nalyoba is also the site with no functioning committee, no other water source, and the lowest meeting attendance. The three deficits are mutually reinforcing and identify Nalyoba as the site requiring the most intensive support.

Even among the 21 respondents who had heard the term, comprehension was thin. Free-text explanations included "measuring water", "owning equipment to measure", "cannot explain", "failed to explain" and "no answer". Only a small number offered a substantive account such as understanding how to keep water safe and clean, or informing people about permitted and prohibited activity at the lake.

Where respondents did name a rule, they named local prohibitions rather than statute: not washing clothes at the shoreline, not bathing in the water, building pit latrines, not dumping waste in the lake, a 200-metre buffer zone from the shore, and rules attributed to the Beach Management Unit. Sources cited were radio stations, including Eastern Voice FM Bugiri, Namayingo FM, Njogo FM Busia and Mbale-based stations, and committee instruction. No respondent cited a national instrument by name. This aligns with the March 2026 progress report finding that Champions attributed responsibility for water resources vaguely to "government".

Taken together, 21 respondents, 43 per cent of the sample, could neither name a rule protecting water quality nor recognise the concept of water quality monitoring. This is the clearest single measure of the knowledge gap that Specific Objective 1 must close.

Views on who should be responsible for checking water quality are notable for what they reveal about latent agency. While 55 per cent named government or district officials, 43 per cent named "women like us", 45 per cent named the landing site committee or Beach Management Unit and 35 per cent named community members generally. Responsibility is therefore not perceived as exclusively governmental, and a substantial minority already locates it partly with themselves.

Who should check water quality	Nalyoba	Maduwa	Majanji	Total (n=49)
Government or district officials	12	12	3	27 (55%)
Landing site committee or Beach Management Unit	4	7	11	22 (45%)
Women like us	7	8	6	21 (43%)
Non-governmental organisations	7	8	4	19 (39%)
Community members	5	7	5	17 (35%)
Do not know	0	1	1	2 (4%)

Table: Perceived responsibility for checking water quality. Multiple response; percentages exceed 100.

5.2 Attitudes and perceptions

Concern about water quality is close to universal and does not vary meaningfully by site. Eighty-eight per cent were very concerned, 10 per cent somewhat concerned and one respondent not at all concerned. At Majanji all 16 respondents were very concerned.

The link between water quality and the fish trade is well understood. Eighty-three per cent stated that water quality affects the fish they process or sell, with 73 per cent saying it does so a great deal. Among those affirming an effect, 94 per cent cited faster spoilage, 62 per cent poor taste or smell, 40 per cent customer complaint or refusal to buy, and 33 per cent unappealing appearance.

Reported effect of poor water quality on fish	Nalyoba	Maduwa	Majanji	Total (n=48)
Fish spoils faster	13	16	16	45 (94%)
Fish tastes or smells bad	13	11	6	30 (62%)
Customers complain or refuse to buy	10	6	3	19 (40%)
Fish looks unclean and unappealing	2	7	7	16 (33%)
Fish kills increase	0	1	1	2 (4%)

Table: How respondents report poor water quality affects their fish. Multiple response; percentages exceed 100.

The health burden attributed to water is substantial. Eighty-one per cent reported that they or a household member had experienced health problems they believed were caused by poor water quality. Among the 38 who specified a condition, typhoid was cited by 47 per cent, diarrhoea by 42 per cent, bilharzia by 26 per cent, stomach pain by 13 per cent, and skin rashes and vomiting by 5 per cent each. Several respondents referenced mass drug administration for bilharzia, and focus group participants at Maduwa and Majanji emphasised that children bear the heaviest burden, contracting bilharzia through swimming and diarrhoeal disease through ingestion.

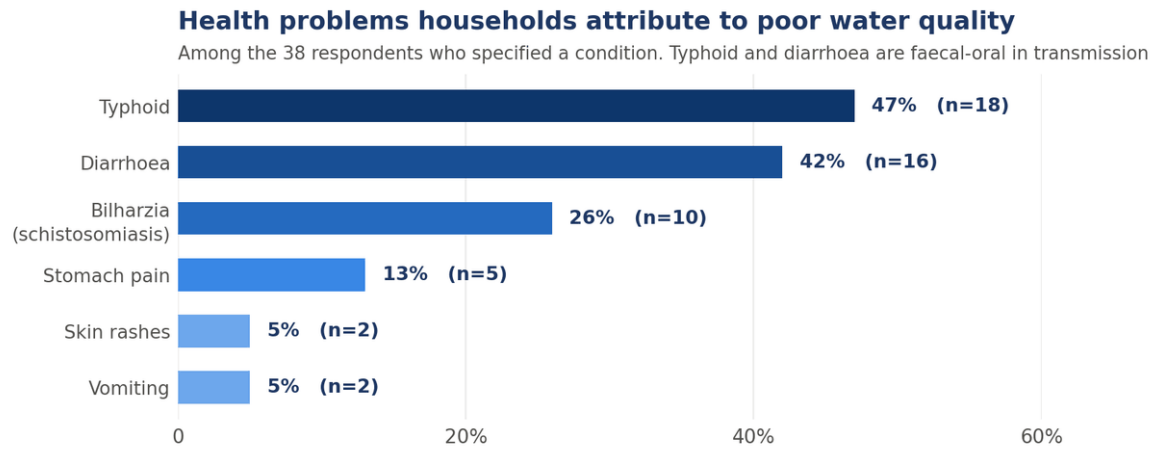


Figure 6: Health problems attributed to poor water quality.

> *"After drinking water directly from the lake, I experienced weakness in my body. During my checkup, I was asked if I had drunk lake water, since my typhoid developed after drinking directly from the lake."*
>
> Focus group discussion, Nalyoba

Self-assessed capability is high. Seventy-three per cent were very confident they could identify whether water at their landing site is polluted, and 65 per cent were very confident they could report a pollution problem to someone who could act. These figures sit in direct tension with the reporting behaviour recorded in Section 5.3, where 63 per cent had never reported a problem and 70 per cent of those cited not knowing whom to report to. The reconciliation is that confidence here expresses willingness rather than knowledge of a channel. Eight respondents who were very concerned about water quality were simultaneously not confident that they could report a problem, Lack of confidence in reporting was concentrated at Nalyoba and Maduwa, with 4 respondents at each site, against 3 at Majanji.

Perceptions of whether women's voices are heard divide sharply by site and constitute one of the most important disaggregations in this baseline.

