EXTERNAL EVALUATION OF BUIKWE-ICELAND DEVELOPMENT PARTNERSHIP

EDUCATION DEVELOPMENT IN FISHING COMMUNITIES 2019-2022 PHASE II

AND

WASH DEVELOPMENT IN FISHING COMMUNITIES 2018-2019 PHASE II

EXTERNAL EVALUATION FINAL REPORT

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LIST OF ACRONYMS:

BDFCDP	Buikwe District Fishing Community Development Programme
BoG	Board of Governors
BTVET	Business, Technical, Vocational Education & Training
CAO	Chief Administrative Officer
CBMS	Conference Board of the Mathematical Sciences
CDO	Community Development Officer
CLTS	Community Led Total Sanitation
CoU	Church of Uganda
CSP	Country Strategy Paper
DAC	Development Assistance Committee
DWO	District Water Officer
DWSCC	District Water and Sanitation Coordination Committee
EoP	End of Project
FENU	Forum for Education NGOs in Uganda
FGD	Focus Group Discussion
GoI	Government of Iceland
GoU	Government of Uganda
ICEIDA	Icelandic International Development Agency
KII	Key Informant Interview
MDD	Music Dance and Drama
MFA	Ministry of Foreign Affairs
MLA	Monitoring of Learners Achievements
MoES	Ministry of Education and Sports
MoFPED	Ministry of Finance, Economic Planning and Development
MoH	Ministry of Health
MoLG	Ministry of Local Government

MWE	Ministry of Water and Environment
NDP II	Second National Development Plan
NDP III	Third National Development Plan
NRM	National Resistance Movement
O&M	Operation and Maintenance
ODA	Overseas Development Assistance
ODF	Open Defecation Free
OECD	Organisation for Economic Cooperation and Development
PD	Programme Document
PLE	Primary Leaving Examinations
PMT	Programme Management Team
PSC	Programme Steering Committee
PTA	Parents' and Teachers' Association
PWDs	People with Disabilities
RGCs	Rural Growth Centers
SC	Sub- County
SDAs	Service Delivery Agencies
SDGs	Sustainable Development Goals
SMC	School Management Committee
UN	United Nations
USD	United States Dollar
USE	Universal Secondary Education
WASH	Water, Sanitation and Hygiene
WB	District Water Board
WUC	Water User Committee
WVI	World Vision International

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The external end of programme evaluation was conducted to assess the programme design, scope and implementation status and the capacity of stakeholders to achieve the expected outcomes. This evaluation has taken us approximately four months to complete, commencing in November 2021 through February 2022 and was shared with stakeholders to allow for validation of the field study findings. As we launch and disseminate the final report, we wish to extend our appreciation to our partners and all stakeholders who have provided input that made this external evaluation possible.

We thank the implementing partners and all other respondents for allowing the consulting firm entry to your respective offices and homes to interact with you as well as gather information that enabled the compilation of this report. In addition, we acknowledge the contribution of other partners contributing to improving WASH and education services delivery in Buikwe District who include Water Mission/Uganda, Busoga Trust, AMREF, WOMENA and World Vision among others, who were interviewed. We also thank the government line ministries including ministry of water and environment, ministry of education and sports and ministry of local government for their support to the programme.

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We hope that this external evaluation will offer valuable information as a reference material for improving water, sanitation and education services delivery in Buikwe district.

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EXECUTIVE SUMMARY

Introduction: This report presents an end of project evaluation for the Buikwe District Fishing Community Development Programme (BDFCDP) and its two mutually related project components, namely; "Buikwe-ICEIDA Development Partnership, WASH Development in Fishing Communities" (WASH II), and "Buikwe-ICEIDA Development Partnership, Education Development in Fishing Communities" (EDU II). The two projects were implemented in 2018-2019 and 2019-2022 respectively. The programme was implemented by Buikwe District Local Government (BDLG) with support from the Government of Iceland (GoI) through the Icelandic International Development Cooperation (ICEIDA). The development objective of the BDFCDP was to facilitate improvement in livelihoods and living conditions of people in 20 fishing communities in the four sub counties of Najja, Ngogwe, Nyenga and Ssi Bukunja in Buikwe district.

Purpose of the External Evaluation: The overall objective of this external evaluation was to assess the programme design, scope and implementation status and the capacity of stakeholders to achieve the expected outcomes. The final evaluation also aimed at assessing the management and performance of the programmes against the planned results. The evaluation captures the lessons learnt and provides information and guidance for donors and implementing partners to assist them in assessing the preliminary indicators of potential impact and sustainability of results, including the contribution to capacity development and achievement of the Sustainable Development Goals (SDGs).

Scope of the evaluation: In terms of geographical coverage, the evaluation targeted 20 fishing villages spread across four (4) sub counties of Najja, Ngogwe, Nyenga and Ssi in Buikwe district. For the evaluation questions, the evaluation assessed the yearly progress as well as management of and the implementation of the two programmes: of the EDU II from 2019-2021 and WASH II from 2018-2019, as well as additional project contents carried out after the stipulated timeframe. This included assessing implementation modalities by the District Council in terms of financing and procurement and the monitoring modality of the donor. The evaluation also assessed and analyzed issues around coordination, partnership arrangements, institutional strengthening, beneficiary participation, replication and sustainability of the programme. The evaluation also examined the extent to which the programmes objectives and outputs have been achieved, taking into account their implementation periods, the management structure of the programmes and additional external challenges, such as those inflicted by the Covid-19Covid-19 pandemic.

Methodology: The standard evaluation criteria of the Organization for Economic Co-operation and Development (OECD) and Development Assistance Committee (DAC) guided this evaluation. These criteria include relevance, implementation effectiveness, operational efficiency, sustainability and impact. Additionally, the evaluation design included questions that assessed the performance of Iceland Embassy and Buikwe DLG in terms of coherence/synergies, results orientation and ownership of the programme. The quantitative component involved household interviews with programme beneficiary households and schools survey, while the qualitative

component involved key informant interviews (KII) with key programme stakeholders. Focus group discussions were also conducted with programme beneficiaries to understand deeper the effects of COVID-19COVID-19 on the results of the programme. Quantitative data was collected using computer aided data collection; data was centrally exported to STATA for checking and cleaning. School based data was mainly analysed using MS excel. The evaluation team used a blended approach of thematic and content analysis to analyse the qualitative data from primary data collection and secondary data sources.

Findings of the evaluation

Relevance: In terms of relevance to Buikwe district, the evaluation established that all the activities implemented under WASH II and EDU II were aligned to the then DDP II – whose objectives was increasing access to safe water, with emphasis on provision of safe and clean water within a walkable distance; and equitable access and quality of education. The core problem to be addressed by the EDU II project was *"Low quality of basic education in schools serving learners from Buikwe district fishing communities"*. In terms of relevance to Government of Iceland (GoI), the evaluation established that the bilateral development cooperation between Iceland and Uganda dates way back to the year 2000/2001, and follows a path charted by the current Country Strategy Paper (CSP: 2014-17, extended until 2019) with the aim to improve people's quality of life by means of empowerment, capacity building and knowledge transfer. GoI supports Government of Uganda (GoU) in achieving the SDGs in line with the country's development priorities. The BDFCDP programme was found to be very relevant and aligned to the development priorities of Uganda expressed in Vision 2040, as well as the respective NDP II for the period 2015-2020. Finally, the objectives of WASH II and EDU II were all well aligned to the SDGs particularly to SDG Goal 4 and SDG Goal 6.

Programme Implementation effectiveness: Overall, the evaluation established that the implementation progress at the output level was at 54.5%, being on track for 24 of the 44 output indicators that were measured during the data collection phase. Specific to projects, WASH II achieved 83% (15 of 18) of the output indicators, while for EDU II just 35% (9 of 26) of the output indicators were achieved. At the outcome level progress was slow with just 3 of the 17 (18%) outcome indicators being having been achieved by the programme. Well as the programme did not achieve 82% of the targets for the outcome level indicators, there was an observed upward trend for 13 of the 17 outcome indicators between 2015 and 2020/2021, with WASH II having 9 of the 11 indicators upwards, while EDU two had 4 of the 7 outcome indicators moving upwards between 2015 and 2020.

Programme Coherence: The district local government is screenings partners' activities to ensure equitable distribution of services to the entire population in the district. Beyond the PSC, the district water and education department established a coordinating mechanism comprising of relevant departments at the district and other implementing partners within the district to minimize duplication of effort. The coordination mechanism under water department is called the District Water and Sanitation Coordination Committee (DWSCC) and sits quarterly. While the one for

education is the Education coordination committee. Through these committees, the district ensures that there is sharing by all stakeholders of their work plans, budgets and reports of activities accomplished as well as their respective areas of operation/locations.

Programme Implementation efficiency: The total programme proposed financing stood at 10.1 million dollars over a period of 2018-2019 for WASH II and 2019-2022 for EDU II. The funds were to be managed by BDGLG with close support from the Embassy of Iceland, Kampala. Of the USD 10.1 million, ICEIDA contributed a total of USD 9,671,000 (96%), while BDLG contribution was USD 431,000 (4%). Specific to projects, USD 7,231,000 was allocated for EDU II activities while USD 2,440,000 was allocated for WASH II interventions as direct support from Iceland. In terms of actual spending, for EDU II, of the planned USD 7,231,000, a total of USD 6,541,716 was spent by December 2021, representing 90% of the planned project direct funding. For WASH II, of the planned USD 2,440,000 a total of USD 2,407,542 was spent by end of the project, representing 99% of the planned project direct funding.

Sustainability of the Programme: Sustainability in the context of the BDFCDP for WASH II focused on on-going service delivery of WASH service systems installed by the project and is defined as "*the maintenance of an acceptable level of service throughout the design life of the safe water supply systems and sanitation facilities, as well as ongoing hygiene education and promotion services*". The measures taken by the project to assure sustainability of WASH services were evaluated in three categories: institutional, technical and financial aspects.

Regarding institutional sustainability for water supply, the evaluation established that Operation and Maintenance (O&M) structures were set up to manage the piped water supply facilities at system level. Every water supply system has a Water Committee that is answerable to a District Water Board (WB) that oversees the functionality of all the piped systems. BDLG plans to increase demand for safe water through increased private connections and extensions for sustainability through new revenue collections. However, a number of challenges still do exist with the maintenance system for piped water schemes, and this calls for professionalization of management of the piped water systems in line with the Ministry of Water and Environment O&M Framework (2019).

For public sanitation, the evaluation established that BDLG still has a few challenges in managing public latrines/toilets that were constructed under the program, particularly challenges with people paying user fees. It was recommended that the programme explores private sector management models for the public latrines. In terms of sustaining ODF, it was found out that although the CLTS approach used by the project does lead to ODF villages, the approach does not necessarily sustain these villages ODF because emphasis is not on construction of standard latrines but rather on any type of facility for disposal of faecal matter, which eventually collapse.

Based on the recent operations and maintenance report, the current system will be sustainable even after additional private connections to the current system. For each system, the current operational costs (USD 57) are less than the revenue collected per system (USD 87). The intention of Buikwe

DLG is to further extend the water pipelines to the neighbouring villages so as to increase household connections and opportunities to generate more revenue for management of the systems.

Key recommendations:

EDU II

- Mobilization, sensitization and training of community to understand their roles and the education policies and approaches.
- Improve monitoring and supervision of the 21 schools that received project support to ensure infrastructure and other support provided by the project leads to improved education outcomes: increased enrolment, retention and performance.
- For O&M of school facilities, there is need to lobby for increased School Facility Grant.
- No cost extension to implement the software component of the project.
- Provide continuous training for teachers to support them refresh and attain new skills in E-learning and improve skills to address the psychosocial effects of the Covid-19Covid-19 pandemic.
- Invest in BTVET to absorb the primary and lower secondary school early leavers as an alternative to support skills development.
- Mobilization of parents to embrace the school feeding programme.
- For girl retention and survival, continue targeting parents of girls to advocate for support to return to school when girls get pregnant.
- Commission some studies: a) to assess the impact of the project on quality education; and b) the impact of Covid-19 on the education system in the fishing community of Buikwe district.

WASH II

- Iceland should support medium size piped water schemes with extensive promotion of household connections so they can better meet the objective of increased access of population to safe water, with effective operation and maintenance for sustainability of the benefits: otherwise, the small, piped water schemes have significant limitations and challenges.
- Extend services to communities neighboring landing sites, since they seem to have even severe water challenges being far away from the lake and also use more of the piped water than those living closer to the lake. This will increase demand and revenue.

- District/water board should study AQ technology, and review and streamline data management on water dispensed on public AQ taps (and private consumers) as a critical control point for enhancement of revenue and financial accountability.
- Safe Water chain campaigns: Conduct massive sensitization about the safe water chain to counter the bad water handling practices identified during the evaluation. Some water points, such as Nanso, were found with some few traces of E-coli.
- Improved management of public toilet facilities: ensure proper O&M so as to avoid these facilities becoming a public nuisance.
- Emphasize land availability for infrastructure projects as a pre-condition
- Adopt the Professional Management Approach (CBMS+ approach) – for O&M of established water systems.
- Support to ODF villages and improvements to households' sanitation upgrade to better standards, sanitation marketing, promotion of household latrine vs public and; integrate appropriate sanitation technology.

1. INTRODUCTION

1.1 Introduction to the External Evaluation.

This report presents findings of the external evaluation of a Programme titled: Buikwe-Iceland Development Partnership: Education Development in Fishing Communities 2019-2022 Phase II and WASH Development in Fishing Communities 2018-2019 Phase II; Project No.: UGA 14030-1502 and UGA 11220. This follows a Contract signed between the Embassy of Iceland and Cardno Partners Consult on the 3rd November 2021 for Provision of Consultancy Services for External Evaluation of the Buikwe District Fishing Community Development Programme (BDFCDP): WASH Project II and Education Project II that was implemented by Buikwe District Local Government (BDLG) in Buikwe district. The external evaluation was conducted between November 2021 and February 2022.

The evaluation report is organized in four broad sub-sections: Section One provides background information about the BDFCDP, context and the purpose, objectives and scope of the evaluation; Section two covers the methodology used to conduct the evaluation and the persons met; section three focuses on discussing the findings, guided by the standard evaluation criteria of relevancy, efficiency, effectiveness, impact, sustainability but also looked at the impact the Covid-19 pandemic had on the project as well as cross-cutting issues such as gender; while the last section four highlights the conclusions, lessons learnt and recommendations for any future similar engagements.

1.2 Programme Background and Context

1.2.1 Background to the Partnership

The development cooperation between the Government of Iceland (GoI) and Government of Uganda (GoU) for support of the Buikwe-Iceland Development partnership was guided by the Uganda Icelandic International Development Agency (ICEIDA) Country Strategy Paper (CSP), 2014-2019 which was approved by the two partner countries. The CSP was set to contribute to achievement of Uganda's development strategies and priorities as articulated in Uganda Vision 2040 and the first National Development Plan (NDP-I) for the period 2010/11–2014/15 succeeded by NDP II. The partnership agreement, which established the BDFCDP was signed in October 2014 between the GoU and the GoI, was valid up to the end of 2019 and was expected to be extended and aligned to the new CSP for 2020-2023.

The BDFCDP is cross-cutting in nature and focuses on cross-sectors' software and hardware investments and support to water, sanitation, education, health and institutional development. The development objective of the BDFCDP is "to improve livelihood and living conditions of people in fishing communities in Buikwe district". This was to be achieved through development support with special emphasis on Education, Fisheries and Health sectors, as well support to develop the administrative and managerial capacity of the Buikwe district authority and other selected Service

Delivery Agencies (SDAs). Therefore, two projects were designed for intervention in Health and Education sectors, with emphasis on Water, Sanitation and Hygiene (WASH) in the Health Sector and basic education (covering primary and lower secondary education) in the Education Sector. In addition, general capacity development support was to be extended to the district administration to strengthen service delivery, especially in the departments responsible for the selected focal areas.

1.2.2 Background about the WASH Sector in Uganda

Uganda has made great strides in the last couple of years with a safe water accessibility of approximately 91.3% and 73.8% for urban and rural water respectively, with 79% overall having access to safe water. Furthermore, according to the Uganda Demographic Health Survey 2016, two in ten households use improved sanitation facilities with a slight difference between the urban and rural households. Data shows that 16% of households in the rural areas do use improved sanitation facilities. For hand washing, 59% of the households have access to hand washing facilities with 69.3% and 55.7% of the urban and rural households having access to hand washing facilities respectively.

In spite of significant investments over the past decades, and many of the underserved people gaining access to improved water supply and sanitation infrastructure, enduring and reliable access to appropriate services of water and sanitation remains a persistent challenge. WASH programs too frequently fail to bring equitable, sustainable and affordable services to the people they seek to serve, with as much as 30-50% of WASH projects failing after 2-5 years. This leads to devastating consequences for individuals, the economy and the environment, posing a major obstacle to the universal access to services, as per the country's commitment to fulfil SDGs and National Development Plan targets. Access of safe water is affected by inadequate Operation and Maintenance (O&M) due to high cost of production, electro mechanical repairs and expansion of systems. This is further culminated by high population growth that pose stress on the existing facilities and the increasing negative effects of climate change that continuously indicate a trend in technological advancement.

1.2.2.1 Buikwe District WASH Sector Context

Four sub-counties: Najja, Ngogwe, Nyenga and Ssi, bordering Lake Victoria, constitute the fishing communities in Buikwe district, in which there are 39 fishing villages bordering the lake and 51 fish handling sites (BDLG 2014b). Socioeconomic indicators in the fishing communities, especially in the 39 fishing villages and the 51 fish handling sites in Buikwe district are generally much worse than the districts or national average. With regard to WASH, the safe water coverage in the 39 fishing villages was estimated at 31% (BDLG 2014b) before intervention, compared to the average coverage of 69% in the district and 64% nationwide. The two largest fishing villages in Buikwe: Kiyindi in Najja sub-county and Ssenyi in Ssi sub-county with a population of 10,128 and 3,447 respectively, had piped safe water supplies, but only 2 out of 8 safe water points in Kiyindi, and only 4 out of 15 in Ssenyi were functional. A similar situation was also found in many

of the remaining 37 fishing villages and hence the WASH-SDP estimated that the overall functionality was around 30% and the actual access to safe water at around 10%. Household sanitation was also a challenge in fishing villages since the commonly used technology for human waste disposal was dugout pits. Before intervention, 79% of the people in fishing villages had no access to improved latrines (BDLG 2014b) and the construction of dugout pits was the responsibility of each household. Most villages were reported to have a rocky substrate that could not be dug or sandy soils that collapsed-in during construction; and appropriate solutions to human waste disposal was a challenge. Community sanitation including garbage management and storm water drainage were non-existent in the fishing villages.

1.2.3 Background to the Education Sector in Uganda

Despite the substantial increase in equitable access to Universal Primary Education-UPE, Universal Secondary Education-USE and Universal Post Primary Education and Training-UPPET and Universal Post-O' Level Education & Training Programme-UPOLET, the Education Sector in Uganda still faces considerable challenges. Among the main challenges is delivery of quality education where children acquire basic literacy, numeracy and life skills that will support them through a healthy and productive life. At the same time disadvantaged children remain excluded from schools because of location, gender, disability, poverty and violence. The various challenges facing education in Uganda manifest in high dropout rates and low levels of completion of education; poor learner attainment in literacy, numeracy and life skills; low performance in Primary Leaving Examinations (PLE); low transition from primary to secondary education and Business, Technical, Vocational Education & Training-BTVET; and transition to secondary education and BTVET.

1.2.3.1 Buikwe District Education Context

Buikwe district has 542 primary schools (162 government aided, and 380 private primary schools), 80 secondary schools (8 are government aided and 72 are private schools, with 22 implementing USE under public-private-partnership), one primary teachers' college, two nursing schools and six BTVET institutions (four registered and two un-registered). The four sub-counties of Najja, Ngogwe, Nyenga and Ssi-Bukunja that constitute the fishing communities in Buikwe district have a total of 198 primary schools out 542 in the whole district, of which 62 are government-aided and 136 private schools. There are 20 secondary schools in the four sub counties out of a total of 80 for the district, of which four are government aided and 16 private schools.

Despite its strategic location in the relatively developed central region of Uganda and the support received from Iceland and other development partners, the district still faces challenges of low access and equity and low quality of basic education. Before intervention, the challenges were considerable in the fishing communities, especially regarding quality of learning outcomes, teaching and learning materials, and school infrastructure and facilities. The situation/problem

analysis carried out during the preparation of EDU-I identified several causes that affected the quality of basic education available in Buikwe fishing communities in a negative way. EDU-II was to focus on quality improvement in primary schools, both lower (P1-4) and upper grades (P-7), promote transition of learners from primary to secondary education and improved quality of lower secondary education (S1-4) or equivalent BTVET. The aim was to extend the school life of learners in the vulnerable age of 13-16 years and increase the number of children that complete basic education and acquire basic skills preparing them for self-employment, the job market or further lifelong learning. EDU-II would furthermore promote BTVET as an alternative education pathway to follow basic education, which was not an element of EDU-I.

1.3 The Buikwe District Fishing Community Development Programme (BDFCDP)

The Buikwe District Fishing Community Development Programme (BDFCDP) and its two mutually related project components, namely; "Buikwe-ICEIDA Development Partnership, WASH Development in Fishing Communities", and "Buikwe-ICEIDA Development Partnership, Education Development in Fishing Communities", were born out of the Uganda Icelandic International Development Agency (ICEIDA) Country Strategy Paper (CSP), 2014-2019, which was approved by the two partner countries. The programme is implemented by Buikwe District Local Government (BDLG) with support from the Government of Iceland (GoI) – Icelandic International Development Cooperation (ICEIDA). The development objective of the BDFCDP is to facilitate improvement in livelihoods and living conditions of people in fishing communities in Buikwe district. The evaluation, therefore, was directed towards the two primary components of Iceland's development cooperation efforts in fishing communities in Uganda: Education Development, and Water and Sanitation.

1.3.1 The BDFCDP-Education Development in Fishing Communities-Phase II

The project, "Buikwe-ICEIDA Development Partnership – Education Development in Fishing Communities 2019-2022 – Phase II (BDFCDP EDU-II or EDU-II); Project No.: UGA 11220-1502" draws its mandate from the existing partnership agreement between the GoI and the GoU represented by Buikwe District Local Government (BDLG) for the "Support to the Implementation of BDFCDP: 2014-2019". The project is aligned to the ICEIDA (2014) Uganda Country Strategy Paper, 2014-2019. The EDU-II immediate objective is to improve the quality of basic education in schools serving fishing communities in Buikwe district. This project contributes to the development objective of the BDFCDP, which facilitates the improvement in livelihoods and living conditions of people in the fishing communities of Buikwe district. The EDU-II project focused on quality improvement in primary schools, both lower (P1-4) and upper grades (P5-7), promote transition of learners from primary to secondary education and improved quality of lower secondary education (S1-4) or equivalent BTVET. The aim is to extend the school life of learners in the vulnerable age of 13-16 years and increase the number of children that complete basic education and acquire basic skills preparing them for self-employment, the job market or further lifelong learning. EDU-II will furthermore promote BTVET as an alternative education pathway

to follow basic education, which was not an element of EDU-I. The extensive support proposed to deliver a comprehensive package of quality enhancement interventions with a focus on five pillars for education improvement of quality of education with modifications made based on lessons learned during the implementation of EDU-I: The five pillars are:

- **Pillar 1. School Infrastructure and Facilities Developed:** The priority would be on construction of new infrastructure, including classrooms, teacher houses, school kitchens, sanitation facilities and other structures and facilities based on needs assessment as well as provision of teaching and learning materials, including equipment and materials for co-curricular activities. EDU-II only supported the renovation of "old" school infrastructure in exception cases where it is financially justified.
- **Pillar II: Education Sector Management:** Most of the capacity requirements, especially at local government level, were addressed by EDU-I. EDU-II, therefore, would focus on Monitoring of Learners Achievements (MLA) extending to the new selected schools and filling some capacity gaps if any.
- **Pillar III: Quality of Teaching and Professional Leadership in Schools:** Focus would be on developing the capacity for quality teaching and professional school leadership in line with the Education Sector Training Plan developed under EDU-I.
- **Pillar IV: Community Participation:** The community mobilization and sensitization component were extended to the 20 new parishes targeting the community engagement and capacity development of school governance bodies such as Primary Teachers Associations-PTA's, School Management Committees-SMC and Board of Governors-BoGs of schools.
- **Pillar V: The Learners:** Based on lessons learned from EDU-I, direct support to learners would be limited to fostering equal opportunities for boys and girls, particularly in secondary schools. This would include menstrual cycle management, promotion of school-based health programmes, and support of health promotion through School Health Clubs-SHC, deworming campaigns, reproductive health education and sensitization on school feeding programmes.

1.3.2 The BDFCDP-WASH Development in Fishing Communities-Phase II

The BDFCDP Project, WASH Development in Fishing Communities 2015-2017 (ICEIDA Project 140230-1501) was launched in 2015 and addressed WASH in 19 out of the 39 fishing villages in Buikwe district. This is what is referred to as WASH I (or Phase I). During WASH I, Safe water and sanitation facilities were successfully installed in all targeted fishing villages and in many schools and health centers. In 2017 the partners, GoU represented by BDLG and the GoI represented by the Iceland Embassy in Kampala, agreed to extend the scope of the project and design a second phase (WASH II) where WASH infrastructure and WASH operational capacity would be installed in the remaining 20 fishing villages in the district, with a total population of 18,982 individuals (Census 2014), projected to be 26,009 individuals by 2019. WASH II was anticipated to provide 100% water coverage in 20 fishing villages including 8 fishing villages in

Najja sub county, 4 in Ngogwe sub county, 3 in Nyenga sub county (where Nanso and Namabere are termed as one village) and 5 in Ssi sub county to serve a projected population of 26,009 people by 2019 or approximately 45% of the total population in all Buikwe district fishing villages.

Similar to the EDU-II project, the project, "Buikwe-ICEIDA Development Partnership – WASH Development in Fishing Communities 2018-2019 – Phase II – WASH II" draws its mandate from the existing partnership agreement between the GoI and the GoU with its Buikwe District Local Government (BDLG) for the "Support to the Implementation of Buikwe Fishing Community Development Programme (BDFCDP) - 2014-2019". The WASH-II project's immediate objective focused on increasing access and use of safe water and sanitation facilities and hygiene services among the fishing communities in Buikwe district for improved public health. Based on the analysis and recommendations of the Buikwe WASH-strategic development plan (SDP) the outputs were clustered into three main categories as follows:

- **Infrastructure for improved WASH developed:** this would entail improving 16 safe water facilities, constructing 13 new piped water systems, extension of existing piped water systems to 3 new villages, construction of 18 improved sanitation facilities and construction of 18 communal toilet facilities for rural growth centers.

- **WASH sector capacity to manage and sustain service delivery developed at all levels** including district coordination and M&E in relation to WASH; establishment of community structures and systems for sustained O&M of WASH; and capacity building for Local Government-LG and partner Service Delivery Agencies-SDAs in O&M for piped water systems and sanitation in the project area.