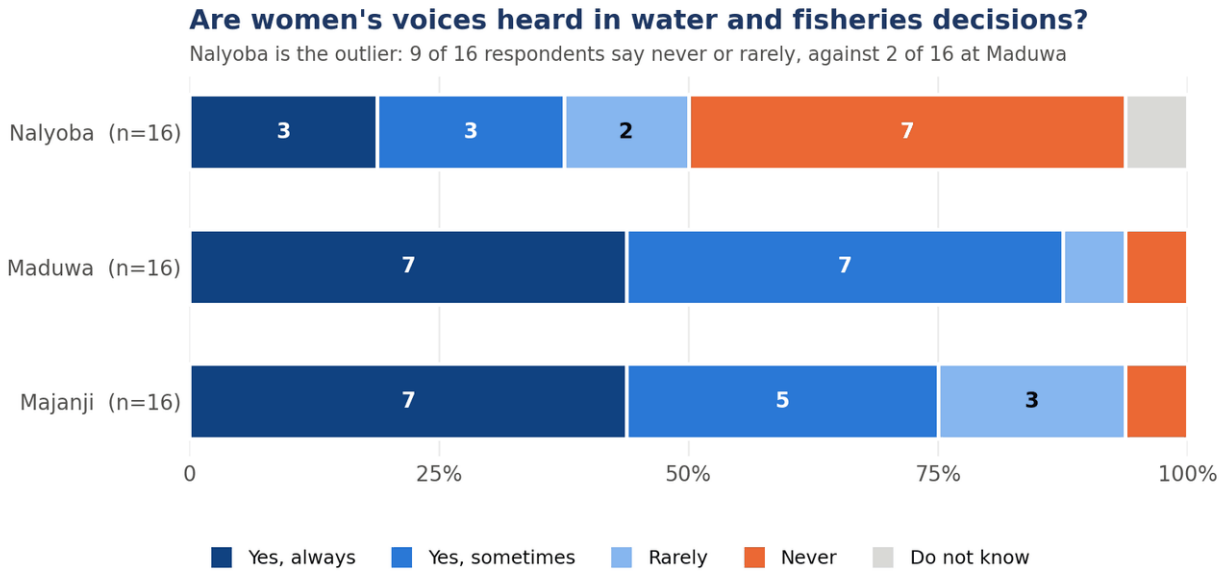


Figure 7: Perceived audibility of women's voices, by landing site.

Are women's voices heard in water and fisheries decisions	Nalyoba	Maduwa	Majanji	Total (n=48)
Yes, always	3	7	7	17 (35%)
Yes, sometimes	3	7	5	15 (31%)

Are women's voices heard in water and fisheries decisions	Nalyoba	Maduwa	Majanji	Total (n=48)
Rarely	2	1	3	6 (12%)
Never	7	1	1	9 (19%)
Do not know	1	0	0	1 (2%)

Table: Perceived audibility of women's voices in water and fisheries decision-making.

At Nalyoba, 7 of 16 respondents answered "never" and a further 2 answered "rarely", so 9 of 16 report effective exclusion, against 2 of 17 at Maduwa and 4 of 16 at Majanji. The Nalyoba focus group is consistent with this: participants reported that the Beach Management Unit chairperson is inactive, that no committee currently manages landing site affairs, that meetings existed long ago and are now, in their words, extinct, and that they would have nowhere to take a water quality complaint.

5.3 Practices

Practice is where the gap between awareness and behaviour is widest, and it is the strongest argument for the project's demonstration component.

Water sourcing and treatment. Ninety-two per cent draw processing water directly from the lake. Eighteen per cent additionally use a borehole or well, 10 per cent a tap or standpipe and 8 per cent a vendor, but these are supplementary rather than substitute sources. Ninety-two per cent apply no treatment whatsoever before using water for fish processing. Only four respondents treat water, by boiling, chlorination, filtration or settling. Combining the two items, 86 per cent of the entire sample processes fish using untreated surface water drawn from a source they themselves describe as intermittently green, brown, malodorous and implicated in household illness.

Fish cleaning location. Fifty-three per cent clean or gut fish at the water's edge or standing in the lake, 29 per cent at home and 24 per cent at a designated cleaning area. Site variation is pronounced and instructive: at Majanji only 1 respondent cleans at the water's edge, with 10 cleaning at home and 6 at a designated area, whereas at Nalyoba and Maduwa 25 of 33 clean at the shoreline. Majanji focus group participants explained the difference, stating that they are not permitted to clean fish in or along the lake and that the management committee does not accept the return of fish waste to the water. Majanji therefore constitutes a within-district demonstration that the practice is changeable where a committee is functional and enforcing, which is a more persuasive argument for behaviour change than any external example.

Combining water source and cleaning location, 22 respondents, 45 per cent of the sample, both use untreated lake water and gut fish at the shoreline. This is the specific practice cluster that the WASHE hygiene component should target.

Practice	Nalyoba	Maduwa	Majanji	Total (n=49)
Draws processing water directly from the lake	14	16	15	45 (92%)
Applies no treatment to processing water	14	16	15	45 (92%)
Cleans or guts fish at the water's edge or in the lake	12	13	1	26 (53%)
Cleans or guts fish at home	3	1	10	14 (29%)
Cleans or guts fish at a designated cleaning area	3	3	6	12 (24%)

Table: Water sourcing and fish handling practices. Multiple response on location items.

Fish waste disposal. Forty-five per cent throw fish waste on the ground near the landing site, 39 per cent feed it to animals, 18 per cent bury it, 10 per cent return it to the lake, 10 per cent collect it in a pile or bin and 6 per cent sell it as animal feed. Site differences again track committee function: 15 of 16 Nalyoba respondents dispose on the ground, against 4 of 17 at Maduwa and 3 of 16 at Majanji, while burial is practised by 9 of 16 at Majanji and by nobody at the other two sites. Several Majanji respondents linked burial to religious practice as well as to committee rule.

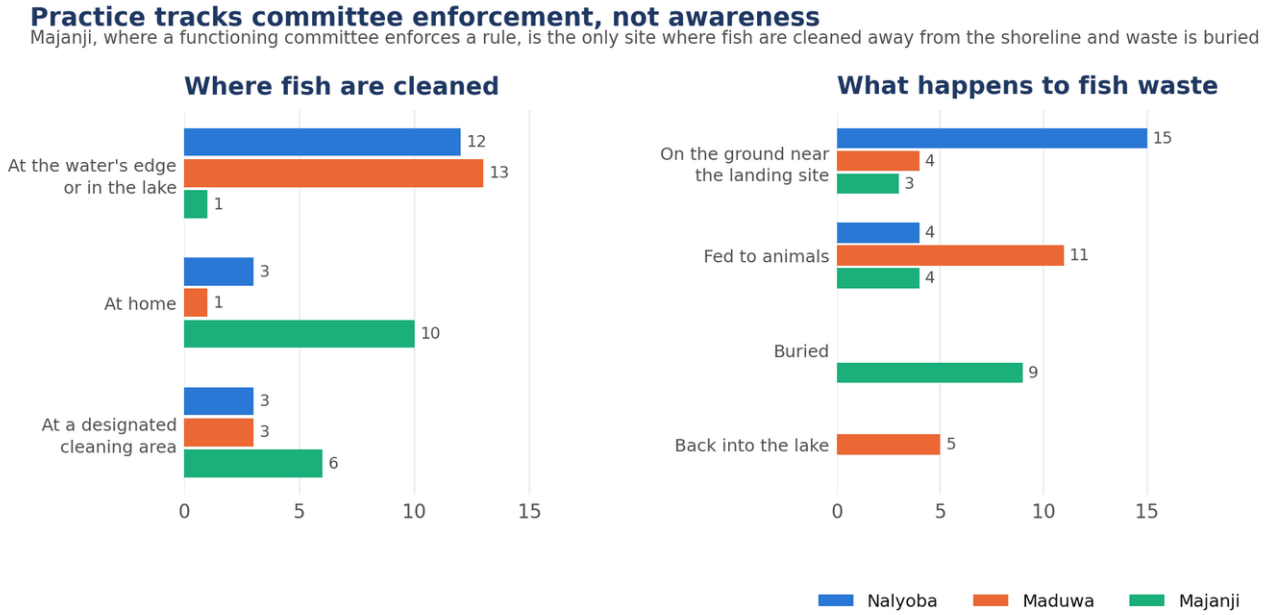


Figure 8: Fish cleaning location and fish waste disposal, by landing site.

Fish waste disposal method	Nalyoba	Maduwa	Majanji	Total (n=49)
Thrown on the ground near the landing site	15	4	3	22 (45%)
Fed to animals	4	11	4	19 (39%)
Buried	0	0	9	9 (18%)
Thrown back into the lake	0	5	0	5 (10%)
Collected in a pile or bin	0	2	3	5 (10%)
Sold for animal feed	0	0	3	3 (6%)

Table: Disposal of fish waste. Multiple response; percentages exceed 100.

Perceived recent change. Forty-three per cent judged that water quality had worsened over the preceding month, 31 per cent that it had stayed the same and 27 per cent that it had improved. Direction of change differs by site: 10 of 16 at Nalyoba and 10 of 17 at Maduwa reported worsening, against 1 of 16 at Majanji where 6 reported improvement. Respondents at Nalyoba and Maduwa attributed deterioration to rain-driven inflow from the River Sio, sand deposition and algal proliferation. This dispersion confirms the seasonality limitation and reinforces the requirement that the endline be read against comparable seasonal conditions.

Reporting behaviour. Thirty-seven per cent had ever reported a water quality problem to anyone. Among the 18 who had, the local council leader was the most common recipient at 44 per cent, followed by the landing site committee or Beach Management Unit and district officials at 33 per cent each. Among the 31 who had never reported, 74 per cent did not know whom to report to and 29 per cent did not think anything would be done. This second reason is a measure of institutional credibility rather than of information, and it will not be resolved by training alone.

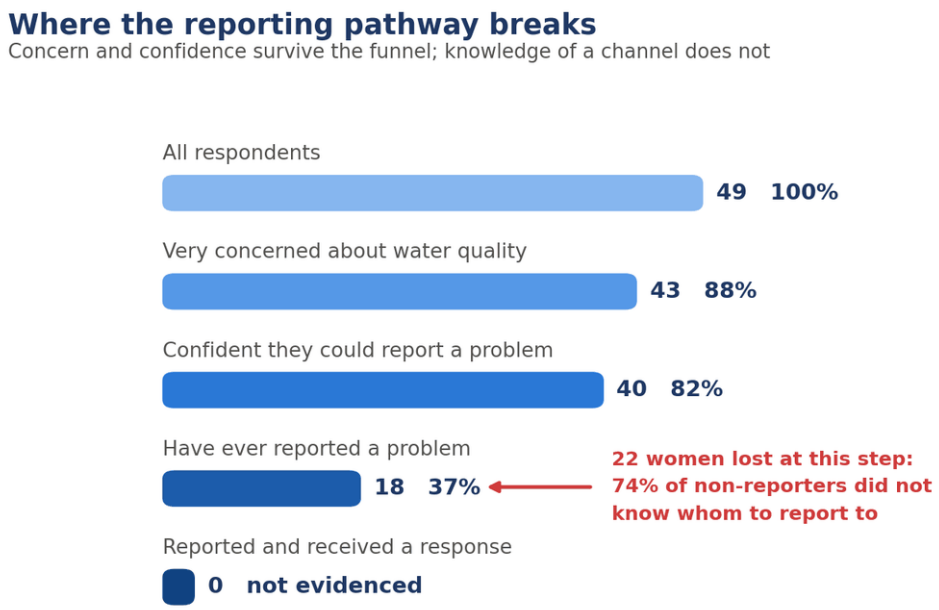


Figure 9: Attrition along the reporting pathway, from concern to action.

> *"We report to the Beach Management Unit but we don't get help."*
> Key informant response recorded in the Majanji KAP survey

Losses to spoilage. Twenty respondents quantified losses in the preceding month in kilogrammes, totalling 1,405 kg with a median of 25 kg and a range of 1 to 500 kg. A further 12 reported losses in basins, trays or heaps, for which no conversion was available, and 16 left the item blank. Set against a median reported weekly income of UGX 40,000, a median monthly loss of 25 kg represents a material erosion of margin. Attributed causes were dominated by water conditions: bad, dirty or heated water, upwelling, water pollution, and high temperature, with a minority citing market factors such as delayed sale or low customer turnout.

> *"Yes, especially during rainy season, and these days I do not take any penny at home. On bad days you can lose like 20,000 shillings."*
> Focus group discussion, Maduwa

One contradiction between methods should be recorded. Asked in the Nalyoba focus group whether they had experienced economic losses due to poor water quality, participants collectively answered that they had not, yet in the same discussion described fish spoilage, reduced catch and health expenditure, and 13 of 16 Nalyoba KAP respondents reported that poor water quality affects their fish. The most plausible reading is that "loss" was interpreted as a discrete catastrophic event rather than as chronic margin erosion. This has a practical implication: the endline should measure loss through structured recall of quantity and price rather than through an open question about loss.

5.4 Willingness to engage

Demand for the intervention is effectively unanimous and is the most encouraging finding of the baseline. Forty-eight of 49 respondents, 98 per cent, wanted to receive training in water quality monitoring, and all 49, 100 per cent, wanted greater involvement in decisions about water and fisheries in their community. Interviewers rated 80 per cent of respondents as very engaged during administration.

This unanimity should be interpreted with care. It is consistent with genuine demand, and it is also consistent with courtesy bias and with expectation of material benefit, both of which were evident in the qualitative data. The appropriate endline measure is therefore not restated willingness but demonstrated participation: attendance at dialogues, reports filed through the established channel, and appearances before district structures.

6. Findings: Governance Landscape and Women's Participation

6.1 Formal structures in transition

Eighty-four per cent of respondents were aware of a committee or group managing landing site affairs, and 39 of the 41 who named it called it the Beach Management Unit. The Beach Management Units were, however, dissolved nationally. What respondents describe is therefore in substantial part institutional memory rather than a functioning body, and this gap between named structure and operating structure is central to understanding governance at these sites.

The Assistant Fisheries Officer set out the sequence. Following dissolution of the Beach Management Units, sub-counties were permitted to elect landing site "elders", so called because they hold no appointment and serve on a temporary basis. During the fieldwork period, a successor structure was being constituted.

> *"We are going to constitute now the one which is called the Fisheries Beach Management Committee. It is the current arrangement for a committee with seven members with two compulsory positions for women. We were given seven days."*
>
> Key informant interview, Assistant Fisheries Officer, Busime Sub-county

The District Fisheries Officer set out the full three-tier architecture and the reservation of positions for women within it.

Tier	Composition	Positions reserved for women	Status at baseline
Landing site committee	7 members	2: vice chairperson and women's representative	Being constituted; expression of interest forms circulated
Sub-county management committee	Chaired by landing site chairpersons	1: female representative	Being constituted
District management committee	5 members: District Fisheries Officer, District Production Officer, Community Development Officer and 2 fisher representatives	1 of the 2 fisher representative positions	Pending approval by the district security committee

Two features of this process carry risk. First, the directive was verbal and time-bound to seven days, issued through security rather than civil channels, with no written instrument provided. The District Fisheries Officer stated that the expression of interest forms in use were produced on his own initiative to formalise the process and preserve a record. Second, campaigning was prohibited, and vetting proceeds downwards from the district security committee to the sub-county and then to the landing site. A process that is undocumented, compressed and vetted from above offers limited scope for the community mobilisation through which women's candidacies would ordinarily be advanced.



Figure 10: The successor fisheries governance structure and the two entry points identified by the baseline.