- **Hygiene promotion and education scale up to 20 focal fishing villages:** this entails supporting SDAs and LGs to scale up hygiene promotion and education, providing grants to none state partner SDA involved in community led total sanitation, scaling up hygiene promotion and education in 20 villages and supporting them in developing hygiene promotion plans.

1.4 Purpose of the External Evaluation of the Buikwe-Iceland Development Partnership

The final evaluation was divided into two primary components: Education Development in Fishing Communities 2019-2022 Phase II; and WASH Development in fishing Communities Phase II 2018-2019. The implementation period under evaluation for the educational development efforts covered from January 2019 to end of 2021, because the Education Project II (2019-2022) was projected to be completed one year earlier than planned; while, the implementation period under evaluation for the WASH development efforts covered the period from March 2018 to end of December 2019.

The overall objective of this external evaluation was to assess the programme design, scope and implementation status and the capacity of stakeholders to achieve the expected outcomes. The final evaluation also aimed at assessing the management and performance of the programmes against the planned results. The evaluation captures the lessons learnt and provides information and guidance for donors and implementing partners to assist them in assessing the preliminary indicators of potential impact and sustainability of results, including the contribution to capacity development and achievement of the Sustainable Development Goals (SDGs).

The findings and recommendations of this evaluation will benefit stakeholders in many ways including identification of potential strengths and weaknesses in the programme-based approach to local government budget support to Buikwe District; and what has and has not worked as a guide for future planning and management.

The evaluation is also meant to support stakeholders, in particular the implementing partners or the Programme Management Team (PMT) in Buikwe District Local Government by learning how the programme progressed and use findings to strengthen implementation efforts. Quite interesting is the fact that the evaluation took into account any disruptions due to the Covid-19 pandemic, and has identified challenges and the measures the implementing partners adopted to address those challenges.

Specifically, the donor will use the final evaluation data to learn and draw conclusions on how the programme is progressing so far and how to improve management and collaboration with Buikwe district authority and other partners and stakeholders in accordance with set standards. The evaluation provides a basis for the implementation of future projects/programmes and any other similar development efforts.

1.5 Scope of the evaluation

1.5.1 Geographic coverage

The evaluation targeted 20 fishing villages spread across four (4) sub counties of Najja, Ngogwe, Nyenga and Ssi in Buikwe district: 8 fishing villages in Najja sub county, 4 in Ngogwe sub county, 3 in Nyenga sub county (where Nanso and Namabere are termed as one village) and 5 in Ssi sub county. The different colours in the map represent the different subcounties targeted by the programme. A map showing the 20 villages considered for the evaluation is shown in Figure 1 below.

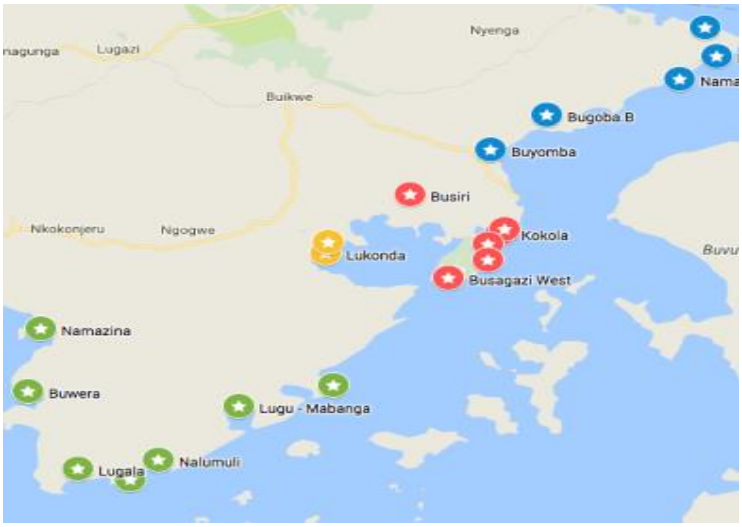

Figure 1:Map showing the 20 fishing villages targeted by the programme in Buikwe District

1.5.2 Content / Evaluation Questions

The evaluation of the EDU II from 2019-2021 and WASH II from 2018-2019 assessed the yearly progress as well as management of and the implementation of the programmes, as well as additional project contents carried out after the stipulated timeframe. This included assessing implementation modalities by the District Council in terms of financing and procurement and the monitoring modality of the donor. The evaluation also assessed and analysed issues around coordination, partnership arrangements, institutional strengthening, beneficiary participation, replication and sustainability of the programme.

Additionally, the evaluation reviewed the programme document and the programme-based approach, its main focus as well as the assumptions (identification and justification) made at the beginning of the development process. It assessed whether programme results were on track; capabilities built, and whether cross-cutting issues on human rights, gender equality and environmental sustainability had been addressed. The evaluation also assessed whether the programmes' implementation strategy had been optimum and identified areas for improvement and learning. The evaluation also assessed the synergy between the EDU II, WASH II and other programmes implemented with regard to strengthening local governance and decentralization and has suggested ways of creating more synergies and enhance coherence between development efforts in Buikwe district. The linkage of results to the overall results framework of the Buikwe DLG was analysed including relevance of the indicators set.

The subject of this evaluation were the specific objectives (outcomes) and outputs listed in the program documents. The two main questions which the evaluation has answered are:

1. To what extent have the programme interventions met their stated development objectives?
2. To what extent have the programme interventions enhanced basic services and strengthened institutions in order to improve living standards and increase opportunities for people in fishing communities?

The evaluation examined the extent to which the programmes objectives and outputs have been achieved, taking into account their implementation periods, the management structure of the programmes and additional external challenges, such as those inflicted by the Covid-19 pandemic.

2. METHODOLOGY:

2.1 Overview of the approach

Following the improved version of the Organization for Economic Co-operation and Development (OECD) and Development Assistance Committee (DAC) evaluation criteria, the evaluation team utilised a project pillar based cross-sectional descriptive mixed methods design (please see Figure 2 below). Additionally, the evaluation design included questions that assessed the performance of Iceland Embassy and Buikwe DLG in terms of coherence/synergies, results orientation and ownership of the programme. The quantitative component involved household interviews with programme beneficiary households and schools survey with a combination of data analysis of relevant secondary data. On the other hand, the qualitative component involved key informant interviews (KII) with key programme stakeholders, district staff, Buikwe DLG programme staff, teachers, School Management Committee-SMC members, and Water User Committee (WUC) members among others. Focus Group discussions were also conducted with programme beneficiaries to understand deeper the effects of Covid-19 on the results of the programme but most importantly the benefits from the programme with regard to improving WASH and education services delivery.

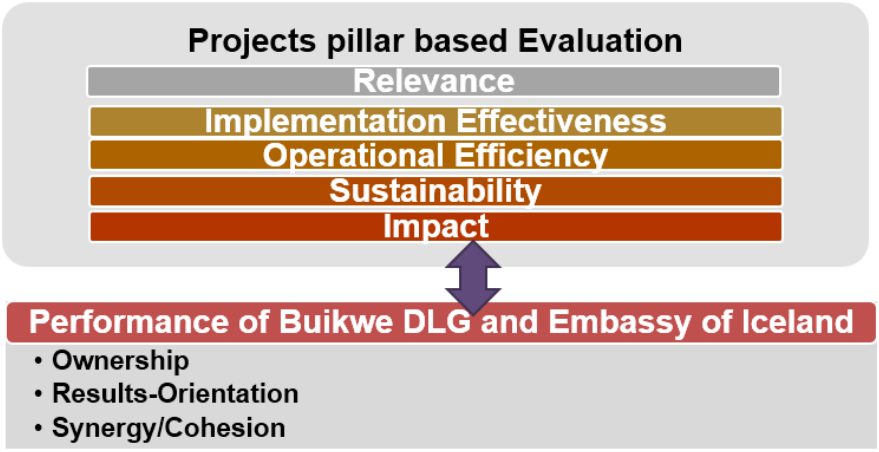

Figure 2:Overall Evaluation Design

In summary, the contextual scope of the assessment basically covered the following questions derived from the Terms of Reference but also particularly incorporating the elements of the OECD/DAC criteria:

Table 1: Summary of key OECD/DAC Criteria major questions

1. **Relevance:** To what extent has the BDFCDP programme met the priorities and needs of the target beneficiaries, Buikwe DLG (in terms of strengthening capacity of the district to improve provision & use of basic services), Iceland and Uganda in relation to improving the livelihoods and living conditions of the fishing communities?
2. **Effectiveness:** To what extent did the BDFCDP programme achieve its objectives, results and including the extent to which the livelihoods of the fishing communities were improved in line with the key programme outcomes and impacts?
3. **Efficiency:** To what extent did the approach in implementation of the BDFCDP programme register savings and reduced wastage of resources (Financial and Human)?
4. **Coherence:** How well did the BDFCDP programme fit with other development efforts; was duplication of efforts avoided and synergies maximized?
5. **Impact:** To what extent have the programme interventions generated changes or effects, including those resulting from the programme interventions directly/indirectly impacted on the livelihoods of the fishing communities and Buikwe DLG?
6. **Sustainability:** To what extent will the results and benefits delivered by the programme likely to continue post donor funding?
7. **Cross-cutting issues:** to what extent did the programme interventions address issues of gender equality and environmental sustainability?
8. **Documenting lessons:** What are the key lessons learned from the various programme interventions; particularly, what worked well so that it could be replicated, what did not work well so that it could be improved in the future, and how did Covid-19 impact project delivery?

2.2 Sampling plan

2.2.1 Sampling plan for households

2.2.1.1 Sample size estimation

The normal approximation to the hyper geometric distribution was used to estimate the sample size because all the targeted population size in the programme sub counties were small. The formula shown below, for small (hypergeometric) populations is used to estimate the sample size for the household survey component[1].

Hypergeometric $$n = \frac{Nz^2pq}{(E^2(N-1)+z^2pq)}$$

Where;

[1] http://uregina.ca/~morrisev/Sociology/Sociology.htm.

- n is the required sample size
- N is the population size
- p and q are the population proportions (q=1-p). For maximum variability and sample size computation, we used p as 0.5.
- z is the value that specifies the level of confidence which is desired in the confidence interval. Typical levels of confidence for surveys are 95%, in which case z is set to 1.96
- E sets the accuracy of the sample proportions (5%)
- The overall sample was inflated by 10% to cater for the anticipated non-response

The sample size calculation yielded a sample of 353 households. Adjusting the sample size by a 10% non-response rate, the resulting sample for the households was 388. Estimates were computed at the district level and thus the final sample size for the household survey component was **388** individuals.

2.2.1.2 Sample selection procedure

To select households and individuals to be included in the study, a four-stage stratified cluster sampling design was utilised. The programme parishes were stratified into four strata using all the four (4) programme sub-counties. Using the simple random sampling method, two parishes were selected from each sub-county, for a total of eight parishes.

The second stage included selection of one village (cluster) from each of the 8 parishes. A list of all programme villages including their corresponding number of households was generated during the field data collection exercise. Therefore, a total of 8 programme villages was included in the study. The third stage, a given number of households per selected Enumeration Area (EA) was randomly selected using systematic sampling from a compiled sampling frame. To develop the sampling frame, all households in the given village was first listed with the help of local authorities. The fourth and final stage involved the identification and interview of one adult male or female respondent in the selected household.

Table 2:Selected Fishing Villages for the household survey

Sub County	Village	Population	Number of HH
Najja	Busagazi E&C	900	200
Najja	Gombolola	900	200
Najja	Busiri	1384	308
Ngogwe	Lukondo	290	64
Ngogwe	Namaziina	220	49
Nyenga Division	Bugoba B	657	146
Nyenga Division	Namabere	830	184
Ssi-Bukunja	Nalumuli	675	150
Ssi-Bukunja	Lugala	440	98
Ssi-Bukunja	Upper Ssenyi area	625	139
Total		**6,921**	**1,538**

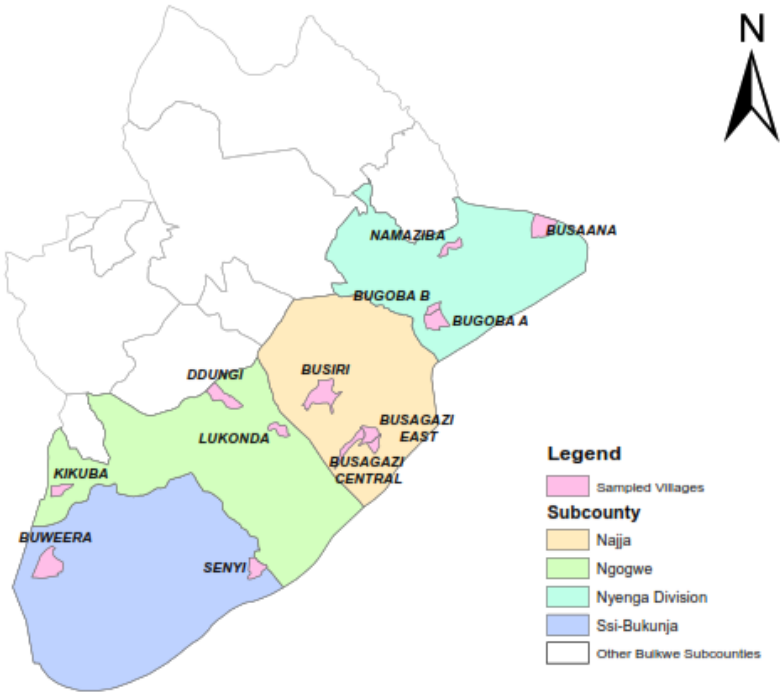

Figure 3:Selected sample villages for household survey component

2.2.2 Sampling plan for schools

From each sub-county, 2 primary schools and 1 secondary school were randomly selected for a total of 8 primary and four secondary schools. These were selected from a sampling frame containing all the primary and secondary schools supported by the programme. Because primary data collection happened at a time when schools were closed, we purposively selected students within a walking distance to the schools to be included in the survey, because primary data collection was to happen at a time when schools were closed. Only students in the upper primary (P5-P7) per selected school were included in the survey. For each school, the evaluation team selected 6-8 pupils to be interviewed. For secondary schools, the evaluation team selected students in S3 and S4, who were more likely to have interfaced with the programme interventions. The total sample size constituted 64 primary school pupils and 32 secondary school students. These students were reached through focus group discussions.

Table 3:Programme Primary schools selected for FDGs, observations and KIs

	Sub- County	Parish	Village	School Name
1	Najja	Kisimba	Kisimba	Kisimba Umea P/S
2	Najja	Namatovu	Kitabazi	Bulere RC P/S
3	Ngogwe	Kikwayi	Kikwayi	Kinoga P/S
4	Ngogwe	Ndolwa	Kikusa	Kikusa P/S
5	Nyenga	Tongolo	Tongolo I	Tongolo CU P/S
6	Nyenga	Buziika B	Mbukiro	St. Josephs Mbuukiro P/S
7	Ssi-Bukunja	Namukuma	Namukuma	Namukuma CU P/S
8	Ssi-Bukunja	Kimera	Sanganzila	Ssangazira P/S

Table 4:Secondary schools selected

Sub-county	**School**
Nyenga	Nyenga SS
Najja	Secret Heart Najja SS
Ssi-Bukunja	Victoria SS
Ngogwe	Baskerville SS Ngogwe

2.2.3 Sampling Plan for In-depth Interviews

2.2.3.1 Sample size for in-depth Interviews

For key informant interviews, 24 key informant interviews were conducted after selection at the district, sub-county/community, school and the national level. For Focus Group Discussions (FGDs), these were conducted mostly at the community level for the WASH component and at the schools for the Education component.

At schools, a total of 12 FGDs (8 for primary and 4 for secondary school) were held; while at the community, four FGDs (one in each sub-county) were conducted with parents focusing on both WASH and education service delivery. This brought the total of FGDs that were conducted to 16. Each of the groups had between 6-8 participants, translating to a total sample size of 128 respondents for the FGDs.

2.3 Data Collection Methods

2.3.1 Document and Literature Review

A thorough review of all relevant materials and literature was undertaken to support the evaluation. The purpose of the document review was to understand the issues around education and WASH services delivery in the district and aspects related to the BDFCDP programme. Other objectives of document review included developing an exhaustive list of key stakeholders and implementers of the two projects. Information gathered through the literature review supported the development and refinement of the evaluation methodology while at the same time also provided key recommendations and lessons learnt at the end of the exercise. Key documents and sources that were reviewed as references are listed in annex II.

The overall goal of the review was to obtain information to answer the key evaluation questions and to determine which evaluation questions required detailed primary data collection and verification from the field.

2.3.2 Assessment of children performance

Children's literacy skills were assessed using secondary data from the district monitoring of learners' achievement (MLA) conducted annually by the district. The MLA is an important tool to evaluate the effectiveness of education delivery and to respond and put in place actions to improve quality of education based on MLA findings. The evaluation accessed the MLA annual reports for lower and upper primary at the district offices and computed values for the numeracy and literacy skills indicator.

2.3.3 Tracking School Completion rates and Transition levels

In order to track school completion rates, the evaluation team used use the enrolment data for 2014

and compared that with the number of students that completed P7 in 2020. In addition, the PLE results for the previous 3 years were obtained from all the schools in order to track transition rates for children during the programme life. Notably, not all children who sat and passed PLE actually continue to the next level of education hence using of PLE results would be the starting point to further inquire on the extent to which the programme children were able to transition to the next level of education. A data extraction form was developed to gather information on enrolment, attendance, repetition, PLE performance and transition to secondary schools or other vocational pathways.

2.3.4 School Observations

This method was used to assess the learning environment specifically, access to sanitation facilities, latrines and washrooms for learners (girls and boys) and teachers (male and female), presence of talking compounds, desk-pupil/student ratio, textbooks, book storage cabinets laboratories, libraries, dormitory blocks and others. This was conducted in each of the 12 sampled schools.

2.3.5 Key Informant Interviews

Key informants were interviewed on key issues that affect education and WASH services provided by the education and WASH Phase II projects. Factors considered leading to success of the projects, constraining factors, sustainability, and performance, among others, were all captured from the key informants. The key informants in this category included: head teachers, BTVET Institution Principals, PTA/SMC Chairpersons, Programme staff, District Chief Administrative Officer (CAO), District Water Officer (DWO), staff of Service Delivery Agencies, and Water User Committee (WUC) members, among others. The detailed list of key informants is shown Annex III. Specific Key Informant (KI) guides were developed for each category of respondents, which is attached in the Appendix II B.

2.3.6 Focus group discussions

To collect information about the insights and opinions with regard to the programme interventions at the community and household level, focus group discussions comprising of 6 to 8 members were conducted. For the education project, a total of 12 FGDs (8 at primary and 4 at the secondary level) were conducted. For WASH, a total of 4 FGDs were conducted, having one in each of the sub-counties. Respondents within the selected sub-counties were purposively selected.

To collect the required data, FGD guides for each category of respondents were developed and pre-tested. The guides were used to collect information about the following key issues: effects of Covid-19 on services delivery, WASH knowledge and practices, accessibility to water sources, perceptions and attitudes influencing behaviours around water use points, involvement of women and people with disabilities in programme interventions, access to education services, quality of education services, availability of qualified teachers, coping strategies, exposure to programme interventions, school health programs, and discussions regarding issues around school drop outs,

among others. The guide also included questions for overall recommendations for improvement of similar programmes within the fishing communities.

2.3.7 Household Survey questionnaire

The household survey questionnaire was developed through a series of consultations with the programme technical and the evaluation reference group before, during and after training of the data collection team. As part of the inception report, a preliminary questionnaire was developed based on the objectives of the evaluation, the key programme outcome indicators and other variables of interest. During discussions with the evaluation reference group, we sought clarifications on key definitions of indicators and the data needs in relation to objectives of the evaluation. The questionnaire had the following general topics:

- Household identification and informed consent
- Background data for respondents
- Knowledge, attitudes and practices related to WASH services
- Decision making at the household level for WASH and education services.
- Perceptions on quality of education services
- Access to and availability of WASH and education services
- Availability of sanitation facilities
- Access to safe water services (distance and type of water sources)
- Experiences with Covid-19 at the household level
- Participation in both formal and informal community groups
- Awareness and access to hygiene and sanitation information
- Hand washing practices
- Other waste disposal methods

The household survey questionnaire was developed in English and translated into the Luganda language for easy administration at the field level. To ensure equivalence of meaning during translation, back translation was conducted from the local language versions into English. The final versions of the local language translations and the English questionnaires were made ready only interviewer training and field pre-testing. Pre-testing of the questionnaires were conducted in the surrounding parishes of Mukono district. The household survey tool used for conducting interviews is attached in Appendix II-A.

2.4 Field Procedures

2.4.1 Recruitment and training of Research Assistants

Individuals with experience in social research were recruited as field data collectors from a pool of Research Assistants (RAs) of the firm. RAs with experience in WASH and education sector research studies and literate in Luganda were recruited. Approximately 15 research assistants were recruited for this study and underwent a 3 days' training and 1 day of field pretesting under close supervision of the Survey Manager. Training included the following: 1) extensive discussion of specific roles for each category of the research team, 2) detailed discussion on the developed baseline data collection tools, 3) instructions on how to select respondents for each method of data collection, 4) the study design, population and sampling methodology, and 5) commonly asked questions and respective answers. After the training, the research team was be divided into two core teams: one for the school component and the other for the WASH/household component. Each team was headed by a supervisor and was allocated a vehicle for fieldwork. In total data collection took 10 working days.

2.4.2 Developing and testing the script on phones/tablets

For household and school survey interviews, the evaluation used Computer Aided Personal Interviews (CAPI). Using appropriate software, Kobo toolbox, the structured questionnaires were scripted by writing a program which facilitated interactive data capture during face-to-face interviews, ensuring that skip patterns were adhered to; building appropriate validity and consistency checks into the questionnaire script. The focal person at Buikwe DLG and Embassy of Iceland were given rights to access the written program and as such able to download data.

The scripted questionnaires were tested for adherence to skip patterns, display of questions (labels and answer options), and its effectiveness in terms of validity and consistency checks, among others. They were tested first with data collected from the pre-test but also conducted a few interviews with selected respondents.

2.4.3 Quality Assurance

To ensure data quality, field data collection teams held daily meetings to review the data collection process, to check data completeness and resolve any logistical or methodological issues. Data quality was monitored in the field by team supervisors, through sampling completed forms before they were uploaded to the Server. In addition, the field supervisors made on spot-checks with the RAs while still in the field in the communities or households. Data validation (for their completeness and quality) was performed before the analysis, checking a random sample of 5% of questionnaires. Data entry and cleaning lasted a total of 5 working days.

2.5 Data management, analysis and reporting

2.6.1 Quantitative data

The evaluation team used computer aided data collection for school and household surveys. Household and school-based interview data captured centrally was exported to STATA for checking and cleaning. Data cleaning instructions to guide the cleaning process was developed in collaboration with the evaluation reference group. Led by the lead consultant, the team developed an analysis plan in collaboration with the evaluation reference group, assisted by the Data Manager. Specifically, a tabulation and report plan was developed and shared with the evaluation reference group. Analysis took into account the different categories of the programme beneficiaries. School based data was mainly analysed using MS excel.

2.6.2 Qualitative data analysis

To analyse the qualitative data from primary data collection and secondary data, the evaluation team used a blended approach of thematic and content analysis. A conceptual framework was also developed, based on the assessment questions, to guide thematic analysis of the qualitative data. The framework specifies the themes guiding the analysis, set out how the key assessment objectives would be addressed and enabled analysis to be undertaken by variables such as category of respondent. Taking a grounded theory approach, the team also undertook content analysis, remaining open to unintended outcomes, themes, patterns and connections emerging from the data. Analysis involved drawing out key findings, identifying themes, patterns and issues relating to the focus of each evaluation objective and programme components. The process began with within-case analysis to consider impacts in individual cases, before moving on to cross-case analysis and identifying commonalities and differences across the different qualitative cases; as well as identification of illustrative cases.

2.6 Evaluation limitations

a. Closure of schools at the time of data collection limited the number of schools and pupils to interview as well as observe some key indicators related to infrastructure support to schools.
b. Due to limited logistics, all day long observations of key WASH practices at the household level were not conducted. Instead for most behavioural indicators, the team used self-reports from the respondents.
c. A lack of detailed expenditure data limited the unit cost analysis for some of the interventions especially for EDU II project interventions. Therefore, a comparison by results achieved vs expenditure by EDU II project pillars.
d. None- availability of primary data for the midterm review limited comparison of some key WASH indicators especially on the safe water chain use by the target population.

3 RESULTS / FINDINGS

3.1 Analysis and Findings- Household and Respondents' Characteristics

Tables 5 and 6 show the socio-demographic characteristics of the survey respondents and characteristics of the surveyed households. As shown, 52 percent of the respondents were female while 48 were male. In terms of age distribution, most of the respondents were aged between 35 and 49 years (38.7%), followed by those aged above 50 years and 25-34 years at 28.6 and 28.2 respectively. With regard to distribution by sub-county, majority were residing in Ssi-Bukunja and Najja at 30 percent respectively. Nyenga Division had the least proportion of respondents at 18.7 percent. The average household size is 4.9, slightly above the district and national household size of 4.5 and 4.7 respectively. Slightly more than 6 in 10 respondents had completed a primary level of education (62.6 percent) while a 21 percent had completed a secondary level of education, with seven percent reporting to have no formal education. Two thirds of the respondents reported that they are currently married or living with a partner, while the rest are currently not married or living with a partner.

Data was also collected on the characteristics of the households during the survey. Access to electricity and other durable goods is an indicator of a household's wealth. During the survey, respondents were asked about access to electricity, ownership of agricultural land and selected household items. Results indicate that 60 percent of the households had access to solar, five percent had access to grid electricity and 52 percent live in a permanent structure. Asked for the main source of lighting, solar is by far the most common source of lighting with nearly three quarters (74%) of the households reporting solar as their main source of lighting, while five present use grid electricity. Respondents were also asked about the main source of energy for cooking. Almost all (97 percent) of the households use charcoal or firewood as their main fuel for cooking, with the majority (69%) using firewood and 28 percent using charcoal as the main fuel for cooking.

Concerning ownership of selected household items, majority of the households either had a mobile phone (75%) or a radio (68%). Respondent households from Ssi-Bukunja and Ngogwe were more likely to have mobile phones 88 and 81 percent respectively than their counterparts in the other two sub-counties. Six in ten (60%) of the households reported to have solar, with 21 percent reporting ownership of a television set. It is also worth noting that just five percent of the households reported to have access to grid electricity, with households in Nyenga Division more likely to have access to electricity (11 percent) than those from the other three sub-counties.

Respondents were asked about the type of toilet facility that was mainly used by the households and here, 37% of the households had pit latrines with slabs, 8 percent had flush toilets, 23% had VIP latrines and 27% used pit latrines without a slab or open pits. Important to note is that 2 percent of the households did not have a toilet facility.