This creates a narrow and time-critical opportunity. Two of seven landing site positions are reserved for women at the exact moment the committees are being formed. If WASHE Champions are supported to occupy those seats now, the project secures a formal governance foothold that would otherwise require years of advocacy. If the window closes before Champion training concludes in April 2026, the seats will be filled by others and the opportunity will not recur within the project period.

Perceptions of women's presence on committees are more favourable than the substance warrants. Seventy-three per cent said women are represented, 12 per cent said they are not and 15 per cent did not know. Where respondents specified numbers, they described two to four women on a twelve-member Maduwa committee, typically holding treasurer, women's representative and secretary positions, and one to two women at Nalyoba and Majanji. The Maduwa focus group gave the composition as three women and nine men. Representation is therefore real but confined to a minority of seats and to roles that are administrative rather than executive.

6.2 Informal structures and power holders

Governance mapping identified a parallel informal architecture that is, at present, more functional than the formal one.

Savings and loan groups are the principal organised form of collective action by women at all three sites. At Maduwa, participants named Ekili mujji tokimanya kala yalyo, founded by three women and providing loans for school fees and health costs, and Tugezeko tulabe nga tunasobola. At Majanji, Agali awamu ngegaluma enyama operates a mixed savings scheme of twenty members meeting weekly, with two of its three elected leaders being women. The District Community Development Officer confirmed that the Get Water Uganda project supports village savings and loan associations among shoreline women in Busime and Majanji sub-counties.

One water-specific group exists. The Maduwa focus group described Obumu ngemanyi, a group concerned with water, established with support from Get Water Uganda and registered at Majanji Sub-county, with 32 members of whom 29 are women, and with all leadership positions held by women except the secretary. This is the closest existing analogue to what WASHE seeks to create, and it constitutes an obvious partner and a source of practical lessons.

Informal women's representatives, referred to as Nabachara or Nabakyala, function as the trusted first point of contact for women with a problem. They are not elected and hold no formal position, but they carry standing. At Majanji, participants identified Mrs Rehama Bumali, describing her as a counsellor to women who

encourages economic activity, shares information about opportunities, listens without judgement and maintains confidence. At Nalyoba, participants named Mrs Nansubuga Margret as a role model. At Maduwa the most influential figure named was a man, Mr Balaza Albert, with participants stating that they had no equivalent woman because the appointed women's representative commanded insufficient respect.

The District Community Development Officer independently identified this informal channel as the one women actually trust, noting that a woman with a problem approaches the Nabachara, who may then approach the Beach Management Unit. Any reporting pathway the project designs should therefore run through, rather than around, these figures.



Plate 7: Women present the Nalyoba participatory map, marking pollution points, the water source and the BMU chairperson.



Plate 8: Community sketch mapping in progress, led by participants rather than facilitators.

Intra-group tension was reported candidly and should not be omitted. At Majanji, participants attributed the difficulty of collective action among women to differences in income and living standards, and to gossip and mistrust between women. At Maduwa, participants stated that no meeting of women had ever been convened at the landing site and that a woman with a serious problem goes directly to the police.

> *"There is no collective responsibility and all about personal concerns."*
> Focus group discussion, Maduwa

6.3 Relations with district institutions

The relationship between the landing sites and the district is characterised by absence. All three focus groups reported that district officials had never visited. At Maduwa, participants stated that only sub-county officials come; asked whether direct communication with district officials was possible, one participant replied that they call repeatedly and are promised visits that do not occur. At Majanji, the answer was that none has ever visited. Participants at Majanji further stated that government had never consulted them before a decision affecting the landing site, and that decisions are communicated after the fact through community radio.

The structural cause is partly one of staffing. The Senior Environment Officer stated that there is one environment officer for the entire district sector and no officer at sub-county level dealing with the environment. The nearest proxy is the health assistant, who approaches problems through a sanitation lens and will not confront wetland encroachment. Sub-county environment committees exist on paper but, following decentralisation, several sub-county councils have too few councillors to constitute an independent committee, so environmental matters are absorbed into general purpose committees whose members are answerable to the very electorate whose practices require regulation.



Plate 9: The Busia Senior Environment Officer with the Uganda Gazette declaring wetlands, December 2023. Over 110 wetlands are gazetted in the district, while the transboundary management plan for 2020 to 2030 remains unimplemented.

> *"If you have two leaders contesting, and one will tell you, we are going to use wetlands as we want, they are ours, and one tells you that we are losing out on them and we have to protect them, if it needs arresting people we shall arrest you, whom will you give votes?"*
>
> Key informant interview, Senior Environment Officer

The District Fisheries Officer described a parallel gap on the fisheries side, noting that community members seeking environment or natural resources services must travel to the district because no officer exists below that level, and that this constitutes a missing link.

A grievance architecture nonetheless exists and is dormant. The District Community Development Officer reported that grievance redress committees have been formed at every sub-county, chaired by the sub-county chief with the Community Development Officer as secretary, and including representatives of persons with disabilities, older persons and women. He was explicit that these committees are inactive, and equally explicit about why.

> *"Those redress committees, though they are not so active, they are there. Why they are not active is that the committee is not informed. Therefore, information is the one that is lacking about the existence of those committees."*
>
> Key informant interview, District Community Development Officer

This finding materially changes the advocacy proposition. WASHE does not need to persuade the district to create a channel for women's grievances. A statutory channel exists at the tier closest to the community, is inclusive by design, and requires only activation and awareness on both sides. Grievances that should be settled at sub-county level currently escalate to the Chief Administrative Officer, which is evidence of the same failure viewed from above.

6.4 Institutional receptiveness to community monitoring

District officials were consistently receptive to community-generated evidence, subject to one condition that the project should treat as a design requirement rather than as an aspiration.

The Assistant Fisheries Officer confirmed that communities already report water quality concerns to her office, principally odour, fish kills, green colour and brown colour, and that she escalates these to the District Fisheries Officer, who in the 2025 case obtained a technical explanation and returned it to the community. Asked how her office would respond if a group of women presented evidence of pollution and proposed a solution, she stated that the sample would be taken for further testing. Asked what would be needed for community-led monitoring to be recognised and used by the district, she was precise.

> *"Maybe capacity building training, and after that, being given an appointment to carry out that activity. Because if she is not given an appointment, she can do something and somebody says, ah, you go away, don't tell us anything. But when she is appointed by the district directly and people know, they feel her, and they will listen to her."*
>
> Key informant interview, Assistant Fisheries Officer, Busime Sub-county

Formal recognition, not technical capacity, is identified by the institution itself as the binding constraint on community monitoring. Training a Champion produces a person who can measure. A letter of appointment or equivalent instrument of recognition from the district produces a person whose measurements are acted upon. Securing such an instrument should be the primary target of the multi-stakeholder advocacy forum in June 2026, and it is a more concrete and more achievable ask than a general commitment to inclusive governance.

The District Water Officer's account converges from the supply side. He noted that his office holds testing capacity that communities lack, that he cannot be present everywhere, and that a photograph and message sent by someone on the ground would prompt a departmental response. His framing of the problem was as information asymmetry: help exists but people do not know where to seek it. The District Fisheries Officer, asked what approach would best give women a voice in governance, answered that organisation into groups, training in group dynamics, and building of confidence and rights awareness were the prerequisites, since in mixed meetings the same people speak and no female voice is heard unless it is expressly solicited.

7. Findings: Gender Equality and Social Inclusion

This section assesses the WASHE baseline evidence against the nine barriers set out in the IUCN GESI Action Plan and against the basin-level findings of the 2025 IUCN gender analysis for the BRIDGE and CREATES transboundary basin projects, which covered the Sio-Malaba-Malakisi basin including Busia District. That study was conducted independently of WASHE in the same basin, and the convergence between the two datasets provides a form of external validation for the findings reported here.

7.1 Convergence with the basin-level gender analysis

The 2025 basin analysis found that traditional gender norms remain intact across the SMM basin, that men are perceived as action-oriented providers and women as followers and cultivators, that women may access natural resources but do not own them or make decisions about them, and that approval must be sought from elderly men to access the river, fish, sand and trees. It found that women in the SMM basin are not permitted to buy or inherit land, with respondents in Uganda stating that all land belongs to men, and that decision-making power is reserved for older people and specifically for older men.

The WASHE baseline reproduces each of these findings at landing site level. The Senior Environment Officer supplied the mechanism by which land tenure translates into exclusion from the fishery itself, explaining that customary land ownership on the dry land is assumed to extend to the adjacent river, that such ownership vests in men, and that women therefore lack direct access and rights to the river-based fishing methods practised there.

> *"People assume whoever has land on the dry land extends the boundaries to the river. And the ownership of land here is by men. So they see to it that it is now men who are dominating and they are downplaying them, that they don't have direct access and rights."*
>
> Key informant interview, Senior Environment Officer

The following table maps the nine GESI Action Plan barriers against the evidence generated by this baseline.

GESI Action Plan barrier	WASHE baseline evidence	Assessment
1. Gender norms	Men fish, women process and trade, reported without exception at all three sites. Men provide no domestic assistance, reported at Maduwa and Majanji. The District Fisheries Officer attributes women's absence from capture fishing to mindset rather than formal restriction.	Confirmed. Norms operate through role allocation rather than through explicit prohibition, which makes them more tractable to dialogue than to regulation.
2. Gendered roles and time poverty	Thirty-seven per cent cite domestic responsibilities as a barrier to participation and 39 per cent cite inconvenient meeting times. Focus group day-in-the-life accounts describe continuous work from 04:00 to 22:00 or 23:00 combining childcare, garden, processing and market.	Confirmed and quantified. The project's adjustment of meeting times to 14:00 is a correct and evidence-based response.
3. Gendered financial barriers	Median weekly income UGX 40,000. Eighty-one per cent hold secondary income, principally subsistence farming. Savings and loan groups are the dominant form of collective organisation at all three sites, and the request for financial support recurs across focus groups.	Confirmed. Opportunity cost of attendance is material at this income level and warrants continued transport and refreshment provision.
4. Lack of women role models	Named role models exist at Nalyoba and Majanji. At Maduwa participants stated that they have no woman role model because the appointed women's representative is not respected. Only 35 per cent believe women's voices are always heard, falling to 19 per cent at Nalyoba.	Confirmed, with marked site variation. Maduwa requires attention to the legitimacy of existing women's representation, not only to the creation of new roles.
5. Gendered land rights	Customary tenure vests riverbank land in men and extends that claim to the adjacent water, excluding women from river-based fishing methods.	Confirmed. Outside the scope of an eight-month project to alter, but material to the policy brief.

GESI Action Plan barrier	WASHE baseline evidence	Assessment
6. Language skills and literacy	Sixty-five per cent did not progress beyond primary education and 9 per cent have no formal education. Interviews were conducted across five languages. The March 2026 progress report records that the extent of the language barrier exceeded expectation.	Confirmed and more severe than anticipated. All monitoring protocols and information materials must be pictorial and multilingual.
7. Negative masculinity and gender-based violence	Forty-nine per cent state that men do not take women seriously. Respondents reported fear of abuse or reprisal for raising concerns. The District Community Development Officer confirmed that women are restricted from night movement by spouses, limiting participation in capture fishing.	Partially confirmed. Direct evidence of gender-based violence was not sought and was not volunteered. The project safeguarding policy and grievance route should nonetheless be operative before dialogues begin.
8. Gendered impact of environmental change	Water collection and fish processing are female tasks, so deterioration in water quality falls first on women. Nalyoba women reported the lake as the only source and government boreholes as saline. Children's illness, borne as a care burden by women, was raised in every focus group.	Confirmed. Environmental degradation at these sites is transmitted to households through women's labour and care responsibilities.
9. Sustainable GESI expertise	The KAP instrument records no sex variable, preventing sex-disaggregated analysis of the project's principal quantitative dataset.	Not met. Correction required before the endline.

7.2 Barriers to women's participation as reported by respondents

Respondents were asked directly what prevents women from participating in decision-making. The distribution is notable in that internalised barriers, namely lack of confidence and lack of education, rank equally with externally imposed ones.

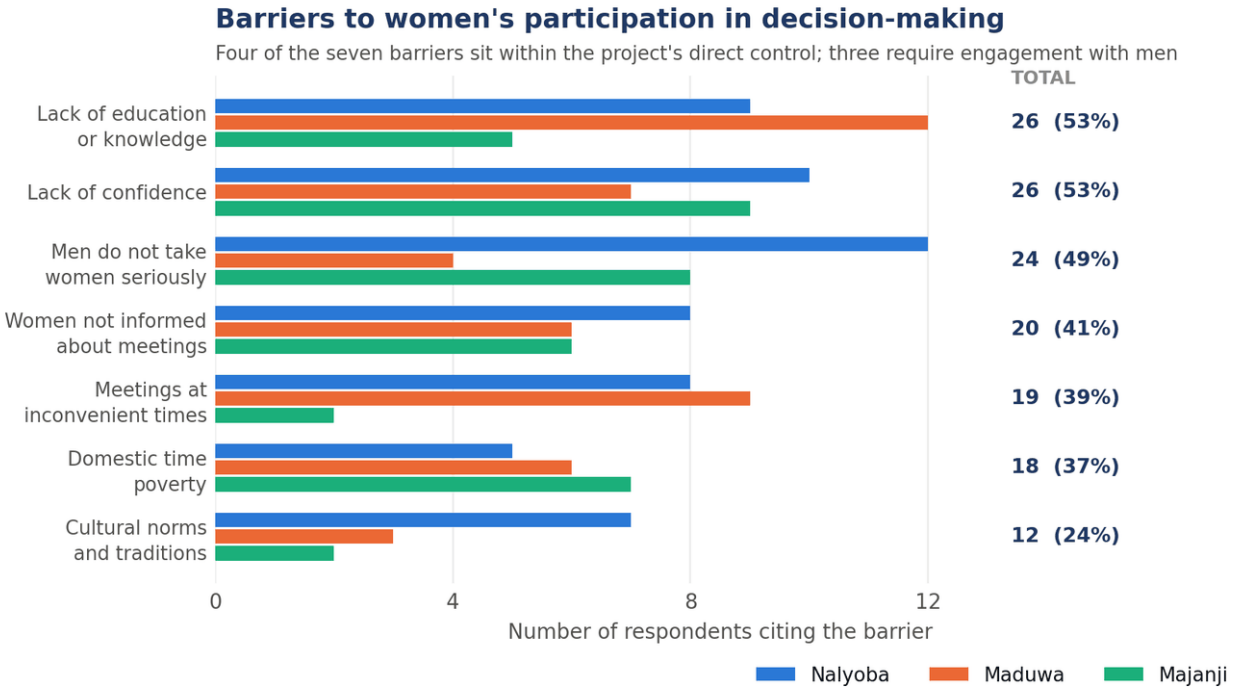


Figure 11: Barriers to women's participation in decision-making, by landing site.