Distance to the nearest primary or secondary school could have a direct bearing on the enrolment and survival rates at school as well as access to basic primary education. During the survey, respondents were asked about the distance to the nearest primary school. Results indicate majority

of the primary schools (44 percent) are located between 1 to 5 kilometers while 42 percent are located within less than a kilometer. Households in Nyenga report the shortest distance to a primary school with 61 percent reporting a primary school located within less than a kilometer. Data was also collected to distance to the nearest secondary school. Similar to primary schools, majority of the secondary schools (55 percent) are located between 1 to 5 kilometers with 16 percent located within a kilometer from the households. Households in Nyenga and Najja sub -counties report the shortest distance to a secondary school with three quarters reporting a secondary school located within a 5 kilometers radius.

Data was also collected on the number of schools going age children as well as those who are currently attending school. Households on average have 2 children who are in the age brackets for school going children. Of these, 1.8 (90%) are currently attending school.

Table 5:Respondents characteristics

Characteristic	Percentage (%)	N
Sex of respondent		
Male	47.8	184
Female	52.2	201
Age of respondent in years		
18-24	8.3	32
25-34	26.2	101
35-49	38.7	149
50 and above	26.8	103
Subcounty		
Ssi-Bukunja	30.4	117
Nyenga Division	18.7	72
Najja	29.9	115
Ngogwe	21	81
Marital status of respondents		
Married or living together	67.3	259
Not married nor living together	32.7	126
Level of Education		
None	7	27
Primary	62.6	241
Secondary	21	81
Tertiary	9.1	35
Other	0.3	1

Table 6:Household characteristics

Characteristic	Percentage (%)	N
Average household size	4.9	
Children aged 6 to 18 years	2.0	
Number currently going to school	1.8	
Ownership of agricultural land	36.4	140
Fuel for cooking		
Firewood	69.4	267
Charcoal	28.1	108
Paraffin	0.3	1
Others	2.1	8
Don't Know	0.3	1
Fuel for lighting		
Solar	74.0	285
Grid electricity	4.9	19
Paraffin	13.2	51
Candle wax	1.6	6
Others	6.0	23
Don't know	0.3	1
Type of type of toilet		
VIP latrine	23	89
latrine without slab	27	104
Latrines with slabs	37	142
Flush toilet	8	31
No facility	2	8
Ownership of selected household items		
Car	1	2
Motorcycle	10	38
Mobile Phone	75	288
Radio	68	261
Television	21	81
Grid electricity	5	18
Income generating business	29	111
Solar	60	231
Distance to nearest primary school		
Less than 1 km	42	141
Between 1 and 5 kms	44	148
Above 5kms	14	47
Distance to nearest primary school		
Less than 1 km	16	52
Between 1 and 5 kms	55	176
Between 5 and 10kms	19	62
Above 10kms	10	32

3.2 Analysis and Findings-Relevance of the programme

This section presents the assessment of the extent to which the development assistance under the BDFCDP program met the priorities and needs of the target beneficiaries, Buikwe District Local Government (DLG), Iceland and Government of Uganda in relation to improving the livelihoods and living conditions of the fishing communities. Among others, the evaluation established whether the programme addressed the needs of the fishing communities in Buikwe district; and the extent to which BDFCDP strengthened the Buikwe DLGs capacity to improve the use and access to basic services in the district. Overall, the evaluation established that the BDFCDP was very relevant to the strategic aims and objectives of the two Governments of Iceland and Uganda, and to a great extent the programme activities and outputs were consistent with the attainment of its intended outcomes and impact.

3.2.1 Appropriateness of the BDFCDP to Buikwe DLG

3.2.1.1 Appropriateness of WASH II

According to BDLG, all the activities implemented under WASH II were aligned to the then DDP II – whose objective was increasing access to safe water, with emphasis on provision of safe and clean water within a walkable distance for every village. This was very much aligned because in all the interventions under WASH II, BDLG emphasized increased access to piped water, and less on point water sources (e.g. boreholes) as well as focus on underserved villages. The other alignment was with improving access to sanitation, which was also emphasized under DDP II but because of the nature of these fishing villages, e.g. poor soil conditions, etc. it was not easy to push for the Community Led Total Sanitation (CLTS) approach that puts more emphasis on households (HHs) building their own latrines, which was a bit of a challenge, even given the nature of the settlements. The DDP II also focused on improving the functionality, sustainability. Resilience and source protection of the water supply systems through O&M. Indeed WASH II focused on supporting the district to develop and implement O&M systems for the water systems constructed in the target villages.

Additionally, under sanitation, for those who were able to construct household latrines, the district emphasized through Busoga Trust, to come in massively and sensitise communities on the dangers of open defecation and poor hygiene, and to change the mind-set of the fishing communities and how they see the danger of defecating in the lake and in the open. The project also constructed communal toilets to improve sanitation in the RGAs as well as hygiene education in the communities. These interventions were well aligned to objective of increasing access to improved sanitation in rural areas from 69% in 2012/13 to 77% in 2019/20 as well as the objective of ending Open Defecation.

3.2.1.2 Appropriateness of EDU II

The priority issues selected for the BDFCDP Education project were based on two strategic objectives in Buikwe DLG Education Sector Development Plan and DDP II for basic education, that is: equitable access and quality of education. The core problem to be addressed by the project was *"Low quality of basic education in schools serving learners from Buikwe district fishing communities"* especially the girl child across primary and secondary school levels. The low quality of education led to low academic achievements of learners in Literacy, Numeracy and Life Skills in the basic education system. It also contributed to high dropout rates, poor examination outcomes and low transition to and completion of secondary education and BTVET. Although the causes of low quality of education in Uganda are many and complex, insufficient school infrastructure and facilities, lack of teaching and learning materials, lack of capacity for quality teaching, inadequate school leadership and governance, inadequate support supervision, weak community support, and poor nutrition and health status of learners were among the identified direct causes in Buikwe district.

In response to the above challenges, the Buikwe EDU II project was designed focusing on quality improvement in primary and secondary schools, hence contributing to the Buikwe DDP II goal of achieving equitable access to relevant and quality education and training. The programme focuses on increasing enrolment, retention of children especially girl child across the primary and secondary levels as well as putting emphasize on skills training to suit the current and future skills demands, which is in line with the DDP II aspirations. Through the Project's Pillar 1 of improving school infrastructure and facilities, the programme aligns well with the DDP II objective of expanding, improving and maintaining school infrastructure by ensuring adequate classrooms, water supply systems, sanitation and hand washing facilities for girls and boys. Through pillar 4 (community participation), the EDU II contributes to the DDP II objective of forging strong partnerships with parents to break social-cultural and other barriers that affect attendance and retention of boys and girls in schools. The table 7 below show the linkages between the project's pillars and the DDP II objectives.

Table 7:Linkage between EDU II pillars and DDP II objectives

EDU II Pillar	DDP II Objective
Pillar 1-Improving school infrastructure and facilities	Expand, improve and maintain school infrastructure and ensure adequate provision of classrooms, water supply systems, sanitation and hand washing facilities for girls and boys, school physical education and community facilities
Pillar 2-Capacity support to improve the education sector management with a focus on MLA	1. Increasing enrolment, retention of children especially girl child across the primary and secondary levels, emphasize skills training to suit the current and future skills demands. 2. Capacity building and empowerment of all stakeholders in provision of quality education and training.
Pillar 3-Improve the quality of teaching and professional leadership in schools	Achieve equitable access to relevant and quality education and training.
Pillar 4- Increased community participation through community mobilization and sensitization	1. Forge strong partnerships with parents to break social-cultural and other barriers that affect attendance and retention of boys and girls in schools. 2. Install, re-orient all school management committees (SMCs) to play their critical roles in education service delivery
Pillar 5- The Learners- Direct support to learners through support to menstrual hygiene, school health, school feeding programme among others.	1. Promote school feeding and nutrition 2. Increasing enrolment, retention of children especially girl child across the primary and secondary levels, emphasize skills training to suit the current and future skills demands. 3. Strengthen School health services and standards to address the specific needs of girls and boys

3.2.2 Appropriateness of the BDFCDP to Iceland Embassy and Uganda

Government of Iceland: The bilateral cooperation between Iceland and Uganda dates way back to 2001 and follows a path charted by the current Country Strategy Paper (CSP: 2014-17, extended until 2019) with the aim to improve people's quality of life by means of empowerment, capacity building and knowledge transfer. Iceland's development cooperation with Uganda is directed towards reducing poverty and improving livelihood amongst some of the poorest communities in Uganda. The GoI through ICEIDA supports the GoU in achieving the SDGs in line with the country's development priorities.

Iceland's main focus priorities areas as set out in the Uganda CSP are three, including natural resources (fisheries and energy), social infrastructure (education and health, including water and sanitation), and peace building in addition to gender equality, environmental sustainability and human rights as cross-cutting issues that are integrated in all development activities. Iceland's support is primarily focused at the district level, and districts with a substantial fisheries sector were prioritized with a particular focus placed on improving the livelihood of people in fishing communities. In regard to alignment to the CSP priorities, the programme aligns well with the capacity building interventions at the district level through capacity development of district technical staff to implement and manage WASH and education services delivery; support to social infrastructure objective through provision of basic education, safe water and improved sanitation facilities to the target communities. Throughout the WASH II and EDU II projects, the programme aligned well with the Gender crosscutting theme by emphasizing participation of both men and women including those with disabilities in access to services.

Review of the Iceland's Policy document on International development cooperation for 2019-2023 indicated that the Programme was aligned to the development policy objective of "Enhancing social infrastructure and peace efforts". In particular, the programme by targeting the poor who leave within the fishing communities is aligned to three objectives under goal 1 which include: Gender equality and empowerment of women by targeting women and girls through implementation of gender sensitive WASH II and EDU II interventions; equitable access for all to quality education through implementation of the five pillars of EDU II project and; improved access to clean water and sanitation through implementation of WASH II interventions. The programme placed emphasis on the quality of basic education, improved access to education and reduction of school dropout rates in poor societies, with a special focus on girls, which are clear intervention strategies for Iceland's International development cooperation. Furthermore, the programme through WASH II improved the hygiene practices, increase access to clean water, sanitation facilities, all of which are interventions emphasis in the International Development cooperation document.

Government of Uganda: The BDFCDP programme is relevant and aligned to the development priorities of Uganda expressed in Vision 2040, as well as the respective NDP II for the period 2015-2020. The evaluation noted that although the EDU II and WASH II projects were formulated for implementation during the second National Development Plan II (NDP II: 2015-2020) the issues, priorities and interventions under each sub sector are still relevant under NDP III (2019/20-2024/25). Additionally, the project was also relevant to the Education and Sports Sector Strategic Plan 2017/18-2019/20, and to the National Resistance Movement (NRM) Presidential Manifesto for the period 2016-2021 both of which put emphasis on promotion of quality education and sports for all persons in Uganda for national integration, individual and national development.

Relevance to WASH- In particular, for NDP II, the programme is aligned to rural water and sanitation interventions through increasing access to improved water, sanitation and hygiene

practices to the fishing communities. For the water sector 2015-2020 strategic plan objectives of access to affordable water and sanitation services to rural areas with a focus on women and girls. For NDP III, the program is aligned to the intervention 'increasing access to safe water, sanitation and hygiene' under objective 3 of the human capital development goal of NDP III. NDP III objective three aims to improve the population health, safety and management.

Relevance to Education- With regard to support to education services delivery, the programme is well aligned with three objectives in NPD II and the 2015/16-2019/20 education sector strategic plan. These three objectives include: "objective 1-Achieve equitable access to relevant and quality education and training"; "objective 2-Ensure delivery of relevant and quality education and training"; and "objective 3- Enhance efficiency and effectiveness of education and sports service delivery at all levels". Specifically for objective 1 the EDU II project supports the school feeding program, expansion and construction of school infrastructure, implements community programmes that encourage school retention and transition rates, and addresses gender responsiveness sanitation facilities at schools, among others. For objective 2, the project supports the district to implement the MLA approach with the goal of improving the numeracy and literacy skills for students, in-service training of teachers, provides management training for teachers and supports expansion of school facilities. For objective 3, the project supports in improving the school governance structures especially training of the school management committees. It should also be noted that the programme education interventions are well aligned with the broad NDP III human development objective, specifically the objective to improve the foundations for human capital development through equipping and supporting schools to improve the education services delivery.

3.2.3 Relevance of BDFCDP to the International Agenda

The WASH II and EDU II projects were implemented from 2018-2019/20, two years after the Sustainable Development Goals (SDGs) were adopted by the United Nations Member States in 2015. The project objective for EDU II to improve quality of basic education in schools serving fishing communities of Buikwe district; and the project objective for WASH II to increase access and use of safe water and sanitation facilities and hygiene services among the fishing communities in Buikwe district for improve public health were all well aligned to the SDGs particularly to SDG 4 aimed at ensuring inclusive and equitable education for all; and SDG Goal 6 which is about ensuring availability and sustainable management of water and sanitation for all by 2030; and specifically to SDG Target 6.2 which seeks by 2030 to achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation. The BDFCDP was well intentioned in so far as that it paid attention to those in vulnerable situations by specifically targeting the fishing communities. In terms of gender, the programme was aligned to SDG 5 which seeks to achieve gender equality and ensure there is an end to discrimination against women and girls everywhere.

3.3 Analysis and Findings-Programme coherence

This sub section endeavours to answer the question of how well the programme fitted with other development efforts, and whether duplication of efforts was avoided and synergies maximized. The evaluation answers the questions to what extent were synergies from different development efforts in the respective sectors and in the region ensured; whether there was sufficient partner consultation; and whether programme activities overlapped and/or duplicated other similar interventions funded in the district by other donors.

According to BDLG, the programme under review focused on fishing communities where other partners were not working. As a local authority, the district local government is keen on screening partners' activities to ensure equitable distribution of services to the entire population in the district. Beyond the PSC, the district water department established a coordination mechanism comprising of relevant departments at the district (such as education, health, and community based services) and other WASH implementing partners within the district (e.g. Water Mission Uganda, Busoga Trust and WVI) to minimize duplication of effort. The coordination mechanism under water department is called the District Water and Sanitation Coordination Committee (DWSCC) and sits quarterly. Through the DWSCC, the district ensures that there is sharing by all WASH stakeholders of their work plans, budgets and reports of activities accomplished as well as their respective areas of operation/locations. The district ensures coordination is streamlined to avoid duplication of efforts. For instance, World Vision International (WVI) and Africa Water Solutions which support WASH interventions in the district were allocated different sub counties by the district and advised to implement activities similar to those funded by the Embassy in other sub-counties outside the programme sub-counties. To note is that partners such as WVI that were implementing water systems implemented such water schemes in a sub county that is not part of this Iceland supported program, and that is Buikwe rural.

Additionally, even those that were in the same sub counties were implementing in other parishes and villages that were in the inner land and not closer to the lake or landing sites. The district reported that under Ngogwe Sub County, for example, WVI promoted sanitation and hygiene in the inland villages far away from the lake and not in the parishes and villages under the Iceland supported program. However, to note is that all these development partners had a common program and approach that was being implemented by all partners including the district, which was promotion of household hygiene and sanitation using CLTS.

3.4 Analysis and Findings- Implementation effectiveness

The BDFCDP programme overall goal is to improve the livelihood and living conditions of people in fishing communities in Buikwe district. The programme had two major components targeting education (EDUC II) and WASH interventions (WASH II). The primary objective of the EDU II project was to mprove the quality of basic education in schools serving fishing communities of

Buikwe district, while the primary objective for WASH II was to increase access and use of safe water, sanitation and hygiene services among the fishing community in Buikwe district for improved public health. Progress in implementation for each project is discussed later in the findings.

In order to frame the analysis and findings relating to the effectiveness of the programme activities, this section begins with an overview of the progress of the programme before assessing the effectiveness of each of the projects. This section then examines the overall contribution of programme interventions to increased access to safe water and improved sanitation and education services in the target communities. The analysis draws on programme monitoring data provided by the programme implementation team and data from interviews held with key informants and programme stakeholders sampled at district and community level as well as those talked to at the national level. To assess effectiveness of the programme, the key question asked was "To what extent did the BDFCDP programme achieve its objectives, results and including the extent to which the livelihoods of the fishing communities were improved in line with the key programme outcomes and impacts?"

Overall, the evaluation established that the implementation progress at the output level was at 54.5%, being on track for 24 of the 44 output indicators that were measured during the data collection phase. Specific to projects, WASH II achieved 83% (15 of 18) of the output indicators, while for EDU II just 35% (9 of 26) of the output indicators were achieved. At the outcome level progress was slow with just 3 of the 17 (18%) outcome indicators being having been achieved by the programme. Although the programme did not achieve 82% of the targets for the outcome level indicators, there was an observed upward trend for 13 of the 17 outcome indicators between 2015 and 2020/2021, with WASH II having 9 of the 11 indicators upwards, while EDU two had 4 of the 7 outcome indicators moving upwards between 2015 and 2020. Progress on specific outcome and output indicators for each of the projects is described in the subsections that follow.

3.4.1 Implementation effectiveness of WASH II output indicators

The software and infrastructure were to serve an additional 20 villages in fishing communities. Overall, the evaluation established that most of planned WASH infrastructure and facilities were completed, achieving 15 of the planned 18 output level indicators. Under the development of water facilities, 9 new piped water systems were developed; four new extensions to new villages were conducted and 56 new AQ taps were installed in 20 villages. Under the hygiene promotion and education component, the project constructed 17 VIP latrines, 12 waterborne toilets and supported implementation of the CLTS model across the 20 villages largely through Busoga Trust. The project also built the capacity of the district in relation to WASH through training 28 staff in WASH related service delivery and supported the district in developing Operation and Maintenance (O&M plans) for the infrastructure installed. Furthermore, at the community level the project supported the establishment and operationalization of O&M mechanisms for the water

facilities by setting up water user committees as well as training them on O&M for the established facilities. Details are in the progress table for WASH II output indicators in annex 1.

3.4.1.1 Infrastructure for improved WASH installed and/or restored

At the output level, WASH II project aimed at increasing the infrastructure for improved water services through construction of 13 new safe water facilities, extension of two piped water systems to new villages, installation of one hand pump to 3 new villages, and installation of 56 AQ taps in the target villages. Additionally, the programme planned to construct 18 new sanitation facilities for communal use in Rural Growth Centres (RGCs) and installation of 56 AQ-taps in the target villages.

Construction of new piped water supply systems:

The evaluation established that BDLG constructed nine (9) new water systems which include Busaana, Namabere, Nanso B, Bugoba B, Nalumuli, Natyole, Busagazi-Busiri, Upper Ssenyi-busunga and Buwera. Additionally, two boreholes in Buyoka and Lugala; and four (4) extensions of piped water systems were constructed. The 56 AQ-taps were also installed as planned on the water systems.

The major reason for the variance in the outputs from 13 to only nine (9) new water systems was due to inadequate sources of water. Based on lessons by the Embassy in Kalangala district, emphasis of WASH II was to abstract water from underground sources as opposed to getting surface water, which is expensive in terms of water treatment. Therefore, upon consultation with the Embassy, BDLG agreed on an approach where if it was feasible, one water system was combined to supply more than one village e.g., Busagazi and Busiri were combined into one; while Bulinyi village shared a system with Nalumuli. Secondly, there were other villages such as Buyoka where water was gotten so deep that the Ministry of Water and Environment rejected approval of the design on the grounds that it would be very expensive to abstract and pump water from a depth of 170m.

In terms of numbers of people with access to improved water facility, BDLG estimates that AQ-Taps serve an estimated 500 people while boreholes serve 300 people each. Therefore, the new water systems installed serves an estimated total population of 28,600 people vs 27,300 people as planned[2] i.e., the projected population in the 20 targeted villages in 10 years which is 104.8% achievement. The total number of households accessing safe water is 5,720 vs 5,460[3] as planned. The implication of these figures is that the project achieved slightly above the planned households to be served during the project life. Well as the number of households served with tap water was achieved, the preference as per the SDGs is to have more people accessing safe water within the premises. For the target villages, households are accessing water through shared communal taps, which makes the distances travelled slightly far as per the SDGs. Some sources estimate the current

[2] *WASH II Project Document.*

[3] *Average household-HH size is 5, as stated in the WASH II Project Document.*

population at 35,000 (Embassy monitoring report, Sept., 2021) compared to the 2015 baseline of 30,656 (Baseline report, 2015).
According to a recent WASH II project monitoring report by Iceland Embassy (September 2021), 19% of the population in the targeted fishing villages utilized safe water from the new piped water schemes based on an assumption of 20 litres of water usage per person per day. The population with access to piped water increased to 76% when daily drinking water is assumed to be the realistic figure of 5 litres per person per day. Another critical indicator tracked by the project was the average cost per beneficiary of a water facility, which was UGX 167,000 (USD 45) vs the targeted UGX 183,000 (USD 50) per person.

Construction of 18 latrines/toilets for communal use in Rural Growth Centres (RGCs)

The programme planned to construct 11 VIP latrines in (2-Nanso, 1-Buyoka, 2-Busagazi, 2-Gombolola, 1-Nalumuli, 2-Buwera and 1-Namazina) & 7 waterborne toilets (3-Busaana, 2-Namabere and 2-Nalumuli). All the planned 18 sanitation facilities were completed (i.e., 11 VIPs and 7 water borne toilets in fishing villages. However, four (04) out of 39 villages targeted by WASH project villages were threatened with evictions from the fishing villages by landlords that sold occupied land to investors, and the concern was that was happening in areas where the WASH infrastructure for piped water and sanitation facilities had already been developed. The population likely to be affected is about 10,000 people (2,500 households). Specifically, the eviction of the people was already executed at Namabere fishing village under WASH II and the WASH infrastructure was deserted. Two actions are proposed: first, is addressing the human rights situation of the people who lose their property without prior and adequate compensation contrary to Uganda's Constitutional provisions and the human rights principle under Iceland policy for international development cooperation; and second is that infrastructure is lost or rendered redundant hence the need to review the pre-conditions for funding infrastructure investments by emphasizing availability of land verifiable by legally binding land acquisition agreements.

3.4.1.2 Hygiene promotion and education conducted in fishing villages and schools

On the software side, the project planned that BDLG and partner SDAs are supported to scale up hygiene promotion and education using Community Led Total Sanitation (CLTS) approach in 20 villages in the project area. To achieve this, the district planned to mobilize leaders to support, get involved and participate in the sanitation and hygiene promotion campaigns under WASH II. A total of 388 leaders were mobilized and sensitized (232 male and 156 female) in WASH II villages so that these could get involved, to own and manage the sanitation facilities to enhance sustainability. The WASH team at the district, the Community Development Officers (CDOs) and the Health Assistants (H/As) were re-trained on the CLTS approach and have been instrumental in conducting monitoring and support supervision as well as participating in the ODF verification processes in the 20 targeted project villages.

Performance of Busoga Trust under WASH I was assessed and BT contracted by BDLG as a non-state SDA to undertake CLTS implementation to improve on hygiene and sanitation in communities and schools in the 20 WASH villages. All the 20 villages were triggered and follow-up conducted leading to declaration of project villages Open Defecation Free (ODF) with a few gaps identified specifically in three (3) villages for follow-up. In the future, there will be need to follow-up the sustainability of ODF villages as well as the Operation and Maintenance of public and communal latrine/toilet infrastructure as insufficient funds collection was reported hence inability to pay cleaners, to buy consumables (e.g., detergents, toilet paper and scrubbing brushes) and to undertake minor repairs. Water and Sanitation Committees will need to collect funds from users to facilitate emptying when toilets fill up. Some of the toilet facilities' hand wash basins/ceramic sinks were damaged and/or abandoned hence affecting the practice of handwashing with water and soap to close the faecal-oral route of disease transmission.

3.4.1.3 WASH sector institutional capacity developed at district, sub-county and village level

District coordination and M&E in relation to WASH strengthened;

A team of 28 staff (9 Scheme Agents and 19 District WASH member team) were trained in monitoring and evaluation; the district was supported to establish monitoring and evaluation systems and tools for monitoring on WASH and education services delivery indicators. In order to deliver sustainable WASH services, the district water office team was also trained on gender and HIV/AIDS and environment mainstreaming into WASH programmes; on water quality analysis and surveillance; and in effective management of piped water systems, including the Water Board and the Scheme Agents and Scheme Operators. An O&M strategy/plan and budget was also developed and approved by the District Council; the plan was updated to include the 20 project villages. According to BDLG project reports, the WB is now knowledgeable on a number of O&M management areas such as financial management, reporting, monitoring, business planning and the roles and responsibilities of the WB towards effective O&M for piped water systems. The WB is expected to perform better and become efficient with increased practice and further re-fresher trainings.

BDLG project monitoring reports also show that the Scheme Agents have basic skills required to operate the pump houses and handle basic leakages, and in trouble shooting measures on operations. The Agent Manager is able to do plumbing and to a certain extent electoral mechanical troubleshooting. The District Water Officer (DWO) and Agent Manager were also trained on online system monitoring, troubleshooting of AQ-taps, preventive maintenance of pumps and inverters as well as monitoring performance of general electricals.

Community structures and systems are for sustained operation and maintenance of WASH established in 20 villages

Awareness and sensitization sessions were conducted for stakeholders in all 20-fishing villages with the participation of 2,564 community members. WASH committees with representation from

various categories of residents (e.g. the elderly, the youth, women and PWD) were sensitized on their roles and responsibilities; and to prepare them to receive the project and to instil a sense of ownership and management responsibility for the WASH infrastructure. Specifically, although hampered by the lockdown due to Covid-19 pandemic, the management committees for the sanitation facilities and the management committees of the 9 new piped water systems as well as the Scheme Agents and Scheme operators were selected and trained on O&M of the piped water systems.

3.4.2 Implementation effectiveness of WASH II outcome indicators

3.4.2.1 Access to improved water and sanitation services

Indicator 1: Percentage of household population with access to improved water facility within 200 meters for rural growth centers and 1 km for other rural villages.

Access to safe drinking water contributes to improved sanitation. As a way of gauging the extent to which the community has access to safe water for drinking, respondents were asked the main source of drinking water during the survey. The main sources for the water are summarised in table 8 below. Half of the households (50.9%) reported the tap or piped water as a main source of drinking water, while the protected well or spring is the second main source of water for drinking with 23.6 percent reporting it as a major source. Nine percent of the households report getting drinking water from the protected well or spring and a similar percentage still access drinking water from an open water source or shallow well. The probable reason for some households still accessing water from unsafe sources could be linked to the cost of water. A 20-litre jerry can is sold at UGX 100, which is expensive for some households. According to the district, the desire would be to charge a 20-litre jerry can at UGX 50, which is too low to break even and continue maintaining the installed systems. It is recommended that the district conducts a vulnerability assessment and develops a pro-poor strategy to identify the most vulnerable households that can be charged a lower rate. The district could pick lessons from other pro-poor approaches for water supply to vulnerable households implemented by other projects such as the Uganda Sanitation for Health Activity (USHA) funded by USAID.