Barrier to women's participation	Nalyoba	Maduwa	Majanji	Total (n=49)
Lack of education or knowledge	9	12	5	26 (53%)
Lack of confidence	10	7	9	26 (53%)
Men do not take women seriously	12	4	8	24 (49%)

Barrier to women's participation	Nalyoba	Maduwa	Majanji	Total (n=49)
Women are not informed about meetings	8	6	6	20 (41%)
Meetings held at inconvenient times	8	9	2	19 (39%)
Lack of time due to domestic responsibilities	5	6	7	18 (37%)
Cultural norms and traditions	7	3	2	12 (24%)

Table: Perceived barriers to women's participation in decision-making. Multiple response; percentages exceed 100.

The programmatic implication is that four of the seven barriers, namely knowledge, confidence, information about meetings and meeting timing, are within the direct control of the project and can be addressed within the remaining implementation period. The remaining three, namely male attitudes, domestic labour distribution and cultural norms, require engagement with men and are longer-term. The GESI Action Plan recommendation to hold dialogues with men to create an enabling environment is therefore not optional for WASHE; without it, the four tractable barriers will be addressed while the constraint simply relocates.

The evidence on comfort in meetings requires careful reading. Among those who had attended a meeting, 70 per cent reported feeling very comfortable speaking. This appears to contradict the qualitative evidence, in which women described silence in mixed-gender settings. Two considerations reconcile the two. First, only 29 per cent of the sample attends meetings regularly or occasionally, so those reporting comfort are a self-selected minority. Second, the District Fisheries Officer's observation is decisive: in most meetings the same people speak, and no female voice is heard unless it is expressly solicited. Comfort in principle and speech in practice are different quantities. The endline should measure the latter.

7.3 Disability inclusion

Busia District records 46,899 persons with disabilities, some 22.3 per cent of the district population, among the highest recorded prevalences in Uganda. The 2025 basin analysis found that persons with disabilities face social stigma and segregation that impairs participation in water governance and in project activities.

The WASHE project has responded structurally: each of the three ten-member Champion cohorts includes a representative of persons with disabilities, and community mobilisation instructions expressly required inclusion of persons with disabilities and selection across different households and permanent rather than seasonal residents. The sub-county grievance redress committees also include a representative of persons with disabilities by design.

The baseline data, however, contains no disability variable. Disability status was not recorded in the KAP instrument, was not a stratifying factor in focus group composition, and does not appear in the analysis. The project therefore cannot at present evidence differential outcomes for persons with disabilities, which the GESI Action Plan requires for all key performance indicators. This is the same instrument design fault identified for sex, and the same correction applies.

7.4 Age

The basin analysis found that decision-making power is reserved for older people and particularly older men. The WASHE sample skews middle-aged, with 60 per cent aged 31 to 50 and only 21 per cent aged 18 to 30. Younger women are therefore underrepresented among those with the longest exposure to the resource and, by the basin analysis, are furthest from decision-making influence. Champion selection should be reviewed to confirm that the youngest age band is represented, since intergenerational dialogue is a specific recommendation of the GESI Action Plan.

8. Findings: Community-Identified Challenges and Solutions

Focus groups and mapping exercises were designed to elicit community solutions before any project intervention, so that the project could build on existing thinking rather than substitute for it. The proposals fall into four groups.

8.1 Collective organisation

The most frequently proposed solution across all three sites was the formation of women's groups. Participants at Maduwa were explicit that nothing beneficial can be achieved at individual level, and linked group formation to savings and loan schemes as the mechanism for raising household income. Nalyoba participants proposed collective sensitisation by women as the route to broader community responsibility for water.

> *"Working together as women and collective sensitisation about water quality, then people will feel concerned and responsible about water."*
>
> Focus group discussion, Nalyoba

This convergence between community proposal and project design is a significant validation. It also carries a caution, given the intra-group mistrust reported at Majanji and the absence of any prior women's meeting at Maduwa: group formation will require facilitation of trust, not only of structure.

8.2 Shoreline behaviour and waste management

Participants proposed regular collective cleaning of the landing site and shoreline, cessation of clothes washing, bathing and motorcycle cleaning in the lake, and prohibition of urination in the water. Several proposals were framed in enforcement terms, including one Majanji participant who proposed breaking the basins of women washing clothes at the shoreline and arresting those urinating in the lake. A Maduwa participant proposed mobilising women to stop shoreline washing, and another proposed organising weekly cleaning by women on the reasoning that women are the primary users of the water.

Prior experience tempers this. The Assistant Fisheries Officer and the Maduwa focus group both described a GIZ-supported clean-up in 2022 that mobilised the community, delivered thorough cleaning, provided sensitisation and donated waste bins. Both accounts agree on the outcome: the gains disappeared when the implementer left, and waste reappeared the following day. A Maduwa participant added that a community collection for cleaning failed because the Beach Management Unit did not work with the water and sanitation committee. Any clean-up component of WASHE must therefore be attached to a maintained structure rather than delivered as an event.

8.3 Water supply

Piped water was the most frequently named single wish, particularly at Nalyoba where the lake is the sole source. The sub-county representative interviewed set out the constraint candidly: extending supply to these sites would require abstraction from the lake and treatment rather than drilling, given the salinity, and the cost would consume a large share of the district water budget over several years. He framed the honest answer to the community as an explanation of that trade-off, together with the observation that a donor interested in this population would be transformative.

This is beyond the scope of WASHE to deliver, but it is squarely within the scope of the policy brief to advance. The brief should present the community demand alongside the district cost analysis, so that the ask is credible rather than aspirational.

8.4 Fisheries management and livelihood

Many proposals concerned the fishery rather than water quality: prohibition of undersized fishing gear and juvenile capture, access to compliant gear through loans, restocking with Nile perch fingerlings, construction of a market to give women a trading place, and an age restriction preventing children under 18 from fishing, proposed on the ground that children who earn from fishing leave school. Maduwa participants requested training in alternative economic activities on the reasoning that much current activity is illegal.

The prominence of fisheries and livelihood proposals over water-specific ones is itself a finding. For these communities, water quality is not experienced as a discrete problem but as one determinant of income among several. The project's framing, which links water quality to fish safety and to livelihood, matches how the community already reasons, and the Champion training should preserve that framing rather than isolating water quality as a technical subject.

9. Comparison with Project Assumptions

The baseline tested six assumptions embedded in the WASHE project design.

Project assumption	Baseline evidence	Verdict
Women fish processors lack knowledge of water quality and its links to fish safety and health	Eighty-three per cent already link water quality to fish quality, 94 per cent to faster spoilage, and 81 per cent report water-attributed household illness. Conceptual understanding is present. Technical vocabulary is absent, with 56 per cent never having heard of water quality monitoring and 60 per cent unable to name a protective rule.	Partially challenged. The deficit is technical and institutional literacy, not causal understanding. Training should begin from what women already know and add measurement and reporting rather than establishing the link.
Women are excluded from water and fisheries governance structures	Two of seven landing site committee positions are now reserved for women, and 73 per cent believe women are represented. However, 71 per cent rarely or never attend meetings, only 35 per cent believe women's voices are always heard, and at Nalyoba 56 per cent report never or rarely being heard.	Confirmed with refinement. Exclusion operates through information, timing and confidence rather than through formal bars. Reserved seats create an opening that must be occupied.
Poor water quality causes economic loss to women	Twenty respondents reported 1,405 kg of spoilage in one month, median 25 kg, against a median weekly income of UGX 40,000. Attributed causes are dominated by water conditions.	Confirmed, though quantification is weak owing to heterogeneous units. Structured loss measurement is required at endline.
Community-led monitoring is feasible and would be accepted by the district	District officials were uniformly receptive. The Assistant Fisheries Officer specified that formal appointment, not capacity, is the condition for recognition. The District Water Officer described community reporting as saving departmental resources.	Confirmed, conditional on securing an instrument of recognition. This should be the principal target of the advocacy forum.
Pollution originates principally at the landing sites	Community respondents identify shoreline sources, but key informants identify upstream and transboundary drivers: River Sio inflow, agricultural runoff, cage aquaculture, riverbank collapse and mercury from gold mining in Buteba and Tiira.	Challenged. Local practice is a real but partial contributor. Monitoring framed only around shoreline sources would produce a misleading evidence base.
Existing governance structures are stable enough to engage	Beach Management Units were dissolved; successor committees were being constituted during fieldwork under a verbal seven-day directive; no environment officer exists below district level; sub-county grievance committees are dormant.	Challenged. The institutional landscape is in flux. This creates both risk and, in the reserved committee seats and the dormant grievance committees, immediate opportunity.