With regard to access to safe drinking water defined as water from the tap, borehole, solar powered pump and protected well or spring, almost nine in ten (89.3%) respondents reported having access to safe drinking; tap/piped water reported as the most common source of drinking water and improved from 14% at baseline to 51%. Information was collected about the functionality of the current sources of water with almost all (98 percent) the respondents reporting that the current sources of water are still functional.

Data was also collected on the distance to the nearest source of drinking water. Results indicate that for a slightly more than a third (1/3) of the respondents, water source was within 200 meters from the household and for 31 percent, a water source was between 200 meters and a kilometer, compared to 1-7 miles travelled by some household members before intervention. Also noted was

that 15 percent of the respondents had water within their premises. Eighty two percent (82%) of the household thus have access to safe drinking water within a kilometer. In comparison by sub-county, households in Nyenga Division are more likely (93%) to have a water source within 1 kilometer than their counterparts in other sub counties. Households from Najja are least likely (58%) to have a water source within a kilometer. Results also indicate that there has been an improvement in access to safe drinking water within a kilometer radius between 2015 and 2021. As indicated, in 2015 just 32% of the respondents had access to safe water within a kilometer. This proportion exponentially improved to 82 percent in 2021. For details see tables 8 and figures 4 and 5 below.

Despite the above achievements, the evaluation established that the public stand taps (AQ taps) increase access to safe water to some extent but are not sufficient to meet even the basic safe water service, which is the minimum service level according to SDG 6 because the distances to the taps are still long for some households and hence the time spent to fetch water exceeds 30 minutes. Thirdly, despite the distance to the taps still being long for some households, water is obtained at a relatively higher cost compared to" free" water from hand pumped boreholes or protected springs, hence people prefer to walk even long distances to fetch water from water point sources where they still exist. It is recommended that Iceland Embassy invests in medium size piped water schemes with extensive promotion of household connections that can better meet the objective of increased access of population to safe water, with effective operation and maintenance for sustainability of the benefits.

Table 8:Access to safe drinking water by selected characteristics

Characteristic	N	%
Main Source of drinking water		
Tap water	196	50.9
Borehole/Hand pump	33	8.6
Solar powered pump,	24	6.2
Protected Well/ Spring,	91	23.6
Open Water Sources/shallow well	35	9.1
Rainwater	1	0.3
Others	5	1.3
Functional status of water source		
Yes	378	98.2
No	5	1.3
Don't Know	2	0.5
Distance to main water source		
On the Premises	57	14.8
Less than 200 meters	139	36.1
Between 200 meters and 1 Km	120	31.2
Between 1 Km to 5 Kms	67	17.4
More than 5 Kms	2	0.5
Time taken to collect water		
0-30 minutes	279	72.5
30-60 minutes	82	21.3
Above 60 minutes	23	6
Don't Know	1	0.3

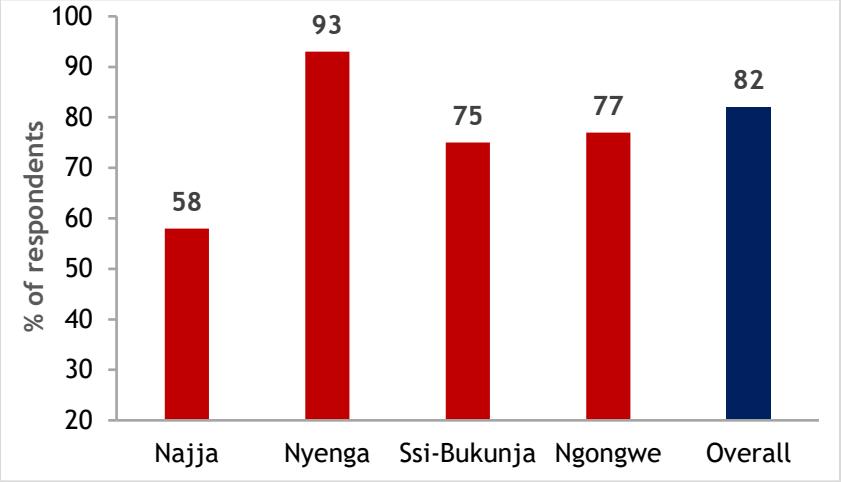

Figure 4:Access to safe water within a kilometer radius by sub-county, 2021

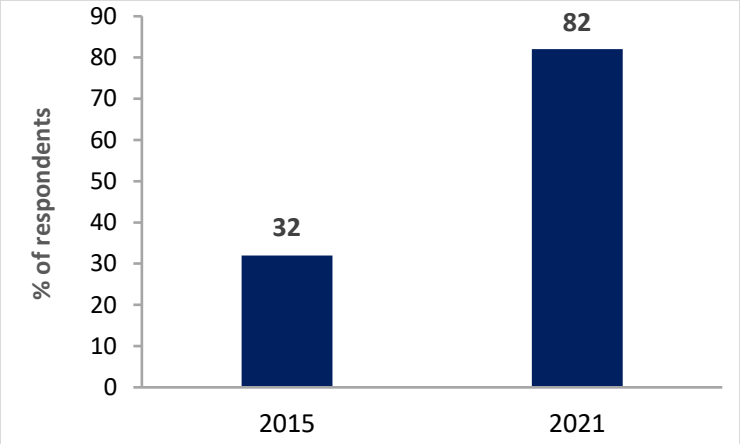

Figure 5:Access to safe water within one kilometer radius by year, 2015-2021

Indicator: Percentage of households with access to improved communal VIP latrines/toilet

The WASH I and II projects had interventions for constructing improved VIP latrines and waterborne toilets within the target sub-counties especially for rural growth areas. The evaluation established that BDLG has altogether constructed a total of 155 VIP latrines and 13 waterborne toilets both in WASH I and WASH II, which is a huge investment in public and/or communal toilets. Of these, 72 VIPs and 13 waterborne toilets are in fishing villages; 71 VIPS in primary schools; and 6 VIPs are in healthcare facilities. This puts the total to 85 latrines/toilets in fishing village alone.

During the survey, respondents were asked about access to improved communal VIP latrines and/or toilets so as ascertain the extent to which access to improved sanitation for communal

purposes has improved. Results indicate that 40% of the households have access to improved communal toilets. Households in Ssi-Bukunja by far had the most access to public toilets (64 percent) than households in other sub-counties. The sub-county with least access to communal improved toilets is Ngogwe with just 19 percent of the households reporting access to improved communal toilets. However, there was an upward trend in terms of access to improved communal toilets between 2015 and 2021, from 13 percent of the household to 40 percent respectively.

One of the biggest challenges reported by the district, is the high demand, putting a lot of strain on the facilities. This in turn quickly damages the established facilities, facilities fill up faster, and leads to high cost of emptying. Secondly, there are challenges particularly with people paying user fees as a contribution towards the general hygiene and cleanliness of the facilities and maintenance of the facilities. Finally, there is also a concern that the majority of the population concentrated in rural growth centres use share latrines, which is a limited sanitation service. The huge investment in public VIPs and waterborne toilets will require dedicated follow-up from the district for proper O&M so as to avoid these facilities becoming a public nuisance. Well established homes/households should be encouraged to construct their own households' latrines; and where water is available, there should not be any more investments in lined VIP latrines for public use (shared). For details see figure 6 and table 9 below.

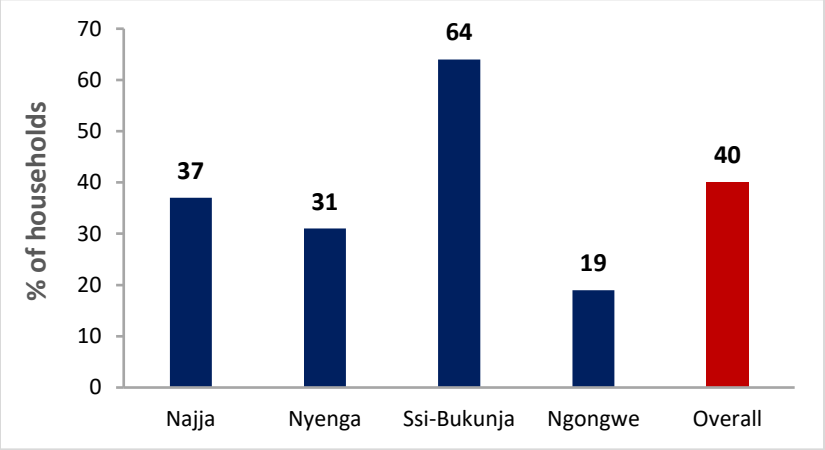

Figure 6:Percentage of households with access to improved communal VIP latrines/toilet by sub-county

Indicator: Percentage of public institutions (schools, health center) in the project area with access to improved water facilities.

As shown in figure 7 below, available data at the district indicates that project interventions in schools in the targeted project sub counties in WASH I had access to safe water improved from 28% in 2015 to 100% in 2021. However, important to note is that there were no interventions in WASH in Schools and Healthcare facilities in WASH II.

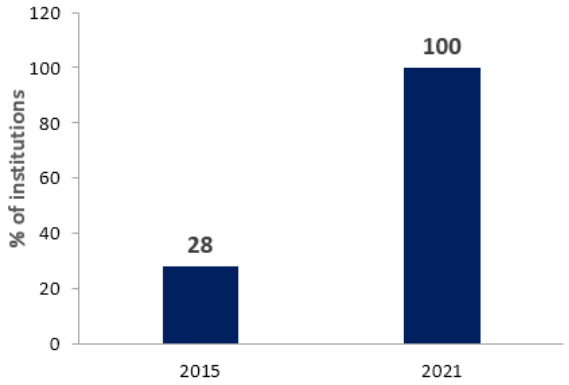

Figure 7:Percent of public institutions with access to improved water facilities

Percent of targeted fishing handling facilities (FHS) with access to water for production

Although this is one of the outcome indicators in the WASH II project logframe, the evaluation established that the district did not have interventions related to water for fish production.

Table 9:Trends in access to WASH services indicators

Indicators	2015	2018	2021	Project target
Percentage of household population with access to improved water facility within 200 meters for rural growth centers and 1 km for other rural villages.	32.8		.2km=52 1km=82	95
Percentage of households with access to improved communal VIP latrines/toilet	13.4		40	95
Percentage of public institutions (schools, health center) in the project area with access to improved water facilities.	Sc=22.2 HF=60 T=28		Sc=100 HF=100 T=100	95
Percentage of public institutions (schools and health centers) in target FHS with access to gender responsive improved VIP latrine/toilet.	Sc=37 HF=40 T=38			95

3.4.2.2 WASH knowledge and practices

Building on interventions implemented during WASH I, WASH II used the community led total sanitation approach and home improvement campaigns for promotion of Hygiene and Sanitation knowledge and practices in 20 villages. The main implement or sub-grantee was Busoga Trust. Therefore, to assess the effects of this interventions at the population level, data was collected on the knowledge and practices of key hygiene and sanitation within the WASH II sub-counties as part of the household survey. Data for two indicators: “Percentage of households with hygienic water use practices (safe water chain)” and; “Percentage of households practicing hand washing at critical times” was collected and results described in the following sub-sections:

Indicator 3: Percent of households with hygienic use of water ensuring safe water chain (safe handling from source, transportation, storage until final use).

Building on interventions implemented during incidence of WASH I, WASH II used the Community Led Total Sanitation (CLTS) approach and home improvement campaigns for promotion of Hygiene and Sanitation knowledge and practices in 20 villages. The main implement or sub-grantee was Busoga Trust. Therefore, to assess the effects of these interventions at the community level, data was collected on the knowledge and practices of key hygiene and sanitation within the WASH II sub-counties as part of the household survey. Specifically, data was collected on one indicator: "Percentage of households with hygienic water use practices (safe water chain)" and results are described below.

In order to avoid water related diseases, it is advisable to handle water correctly right from the point of fetching (source) through transportation and lastly storage in order to avoid it being contaminated. The handling of water correctly through all the stages mentioned, is referred to as the safe water chain. At the source, almost all the respondents (98.7 percent) were using a correct container (a jerry can with a narrow neck) to collect water for drinking. Asked about if they were doing anything to make the water safe for drinking, 64% of the households reported that they would treat the water in some way before drinking it and the main form of treatment was boiling it (88.8%). Households in Ssi-Bukunja (76 percent) and Ngogwe (73 percent) sub counties were more likely to treat water before drinking than households in Najja (57 percent) and Nyenga (50 percent). All the drinking water containers either had a narrow mouth (<10cm) (23%) or were covered with a lid or fitted cover in 77%. None of the households' containers were found to have a spigot (tap). In a nutshell, the proportion of households with hygienic water use practices was only 3.6% compared to 2% at baseline. For details on key practices see table 10 below.

Table 10:Key practices for hygienic use of water ensuring safe water chain among respondents

Characteristic	N	%
Main water collecting container		
Jerry cans	380	98.7
Saucepans	2	0.5
Clay pots	2	0.5
Other	1	0.3
Containers for water collection are covered	287	74.5
Do water storage containers have		
Narrow mouth less than 10cm	89	23.1
Spigot/Tap	0	0.0
Lid or fitted cover	300	76.9
Method for drawing water for drinking from the storage container		
Drinking directly from the source	6	1.6
Use a designated cup to draw water	185	48.1
Use a different cup to draw water	194	50.4
Doing something to make water safe for drinking	250	64
Method of treating water		
Boil	222	88.8
Solar Disinfection	11	4.4
Let It Stand and Settle	11	4.4
Other	6	2.4

Further analysis of the water testing results during project evaluation revealed that 17 (15%) samples out of 114 samples collected at household showed traces of E-coli. This confirms the observation during the water quality sampling and testing activity that most households or water users do not practice the safe water chain. The major challenge observed during the evaluation was that the containers used to draw water from the tap stands or AQs taps are the same containers used to draw water from the lake or other highly contaminated water sources. This means that if safe and clean water is introduced into highly contaminated containers, then the so-called safe water will be prone to contamination because the containers used to draw the water at household level are not safe.

Additionally, although 74.5% of the respondents reported use of covered containers for fetching water, information from the observations during water quality testing showed that most containers used to draw water had no covers or lids and even those that tried to provide, had either cassava or banana fingers or maize cobs; this means that as water is being collected, transported or stored, a lot of foreign matter is introduced in it.

Regarding storage containers for drinking water, 9 out of every 10 respondents at baseline said that they kept drinking water in a container only used for drinking water. Only 23% respondents during evaluation affirmed as compared to 88% of households at baseline that they store drinking

water in a narrow mouth container (<10cm). A total of 78% reported using a container with a fitted cover or lid compared to 84% at baseline, while 0% were found with spigot (tap) compared to 24% at baseline. Overall, triangulation of information showed that water for drinking at household level was not kept in a separate container from the water for other domestic purposes. The households that tried to separate it, put it in pots which have their own challenges at consumption level. For instance, drawing water for drinking from the pots involves high chances of contamination either through the cups or the hands used to draw water.

Regarding treatment, it was observed that all households visited did not treat nor boil water for drinking, compared to 97% of the households that reported treating drinking water at baseline through boiling. The probable explanation for not boiling drinking water may be because households believe the water provided by the project is already treated and is therefore safe. A total of 48% of respondents said they use a designated cup to draw water but also use it for drinking, while 50% of respondents reported to use different cups to draw and for drinking water. All the above findings call for massive sensitization of water users about the safe water chain, which should be the main focus for Buikwe district and partners during WASH III.

Indicator 4: Percentage of households practicing hand washing at critical times.

It is a good practice to wash hands at critical times, defined as; after defecation, after cleaning children's excreta, before food preparation, before eating and before feeding children. To assess this indicator, data was collected on presence of a hand washing facility, presence of soap or ash at the washing facility as well as presence of water at the hand washing place and knowledge of all the five critical moments of hand washing. Concerning presence of a hand washing facility, 79 percent of the households had one; and there was presence of water at 93 percent of the hand washing facilities. Data was also collected for presence of soap or ash at the hand washing facility by observation. Results indicate that 65 percent of the hand washing facility had soap or ash. It is probable that the percentage on hand washing at household level went up due to the increased awareness about hand washing with water and soap as one of the measures to curb the spread of Covid-19 pandemic.

Further assessment of evaluation results showed that the highest knowledge stood at 88% about the critical moments of hand washing was before eating food; 76.6% after using the toilet while the lowest known critical times were after cleaning a child that has defecated (24.9%) and after changing a child's diaper (13.3%). It is useful to note that although all respondents said they wash hands after toilet use, self-reported washing of hands at all the five critical moments was computed and results indicate that just 4.5 percent self-report washing hands at all the five critical moments. Therefore, the target for washing hands at critical moments (50% of respondents) was not achieved. Overall, the implication of this finding is that in the future BDLG should focus messaging around management of children's faeces in the homes and practicing of handwashing after cleaning the babies' bottoms.

Table 11:Hand washing practices at critical times

Variable	N	%
Washing hands after toilet use	384	99.7
Presence of hand washing facility next to toilet		
Yes, observed	305	79.4
No, not observed	79	20.6
Presence of water at handwashing place	283	92.8
Presence of soap or ash at hand washing facility next to toilet	198	64.9
Critical moments of hand washing		
Before eating	340	88.3
Before breastfeeding or feeding a child	102	26.5
Before cooking or preparing food	178	46.2
After using the toilet	295	76.6
After cleaning a child who has defecated or	96	24.9
after changing a child's diaper	51	13.3
Others		
Washes hand at all the 5 critical moments	384	4.5

Table 12:Trend on WASH practices indicators.

Indicators	2015	2018	2021	Project Target
Percentage of target villages certified open defecation free (ODF)	0	53	84	95
Percent of individuals washing hands at critical hand washing moments. Hand washing behaviour & practice is defined as washing hands with water and soap or ash at critical times (after defecation, after cleaning children's excreta; before food preparation; Before eating; and before feeding children).	2.7	94.3	4.5	50
Percent of households with presence of hand washing facility presence of soap or ash next to toilet			79.4	
Percent of households with hygienic use of water ensuring safe water chain (safe handling from source, transportation, storage until final use).	1.8	49	3.6	50

Indicator 5: Rate of incidence of WASH related diseases among the target population compared to baseline status.

Diseases related to use or consumption of unsafe water can either be waterborne or water wash diseases, the latter being diseases caused by the use of unsafe water. For the purposes of this survey, the survey team largely targeted children aged below five and the prevalence of disease took into consideration the reference period of 2 weeks (save for bilharzia) preceding the survey as is often done in most of the standardized surveys carried out in Uganda. Water related diseases that largely affect children under five years are summarized in table 14.

Concerning diarrhoea, during the survey, to ascertain prevalence of diarrhoea for children under five, survey respondents were asked if all children in the household aged below five had had diarrhoea in the last 2 weeks preceding the survey. Diarrhoea was defined as having 3 or more watery stools a day. Results indicate that 17 percent of the children in the households visited had had an episode of diarrhoea in the two weeks preceding the survey. Of the children who had had an episode of diarrhoea in the last weeks, 84 percent sought treatment. It was also observed that there is a downward trend in the prevalence of diarrhoea among children under five between 2015 and 2021. As indicated in table 13, in 2015, 29% of the children had diarrhoea in the two weeks preceding the survey. The prevalence dropped to 23 percent in 2018, dropping further to 17 percent in 2021. Despite the drop in prevalence between 2018 and 2021, the project did not attain the target of a 50% drop in diarrhoea between the two periods. According to survey findings, prevalence of diarrhoea was higher in Najja (26.2%) and least in Ngogwe (6%). Ssi-Bukunja and Nyenga had a prevalence of 14 and 18 percent respectively.

Similar to diarrhoea, respondents were asked if any member of the household experienced typhoid in the past two weeks preceding the survey. Almost six percent of the respondent said they had had typhoid in the two weeks preceding the survey. For bilharzia, respondents were asked if they had had the condition in the 12 months preceding the survey. Results indicate that six percent had had bilharzia. For details see table 13 below.

Table 13:Prevalence of Diarrhea and Bilharzia in the project sub-counties

Name of Sub County	% Rate of Diarrhea		% Rate of Bilharzia		% Access to safe water within 1 km		% Access to public sanitation	
	Baseline	EoP	Baseline	EoP	Baseline	EoP	Baseline	EoP
Ssi Bukunja	32	14	3	1.7	27	75	4	64
Nyenga	29	18	7	2.8	31	93	11	31
Najja	29	26	5	3.4	37	58	29	37
Ngogwe	23	6	2	4.9	48	77	9	19
Overall	**29**	**17**	**4.7**	**3.1**	**32**	**82**	**13**	**40**

Similar to diarrhoea, respondents were asked if any member of the household experienced typhoid in the past two weeks preceding the survey. Almost six percent (6%) of the respondents said they had had typhoid in the two weeks precdeing the survey, compared to 12% at baseline. For bilharzia, respondents were asked if any member of the household had had the condition in the 12 months preceding the survey. Results indicate that three percent (3%) had had bilharzia compared to 5% at baseline. For details see table 13 above.

In WASH projects, there is a correlation between access to improved WASH services and the disease burden. Although this correlation would require a longitudinal study, the project evaluation team conducted a quick analysis between the results of improvements in provision of improved WASH services and practices and the prevailing disease burden. Through water quality testing, the evaluation established that there were no traces of e-coli contamination at the reservoir tanks and tap stands and hence the conclusion that the water supplied from the piped water systems was safe for human consumption.

Despite the improvements in safe water supply, a total of 17 (15%) out of 114 household drinking water samples tested during the evaluation showed traces of e-coli, which is the probable explanation for non-achievement of the targeted 50% reduction in diarrhoea and 50% in bilharzia. Traces of e-coli in drinking water samples at household level confirm the observation during water quality testing that most households were not following the water safe chain at collection, transportation, storage and even at consumption point thus causing microbiological cross contamination. E-coli contamination is a sign that water has some pathogens and can cause severe water borne diseases like typhoid, diarrhoea, cholera and dysentery. The conclusion, therefore, is that although the project improved water and sanitation services for the fishing communities, the hygiene practices are still very low. The recommendation, therefore, is that the district conducts massive sensitization of the population about the safe water chain as well as hand washing with soap and water at critical times. The district may need to carry out precautionary chlorination to ensure the water has residual chlorine to safeguard against the risk of any subsequent microbial contamination along the water handling chain.

Table 14:Prevalence of waterborne diseases among respondents

Variable	N	%
Child 0-4 years had diarrhoea in last 2 weeks	51	17.3
Among those with diarrhoea, treatment was sought.	43	84.3
Household member had bilharzia in last 12 months		3.1
Any member of household had Typhoid in last two weeks		5.9

Table 15:Trends in WASH behaviour related diseases

Indicators	2015	2018	2021	Project Target
Percentage of children aged 0-4 years experiencing diarrhoea in the past two weeks preceding the survey	29.3	23	17	50% reduction
Percentage of individuals who report having typhoid in the past two weeks preceding the survey	12		5.9	6 (50% reduction)
Percentage of individuals who report having bilharzia in the past 12 months preceding the survey	4.7		3.1	2,35 (50% reduction)

Percentage of target villages certified *Open Defecation Free* (ODF)

At baseline, 25% of households found to be using the bush for defecation. In response to this situation Buikwe DLG, with support from the Embassy of Iceland, contracted Busoga Trust as a Service Delivery Agency (SDA) to implement a Hygiene and Sanitation Promotion Assignment in the 20 WASH II villages. The hygiene and sanitation promotion aimed at transformation of the

20 villages from Open Defecation (OD) to Open Defecation Free (ODF) status through CLTS and Follow-up Mandona approaches. To achieve ODF, several activities were implemented such as review and training of Water and Sanitation Committees (WSC), conducting of weekly radio talk shows, FUM to encourage Simple Doable Actions (SDA) in the 20 villages, house to house visits to emphasise Operation and Maintenance (O&M) of latrines, and conducting verification to declare the 20 villages of WASH II as ODF zones.

With regard to access to household sanitation (toilets), at baseline 28% of households used pit latrines, 17% had VIPs and 16% used pit latrines without a slab, while 73% of the households reported sharing a toilet facility with other households (i.e. had access to limited sanitation service). To improve on this situation, the BDFCDP Programme set ambitious target to facilitate 39 villages (19 from WASH I and 20 villages from WASH II) and 32 schools in reaching the Open Defecation Free (ODF) status by the end of 2020. As a result, over 60,000 thousand people were expected to gain access to sanitation and improve their hygiene practices.

By the end of April of 2020, a total of 34 rural communities and 32 schools had gained the ODF status. From the perspective of the entire programme this means that 88% of the targeted rural communities and 100% of the targeted schools had reached the ODF status[4]. Buikwe DLG was supported by the Ministry of Water and Environment to conduct verification of project villages. Table 16 below provides a snapshot of the ODF results of the project summarized in three broad categories.

The first category was a clear case of ODF villages, where villages were found to be glaring ODF with 100% score on the parameter of no open defecation. This means no open defecation sites were seen in the village nor any other evidence to that effect. The villages that fell in this first category and declared unconditionally and recommended for immediate ODF certification were 10 in number. This is because such villages had completely closed down the faecal oral route by clearly using latrines, having sanitation committees in place and a clear O&M framework with either monthly subscriptions/contributions or daily payments where a caretaker for the public toilet facility is paid on a monthly basis and all detergents are purchased and used regularly; with hand washing facilities in place to improve on the general hygiene of the homesteads. A total of four (4) WASH I villages also fell in this category (i.e., Bangamuvo and Nansagazi in Ssi Bukunja sub county; and Kiyindi and Kigaya in Najja sub county). Overall, latrine coverage in the villages without public latrines verified was above 80%.

[4] *Sanitation & Hygiene Promotion in Buikwe District Activity Progress Report: December 2019-April 2020 WASH I & II, BDFCDP*

Table 16:Summary of ODF findings

Parameter	#	Details	Remarks
Villages verified ODF (Unconditionally)	10	Kolola, Busiri, Buyomba, Busagazi East, Lukonda, Natvole, Buwera, Nalumuli, Upper Nsenyi, and Bulinyi.	Passed ODF Verification test
Villages verified ODF (Conditionally)	06	Gombolola, Busagazi West, Busagazi Central, Busana, Bugoba B, Namabare.	Passed ODF Verification test With reservations
Villages verified but did not pass as ODF	03	Namaziina, Buyoka and Nanso B.	Verified but did not pass
Project Villages not verifies by the District.	03	Lugu, Lugala and Buliba	Not included on the list of ODF Report of February 2020.
TOTAL:	**22**		

The second category were six (6) WASH II villages and these were conditionally ODF verified villages that performed substantially well but had a few shortcomings to close down the faecal oral routes; the monthly subscriptions for the public VIP latrine/toilet facilities were not adequate to pay the cleaners and buy detergents or even pay for the water bills. The extension workers had to hold meetings with the users to improve on the collections. Hand washing in these villages was also not well handled. To note is that none of the villages from WASH I fell in this category.

The third category had a total of three (3) villages i.e., those rejected as the faecal oral route had not been closed down and still required more work to ensure proper sanitation. Three WASH I villages were also rejected (e.g., Bubwa and Muvo in Ssi Bukunja sub county; and Kigaya from Najja sub county), these villages were rejected because the super-structures of some of the household and public latrines/toilets were in poor state and needed rehabilitation by painting and disinfection of rodents. Also, the cleaning process especially for the public latrines was not thorough as the floors had lost the original colour. There was also a challenge of collection of O&M fees, as the sanitation committee was not vigilant enough and there was no clear plan of emptying in case the latrines filled-up. Hand washing was neglected; the area surrounding the latrines was bushy and there was general laxity of the local leaders to enforce sanitation improvements.

Figure 8:Example of public latrine that needed repair & painting

Figure 9:Example of household latrine that needed to be improved

It was recommended that all the villages that were verified ODF be followed up to improve and upgrade their latrines to basic sanitation to improve faecal disposal at household level. It was also recommended that sanitation marketing approach be adopted as a strategy to improve the quality of latrines; and that health workers should be oriented on this approach. Health workers should support the sanitation committees in enforcement of sanitation laws such as the public health act and the O&M fees and arrest those still practicing OD. Increased contributions of O&M fees will support the repairs and replacement of broken washing basins, taps and blocked drainage as well as purchase of disinfectants and scrubbing brushes to maintain the general appearance and cleanliness of public toilet facilities. It is also recommended the district explores possibility of modification of existing latrines or future latrines into pour-flush to save on the water bills. Also, appropriate anal cleansing materials were recommended in all public toilets/latrines and be replenished as soon as the earlier stock is exhausted to avoid toilet blockages. Above all, it is recommended that Buikwe DLG and partners develop and implement a clear O&M plan as an exit strategy to ensure sustainability.

3.4.3 Implementation effectiveness of EDU II output indicators

At the output level, EDU II project aimed at improving the infrastructure in 21 primary and four secondary schools servicing the fishing community in Buikwe, building on from EDU I interventions. The project was implemented under 5 pillars which include: developing school infrastructure and facilities through construction of classrooms, teacher houses, school kitchens, sanitation facilities and other facilities based on needs assessment as well as provision of teaching and learning materials, including equipment and materials for co-curricular activities; Pillar II which focuses on support to the Education Sector Management through supporting the Monitoring of Learners Achievements (MLA) and filling some capacity gaps if any; Pillar III, which focuses on improving the quality of teaching and professional leadership in schools through developing the capacity for quality teaching and professional school leadership in line with the education sector training plan developed under EDU-I; Pillar IV that focuses on community participation and engagement to 20 new parishes as well capacity development of school governance bodies such as PTAs, SMCs and BoGs of schools; and lastly pillar V which

focuses on direct support to the learners and includes menstrual cycle management, promotion of school based health programmes, support of health promotion through school health clubs, deworming campaigns, reproductive health education and sensitization on school feeding programmes. Progress on each of the pillars is described below:

Under Pillar 1 - Education Infrastructure and facilities, the project constructed 28 new classroom blocks (87 classrooms and 19 offices) benefiting 19 schools and renovated 33 classroom blocks (92 classrooms); constructed 21 staff houses; constructed and equipped four laboratories; 9 VIP latrines and constructed 21 school kitchens. To improve the seating arrangement for the pupils, the project supplied a total of 3,312 desks of the planned 1,458 desks. It is noted that under the education infrastructure and facilities support, 3 key outputs were under achieved and these include renovation of classroom blocks at 41% achievement, construction of gender sensitive VIP latrines at 64% and construction of dormitories at zero percent achievement. Reasons for not achieving these are budget shortfalls for construction of dormitories, schools benefiting from EDU I for VIP latrines and programme opting for new constriction of classroom blocks during EDU II and hence fewer renovation of classroom blocks done under EDU II.

To support the learning environment including co-curricular activities to pupils, the project supplied an assortment of 23,970 text books in the core subjects of Math, Science, SST, English and Reading, achieving a pupil text book ratio of 1:1; and supplied an assortment of 21 of the planned 38 MDD kits schools. However, well as the project planned to supply 21 sports kits, none was supplied during the period under review. Additionally, the targets for MDD kits (55%) and school text books (59%) was not achieved during the period under review.

For Pillar 2- support to education sector management, the project majorly planned to support implementation of the MLA approach and assessment especially for lower primary. However, these activities just one assessment was conducted in 2019/20 targeting 647 learners. Other activities were not implemented largely due to the effect of Covid-19 where schools and training workshops were closed for a period of two years.

Under the Pillar 3- improving the quality of teaching and professional leadership in schools, the project had planned to conduct general capacity development for 63 head teachers and teachers; support 38 teachers to upgrade to grade III teaching certificate and conduct a continuous capacity development program for 168 teachers in the target schools. At the time of evaluation, 38 teachers were undergoing a grade III teacher training program and are expected to complete training in 2022. These will acquire the minimum qualification of Grade III teaching certificate. Similarly due to the effect of Covid-19 lock down, activities under this pillar were largely not implemented.

Under Pillar 4- that focuses on community participation and engagement, the project had planned to conduct 16 community outreach programmes targets parents of learners in the 21 schools; support the functioning of the SMCs and PTAs for the 21 schools and support the 21 schools to develop school improvement plans. At the time of the evaluation, implementation of activities under this pillar had not taken off save for community mobilization meetings as a result of Covid-19, which led to the closure major community-based programs and sensitization meetings. Overall, 25 community-based mobilization meetings targeting parents were conducted with the objective of reawakening their participation and voice into schools.

Under Pillar 5- which focuses on direct support to learners to achieve increased learners' interests in education targeted implementation of the school feeding program, reproductive health program, school health program, deworming of learners across all the 21 supported schools. Similarly, most of the planned activities did not happen due to closure of schools as a result of Covid-19. Nonetheless, the project trained 121 (59 males and 62 females) in promoting menstrual hygiene in 21 schools though the school health clubs were not operational.

A table detailing output achievement for all the EDU II output indicators is in annex 1.

3.4.4 Implementation effectiveness of EDU II outcome indicators

Indicator 1: Percentage of learners (girls and boys) passing in division I-III in national primary leaving exams

Performance in primary leaving examinations (PLE) is one of the indicators of the quality of primary education delivery in Uganda. The Uganda National Examinations Board (UNEB) conducts the PLE annually at the end of the primary education cycle. The PLE passes are graded into division I-IV. Passes in division I qualify learners to compete and join the best secondary schools in the country. Learners that pass in division I-III qualify to join tuition free Uganda's universal secondary education (USE) programme. Learners that pass in division IV qualify to join secondary education, but their parents or guardians meet their tuition fees.

The percentage of learners passing in division I-III in a given year is expressed as the number of pupils who sat for PLE in given year and passed in division I-III over the total number of pupils that sat for PLE in that given year. Division I-III is of interest because it qualifies learners to access tuition free universal secondary education and to be admitted to a secondary school. Analysis of data from the Uganda National Examination Board (UNEB) PLE results for the years 2018 through 2020 was conducted.

Specific to 2020 performance, a total of 2564 learners (Boys =1085 and Girls = 1479) sat for PLE 2020. Of these, majority (41.8 percent) passed in division II, followed by 21.2 percent in III and 3.7 percent in division I. Overall, two thirds (66.8%) of the pupils passed in divisions I-III with 68.9% of boys and 65.3% of girls. Comparing performance by sub-county, pupils from Ssi-Bukunja (77.3 percent) and Najja (69.7 percent) performed better than their counterparts from

Ngogwe (68.2 percent). The least performing sub-county is Nyenga Division (54.2 percent) yet is the most urban subcounty.

Trend analysis of the PLE results showed that there was an improvement in the performance of leaners between 2015 and 2018. Between 2018 and 2020, there is an observed stagnation with performance oscillating between 67 and 68 percent passing in division I-III. It should also be observed that in 2020, the target of 75% of the pupils passing in division I-III was not achieved. Comparing school PLE performance for 75% of the candidates in Division I-III in the programme sub-counties, results indicated that between 2018 and 2020, there was also an observed decline in the proportion of schools achieving the 75% target for pupils passing in division I-III. In 2018, 44% of the schools had 75% pupils passing in division I-III, declining to 38% in 2019 and 29% in 2020.

In comparison to the national level PLE performance, overall, the performance at the national level was better than performance for target sub-counties based on the 2020 PLE results. At the national level, 77% of the PLE candidates that sat passed in division I-III, in comparison to 67% in the EDU II sub-counties. At the national level, a higher proportion of candidates passed in division I (11%) in comparison to 3.7% for the EDU II sub-counties. A similar difference is observed in candidates that passed in II where 46% at the national level passed in II, while 41.8% in EDU II schools passed in division II. For details see tables 17, 18 and figure 10 below.

Table 17:Percentage distribution of Pupils passing in Divisions I-III for 2020 PLE results

Characteristic	Div 1	Div II	DIV III	Div I-III	N
Sex					
Boys	5.4	44.1	19.4	68.9	1085
Girls	2.5	40.2	22.5	65.2	1479
Sub-county					
Ssi-Bukunja	3.3	56	18	77.3	364
Nyenga Division	3.2	30	21	54.2	601
Najja	4.7	43	22	69.7	967
Ngongwe	3.2	44	21	68.2	632
Total	3.7	41.8	21.2	66.8	2564

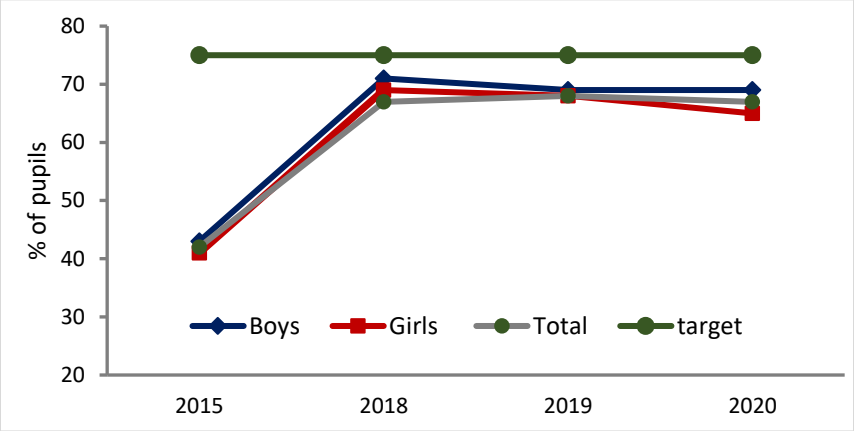

Figure 10:Percentage of learners passing in division I-III in national primary leaving exams by year, 2015 to 2020

Table 18:Percentage distribution of Pupils passing in Division I-III for 2020 PLE results at national level

Division	Boys, %	Girls, %	Total
I	13	10	11
II	47	44	46
III	19	21	20
I-III	79	75	77
Total (N)	**346,820**	**387,968**	**734,788**

Indicator 2: **Percentage of learners (girls and boys) achieving competence in literacy and numeracy in lower grades (P.1- P.4) and upper grades (P.5-P.6).**

This indicator is defined as the proportion of learners who score at least 75% of the numeracy and literacy tests given to learners during the monitoring leaner achievement tests. For this indicator, data was available for only lower grades (P1-P4) and thus results are presented for this grade only.

Specific to 2020 performance, a total of 647 learners in lower primary were provided with the numeracy and literacy tests during the MLA assessment. Overall, 54 percent of the learners obtained the minimum score in numeracy in comparison to 50 percent in literacy. Trend analysis of the MLA scores showed an increase in the proportion of learners attaining the minimum score for numeracy skills while there was a slight increase in the proportion for literacy skills. For numeracy, in 2015, 32% of the learners obtained a minimum score, which slightly increased to 36 percent in 2018 and raised slightly higher to 50 percent in 2020. Concerning literacy there was

light increase between 2015 (48 percent) and 2018 (53 percent), while the proportion marginally increased between 2018 (54 percent) and 2020 (54 percent). For details see figure 11 below.

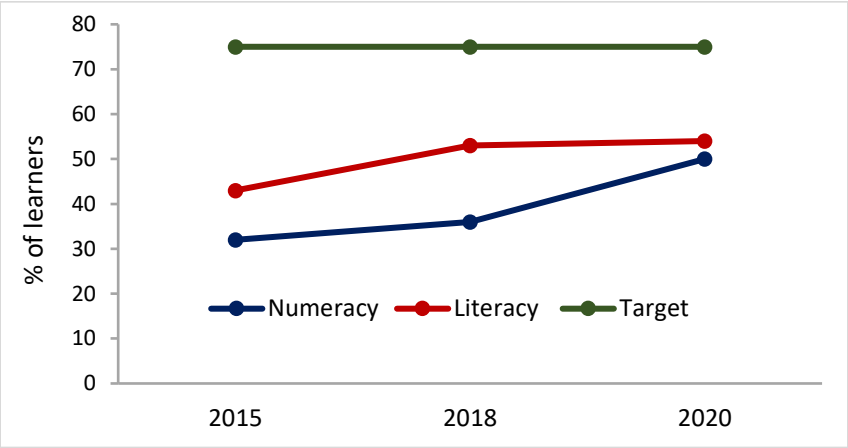

Figure 11:MLA results for numeracy and literacy assessments among lower primary learners, 2015-2020

Indicator 3: Survival Rate of primary school cohorts (boys and girls) to grade 5 and final grade 7

The survival rate is percentage of a cohort of pupils enrolled in first grade of primary school in a given year who reach a successive grade, typically fifth (P5) and final grade (P7) at the end of the required number of years of study.

Survival rate of learners to Grade 5: In 2020, out of a total of 2313 learners (Boys= 1115 and Girls=1198) who enrolled for grade 1 in 2017 in the project primary schools, close to two thirds (66.3%) or 1533 of the learners progressed to grade 5. Girls (70.3 percent) were more likely to progress to grade 5 than boys (62 percent). Comparing the survival rate by sub-county, learners from Ssi-Bukunja (58 percent) were less likely to complete grade 5 than their counterparts from the other three sub-counties, while learners from Nyenga Division were slightly more likely to complete Grade 5. According to the results, it can be deduced that the survival rate of learners (boys and girls) to grade 5 in the project schools is still below the project target (75%).

Survival rate of learners to Grade 7: In 2020, out of a total of 1919 learners (Boys= 909 and Girls=1010) who enrolled for grade 1 in 2014 in the project primary schools, half (50.7%) or 973 of the learners progressed to grade 7 by 2020. Slightly more girls (51.1 percent) were more likely to progress to grade 7 than boys (50.2 percent). Comparing the survival rate to grade 7 by sub-county, surprisingly learners from Ssi-Bukunja (68 percent) were more likely to complete grade 7 than their counterparts from the other three sub-counties, while learners from Nyenga Division were far less likely to complete Grade 7, with just 35 percent completing grade 7 in 2020. For both survival rates by 2020, the project target of 75% of leaners completing grade 5 and 7 respectively were not accomplished.

Trend analysis of the survival rate to grade 5 showed an upward trend between 2015 and 2020. Between 2015 and 2018, the overall survival rate increased from 27 to 34 percent. However, in

the two-year period between 2018 and 2020, the survival rate to grade 5 doubled to 67 percent. For details see table 19 and figure 12 below.

At the national level, survival rates were available for grade 7 for 2018. Thus, comparing the survival rates up to grade 7 in the programme target sub-counties with those at the national level, learners in the programme sub-counties are less likely to complete grade 7 (51%) than their counterparts at a national level (60%). A similar difference is observed between the girls and boys, with girls at the national level slightly more likely to complete grade 7 than boys. Strangely, the survival rate to grade 7 (68%) in Ssi-Bukunja is higher than the survival rate to grade to 5 (58%). This could be as a result of an influx of learners from other non-programme supported schools due to better school housing and services and general improved learning environment.

Table 19:Survival rate (%) to grades 5 and 7 among learners in the project schools

Characteristic	Grade 5	Grade 7
Sex		
Boys	62	50
Girls	70	51
Sub-county		
Ssi-Bukunja	58	68
Nyenga	72	35
Najja	68	51
Ngogwe	68	63
Total	**66**	**51**

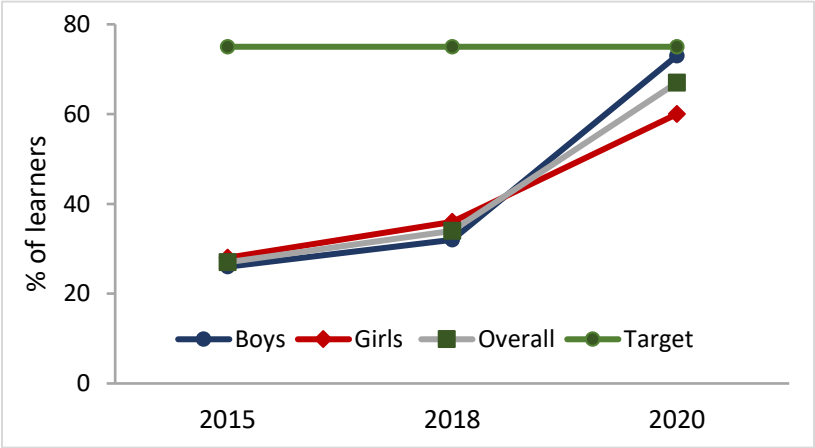

Figure 12:Survival rate of learners to grade 5 by year, 2015-2020

Interviews with stakeholders, parents and students as well as community meetings conducted by FENU, indicated that the major reasons for persistent lower survival rates especially up to grade 7 included:

1. A lack of sensitization of parents to embrace the new local language thematic curriculum introduced by ministry of education, where at the lower primary levels, student is taught in the local language. Parents prefer that is the students are at school, their expectation is to be taught in the English language, otherwise they stop taking children to schools.
2. Most of the learners go hungry during school due to a lack of a proper school feeding program that provides food to the leaners during the lunch break. For most of the cases, leaners will prefer staying home.
3. On the part of the girl child, early marriages and teenage pregnancies are contributing to high drop rates, where girls are married off early or get pregnant while at school. Once a girl gets pregnant, never will she ever go back to school.
4. Persistent child labour especially at the fishing sites and sugar cane plantations. In Ssi-Bukunja for example, there are a number of sugar cane plantations where leaners are engaged in economic activities and thus will find it difficult to continue with school. For Najja sub-county for instance, the boys are mainly engaged in fishing activities, and will thus prefer fishing to schooling.
5. Menstruation- for girls, both learners and parents reported menstruation as a major hindrance to attending schools among the girls, on average girls miss school for up to 3 days a month during their periods, and eventually give up on school due to discomfort as a result of menstruation.

Indicator 4: Transition rates for learners (girls and boys) from P.7 to secondary schools and BTVET institutions.

The transition rate from P7 to secondary and/or BTVET is percentage of a cohort of pupils who completed final grade 7 in a given year and joined S1 or 1st year in a BTVET.

In 2020, 70 percent of the pupils that sat for PLE transitioned to either a secondary or BTVET school, with boys (75%) more likely to progress than girls (63 percent). This achievement is exactly the target set by the project. Trend analysis of the transition rate to secondary or BTVET showed an upward trend between 2015 and 2020. Between 2015 and 2018, the overall transition rate increased slightly from 59 to 61 percent. However, in the two-year period between 2018 and 2020, the transition rate to secondary increased by 9 percent to 70 percent.

At the national level, transition rates from primary seven to secondary or BTVET for primary seven leavers were lower than that in the programme sub-counties. Overall, at the national level, six in ten primary seven leavers join secondary or a BTVET in comparison to seven in ten in the programme sub-counties. At the national level, there was no difference in transitioning from primary seven to secondary among boys and girls. For the learners that do not transition, the major issue raised among parents is a lack BTVET institutions, which allows those who have failed to join secondary to further their studies in BETVET institutions. For instance, in Buikwe district, there are just four registered BTVET institutions with none located in the programme sub-counties.

Comparing the survival rates up to grade 7 in the programme target sub-counties with those at the national level, learners in the programme sub-counties are less likely to complete grade 7 (51%) than their counterparts at a national level (60%). A similar difference is observed between the girls and boys, with girls at the national level slightly more likely to complete grade 7 than boys. See figure 13 below for trends in transition rates.

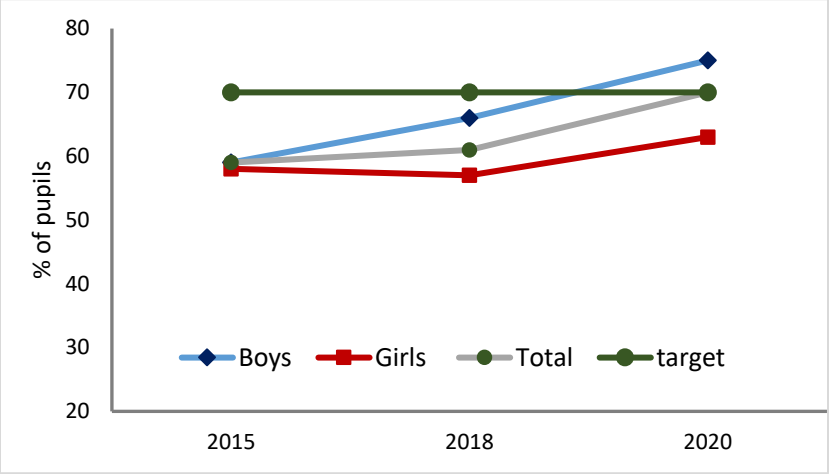

Figure 13:Transition rate from Primary to Secondary or BTVET, 2015 to 2020

Indicator 5: Survival rate for learners' (boys and girls) in lower secondary education (ordinary) level (S.1 to S4) or equivalent BTVET in the target secondary schools /institutions

Survival rate from S1 to S4 or BTVET equivalent is percentage of a cohort of students who enrolled in first grade (S.1) of lower secondary education and progressed through successive grades and reached final grade (S.4) of lower secondary. In 2020, out of a total of 1367 students (Boys= 661 and Girls=706) who enrolled for senior one in 2017 in the project secondary schools, less than a third (31.2%) or 435 of the students progressed to senior four by 2020. Girls (35 percent) were more likely to progress to senior four than boys (28.4 percent).

Trend analysis of the survival rate to senior four showed a downward trend between 2015 and 2020. Between 2015 and 2018, the overall survival rate decreased by more than 20 percentage points from 66 to 43 percent respectively. A further decline was in the two-year period between 2018 and 2020, where the survival rate declined further from 43 to 32 percent between 2018 and 2020. For details see figure 14 below.

Thus, comparing the survival rates from senior 1 to senior 4, in the programme target sub-counties with those at the national level, learners in the programme sub-counties are much less likely to survive from senior 1 to senior 4 (31.2%) than their counterparts at a national level (77%). Interviews with stakeholders, parents and students as well as community meetings conducted by

FENU, indicated that similar reasons for those that fail to reach senior four within the programme sub-counties.

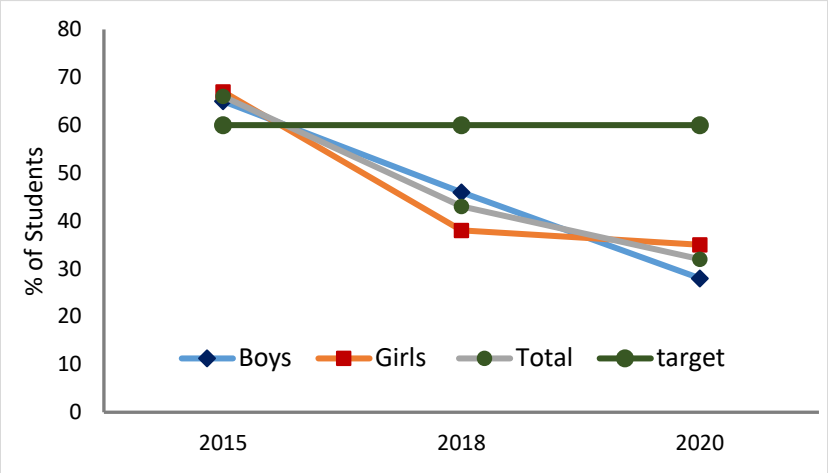

Figure 14:Survival rate for learners in lower secondary education (ordinary) level (S.1 to S4)

Table 20:Trends in selected EDU II indicators

	2015			2018			2020			Target
Indicator	**Boys**	**Girls**	**Total**	**Boys**	**Girls**	**Total**	**Boys**	**Girls**	**Total**	
Percentage of learners (girls and boys) passing in division I-III in national primary leaving exams	43	41	42	70	65	67	69	65	67	75
Percentage of learners (girls and boys) achieving competence in literacy and numeracy in lower grades (P.1- P.4) and upper grades (P.5-P.6)-Only lower primary included	Numeracy =32 Literacy=48			Numeracy =36 Literacy =53			Numeracy =50 Literacy =54			75
Survival rate of cohorts (boys and girls) to primary school grade 5 (P.5)	26	28	27	32	36	34	68	57	62	75
Survival rate of cohorts (boys and girls) to primary to final grade 7 (P.7)							57	59	58	75
Satisfaction rate of learners and parents with quality of teaching and learning in supported schools.	Inf=88 T=89									85
Transition rates for learners (girls and boys) from P.7 to secondary schools and BTVET institutions	59	58	59	66	57	61	75	63	70	70
Survival rate for learners' (boys and girls) in lower secondary education (ordinary) level (S.1 to S4) or equivalent BTVET in the target secondary schools/institutions	65	67	66	46	38	43	28	35	32	60
Transition rate of learners (girls and boys) from lower secondary education (S.4) to higher secondary education (S.5)	47	34	42	31	17	24				50

3.4.5 Factors that contributed to achievement of programme results

The sub-section below seeks to answer the question relating to what factors contributed to achieving or hindering achievement of implementation progress and results; and whether there were appropriate actions taken to adjust the programme design and actions. Additionally, the evaluation is also seeking to understand whether there were any problematic communication or administrative faults in the design that call for remedial action.

One of the contributing factors for the success of BDFCDP was the competent and supportive district technical leadership, right from the Chief Administrative Officer to the Heads of Departments, which enabled support and involvement to happen at all levels – from the district to the Sub County level. Secondly, there was very good and cordial working relations between the Embassy of Iceland and the local leadership of Buikwe district, as well the technical support from the Embassy. For example, Iceland supported BDLG with an experienced engineering firm, which helped the district to design the water supply systems but also built the capacity of the district staff, not only in designing piped water systems but also in setting up O&M strategies, structures and plans for these piped water systems. Thirdly, BDLG had the required technical human resource capacity, both in education and WASH departments, to support programme implementation.

Besides, there was very good political will; the technical team enjoyed good working relationship with the political leadership of the district who understood the program well, and who were willing to support and monitor programme activities. For example, much as programme plans and budgets were approved in the PSC, the political wing or District Council also had to approve these plans and budgets and the approval was timely and without any resistance, which enabled the district to perform better and achieve results. Fourthly, was the bringing on board by BDLG of competent and experienced SDAs such as Busoga Trust and Water Mission Uganda (WMU) to support WASH implementation. FENU and WOMENA supported the Education Services delivery that beefed up the implementation capacity of the district was part and parcel of steering implementation and achievement of quality results, because WMU provided capacity building support to BDLG e.g. the technical officers received capacity building in sanitation and hygiene promotion approaches; training in Water Quality Analysis and Surveillance; and monitoring and supervision from the Ministry, especially the then Technical Support Unit-TSU/MWE, who also supported timely approval of the designs by the Ministry.