10. Baseline Values for Project Indicators

The following values are established as the comparator for the July 2026 endline. Denominators are stated because item non-response varies. All values derive from the 49 analysed KAP records except where otherwise noted.

Indicator	Baseline value	Source	Objective
Proportion who have heard of water quality monitoring	44% (21/48)	KAP C5	SO1
Proportion able to name a rule or law protecting water quality	40% (19/48)	KAP C8	SO1
Proportion neither aware of monitoring nor able to name a rule	43% (21/49)	KAP C5 and C8	SO1
Proportion very confident they could identify polluted water	73% (36/49)	KAP D6	SO1
Number of functioning water quality monitoring programmes at landing sites	0	KII, Assistant Fisheries Officer	SO1
Sampling points returning E. coli too numerous to count	4 of 6, at all 3 sites	Buikwe Water Authority	SO1
Sampling points exceeding the 5 NTU turbidity limit	4 of 6 (Nalyoba and Majanji)	Buikwe Water Authority	SO1
Turbidity range across the three sites	4 to 28 NTU	Buikwe Water Authority	SO1
Sampling points meeting the zero faecal coliform standard	3 of 6	Buikwe Water Authority	SO1
Proportion using untreated water for fish processing	92% (45/49)	KAP E2	SO2
Proportion cleaning or gutting fish at the water's edge or in the lake	53% (26/49)	KAP E4	SO2
Proportion using untreated lake water and gutting at the shoreline	45% (22/49)	KAP E1, E2 and E4	SO2
Proportion disposing of fish waste on the ground or into the lake	53% (26/49)	KAP E5	SO2
Proportion linking water quality to fish spoilage	94% (45/48)	KAP D3	SO2
Proportion reporting water-attributed household illness	81% (39/48)	KAP D4	SO2
Median reported monthly spoilage loss, kilogramme subset	25 kg (n=20)	KAP E10	SO2
Proportion who have ever reported a water quality problem	37% (18/49)	KAP E7	SO3
Proportion of non-reporters citing not knowing whom to report to	74% (23/31)	KAP E9	SO3
Proportion attending water, sanitation or fisheries meetings regularly or occasionally	29% (14/49)	KAP F4	SO3
Proportion who have never attended such a meeting	41% (20/49)	KAP F4	SO3
Proportion believing women's voices are always heard	35% (17/48)	KAP D8	SO3
Number of landing site committee positions held by WASHE Champions	0	Governance mapping	SO3
Number of active sub-county grievance redress committees engaged	0	KII, District Community Development Officer	SO3
Number of documented district visits to the three landing sites	0 reported by communities	FGD, all three sites	SO3
Proportion wanting training in water quality monitoring	98% (48/49)	KAP F6	All
Proportion wanting greater involvement in decisions	100% (49/49)	KAP F7	All

11. Recommendations for Implementation

Nine recommendations follow from the baseline. They are ordered by urgency within the remaining implementation period, which runs to July 2026.

11.1 Secure the reserved committee seats before they are filled

Two of seven landing site committee positions, the vice chairperson and the women's representative, are reserved for women, and the committees were being constituted during the fieldwork period through expression of interest forms held by the District Fisheries Officer. UNWFO should, immediately and in advance of the completion of Champion training, support named Champions at each of the three sites to lodge expressions of interest, and should seek the District Fisheries Officer's assistance in ensuring that the reservation is observed at all three landing sites. A single Champion seated on each committee converts the project from an external intervention into an internal presence. Timeliness matters more than preparedness here; the seats will not remain open.

11.2 Establish and test a named reporting line

The single largest behavioural gap is that 74 per cent of non-reporters do not know whom to report to, while 65 per cent are confident they could report if they did. This is resolvable within weeks. The project should publish a one-page reporting card, in Samia and Luganda and in pictorial form, naming the District Water Officer, the District Fisheries Officer, the Assistant Fisheries Officer and the sub-county grievance redress committee, with telephone contacts and an explicit statement of what each office handles. The card should be tested during training by having Champions place an actual report and record the response received. An untested channel is indistinguishable from no channel, and the community has already learnt from the Beach Management Unit experience that reporting without response is futile.

11.3 Obtain an instrument of formal recognition for Champions

The Assistant Fisheries Officer identified appointment by the district, rather than capacity, as the condition for community monitoring to be recognised and acted upon. The multi-stakeholder advocacy forum in June 2026 should therefore pursue one concrete and specific outcome: a letter of recognition, identity card or equivalent instrument issued by Busia District Local Government designating trained Champions as community water quality monitors with a defined reporting relationship. A general commitment to inclusive governance is not measurable at endline. A signed instrument is.

11.4 Activate the dormant sub-county grievance redress committees

Grievance redress committees exist at every sub-county, chaired by the sub-county chief, with the Community Development Officer as secretary and with women, older persons and persons with disabilities represented. They are inactive solely because neither the committees nor the communities are aware of them. UNWFO should convene a joint session at Busime and Majanji sub-counties bringing Champions together with the respective committees, and should include the committees in the reporting card at 11.2. This is the lowest-cost governance gain available to the project and it uses an existing statutory structure rather than creating a parallel one.

11.5 Act on the microbiological result and secure the sampling protocol

The finding that E. coli was too numerous to count at all three landing sites is actionable in its own right and should not wait for the policy brief. It should be transmitted in writing to the District Water Officer and the District Health Office without delay, since it constitutes evidence of a public health exposure affecting a population that draws domestic and processing water from these points. It also gives Champions a concrete,

district-verified result to carry into community dialogues, which is a stronger basis for behaviour change messaging than general advice about hygiene.

For the endline to be comparable, the sampling protocol requires tightening. GPS coordinates should be recorded for all six points, the evening sampling window replicated, pH and dissolved oxygen added, the nitrate reporting unit standardised and verified, and a single site coding convention adopted across the water quality log and the survey instrument. The project should further agree a data-sharing arrangement with the District Water Officer, whose office already conducts quarterly bacteriological and physical testing and holds escalation access to a regional laboratory. Aligning Champion monitoring points with the district testing regime would embed community data in an existing official series rather than creating an unconnected one.

11.6 Correct the survey instrument before the endline

The KAP questionnaire records neither sex nor disability status. The GESI Action Plan requires that all key performance indicators be disaggregated by gender, age and disability, and the project cannot currently meet that requirement from its principal quantitative dataset. Three variables should be added to the endline instrument: sex, disability status using the Washington Group short set, and Champion status, the last to permit separation of the trained cohort from the wider community. Loss measurement should also be restructured to capture quantity and unit price through structured recall rather than an open question.

11.7 Frame monitoring around the full pollution pathway

Community respondents identify shoreline sources; key informants identify upstream drivers that no community respondent named, including agricultural runoff, cage aquaculture, riverbank collapse from reed cutting, and mercury discharge from gold mining in Buteba and Tiira reaching the River Sio. Champion training should include a basin-scale orientation so that Champions understand that a green or black water event at their landing site may originate far upstream and across a border. This matters practically as well as conceptually: a Champion who reports a condition she cannot explain is more credible than one who attributes it to a local cause that district technical staff know to be wrong. The gold mining pathway should additionally be flagged in the policy brief, since it implicates a second population of women in the same district as both agents and victims of pollution.

11.8 Engage men deliberately

Forty-nine per cent of respondents state that men do not take women seriously, and the GESI Action Plan identifies dialogue with men as a precondition for an enabling environment. Focus groups reported that men provide no domestic assistance and that women are not informed of meetings. The community dialogues planned for May 2026 should include at least one session per site expressly targeted at men, fishers and local council leaders, framed around the shared economic interest in fish quality rather than around gender relations, since the former is common ground and the latter is contested. Without this, the project risks producing capable Champions who are heard by the district and ignored at home.

11.9 Attach behaviour change to a maintained structure

The 2022 GIZ clean-up at Maduwa mobilised the community, delivered sensitisation and donated bins, and the gains reversed on the implementer's departure. Majanji, by contrast, sustains changed practice, with fish gutted at home or at designated areas and fish waste buried rather than returned to the lake, because a functioning committee enforces the rule. The lesson is that at these sites practice follows enforcement, not information. WASHE clean-up or waste management activity should therefore be tied to a rule adopted by the landing site committee with a named enforcement role, and Majanji should be used as the demonstration case for the other two sites. A within-district example carries more weight than an external one.

12. Conclusion

The baseline confirms the premise on which WASHE was designed, and the laboratory results place it beyond argument. Escherichia coli was too numerous to count at all three landing sites. Women at Nalyoba, Maduwa and Majanji handle fish in water they knew to be contaminated and that is now demonstrated to be so, absorb the resulting spoilage losses and household illness, and have no institutional channel through which their observation of the resource can travel. Concern is near universal, the causal link between water quality and livelihood is already understood, and demand for training and for a governance role is unanimous.

The study also refines the design in ways that should shape the remaining five months. The constraint is institutional rather than motivational: what is missing is not willingness but a named, tested and recognised route from observation to action. The pollution burden is substantially transboundary and upstream, so community monitoring must be positioned as evidence generation for a basin-scale problem. Governance is in flux, and that flux has opened two immediate entry points, in the reserved committee seats and the dormant sub-county grievance committees, that were not visible at design stage and that will not remain open indefinitely.

The most consequential single finding is the condition stated by the Assistant Fisheries Officer: community monitoring will be acted upon when it is formally recognised, and not before. That converts the project's advocacy objective from a general aspiration into a specific, achievable and measurable ask. Securing it would leave behind, at the close of an eight-month grant, a standing arrangement under which women at three landing sites in the Sio-Malaba-Malakisi basin are recognised by their district as monitors of the water on which their livelihoods depend.

Annex 1: Realised Sample Composition

Characteristic	Nalyoba	Maduwa	Majanji	Total
KAP records analysed	16	17	16	49
Mean age (years)	41.6	41.2	38.6	40.5
Aged 18 to 30	3	2	5	10 (21%)
Aged 31 to 50	10	11	8	29 (60%)
Aged over 50	3	3	3	9 (19%)
Married	10	14	15	39 (83%)
Not beyond primary education	11	11	8	30 (65%)
Mean years in the fish trade	10.1	14.2	13.8	12.7
Interviewed in Lusamia	9	7	3	19 (39%)
Interviewed in Luganda	6	6	8	20 (41%)

Note: 52 questionnaires were administered per the March 2026 progress report, of which 39 were with women and 13 with men. Three instruments were not present in the dataset transmitted for analysis. Sex was not recorded as a variable in the questionnaire and cannot be derived from the records.

Annex 2: Key Informant Interviews Conducted

Office	Level	Date
District Water Officer	Busia District Local Government	16 March 2026
District Fisheries Officer	Busia District Local Government	16 March 2026
Senior Environment Officer	Busia District Local Government	16 March 2026
District Community Development Officer	Busia District Local Government	16 March 2026
Assistant Fisheries Officer	Busime Sub-county	16 March 2026
Sub-county representative	Busime Sub-county	16 March 2026

Annex 3: Data Collection Schedule

Activity	Location	Date	Participants
Community inception meeting	Nalyoba	19 February 2026	48 (36 women, 12 men)
Community inception meeting	Maduwa A	20 February 2026	28 (19 women, 9 men)
Community inception meeting	Majanji A	20 February 2026	37 (27 women, 10 men)
KAP survey	Nalyoba	13 March 2026	16 records
KAP survey	Maduwa	14 March 2026	17 records
KAP survey	Majanji	15 March 2026	16 records
Focus group discussion and mapping	Nalyoba	12 to 17 March 2026	29 women across 3 sites

Activity	Location	Date	Participants
Focus group discussion and mapping	Maduwa	12 to 17 March 2026	Included above
Focus group discussion and mapping	Majanji	12 to 17 March 2026	Included above
Key informant interviews	Busia District and sub-counties	16 March 2026	7 (1 woman, 6 men)
Water sampling with Buikwe Water Authority	All three sites	March 2026	6 points

Annex 4: Full KAP Frequency Tables

Frequencies for all coded variables are held in the accompanying analysis workbook. Tables reproduced in the body of this report cover the variables bearing on project indicators. The full set covers sections B through G of the questionnaire, comprising demographic and socio-economic profile, knowledge of water quality and pollution, attitudes and perceptions, current practices, awareness of governance structures, and interviewer observation, disaggregated by landing site throughout.

Variable group	Items coded	Multiple response items	Mean item response rate
B. Demographic and socio-economic profile	10	2	94%
C. Knowledge of water quality and pollution	9	3	97%
D. Attitudes and perceptions	9	3	98%
E. Current practices	11	5	92%
F. Awareness of governance structures	7	0	96%
G. Interviewer observation	4	1	100%

Annex 5: Documents Reviewed

- IUCN-BRIDGE WASHE UNWFO Baseline Study Plan and Tools, February 2026
- IUCN-BRIDGE WASHE UNWFO Inception Report, January 2026
- IUCN-BRIDGE WASHE UNWFO Progress Report, March 2026
- IUCN, Final Report: Consultancy to Develop a Gender Strategy, Inclusive Gender Analysis and Action Plan for BRIDGE and CREATES Transboundary Basin Projects, May 2025 (reference 24-IUCN-KE-1)
- GESI Action Plan for the BRIDGE and CREATES transboundary basin projects
- KAP survey questionnaire, water quality testing log, focus group discussion guide, key informant interview guide, participatory mapping guide, governance mapping tool, transect walk observation checklist and translation glossary
- Site-level KAP datasets for Nalyoba, Maduwa and Majanji, and landing site registration records
- WASHE baseline water quality results, Buikwe Water Authority, March 2026
- Field notes from community inception meetings, focus group discussions, governance mapping and key informant interviews, March 2026