Lastly, was that the good relationship built between the communities, the teachers and the district whereby the community was very appreciative and willing to participate in programme implementation through signing of consent forms. There was also support from the central government Ministry of Education and Sports (MoES), who participated in the PSC meetings and in monitoring and providing guidance to the programme. There was also commitment from the focal persons and the Programme Coordinator representing Iceland Embassy at the district, all of which ensured success of the programme.

3.5 Analysis and Findings- Programme implementation Efficiency

The efficiency measure looked at how the project's economic resources/inputs (funds, expertise, time) were converted into results; and the extent to which the approach used in the implementation of the BDFCDP programme registered savings and reduced waste of resources (financial and human). The project's efficiency was assessed through the lens of whether the Embassy of Iceland and Buikwe DLG fulfilled their respective roles towards meeting their financial obligations; performance of Buikwe DLG in relation to financial transparency and reporting; internal quality assurance activities; and adequacy of the budget allocated for the programme as well as coping mechanisms.

3.5.1 Partnerships, coordination and collaboration with partners

This sub-section of the report looks into the effectiveness of programme management and oversight procedures, including the supervisory role of the applicable ministries, both in respect to liaising with BDLG and the Embassy of Iceland on the progress of the programme. The questions answered here include whether the lines of communications were effective; whether there were any bottlenecks within the line Ministries may have adversely affected the programmes' execution; the Programme Steering Committee (PSC): whether it was operational and was able to fulfill its role; the District Executive Committee (DEC): whether it was engaged in programme components and the district's implementation process; whether line MoH; MoES; MWE/TSUs; MoLG; and Ministry of Finance, Economic Planning and Development (MoFPED) provided guidance and were engaged in a monitoring role of the programme; involvement of technical units at the district e.g. DWO and DEO and their relationship with Lower Local Governments and local committees; the involvement of support units such as the Department of Works, the Department of Finance, the Procurement and Disposal Unit and the Department for Planning: how effective they were and whether these departments and units had sufficient capacity to undertake the required work, duties and responsibilities.

Programme coordination worked well through a multi-disciplinary PSC composed of members at national and district level stakeholders. The PSC is comprised of select staff from the Embassy of Iceland including the Head of Mission and the Ambassador and mission, Buikwe DLG technical headed by the CAO and included staff from Water, planning, education and Health departments as well as the District Council, represented by the District Chairperson LC V. The PSC is also attended by staff from MoES, MoLG, local government and MWE. The PSC provides support to the programme, including approval of work plans and budgets, review and approval of all reports, and overall oversight over the management and implementation of the programme. Work plans and budgets were also approved by the District Council, the representative of the partner countries and the implementing district would seek approvals from their respective countries or local governments on important decisions. The committee meets bi-annually to review program progress and provide advice on key issues affecting program implementation. However, due to Covid-19 lockdown and restrictions of movement, the PSC could not seat physically but rather

held virtue meetings, coordinated by the Embassy's Programme Officer sitting at the Buikwe district headquarters.

The day-to-day programme management and implementation was largely in the hands of Buikwe DLG using existing government structures, systems and processes. Local approvals by the District Council were sought by the management before presenting any proposal to the PSC which makes final decisions. The Chief Administrative Officer (CAO), has the overall responsibility for programme coordination and management, and delegates the roles to the programme coordinator. Nonetheless, there was collaboration with other sector departments for management and technical support services in financial management, procurement, works supervision, health related interventions in schools and addressing of crosscutting issues, a role played by the community-based services department. In addition, the implementation of the project involved strategic partnerships with non-state actors like FENU, Water Mission and Busoga Trust.

The implementation of programme activities combined the use of technical staff of the district, partner SDA staff and private sector contractors for construction and rehabilitation works. For the works contractors, the district drew from the pool of both district level contractors and national contractors when procurement method is open domestic competitive bidding. To the extent that the procurement function is well managed, and processes are open, competitive and fair to all, there is no shortage of contractors to execute quality works. In some observed cases of poor works, the missing link is largely supervision and monitoring. The implementation of activities using own staff however has limitations because of capacity gaps in key line departments, coupled with organizational challenges such as lack of flexibility to involve all available staff from other departments that could be trained to execute activities outside their departments or routines duties. In education sector, there are gaps in the department but there is a pool of coordinating centre tutors deployed by the Ministry of Education who are readily available to functions of the sector department, especially activities required to produce outputs under the teacher pillar of the education project.

3.5.2 The role of Iceland Embassy in implementation of BCFCDP

The key evaluation question that is being answered here in this sub-section is whether the Embassy of Iceland fulfilled its role as a donor and development partner. The evaluation sought to find out whether the lived up to its obligations to fund the programme according to plans; whether there were adequate mechanisms for its evaluation in effect (such as quality data gathering, baselines; whether the process for financial contribution and supervision was effective; whether it fulfilled its role in providing financial guidance and support transparent procurement procedures; and whether it fulfilled its role in monitoring and evaluating the programme).

BDLG received financial, technical as well as material support from Iceland Embassy towards the implementation of the BCFCDP. In the district's own words: "the support by Iceland Embassy to

BDLG was immense", since the Embassy literally participated in the entire project cycle. With regard to financial support, the Embassy pledged and approved USD 9.67 million specifically for WASH II and EDU II projects. Of this, USD 8.95 million (93%) had been obligated and spent by December 2021. The Embassy also supported the district with equipment and tools such as office furniture as part of the programme implementation.

Additionally, using a community-led approach, the Embassy supported the district to conduct an assessment before start of the project to establish the community needs for WASH II. The assessment also sought to understand people's willingness to pay for the service, once the systems were put in place. The process also included sensitizing the would-be beneficiaries on the advantages and disadvantages of the various latrine technologies and their O&M requirements, so that the communities could collectively choose what they thought was good for them. The Embassy also support the district to implement baseline surveys for EDU II and WASH II to establish baseline values for both projects.

The Embassy provided oversight to BDLG in procurement to ensure that the process is transparent and done in line with government's requirements and guidelines. To kick-start any procurement process, the BDLG first sought for a no objection from the Embassy. The Embassy also provided support when they sourced an experienced engineering firm/organization, that had been used to review the designs and installation of AQ-taps in WASH I. The engineering firm helped BDLG to design and supervise the water supply systems.

The Embassy also provided capacity building supported BDLG to carry out water quality analysis, and equipped the district with water quality testing tools/kits. District staff were also trained in areas such as water quality surveillance, M&E, and how to include crosscutting issues such as gender, the environment and HIV/AIDS into programme implementation. In terms of mobility, BDLG received cars; although the cars did not come specifically under WASH II, the district acknowledges receipt of three (3) double-cabin pick-ups that were offered to the district in 2014 during WASH I.

3.5.3 The role of Buikwe DLG in implementation of BCFCDP

The questions answered under this sub-section relate to whether the District Authority assumed responsibilities and fulfilled their roles; how the District performed in relation to financial transparency and reporting; whether financial processes and accountability and reports of the handling of funding were transparent, in order and on time; how is the District performed in relation to sound procurement practices; whether the public procurement rules were followed; whether correct and effective measures for the procurement of goods and services were done; and whether the District reported sufficiently to the Embassy and the respective ministries.

As a district, the implementation oversight for the project was provided by the office of the CAO. The district technical leadership headed by the CAO got involved in terms of supporting the staff to implement the project. To honor its contribution, the district facilitated its staff with fuel for

fieldwork for items not included in the project, including staff for each of the projects and land for the project as a requirement. Therefore, the district mobilized communities and sought for consent from the landowners, to have these facilities constructed to benefit the entire population.

The other role of the district was supervision and monitoring at all levels – at district, Sub County and even at village level. The district had structures, with the approach being that before project implementation, the district would start with sensitisation of communities. During the sensitization meetings, the district facilitated the selection of committees to get involved from the onset of the project.

3.5.4 Programme financing arrangements

The total programme proposed financing stood at 10.1 million dollars over a period of 2018-2019 for WASH II and 2019-2022 for EDU II. The funds were to be managed by BDGLG with close support from the Embassy of Iceland, Kampala. Of the USD 10.1 million, ICEIDA contributed a total of USD 9,671,000 (96%), while BDLG contribution was USD 431,000 (4%). Specific to projects, USD 7,231,000 was allocated for EDU II activities while USD 2,440,000 was allocated for WASH II interventions as direct support from Iceland.

In terms of actual spending, for EDU II, of the planned USD 7,231,000, a total of USD 6,541,716 was spent by December 2021, representing 90% of the planned project direct funding. In terms of budget contributions by project component, the education infrastructure component took the lion's share of the budget (81%), followed by provision of learning materials by a distant six percent. Other components share of the budget include: Capacity of quality teaching and school leadership developed at 1.8%; Community capacity development at 2 percent and; direct learner support at 2.2 percent respectively. The least funds were allocated to enhancement of the District education office functionality at 0.6 percent of the budget.

Concerning actual expenses by component, similarly the education infrastructure component took 93% of the project expenses. This was followed by the provision of learning and teaching materials at 3 percent, direct learner support at 1.9 percent and the community component at 1.3% of the total actual expenses. In terms of proportions of allocated funds spent within each component, it should be noted that the infrastructure component over spent by 4%, having spent 104% (USD 5,829,000 budgeted vs USD 6,076,309 spent) of the planned funds for infrastructure. In comparison to outputs achieved, the infrastructure component achieved 7 of the planned 9 outputs with just VIP latrines and construction of dormitories not being achieved. The dormitories were not constructed because the district had under-budgeted and thus left to be implemented in case another phase is funded. For all the other components that targeted the 'software component' of the project namely provision of teaching and learning materials; enhancement of the district education office functionality; developing the capacity of quality teaching and school leadership and; community capacity development, had half of the planned budget (USD 915,000 budgeted

Vs 458,688 actual expensed) expensed by December 2021, albeit achieved at 100%, four of the fourteen planned outputs that were measured over the period under review.

Data on expenses for specific activities was not availed and thus no computations were made to determine the unit costs of construction a classroom, or conducting an outreach activity. However, based on data for indicative figures for construction of key school facilities, we have imputed the would-be unit costs and/or actual costs for the reported results for the infrastructure component as shown in table 21 below:

Interviews in the field indicated that overall, the financial management aspect of the project performed well, without experiencing delays during the life of the programme. The Buikwe DLG staff reported receiving timely feedback on the reports submitted, regular reviews, receipt of capacity building in financial management. Furthermore, they appreciated the flexibility in reallocation of the budget lines in the advent of Covid-19, which required changes in methods of implementing the programme activities amid travel restrictions.

Table 21:Budget Vs Expenditure for the EDU II Project by component in USD, 2019-2021

Item/Component	Planned Budget	Expenditure	% spent
Education infrastructure and facilities developed and renovated	5,829,000	6,076,309	104%
Provision of teaching and learning materials	438,000	207,035	47%
District education sector management capacity developed	0	0	0%
District education office functionality enhanced	44,000	0	0
Capacity of quality teaching and school leadership developed	131,000	45,323	35%
Community (SMCs, BoGs, PTAs) capacity development	144,000	83,282	58%
Direct learner support	158,000	123,048	78%
Administration, Monitoring and evaluation	127,000	6,719	5%
Contingency	360,000	0	0%
Total	**7,231,000**	**6,541,716**	**90%**

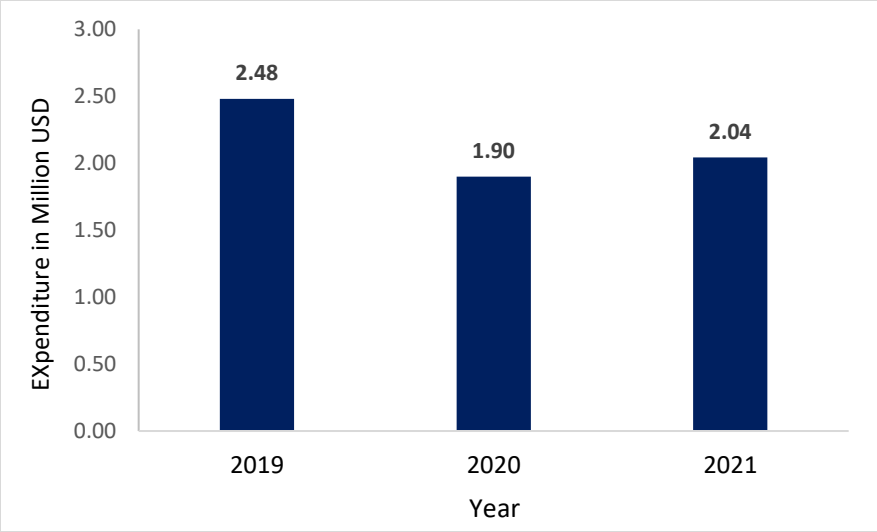

Figure 15:EDU II Expenditure by year

Table 22:Probable unit cost for infrastructure items

Budget Item	Number Achieved	Unit cost (USD)	Total (USD)
Classrooms renovated	92	13,000	1,196,000
Desks supplied to schools	3312	95	314,640
Three classroom blocks constructed	28	81,000	2,268,000
3 in 1 teacher houses constructed	21	80,556	1,691,667
5 stance VIP latrines constructed	9	16,900	152,100
Total			**5,622,407**

For WASH II, of the planned USD 2,440,000 a total of USD 2,407,542 was spent by end of the project, representing 99% of the planned project direct funding. In terms of budget contributions by project component, similar to EDU II, construction of water facilities component took the lion's (82%) share of the project expenses, while the 'software' components of hygiene promotion and support to the district water sector development taking 13 percent of the actual costs. The remaining five present was spent on project management. In terms of proportions of allocated funds and spent within each component, the WASH sector development and project management components over spent by 62% and 13% respectively though they had a small proportion of the overall budget. In comparison to outputs achieved, the WASH sector development component achieved 7 of the planned 9 outputs with M&E surveys and plans and budgets not being achieved. The hygiene promotion and education, 6 of the 7 planned outputs were achieved; while for the improved water facilities component, 3 of the 4 planed outputs were

achieved. Details of outputs achieved are explained in the effectiveness section. For budget vs expenses for WASH II see table 23 below.

Table 23:WASH II Budget Vs Expenditure in USD, 2018-2019

Item/Component	**Planned Budget**	**Expenditure**	**% spent**
Improved water facilities	2,030,000	1,973,620	97%
Hygiene promotion and education	170,000	94,104	55%
WASH sector development	140,000	226,364	162%
Project Management	100,000	113,454	113%
Total	**2,440,000**	**2,407,542**	**99%**

In terms of financial management, due to lessons learnt and challenges experienced during WASH I implementation, WASH II was better implemented. Secondly, all budgets and work plans had to be approved by the District Council and PSC before implementation. Financial transparency and reporting by BDLG annually were done by the district internal auditor, Embassy auditors and the central government Auditor General's office. Along the way, there also experts from Iceland who specifically came to evaluate and assess programme implementation include financial management. The cumulative quarterly progress reports, prepared and submitted to the always had a section of financial analysis, which was closely monitored by the Embassy's Senior Program Officer who sits at the district in Buikwe.

Procurement Processes

For all other procurements, the district utilized the PPDA procurement guidelines and procedures, which are well laid down in the PPDA procurement guidelines and procedures manual for other procurements. All procurements done by the district, a few done by the Embassy on behalf of the district, were undertaken in accordance with Public Procurement and Disposal of Public Assets (PPDA) Act 2003, and Local Governments (Procurements and Disposal of Public Assets) Regulations; PPDA Guidelines on Stand Bid Documents, and thresholds for procurement method (open bidding, selective bidding, quotation etc). Specifically, all works contractors (constructions of all Education and WASH Infrastructure) were procured through open domestic bidding procurement method, and all were run through the News Papers.

3.5.5 Monitoring and evaluation, reporting mechanisms

The Review Team examined whether the programme's Monitoring and Evaluation (M&E) practices being applied in the BDFCDP are serving their intended purpose. The programme's M&E strategy has been derived from the ICEIDA's Monitoring and Evaluation (M&E) strategy. The BDFCDP has detailed M&E Plans for each of the two projects. The quantitative monitoring of the programme is a shared responsibility of the programme partners where BDLG takes the lead and interfacing with ICEIDA through the education programme's joint Implementation

Monitoring Team (Ed-IMT) for routine monitoring of activity implementation process. Furthermore, the programme implementation monitoring includes quarterly monitoring missions and reviews by the partners' joint or separate teams and joint bi-annual reviews by partners' PSC representatives (ICEIDA, GoU and BDLG). Emphasis is also put on enhancing the monitoring roles of the tripartite institutions within the schools' internal and immediate external management contexts, namely the community/parents represented by school management committees (SMCs, BoGs, and PTAs) and in the case of WASH, the WUCs and SUCs. In the case of school management, the head teachers represent the school as the BDLG education sector department is represented by the District Education Officer (DEO) and the District Water Officer (DWO).

The qualitative monitoring of programme activities is outsourced to specialized external bodies who focus on the quality of implementation and how single programme components and overall intervention is performing towards achievement of overall planned programme outcomes and results. The evaluation team also established that BDLG prepared various PSC reports, with clear minutes of issues discussed and attached with detailed reports of WASH II and EDU II projects. However, one of the major gaps in M&E is the fact that project output and outcome indicators were too many and some were either similar or repeated. The baseline values for some indicators were not easy to come by during the evaluation process e.g. the percentage of households with access to improved communal VIP latrines/toilets as a result of project interventions. Also, some of the targets for some of the indicators, for example, on hygiene were way too ambitious and would never be easily achieved within a short period of time of only two (2) years of project implementation (2018-2019). This is because hygiene has to do with people's mind-sets, attitudes and behaviours, which take time to change. The evaluation also established that the BCFCDP did not have a robust M&E system to systematically track and effectively report on all the project indicators, outcomes and results. For example, the district project progress/PSC reports particularly for sanitation and hygiene are more qualitative and hardly capture the numbers of people with improved access to sanitation and hygiene services and the positive stories of change realised at household level in terms of improvements in hygiene behaviour and the quality of life.

3.5.6 Quality assurance measures

For efficient implementation of a programme, in-built quality assurance mechanisms are a pre-requisite. During the data collection process and desk review, questions were asked of whether the programme had quality assurance mechanisms and tools in place.

To ensure data quality, the programme coordinator assisted by the respective technical leads and the planner regularly reviewed the data received and provided, provides guidance on data collection processes during programme review meetings. To support the team, staff from the Embassy who have an office at the district also provided support to the programme in form of reviewing reports and conducting regular monitoring visits to programme sites. The programme

team, consisting of technical leads, also (finance, education and WASH) conducts regular field visits to check on implementation of activities. For instance, if it is an education related activity, the District Education Officer, the Inspector of schools along with the programmes coordinator would conduct supervision visits and hold site meetings to discuss any challenges existing at the time of the visits. Similarly, if it was WASH monitoring, the team consisted of the DWO, the programme coordinator, the DHO, staff from CAO's office and a staff from the political wing.

To further strengthen the quality of activities implemented as well as delivery of quality results, the programme held monthly review meetings. Beyond the review meetings, the programme steering committee composed of a multidisciplinary team held meetings every six months to review programme progress and provide guidance to the programme implementation team. With regard to quality assurance, specifically for WASH, Buikwe DLG learnt many lessons from WASH I and as seen from one of the sub sections above, the district through the CAO's office requested the Embassy to have a qualified and experienced organization, in this case Water Mission Uganda-WMU, to support the district with designing of piped water supply systems. WMU did not only design but also supervised implementation (construction of the water systems). This explains why the district reports not to have had much challenges in WASH II because they had a consultant who knew what to do. According to the district, this also is the reason why all the piped water systems are working, apart from Namabere which had issues of land eviction of users.

3.5.7 Timeliness in implementation of programme activities

For WASH, almost all the planned activities were implemented in a timely manner, save for the operations and maintenance component, whose implementation continued beyond 2019. The major cause of delay was drilling twice for some of the water sources due to scarcity of water in selected villages. So the team spent time traversing villages in search for water sources. Once the sources were identified, another challenge lay in getting design approvals from the ministry of water, which took so long.

The evaluation team noted that 65% of EDU II output level indicators were not achieved and a number of activities not implemented especially activities involving community engagement and capacity building, this will definitely have an effect on the overall achievement of the EDU II output level indicators, which may also affect achievement of the outcome level indicators. The major cause in delay of the activities was closure of the country for almost two years as a result of Covid-19 pandemic. For instance, schools were closed for almost two years and non-school based interactive activity was undertaken during the two-year period which entailed community meetings with the parents as well as training of the PTA and SMC members.

3.6 Analysis and Findings- Programme Sustainability

The key questions answered by the evaluation included to what extent the benefits of the programmes were likely to be sustained after their completion; whether there a sense of ownership by different stakeholders, formal or informal; what the likelihood is that the schools and water systems will continue to operate and be maintained without financial support from the programme; whether the project had positive or any negative environmental impact; what the key factors are that will require attention in order to improve prospects of sustainability of outcomes; what are the recommendations for similar support are in the future; and how the Covid-19 pandemic affected the sustainability of the programmes, and what measures, if any, can be taken to counter the risks to sustainability.

Sustainability in the context of the BDFCDP focused on on-going service delivery of WASH service systems installed by the programme and is defined as "*the maintenance of an acceptable level of service throughout the design life of the safe water supply systems and sanitation facilities, as well as ongoing hygiene education and promotion services*"; and that the success of the programme would be judged not only by the quantity and quality of outputs delivered but also by the capacity created for the sustainability and continuity of WASH services (WASH I Programme)[5]. As part of the sustainability strategies, some modifications were made in WASH II, including installation of AQ Tap water dispensing systems to enable revenue collection, contracting an external SDA to assist in developing a viable O&M system; and use of a demand driven approach to select villages to benefit from sanitation interventions and to use a different sanitation technology from the VIP latrines constructed under WASH I. The measures taken by the programme to assure sustainability of WASH services were evaluated in three categories: institutional, technical and financial aspects as detailed below:

3.6.1 Institutional sustainability of water supply systems

The Minister of Water and Environment approved Buikwe DLG as a Water Authority in December 2019, with a performance agreement subject to renewal after 3-years. The board is composed of district technical staff with other people outside of the district. All the water systems constructed under the programme are run on a business model to cover the O&M costs. In addition to Umbrella Authorities and National Water and Sewerage Corporation (NWSC), through support of the Programme, Buikwe District water board is currently the only functional local water board at the district level. However, the small piped water schemes have significant limitations and challenges, for example, they do not attract professional management from agencies such as Umbrella Authorities (in rural growth centres and small towns) or National Water and Sewerage Corporation (in large towns like Nyenga Division under Njeru Municipality), yet the level of technology

[5] *Buikwe-ICEIDA Development Partnership: WASH Development in Fishing Communities 2015-2017; ICEIDA Project No. 14030-1501 (Herein referred to as WASH I Project Document).*

sophistication is beyond the capacity of community-based maintenance system. To put the above problem into context is the following quote from the Embassy field monitoring report, Buikwe WASH Project, Sept. 2021:

"The solar-powered mini piped water supply systems were the cost-effective intervention for the communities without access to national piped water and electricity grid. Both Umbrella and NSWC were willing to take on the systems because the supply side was seen sustainable (solar pumped with good well yields) but the water demand was not commensurate with operational costs. Also, the AQ tap technology was not aligned with the O&M capacity of both NWSC and Umbrella. On that ground, the Minister approved a separate water board for Buikwe to manage the systems on behalf of government of Uganda. The good news is that the direction of increasing the private connections will in future guarantee a merger between the major government utilities and Buikwe water and sanitation board".

Operation and Maintenance (O&M) structures set up to manage the piped water supply facilities are at system level. Every water supply system has a Water Committee that is answerable to a District Water Board (WB) that oversees the functionality of all the piped systems. Although relatively new as acknowledged by the district, the local authority BDLG is confident that it is growing and will manage well the water systems.

The programme evaluation established that part of BDLG's plan towards sustainability of these systems is to increase demand through private connections, increase demand through extensions, and construction of additional new piped systems, so that these systems are fully sustained in terms of revenue collection, which is what the district has proposed in WASH III. BDLG notes that there has been an increase of up to 350 households compared to the targeted 500 connections with the implication that all of these have to be billed every end of month; bills have to be distributed to them and someone has to be in place to demand for payment. However, the expansion of the piped water system through private connections is bound to stretch the capacity of the current institutional and technical arrangements for O&M. In the PSC report of July-September 2021, the district already observed that the scope of operations has increased hence the need for the Board to recruit Billing Officers and electoral-mechanical technicians.

A number of challenges do exist with the maintenance system for piped water schemes, for example: 1) the professional aspect of managing the piped water systems was still inadequate; 2) much as the revenue from piped water has increased, but in view of the gaps in data on water dispensed it is not possible to establish to what extent the revenue potential was being tapped; 3) there is a big variation in reporting between water dispenses at AQ taps from the online and manual reports. Information provided on how the taps work is not sufficient to determine whether the problem was a gap in AQ tap technology or human capacity gaps; 4) non-revenue water which currently stands at 30.7%, which is so high compared to the allowed maximum of 25%, due to poor operation methods by the Scheme agents who leave the water pumps on for long hence causing overflows at the reservoirs despite the continuous efforts made to sensitize them. This means there is a lot of water lost which results into power loss and accelerated depreciation of key

electromechanical components. The other challenge is that 5) a few systems are still struggling especially Nambula, Lukanga, Buwera and Nanso which are not able to break even unless these are extended to neighbouring communities that are water starved; and 6) lack of sufficient transport to effectively monitor water systems, which affects operations.

Some of the recommendations to address the gaps above is for BDLG to fill the professional gaps for managing the piped water systems; to improve monthly payment of area water agents to at least from UGX 45,000 (approx. USD 13) per month to UGX 100,000 (approx. USD 290) per month per system in view of the extra workload created by private connections; provide appropriate transport, tool kits and uniform for area water agents; study AQ technology, and review and streamline data management on water dispensed on public AQ taps (and private consumers) as a critical control point for enhancement of revenue and financial accountability; based on streamlined data water dispensed, the district/water board should reconcile water dispensed and revenue collection and aim to maximise revenue collection versus the revenue potential; to counter the of high non-revenue water, the district recommends installation of ***Smart Water Technology Kits***; and finally, going forward, the Embassy should support medium size piped water schemes with extensive promotion of household connections that can better meet the objective of increased access of the population to safe water, with effective operation and maintenance for sustainability of the benefits.

3.6.2 Institutional sustainability of public sanitation facilities

The evaluation established that BDLG still has altogether constructed a total of 155 VIP latrines and 13 waterborne toilets both in WASH I and WASH II, which is a huge investment in public and/or communal toilets. Of these, 72 VIPs and 13 waterborne toilets are in fishing villages; 71 VIPS in primary schools; and 6 VIPs are in healthcare facilities. This puts the total to 85 latrines/toilets in fishing village alone.

One of the biggest challenges reported by the district was the overwhelming in-migration of fishermen in some of the villages in managing public toilets that subjected the sanitation facilities to high demand and usage and hence putting a lot of strain on the facilities hence creating damage on the components such as doors, floors, and hand washing facilities, etc. Secondly, due to high populations, the facilities tend to fill up very fast and the cost of emptying has affected utilisation and, in a way, caused public health concerns. Thirdly, there are challenges were constructed under the program, particularly challenges with people paying user fees. Users are supposed to pay as contribution towards the general hygiene and cleanliness of the facilities and also for some repairs, which is working but not in all communities. Finally, there is also a concern that the majority of the population concentrated in rural growth centres use share latrines, which is a limited sanitation service.

For majority of villages, households have mobilized themselves to charge about UGX 2,000-3,000 (approx. USD 0.57-0.86) per household per month as contribution towards Operation and Maintenance (O&M) of toilets, as opposed to pay per use. According to BDLG, a community of

fishermen is unique; they are not "the usual community", are known to be a bit of difficult people and are always in transit and moving from one place to another hence making it difficult to reach them but with consistent sensitization and consistent presence of sanitation promoters in those villages, they are slowly changing. There were also reports where some village leadership e.g. Local Council (LC Is) incite their communities not to pay user fees for the facilities; however, efforts are underway to have this addressed in villages that have active committees for sanitation though sometimes such committees are also compromised.

The huge investment in public VIPs and waterborne toilets will require dedicated follow-up from the district to ensure proper O&M so as to avoid these facilities becoming a public nuisance. Focus should be on guiding the beneficiary communities to collect funds for regular safe latrine pit emptying, which should also involve providing information on where to find services of pit emptiers and the related cost implications. Rather than rely on the community management approach of using sanitation committees, perhaps the district may consider exploring the possibility of using/leasing out management of these latrines/toilets to local private sector (entrepreneurs), like it is happening with similar toilets constructed by government and other partners in rural growth centres. In the event that private sector approach is not feasible, the district may also consider handing over these facilities to the sub counties to manage them using local revenue generated from the same landing sites (e.g. from market due charges to fishermen). Well established homes/households should be encouraged to construct their own households latrines; and where water is available, there should not be any more investments in lined VIP latrines for public use (shared).

3.6.3 Institutional sustainability of ODF Villages

Buikwe district acknowledges that the CLTS approach used under the programme does not necessarily sustain villages ODF because people/households/communities keep migrating from one place to the other; new people keep on coming into a village. Secondly, CLTS does not emphasise the quality of latrines but rather emphasis is on having any form of latrine/toilet for a household. Therefore, in most cases the village is declared ODF based on so many types of latrines, which eventually collapse since CLTS does not focus on the structures (both substructure and superstructure). A district official observed that some toilets are so simple and constructed with a few pieces of timber put together and such is counted as a toilet, but it cannot be used for a period of 2 years. So, in most cases one finds that you find such villages have backslid or there is high slippage into practicing open Defecation (OD). The recommendation, therefore, is that BDLG changes. So, we are proposing that we change the approach to market-based sanitation, where for the village to be declared ODF, the whole village should have access to basic latrines (except for special cases like the landing sites, where communities rely on communal latrines). But for communities that are adjacent to the landing sites, every household should be mobilized to build a basic latrine for the village to be sustainable in terms of ODF. Therefore, BDLG proposes to change the approach in WASH III, of course with further sensitization and mobilisation of

communities and regular monitoring. BDLG (both district and sub county level staff) will benefit from a specialised training on market-based sanitation approach.

3.6.4 Capacity building

In terms of institutional capacity, capacity building was conducted by the programme as part and parcel of steering implementation. For example, through Iceland's support from the Embassy, the SDA Water Mission Uganda provided capacity building to BDLG on design and construction of piped water systems; the district technical officers were provided with capacity building in sanitation promotion approaches such as CLTS; the district also had training e.g. in Water Quality Analysis. This is evidenced by the number of water points tested per quarter i.e. approximately 200 sources. The district also received technical support from the then Technical Support Unit-TSU of Ministry of Water and Environment, who were involved in monitoring, supervision as well as ensuring that the designs are worked on and approved on time. The Scheme operators, DWO, and the WB were due for training on trouble shooting AQ-taps, Inverters, and servicing submersible pumps, and data management and analysis by officers from the Umbrella of Water and Sanitation and the Ministry of Water and Environment Regulation department and Grundfos technicians from Nairobi.

Due to the trainings received on O&M, the team endeavours to timely address leakages, faulty lighting on pump houses, and replacement of weak batteries, troubleshooting and repair of non-functional AQ-taps. All these are rectified on a case-by-case basis, and all systems are currently functional. However, there is still need for more support to the district to strengthen the professional aspects of managing the piped water systems. The other challenge to be addressed is the scarce or lack of spare parts for AQ-taps. By the time of the evaluation, the district had about 8 AQ-taps that had hardware challenges, and the Board was in the process of securing spare AQ-Tap parts directly from Grundfos Kenya. BDLG needs to look into the possibility of bulk procurement of AQ taps and store at the Water Board office to facilitate timely repairs and reduce on the downtime of broken down AQ taps/water dispensers.

3.6.5 Technical aspects

Based on the experiences of the Embassy implementing water supply in Kalangala district, the recommendation and emphasis for WASH II was to use underground water because getting surface water from the lake was very expensive in terms of operational costs through water treatment, etc. Therefore, almost all the piped water supply systems implemented in Buikwe district under WASH II were underground through deep drilling. Modifications were also suggested in WASH II water delivery to include AQ Tap dispensing systems to be installed at all water points in order to enable revenue collection and also increase the likelihood of operational sustainability of the water delivery systems. In response, BDLG sought for support from Water Missions Uganda, an Organisation with experience in the design and supervision of construction of the piped water

systems and installation of AQ Taps, which took away the previous delays of approval of designs by the Ministry of Water and Environment Engineers during WASH I.

3.6.6 Financial aspects

The water systems collect revenue from water sales with the help of 25 water scheme agents and three operators and is deposited on the O&M account in DFCU bank. Scheme agents are currently paid UGX 100,000 (approx. USD 28.5) per month, having been increased from the previous amount of UGX 45,000 (approx. USD 12.9) per month. This increment in the monthly salary will go a long way to motivate the scheme agents to work harder. An O&M report by Buikwe district for the period July-September 2021 shows that the water systems generated UGX 20,815,500 (approx. USD 5,947) from both public and private connections, compared to the previous quarter at UGX 13.3 million (approx. USD 3,800). Buikwe district also accessed a seed fund from Iceland whose balance as at end of September 2021 was UGX 331,404,500 (approx. USD 94,687) inclusive of the revenue accumulations. The water board utilized part of the fund to procure pipe fittings, an inventory container to be used as a store, operations expenses and paying wages to scheme agents and operators. The recurrent O&M monthly expenditure for the water systems is at a tune of UGX 4,800,500 (approx. USD 1,371.6); on average the operational costs of each system is UGX 200,000 (approx. USD 57.1) compared to average revenue collection at UGX 301,000 (approx. USD 85.7) which indicates that the systems are fairly meeting the recurrent expenses. The monthly target is UGX 120 million (approx. USD 5,714.3) for effective sustainability even during major breakdowns. With further extension of water pipelines to the neighbouring villages and more household connections, the Water Board is confident that it will be able to sustain these water systems without support from the Embassy.

With regard to vulnerability, the Buikwe Water Board is in the process of coming up with lists of poor families in each fishing village so that a mechanism is devised to support them under the pro-poor strategy. A WASH III extension proposal has been submitted to extend the existing systems and new ones provided so that people have access to clean and safe water, this will also see more PSPs or AQ-taps extended to communities.

3.6.7 Sustainability of EDU II

Additionally, the programme supported the development of infrastructure O&M plans, to be approved by Council and implemented in the January-June 2022 work plan; and mobilization, sensitization and training of community (including SMC, Boards of Governors and Foundation Bodies) for support and promotion of education in fishing communities, so they understand their roles and the education policies and approaches.

Maintenance of the constructed school facilities: For the current school facilities built by the programme, the school facilities grant received by the BDLG is not sufficient to maintain the facilities. Coupled with this, parents are not willing to pay for the maintenance as they see it as

very expensive on the assumption that government's policy is to provide free education services to the population. Moving forward, the district needs to lobby for increase in the school facilities grant through government so as to allocate money to maintenance of the facilities.

3.7 Cross-cutting issues under the BDFCDP

Cross-cutting issues have the potential to enhance or impede service delivery if not taken into consideration in the planning, implementation as well as monitoring and evaluation of WASH services. This section, therefore, examined the extent to which the BDFCDP interventions addressed issues of gender equality, human rights and environmental sustainability. Specifically, the evaluation assessed whether both men and women (and boys and girls) were equally selected as beneficiaries for the programme interventions, including actively participating in implementation of the programme; whether the programme benefited vulnerable groups; and how the programme (EDU II and WASH II) conducted tracking and reporting on gender and issues of the environment.

3.7.1 Gender in WASH aspects of the BDFCDP

Within the water sector, gender equality and women empowerment are considered both a human right and a pre-condition for sustainability of WASH interventions. For majority of the fishing villages targeted by the project, the lake was the main source of water before implementation of some of the water supply systems in the fishing communities; or perhaps if there was any other source of safe and clean water, it was very far and households would have to access it at a cost. Majorly, it was the women and the little girls who would move long distances to wherever the safe water sources were to fetch water. And for those that could afford, they would buy water very expensively e.g. between UGX 500-1,500 (approx. USD 0.15-0.43) per litre.

With one of the objectives of the BDFCDP being to improve access to safe and clean water within walkable distances, the women and the girl-child have benefited so much because they are now able to access clean and safe water relatively within a walkable distance of 1 km. Therefore, the project lessened the burden of women and girls trekking long distances to the lake and risk drowning. For girls, there is a reduced risk of exposure to sexual violence along the way. In some communities, one can find testimonies from the women themselves how their skin has improved because of using safe and clean water. The only challenge the district is still addressing is ensuring that women and girls can access water supply on the households' premises as required by the SDGs.

Additionally, majority of the users of the piped water schemes who are women are now able to access safe water at a cheaper price than they were accessing what was termed as safe water (e.g. from hand pumps) before construction of the piped water systems. Currently, one litre of water from the piped water schemes is sold at UGX 5 (approx. 0.0014), which makes a 20 litre jerry can at UGX 100 (approx. USD 0.03). Ideally, this is brought about by operational costs, so this price

helps the water schemes to break even in terms of operations. Otherwise, the desire and priority of BDLG was to sell safe water at UGX 50 (approx. USD 0.0014) i.e. what would be termed as the pro-poor price that would benefit majority of households and ensure total elimination of communities from using unsafe water. The district is currently charging UGX 100 due to sustainability issues and the fact that these systems have to be self-sustained in the same state that they were given to the district by Iceland Embassy. Consequently, due to this price charge, the district reports that some communities are using safe water for drinking and cooking, and fetch water from the lake to use for other household chores such as bathing and washing clothes. The challenge with this is that households use the same containers / jerry cans for fetching water from the AQ taps and from the lake which is an unsafe water source and hence leading to cross contamination of drinking water because of the unsafe water chain and dirty jerry cans.

Gender within the water sector also refers to the percentage of women on water source committees. The gender performance indictor is the % of water user committees with at least one woman holding a key position. The key positions include Chairperson, Treasurer and Secretary. The evaluation found out that part of the plan of the project was to establish community structures, systems and capacities for sustained O&M of WASH facilities. Therefore, in terms of management of WASH facilities, the district has emphasised to have at least women representation of 50% on the water supply and sanitation committees. With support from the SDA Busoga Trust, BDLG carried out sensitization and awareness of stakeholders in all 20-fishing village. A total of 2,564 community members were sensitized under WASH II on issues of gender and the participation of women in programme implementation.

In order to prepare communities to receive the project and to own and get involved in management, WASH committees in all the 20 villages were selected and sensitized on their roles and responsibilities especially in O&M. The districts also ensured women hold key decision-making positions on the water and sanitation committees such as Chairperson, Secretary or Treasurer as guided by the sector policy. The committees involved representation of all groups in the communities such as the elderly, the youths, women and people living with disabilities (PDWs), to the extent that some villages included religious leaders as well. However, as observed in the preceding sub-sections, the issue of access to water supply for the vulnerable groups and the performance of women on the WASH committees is still an issue for follow-up by the district.

With regard to sanitation, the district responded to gender needs of women by incorporating gender in the designs of public toilets/latrines, for example, by segregating facilities specifically for men and women. Although the district did not implement WASH II in schools, the district was happy to report that all the toilet facilities that were constructed in schools in WASH I have sex-segregated toilet blocks with stances specifically for girls or stances for boys, including learners with disabilities. Further still, the toilet blocks that were constructed specifically for girls in schools included a washroom to promote menstrual hygiene for the girl-child while at school.

3.7.2 Environment aspects of the BDFCDP

Uganda has experienced poor environmental protection and natural resources management and yet water supply facilities depend on the natural resources to ensure adequate water quantity and quality for all users. There are extensive forested areas and wetlands, which act as stores of water and perform water purification functions. However, increasing population density and demand for land for agriculture, settlement and industrial establishments has led to their widespread clearance. The resulting farm bush landscape is poor at retaining and purifying water and this leads to rapid water runoff, soil erosion and water shortages. Even though much of Uganda has a high annual rainfall, with an average of 1200 mm per year, water shortages in the dry season are increasingly common. Protection of water catchment areas, the areas that drain into the water source, is therefore crucial to retain water and to ensure sufficient water supply throughout the year. In general, there is widespread and increasing activity that is potentially harmful to Uganda's water environment and water infrastructure. This appears to be due to a combination of increasing population with little or no access to improved sanitation, and problems caused by inappropriate land and wetland use practices, and poor quality discharges from industries.

Thus, environment mainstreaming is meant to ensure that the water catchments are protected and safeguarded from pollution as well as ensure water availability throughout. Operationalization of environment protection is through implementation of the water source protection at the source level and catchment planning and management. In response, therefore, the MWE developed the Water Source Protection and the Catchment Management Guidelines in 2013. This includes specifically the Water Sources Protection Guidelines for Piped Water Supply systems, which describe the steps to follow to prepare a Water Source Protection Plan. The document emphasises those steps, actions and considerations that are particularly relevant to protecting a water source for a piped water supply scheme. The evaluation established that the district team was trained on environment issues and their integration into the programme; and how to protect and manage the environment while preserving natural resources and the likely outcomes or dangers of environmental degradation. However, it was not clear how much the MWE guidelines on source protection were disseminated and put to actual use during construction of WASH facilities.

Therefore, there will be need for BDLG to incorporate water source protection into WASH III and revisit and ensure protection of all the locations where there are production wells and reservoirs for the piped water supply system. This is because compromised or degraded water catchments will mean that fishing communities that depend on them will have either limited access to a sustainable source of water or consume contaminated water in the future. Improving environmental water quality has multiple benefits for all water users in a given catchment. It is therefore in the interests of all stakeholders including domestic water consumers, farmers, fishermen, etc. to have a high quality and unpolluted water environment.

3.7.3 Covid-19 Pandemic and its Impact on the BDFCDP

Generally, this section examined how the Covid-19 pandemic impacted the implementation of the BDFCDP; its impact on the health, education and general wellbeing of the communities; as well

as the measures taken by Buikwe DLG to counter the risks of Covid-19 to the program (including how programme activities were adjusted to respond to new challenges of the pandemic). The most affected component was EDU II interventions that were affected. Overall, due to the two year lockdown when schools were closed, no school based activities were implemented and thus these components of the project were seriously affected in terms of achievement at output level. Coupled with this, anticipated gains from the EDU II investments will take longer to take effect due to the Covid-19 effects. For instance, post opening, the drop-out rate of learners was at 32% from a sample of 15 schools and there is a high likelihood of some teachers not getting back to class. However, since a detailed study on the effects of Covid-19 on the WASH and education services delivery was outside the scope of the study, limited data/information was collected so as to provide comprehensive effects of Covid-19.

3.8 Impact of the BDFCDP

The evaluation questions for this subsection related to establishing what the long-term implications of the programmes were for stakeholders, beneficiaries and their environment; whether capacities had been strengthened at the individual and organizational level; whether there was evidence that capabilities will remain and be relevant for the long-term; and what the positive and negative changes in the livelihoods and living conditions are and whether these will benefit the fishing communities in the longer-term.

3.8.1 Impact of WASH II

In terms of livelihoods, through this project, BDLG contributed to improved livelihoods through employing many community members as Scheme and Credit Agents, earning between UGX 60,000–100,000 (approx. USD 17.4–29) per month. As part of gender mainstreaming and responsiveness, the district empowered women, as most of the Credit distributors who sell credit to communities are women and get paid for their services. Additionally, the district also empowered women to actively participate in operations, and at the time of the evaluation the district had employed four (4) women to be in charge operations of the water systems.

The other impact specifically relates to the girl-child and women, as the project contributed to lessening their burden of walking long distances to fetch water. Data from the household survey also indicates a reduction in the incidences of waterborne diseases as a result of the programme. This, however, does not take away pockets of communities' members who use contaminated containers for fetching both water from the lake and clean water from the AQ taps. This is because, as described by the district, they are dealing with one of the most difficult categories of human beings – the fisherman – as per the following quote: "*Fishermen are very difficult people and they are always on the move; someone will tell you to manage 10 fishermen, you would rather give them to manage 10 districts*".

In terms of impact, BDLG also confirmed that users are appreciating every other day the importance of safe and clean water and that from 2019, there has been an increase in usage of water. From zero connections, they are currently 350 household connections (the target was 500) as of end of 2021 despite other challenges such as Covid-19, achieved through increased promotion of household connections. In terms of water consumption, the current consumption as estimated by the district is at 5 litres per day per person among people connected to water system for a target of 10 litres per day set by the district. This is a great achievement from the 0.89 litres in December 2019.

4.0 Lessons Learnt, Challenges and Recommendations

4.1 Lessons learned

This section looked into documentation of any key lessons learned from the various programme interventions; particularly, what worked well so that it could be replicated, what did not work well so that it could be improved in the future, including the challenges experienced while implementing the programme interventions.

a. Learning from previous programs implemented by the Embassy and partners (e.g. WASH I; and the Embassy's work previously implemented in Kalangala) was useful for improving the design and implementation approaches of the subsequent programmes through the incorporation of lessons. As observed by one of the district officials: "there were so many lessons we learnt from WASH that helped us to implement WASH II better".

b. Involvement of Buikwe DLG in the entire process of designing and implementation of WASH II & EDU II right from problem analysis, proposal development stage, implementation and monitoring and evaluation of the programme has had enhanced ownership of the programme by the district local authority.

c. Involvement of and support from the Embassy throughout all the stages of the programme cycle, and assigning a Programme Officer to sit at the district and provide hands-on technical support to the district enhanced coordination and timely preparation and approval of work plans, budgets and reports, including procurement. It also helped quicken the identification and resolution of any issues that would easily affect programme implementation. The district described this support as "immense".

d. Establishment of a Programme Steering Committee (PSC) with the participation of the district, the Embassy (including the Head of Mission and the Ambassador) and relevant ministries such as Ministry of Local Government, was very useful for coordination, tracking progress through reports, and for identification and resolving any implementation challenges.

e. Involvement to SDAs such as Water Mission Uganda, Busoga Trust and FENU in the implementation of the programme supported was very useful in helping Buikwe district to fill the skills gaps, both in WASH and Education.

f. There was very good political will at the district, with political leaders who understood the program well and were very willing to support and monitor interventions. This made implementation, so it was easier because even the programme work plans approved in the PSC still had to go to Council for approval, which was timely done. Therefore, the

programme did not have any resistance in terms of passing the work plans and budgets in Council, which was a plus for the program. Support and leadership of programme also came from the CAOs office and other technical leads for the programme.

g. Enhancement of the capacity of the district in various fields such as in designing piped water systems but also in setting up O&M structures for these piped water systems; capacity building in sanitation promotion approaches; training e.g. in Water Quality Analysis, etc. was very helpful in implementation of the programme.

h. Regarding financial transparency and reporting, there was annual auditing from the office of the Auditor General; but also within the programme itself at the district, and program, was financial audit by the funders/ the financial department of the Embassy which audited the programme financials. There was always a section on financial analysis in the PSC reports as well as the annual reports by the district, which was closely followed by the Embassy's Senior Program Officer who sits in Buikwe.

4.2 Implementation challenges

General:

a. Mobility e.g., the 3 Nissan type of cars offered to the district by the Embassy were relatively expensive to maintain and given the nature of rural roads in Buikwe, the rate of breakdown or damage was relatively high. Sometimes it took the district longer time to do repairs, which would affect implementation, supervision or monitoring.
b. The lengthy procurement process of government, whereby procurement processes took long but the Embassy would say: that was the requirement, since the programme was implemented using government guidelines, hence sometimes causing delays.
c. Covid-19 pandemic which affected both WASH II and EDU II as follows:

WASH II CHALLENGES:

1. **Evictions of targeted populations** – communities are threatened by widespread evictions by landlords that sell occupied land to investors e.g. Namabere village where land has been turned into an Industrial Park hence rendering the infrastructure either lost or redundant. There were similar threats of population evictions and risk of losing infrastructure investments in other villages, namely: Nanso B (close to Namabere); Muyubwe fishing village, where an investor is interested in taking over the adjacent natural forest, apparently on former public land; Busaana fishing village in Tongolo; and Kigaya fishing village. The YALELO company dealing in fish products had taken and fenced off the access to the lake at Butembe fishing village and one VIP latrine, which was constructed under the WASH project, was included in the fenced off area; however, another VIP latrine was constructed

outside the fenced area as a compensation. While the A4 Security Services personnel guarding the industrial park converted one of the toilets into a residence (Iceland Embassy Report; 2021).

2. **Access to and utilization of safe piped water** – the evaluation established the 95% target was not achieved because of the long distances to AQ taps, yet payment for water is required; availability of alternative water sources (both improved and unimproved), especially the "DANIDA" boreholes and protected springs and closeness of households to the lake; non-functionality of some piped water schemes and/or AQ taps; as well as the high cost of water. The implication of this is that although the public stand taps (AQ taps) increase access to safe water to some extent, they are not sufficient to meet even the basic safe water service[6], which is the minimum service level according to SDG 6 because the distances to the taps are still long for some households and hence the time spent to fetch water exceeds 30 minutes (Iceland Embassy Report: 2021).
3. With regard to sanitation and hygiene at household level, CLTS was used as an approach for elimination of OD; however, focus was on use of traditional pit latrines, which are defined as unimproved on the SDG 6.2 sanitation service ladder hence the need to support communities to upgrade to basic sanitation[7].
4. **Challenges of inadequate technology options for difficult soils conditions (e.g. underlying hard rock and collapsing soils)** – hence affecting construction of sanitation facilities, particularly at household level. One of the major reasons why 79% of the population in the fishing villages does not have access to improved sanitation was because most villages either had a rocky substrate that could not be dug or sand soils that collapsed in during construction and hence an appropriate solution to human waste disposal was a challenge. In response, the project proposed and constructed communal/public VIPs and waterborne toilets majorly at the landing sites and rural growth centres. However, it was not clear how the project has supported households facing similar challenges to construct better improved latrine facilities.
5. **The cost of WASH services** – is still prohibitive for some community members who cannot afford to pay for the services. In almost all target sub counties, it was established that majority of beneficiaries do not want to pay for water considering the fact that they still have access to "free" water from the lake, though contaminated. Although far cheaper than the previous prices paid by some households to access safe water of UGX 500-1,500 (approx. USD 0.14-0.43) per 20 litre jerrycan, the EPR established that currently water is obtained at a cost of UGX 100 (approx. USD 0.03) per 20 litre jerry can, which is still expensive for some households given the high poverty levels and negative impacts of Covid-19 pandemic. However, the assessment may have missed out on identification of the most vulnerable members in the various target communities who later on have been

[6] *Is defined by the Joint Monitoring Program-JMP/UNICEF as: "Drinking water from an improved source, provided collection time is not more than 30 minutes for a round trip, including queuing".*

[7] *Is defined by the Joint Monitoring Program-JMP/UNICEF as: "Use of improved facilities that are not shared with other households".*

much affected by prices of water leading them to going back to access water from either unsafe sources or to travel long distances to fetch "free" water from point water sources such as boreholes.

6. For maintenance of public toilets, households agreed to contribute UGX 3,000 (approx. USD 0.86) because they need to pay caretakers, to buy consumables such as soap, and also pair for repairs e.g. of broken doors. However, there were reports by the district for reluctance to pay for use of sanitation services.
7. **Sustainability of piped water supply systems** – The Water Board is relatively new and needs much more support to professionalise O&M services.
8. **High demand and usage of public/communal latrines** and putting a lot of strain on the facilities hence creating damage on the components such as doors, floors, and hand washing facilities, etc. Secondly, high rate of fill up of facilities due to high populations, hence raising the cost of pit emptying. Challenges of payment of user fees meant that timely repairs e.g. of broken down hand wash basins is not done; hygiene and cleanliness of the facilities is compromised as well. Additionally, the majority of the population concentrated in rural growth centres use share latrines, which is a limited sanitation service.

EDU II CHALLENGES:

1. Majority of parents in the fishing communities still do not value education and thus do not send their children to school, engaging them in child labour. This leads to an increase in the drop out for the children within the target communities.

2. Staffing levels in some schools is still very low. For example, Kinoga primary school with an enrolment of 328 pupils as per the 2019 enrolment data has only six (6) teachers including the Head teacher, giving a ratio of 1:55 instead of the recommended 1:40, which makes it very difficult for teachers to manage all the pupils in classes. Coupled with this, due to the effect of Covid-19, there is massive exodus from the teaching profession, as many teachers have resorted to various jobs to earn a living since they went for many months without pay.

3. Readily available employment as children easily tend to go to the water (the lake) to get money; so, concentration on learning was and is still an issue, as children see that fishing to get money is easier. However, this is reducing, as present and children are realizing that fishing is not adequate, as children also have to read.

4. Between 2018 and 2021, there have been an observed decline or stagnation of almost all the EDU II outcome indicators, including performance in PLE, which is a key indicator in terms of improved education outcomes at the primary school level. This decline or stagnation has been linked to none or low implementation of the 'software' components of the EDU II project.

This has largely been linked to the effect of closing schools for the past two years of the actual project implementation period as a result of Covid-19.

5. Increased demand for facilities such as teachers' houses, which has led to overcrowding in the staff houses since teachers have resorted to sharing single rooms thus houses accommodating 6 teachers as compared to a plan of 3 teachers per house.
6. Slow take off of the school feeding program- Most of the learners go hungry during school due to a lack of a proper school feeding program that provides food to the leaners during the lunch break. Secondly, the parent are very reluctant in contributing to the feeding of the children as they feel the cost of education is already too high. In most of these cases, leaners prefer staying home and eventually drop out of school.

7. Persistent child labour especially at the fishing sites and sugar cane plantations. In Ssi-Bukunja for example, there are a number of sugar cane plantations where leaners are engaged in economic activities and thus will find it difficult to continue with school. For Najja sub-county for instance, the boys are mainly engaged in fishing activities, and will thus prefer fishing to schooling.

8. High drop-out rates of girls from lower secondary school due to many factors including long distances travelled to school that exposes them to many risks along the way; inadequate provision of necessities such as menstrual pads for the girl-child by parents; many schools in Buikwe district that stop at O' Level and so children cannot proceed to A' Level after attaining their Uganda Certificate of Education-UCE.

9. Inadequate BTVET institutions to address the glaring need to support learners who may need alternative skills training due to the vast effects of Covid-19 pandemic. There are just four registered BTVET institutions in Buikwe district which cannot cater for the growing number of PLE candidates that are not absorbed by the secondary schools either due to poor performance at PLE or lack of school fees by the parents.

4.3 Recommendations

WASH II

1. **Access to improved safe water services** – the following are recommended by the end of project evaluation team:

    a. **Access to land for future water supply investments** – currently BDLG is not able to guarantee continued stay of the population settlements where the WASH infrastructure and facilities have been established, yet availability of unencumbered land was a pre-condition for release of funds by the development partner (Iceland). It is therefore

recommended that for such investments in the future, verification of land availability for infrastructure development should be revisited. Land availability should be re-emphasized as a pre-condition for funding infrastructure investments and should be verified by binding agreements certified by the Solicitor General in accordance with Uganda's legal framework.

b. **AQ taps technology vs access to basic water services** – majority of the population still has to travel a distance of 1 km or beyond to access AQ taps, which has forced some people back to using unsafe water e.g., from the lake. BDLG/Water Board should:
   - **develop medium size piped water schemes** – with extensive promotion of household connections that can better meet the objective of increased access to safe water at the premises. The implication of this is that the programme and the district would reduce on installation of AQ taps and instead increase on household connections.
   - **extend services to communities neighbouring landing sites** – since they seem to have even severe water challenges being far away from the lake and yet use more of the piped water than those living closer to the lake. This will likely lead to increased access to and the utilization of safe water by the target population from the current 5 litres per person per day to the desired 10 litres per person, in turn improving the revenues to support O&M for the systems.
   - **study AQ technology** – and review and streamline data management on water dispensed on public AQ taps (and private consumers) as a critical control point for enhancement of revenue and financial accountability. Based on streamlined data water dispensed, the district/water board should reconcile water dispensed and revenue collection and aim to maximise revenue collection versus the revenue potential.

2. **Hygiene and sanitation improvements** – the recommendations by the evaluation team are as follows:

a. **to ODF villages and improvements to households sanitation** – i) BDLG should follow-up villages that were on the verge of becoming ODF and those that did not pass the ODF test to bring these to the level of ODF; ii) start with the households that own sanitation facilities to upgrade to basic sanitation service level standards defined by MoH; ii) empowerment of local government actors sub-county, parish and village levels to take on the sanitation marketing approach to support households to construct better latrines; iii) promote household latrines as opposed to public/communal toilets; and where need be promote pour flush public latrines/toilets in order to save the communities water bills; iv) integrate appropriate sanitation technology solutions for difficult soil conditions such as hard underlying rock and collapsing soils,; and v) reduce or do away with investments in public/ communal latrines (shared); as people build more permanent homes, promote own household latrines as opposed to public/communal toilets.

b. **Hand washing with water and soap (HWWS) at household level** – focus messaging on hygiene around management of children's faeces; and HWWS after cleaning the baby's bottoms. Improved hygiene behaviour in the homesteads could be achieved using the recently launched Social Behaviour Change (SBC) materials for households by MoH.
c. **Safe water chain** – the district needs to conduct massive sensitisation of households and communities about the safe water chain to counter the bad water handling practices identified during the evaluation. Some few water points such as Nanso were found with some few traces of E-coli. Therefore, the district will have to continue to carry out precautionary chlorination to ensure the water has residual chlorine to safeguard against the risk of any subsequent microbial contamination along the water handling chain. Conducting regular sanitary surveys will also help the district to establish the sources of contamination and support the sensitization drives in the communities to guard against the bad practices that lead to contamination of water.

3. **Sustainability of WASH Investments** – the recommendations of the evaluation are as follows:

a. **Adopt the Professional Management Approach (CBMS+ approach)** –), as defined by the National Framework for O&M Framework of Rural Infrastructure in Uganda (MWE, 2019)[8]. CBMS+ approach where the District Water Authority, through the Water Service Board, formally outsources the O&M function to an entity which might be the Private Sector Organisation (PSO), or NGO, NWSC, the Umbrella Authority, or the HPMA with the requisite training, skills and experience in management of piped systems. However, the evaluation established that the small piped systems were not attractive to such external entities, which is why BDLG was designated as an Authority. Therefore, it will be important that if supported by the Embassy, Buikwe district and the Water Board are supported to become a centre of excellency and offer good lessons and experiences for the Ministry of Water and Environment and for the Sector on how to operationalize the new O&M framework, so that more DLGs can be gazetted as water authorities in the future.

4. **Target area and population:**

- Buikwe district local government is not able to guarantee continued stay of the population settlements where the WASH infrastructure and facilities have been established, yet availability of unencumbered land was a pre-condition for release of funds by the development partner (Iceland) for such developments. The Embassy should have a **pre-**

[8] *The Professional Management Approach is where sustainable O&M model of water supply infrastructure is guaranteed through formal contract-based performance management arrangements.*

condition for funding infrastructure investments by emphasising availability of land verifiable by legally binding land acquisition agreements.

- **The verification of land availability for infrastructure development should revisited. Land availability should be re-emphasized as pre-condition that should be verified by binding agreements certified by Solicitor General in accordance with Uganda's legal framework**. The environment and social impact briefs prepared for each programme site for infrastructure development should clearly certify that compliance with this requirement has been verified.

5. **Safe Water Service:** Going forward:
   - **Iceland should support medium size piped water schemes with extensive promotion of household connections that can better meet the objective of increased access of population to safe water, with effective operation and maintenance for sustainability of the benefits**: otherwise, the small, piped water schemes have significant limitations and challenges.
   - **District/water board should study AQ technology, and review and streamline data management on water dispensed on public AQ taps (and private consumers) as a critical control point for enhancement of revenue and financial accountability.** Based on streamlined data water dispensed, the district/water board should reconcile water dispensed and revenue collection and aim to maximise revenue collection versus the revenue potential.

   b. Support the Water Board to **have regular access to spare parts for AQ2-taps in-country** – and adopt the **Smart Water Kit technology** to help minimize water losses, ensure sustained supply, and minimize breakdowns due to operational errors in turn reduced shortages of water supply.

6. **Improve management of public latrines** – the huge investment in public VIPs and waterborne toilets by the programme will require dedicated follow-up from the district to ensure proper O&M so as to avoid these facilities becoming a public nuisance. The district will need to define a management model such as use of a private sector model for management of public sanitation facilities as a business. If the management of latrines is not viable as a business, the facilities should be handed over to the sub counties to manage using local revenue gotten from markets and other public places, which also benefit from the use of these public/communal toilets.

7. Findings indicated that a section of the targeted population cannot afford the cost of water and hence failure to meet the target for daily safe water consumption. For the vulnerable poor, we recommend that the district conducts a vulnerability assessment and develops a pro-poor strategy to identify the most vulnerable households that can be charged for the service a lower rate. The district could further pick lessons from other pro-poor approaches for water supply

to vulnerable households implemented by other projects such as the Uganda Sanitation for Health Activity (USHA) funded by USAID.

8. **Crosscutting issues**

   a. **Gender mainstreaming:** it is recommended that BDLG conducts a vulnerability assessment and develops a pro-poor strategy to identify the most vulnerable households that need either to be charged UGX 50 per 20 jerry can of water or exonerate them from paying for WASH services. BDLG is also advised to learn from the pro-poor approach for water supply to vulnerable households implemented by other projects such as the Uganda Sanitation for Health Activity (USHA) funded by USAID.

   b. **Environment mainstreaming:** - the evaluation established that the district team was trained on environment issues and their integration into the programme; and how to protect and manage the environment while preserving natural resources and the likely outcomes or dangers of environmental degradation. However, it was not clear how much the MWE guidelines on source protection were disseminated and put to actual use during construction of WASH facilities. Therefore, there will be need for BDLG to incorporate water source protection into WASH III and revisit and ensure protection of all the locations where there are production wells and reservoirs for the piped water supply systems. The environment and social impact briefs prepared for each programme site for infrastructure development should clearly certify that compliance with this requirement has been verified.

EDU II

1. The programme has put in place good infrastructure at the 21 schools including VIP latrines, classrooms, teacher houses and kitchens. These infrastructures require proper O&M plans which should be implemented, which are currently unavailable. The district should fast track the approval of infrastructure O&M plans by Council for implementation. In addition, parents are currently overwhelmed by the demands at school and thus cannot contribute the O&M for the established infrastructure. Instead, the district should lobby the government through the budgeting process increase into the school facilities grant received for O&M of the infrastructure.

2. Covid-19 seriously affected the implementation of the non-infrastructure components of the EDU II project, with most of the outputs not being achieved. As a result, the district did not spend funds up to a tune of USD 576,000 for phase II interventions. In consultation with Iceland Embassy, the district should request that the outstanding project funds be rolled over to the next project phase, with a focus to implement the outstanding interventions not implementing during the two years of Covid-19 lockdown."

3. The evaluation established that parents within the fishing communities do not still

appreciate the role of education and thus do not support their children to stay at school, leading to low transition and survival rates. Instead they engage the children in child labour including marrying them off early. The evaluation thus recommends that the district intensifies the mobilisation, sensitization and training of community (including SMC, Boards of Governors and Foundation Bodies) for support and promotion of education in fishing communities, so they understand their roles, the education policies and approaches. Additionally, for girl retention and survival of the girls, the district should advocate for the parents' support to return to school when girls get pregnant.

4. Improve monitoring and supervision of the 21 schools that received programme support to ensure infrastructure and other support provided by the programme leads to improved education outcomes: increased enrolment, retention and performance.

5. As a result of Covid-19, most teachers have either lost interest or started new income generating activities and thus not ready to return to class. To try and cover the gap, the district should provid**e** continuous training for teachers to support them refresh and attain new skills in E-learning and improve skills to address the psychosocial effects of the Covid-19 pandemic.

6. Based on the transition rates from primary to secondary and interviews from parents, learners who are not taken into secondary schools should find options to join BTVET. However, findings indicates that the available number of BTVET institutions are not sufficient to absorb the increasing numbers not able to join secondary. If a continuation of the programme is taken under consideration by the government of Iceland, it is suggested that the following priorities are particularly considered to strengthen the sustainability of previous investments made by Buikwe district local government working with the central government to strengthen the BTVET component to absorb the increasing numbers.

7. The EDU II project had a plan to introduce a school feeding program through construction of kitchens in the 21 schools with the objective of improving the survival rates among learners. This program was seriously affected by the Covid-19 lockdown as well as a lack of interest from the parents to contribute to the feeding of the learners. The evaluation thus recommends that parents be sensitized to appreciate the importance of the school feeding program and in turn contribute towards the program either through a cash contribution or provision of food items like beans, maize to the schools.

8. Commission some studies: a) to assess the impact of the programme on quality education; and b) the impact of Covid-19 on the education system in the fishing community of Buikwe district.

5 ANNEXES

Annex I: OUTPUT Level Indicators results

EDU II indicators

SN	Indicator	Target	Achieved	% Achieved
	Education Infrastructure and Facilities Developed			
1	Number of classrooms renovated by level of school	81	92	113
2	Number of desks supplied to schools by level of school	1,458	3,312	227
3	Number of classroom blocks newly constructed by level of school	26	28	108
4	Number of teacher houses constructed by level of school (Blocks)	20	21	105
5	Number of VIP latrines constructed (Segregated by gender responsiveness)	14	9	64
6	Number of labs constructed	4	4	100
	Number of primary school kitchens constructed	21	21	100
7	Number of school libraries constructed	4	4	100
8	Number of school dormitories constructed	8	0	0
	Teaching and Learning Materials Provided			
12	Number of textbooks in each core subject supplied to target schools.	40,620	23,970	59
13	Number of teachers' guides provided.	840	0	0
14	Number of storage cabinets supplied to schools by level of school.	168	0	0
16	Number of sets of laboratory equipment supplied	200 sets	0	0
18	Number of sports kits provided.	38	0	0.0
19	Number of MDD kits provided.	38	21	55.3
	District Education Sector Management Capacity Developed			
21	Percent of learners (male and female) assessed.	No target	647	
22	Number of MLA/NAPE assessments conducted for primary grade 1-4.	4	1	25.0
23	Number of MLA core and support teams trained.	1	0	0.0
	Capacity for Quality Teaching and School Leadership Developed			
27	Number of teachers (male and female) acquired Grade III Teacher Certificates.	38	0	0.0
28	Number of teachers (male and female) reached by continuous professional development training programme by CCTs.	168	0	0.0
	Community Capacity Developed			

SN	Indicator	Target	Achieved	% Achieved
29	Number of schools with school improvement plans developed	21	21	100
30	Number of schools with functional SMCs and PTAs	21	21	100
31	Number of school catchment communities mobilized	16	25	156
	Direct Learner Support Facilitated			
32	Number of schools based de-worming programmes implemented	8	0	0
35	Number of schools reached by reproductive health educations programmes	21	21	100
36	Number of feeding programmes established	21	21	100

EDU II Indicators Not Measured Due to pupils not in school as a result of COVID-19

	Indicator	Target
1	Number of learners using textbooks at school and borrowing for home use.	ALL
2	Number of teachers using teaching materials in classrooms.	ALL
3	Textbook to learner ratio.	1:1
4	Number of learners using lab at school.	All
5	Number of target schools/learners participating in zonal, district, regional and national sports/MDD events.	21
6	Number of teachers conducting remedial lessons.	All
7	Number of learners participating in classroom learning activities.	All
8	Number of teachers applying child-centered teaching methods after training.	168
9	Number of head-teachers and senior teachers trained, and number demonstrating increased skills and capacity to perform their duties.	63
10	Number of learners de-wormed	All
11	Number of schools with functional health clubs	21
13	Number of learners feeding	All

WASH indicators

Indicator	Target	Achieved	% achieved
Improved water facilities developed			
Number of new piped water systems constructed	13	9	69
Number of piped water system extensions installed plus one hand pump bore hole	2	4	200
Average cost in UGX per facility per beneficiary (Total cost divided by total people reached	183,000	167,000	90
Procure 56 AQ taps	56	56	100
Hygiene promotion and education conducted			
Number of communal VIP latrines constructed	18	17	94
Number of waterborne toilets constructed	07	12	171
Number of village hygiene improvement plans developed	20	20	100
Number of gender balanced committees trained in CLTS	20	20	100
Number of villages where CLTS was triggered	20	20	100
Number of villages verified and certified ODF	20	20	100
Number of village recognition events celebrated	20	DNA*	
WASH sector institutional development			
Number of district WASH MIS updated to include 20 additional villages	1	1	100
Number of plans and budgets produced	2	1	50
Number of annual M&E surveys conducted	2	0	0%
District water office and WASH team equipped			
Number of district strategies for WASH O&M developed (updated to include 20 villages)	02	02	100
No. of WASH staff trained	28	28	100
Number of WASH equipment and tools provided to boast capacity for additional villages	01	01	100
Community structures and systems for sustained O&M for WASH establish in 19 villages			
Number of additional villages with established mechanism for O&M for WASH	20	20	100
No. of local mechanics trained and equipped (two per additional villages)	40	40	100

Key (Level of achievement)

DNA- Data not available

	Above 90%
	70-89%

Key (Level of achievement)

	50-69%
	Below 50%

Indicator	Target	Achieved	% achieved
No. of gender balanced WUC committees trained in additional villages.	20	20	100

Annex II: Reference documents

- The Buikwe District Local Government Development Plan, 2015-2020, Buikwe District Local Government.
- The Synthesis report on monitoring of education project supported by Iceland in Buikwe district, 2017.
- Effects of COVID–19 Pandemic on Teaching and Learning at Primary and Secondary Education levels in Uganda, 2021 Report, Uganda National Examinations Board.
- The BDFCDP EDU II project internal baseline report, Buikwe District Local Government
- Final Baseline Survey Report for WASH Development in Buikwe District Fishing Communities.
- Education Development in Fishing Communities 2019-2020 Phase II, project document
- WASH Development in Fishing Communities 2018-2019 Phase II, project document.
- The 2016/17 Uganda National Household Survey report, The Uganda Bureau of Statistics
- ICEIDA Uganda Country Strategy Paper, 2014-2017, Iceland Ministry of Foreign Affairs.
- The internal BDFCDP programme mid-term review report, 2018
- The Second Uganda National Development Plan 2015/16-2019/20, National Planning Authority, June 2015.
- The third Uganda National Development Plan 2020/21-2024/25, National Planning Authority, January 2020.
- Ministry of Water and Environment Sector Development Plan, 2015-2020. Ministry of Water and Environment
- The WASH Sector 2018/19 Annual Progress Report, Ministry of water and Environment
- The education and sport sector annual performance report, FY 2018/19, Ministry of education and sports, Kampala Uganda
- The education and sport sector annual performance report, FY 2019/20. Ministry of education and sports, Kampala Uganda
- The education and sport sector strategic plan FY 2017/18 to 2019/20. Ministry of education and sports, Kampala Uganda.
- The Parliamentary Resolution on Iceland's policy for international development cooperation for 2019-2023., Iceland Ministry of Foreign Affairs, 149th legislative assembly 2018-2019. Parliamentary document 1424- item 345.
- Uganda Performance and Impact Evaluation for Literacy Achievement and Retention Activity (LARA). Final Performance Evaluation Data Collection Report, April 28, 2020
- Final Report of the Baseline Survey On Buikwe-ICEIDA Development Partnership Education Development In Fishing Communities 2016-2019: Qualitative Indicators Conducted In, September 2019.
- The Fifteenth Program Steering Committee (15th PSC) Meeting for Buikwe District Fishing Community Development Program (BDFCDP), Buikwe District Local Government, November 2021.
- The Sixteenth Program Steering Committee (16th PSC) Meeting for Buikwe District Fishing Community Development Program (BDFCDP), Buikwe District Local Government, February 2021.

- The Fourteenth Program Steering Committee (14th PSC) Meeting for Buikwe District Fishing Community Development Program (BDFCDP), Buikwe District Local Government, August 2020.
- The Thirteenth Program Steering Committee (14th PSC) Meeting for Buikwe District Fishing Community Development Program (BDFCDP), Buikwe District Local Government, January 2020.
- The 17th publication of the Education and Sports Sector Statistical Abstract, Education Policy and Planning Department, Ministry of Education & Sports, April 2017

Annex III: List of Stakeholders Interviewed or Consulted

A. Community Level

Name of Participants/Respondent	Position/ Title of the respondent/Participant
1-Sarah Nampijja	Community WASH Promoter
2- Juma Mpanga	Community WASH Promoter
3- Margret Nakiyimba	Water User Committee Member
4- Annet Nakiddu	Water User Committee Member
5- Amina Nakayiza	Head Teacher-Kisimba Umea P/S
6- Thomas Kanyike	Head Teacher-Bulere RC P/S
7- Steven Kinyali	Head Teacher-Kinoga P/S
8- Rebecca Nabirye	Head Teacher-Kikusa P/S
9- David Mwite	Head Teacher-Tongolo CU P/S
10- Lonbson Olube	Head Teacher-St. Josephs Mbuukiro P/S
11- Samson Tabu	Head Teacher-Namukuma CU P/S
12-Annet Nassuna	Head Teacher-Ssangazira P/S
13-Rev. Henry Katumba	Chairperson Board of Governor
14- Grace Nantumbwe	Teacher
15- Nelson Kanyike	Head Teacher-Nyenga SS
16- Anthony Balagira	Head Teacher-Secret Heart Najja SS
17- Fred Luwaga	Head Teacher-Victoria SS
18- Isaac Kilenzi	Head Teacher-Baskerville SS Ngogwe

B. District level

Name of Participants/Respondent	Position/ Title of the respondent/Participant
1- George Ntulume	Former Chief Administrative Officer
2- Betty Nankindu	Deputy Chief Administrative Officer
3- Joyce Nalubega	Programme Coordinator/ Senior Education Officer.
4- Rosemary Zalwango	District Planner, BDLG
5- Julius Musasizi Kizito	District Education Officer, BDLG
6-David Mutiri	District Inspector of Schools, BDLG
7- Arthur Kayaga	District Water Officer, BDLG
8- Bill Tomusange	Former Secretary for Social services
9- Ismail Akiida Nakibinge	Current Secretary for Social services
10-Johnson Waibi	Busoga Trust

Name of Participants/Respondent	Position/ Title of the respondent/Participant
11-Joseph Baisi Mugenyi	Water Mission

C. National/Policy Level

Name of Participants/Respondent	Position/ Title of the respondent/Participant
3-Ruth Gyayo	Commissioner -Local Government
4- Dr. Cleophus Mugenyi	Commissioner Basic Education-Ministry of Education
5-Jane Achom	Commissioner-Ministry of Water and Environment
6- Fredrick Mwesigye	Executive Director, FENU

D. Participants in the Final Report Presentation and Validation meeting

Name	Title	Position/Organization
1- Godfrey Kuruhiira Akiiki	Chief Administrative Officer (CAO)	Buikwe District
2- Arthur Kayaga	District Water Officer (DWO)	Buikwe District
3- Julius Musasizi Kizito	District Education Officer (DEO)	Buikwe District
4- David Bjarnason	Director Bilateral Cooperation	MFA Iceland
5- Sara Ogmundsdottir	Director Finance and Statistics	MFA Iceland
6- Pordis Siguroardottir	Head of Mission	Embassy of Iceland Kampala
7-Finnbogi Rutur Arnarson	Head of Cooperation	Embassy of Iceland Kampala
8- Samuel Lutwama	Senior Program Officer	Embassy of Iceland Kampala
9- Ben Twikirize	Senior Program Officer	Embassy of Iceland Kampala
10-Pius Ichariat	Senior Program Officer	Embassy of Iceland Kampala
11- Pauline Atai	Senior Program Officer	Embassy of Iceland Kampala
12-Maurice Ssebisubi	Senior Program Officer	Embassy of Iceland Kampala
13- Fredrick Mwesigye	Executive Director, FENU Uganda	FENU-Uganda

Annex IV: List of Consultants

SN	Names	Role
1	Robert Nangai	Team Lead
2	Jacinta Nekesa Nangabo	WASH Expert/Deputy Team Lead
3	Rehemah Nabacwa	Education Expert
4	Abubaker Kalule	Data Manager/Statistician
5	Grace Namuli	Survey Administrator
6	Stephen Alor	Research Associate

Enumerators

1	Immaculate Namande
2	Micheal Watuwa
3	Mafabi Eric Keith
4	Mary Takuwa
5	Lydia Namwebya
6	Faith Nafugo
7	Samuel Masete
8	Edward Muwonge
9	Isaac Lubangakene
10	Ritah Kobusingye
11	Denis Okello

Annex V: Data collection tools

Annex V a: Household questionnaire

EMBASY OF ICELAND AND BUIKWE DISTRICT LOCAL GOVERNMENT

EXTERNAL EVALUATION OF BUIKWE-ICELAND DEVELOPMENT PARTNERSHIP

GENERAL HOUSEHOLD QUESTIONNAIRE
ENGLISH VERSION

ID NUMBER : _____

IDENTIFICATION INFORMATION			
№	**QUESTIONS AND FILTERS**	**RESPONSE**	**TYPE/SKIP**
001	Household number	_____	
002	Subcounty	1. Najja 2. Nyenga Division 3. Ssi-Bukunja 4. Ngongwe	
003	Parish/Ward (Single select)	[Will insert all Parishes in the 4 sub-counties]	
004	Local Council I/Village (LC1)	Insert list of villages for the project	
005	GPS Coordinates of the household		
006	Number of individuals in household	_____	

SECTION 1: DEMOGRAPHIC INFORMATION			
№	**QUESTIONS**	**RESPONSE**	**TYPE/SKIP**
100	Sex *[Please interviewer observe]*	1 = Male 2 = Female	Single select
101	In what month and year were you born? (Indicate Y if you don't know)	Month……☐☐ Don't know month (Y) …… YEAR…… ☐☐☐☐ Don't know year (Y)……	
102	How old were you at your last birthday? (Indicate Y if you don't know)	Age in completed years _____/_____/____ Don't know (Y) _____	
103	What is your marital status? ***Interviewer: If married ask the respondent: is the marriage monogamous or polygamous?***	1 = Single (never married) 2 = Married Monogamous 3 = Married Polygamous 4 = Not married, living with partner 5 = Widowed 6 = Divorced/separated 7 = Other (Specify)_____	Single select
104	Is your partner or spouse currently living in this household or elsewhere?	1 = All the time 2 = Sometimes 3 = Living elsewhere	Single select
105	What is the highest level of education you have attained? ***Interviewer: Let the respondent tell you the***	0 = None (0 years) 88 = Adult Literacy Training 1 = Primary 1 2 = Primary 2 3 = Primary 3 4 = Primary 4 5 = Primary 5	Single select

SECTION 1: DEMOGRAPHIC INFORMATION			
№	**QUESTIONS**	**RESPONSE**	**TYPE/SKIP**
	class completed. Code the correct response	6 = Primary 6 7 = Primary 7 8 = Senior 1 9 = Senior 2 10 = Senior 3 11 = Senior 4 12 = Senior 5 13 = Senior 6 14 = Certificate 15 = Diploma 16 = University 17 = Other (Specify): _____	
106	What is your main occupation?	1 = Currently not working 2 = Fisherman 3 = Housewife 4 = Labourer 5 = Domestic Worker / Maid / Char / House help 6 = Petty Trader / Hawker / Vendor/Boda boda 7 = Owns Business with 3 or more employees 8 = Professional Worker (lawyer, accountant, nurse, engineer, teacher, administrator, etc.) 9 = Armed Services/ Police / Security Personnel 10 = Artisan (skilled carpenter, builder, mechanic, etc) 11 = Politician 12 = Broker 13 = Student 14 = Don't Know 15 = Other (Specify)_____	Single select
107	How many children aged 6 to 18 years are in this household?		
108	How many are currently enrolled at school?		

SECTION 2: HOUSEHOLD CHARACTERISTICS & AMENITIES			
CODE	**QUESTION**	**RESPONSES**	**TYPE/SKIP**
201	Type of Dwelling*	1 = Permanent, 2 = Semi-Permanent, 3= Temporary	Single select
202	Do you or your household own the following? ***Readout options and check all that applies***	1 = A radio 2 = A television set 3 = A bicycle 4 = A motor cycle 5 = Your own/family home 6 = A cell phone 7 = A regular (land line) phone 8 = A computer 9 = An income generating business 10 = An indoor bathroom 11 = Running water either inside the house or inside the compound of your house 12 = Electricity 13 = Car 14 = Generator 15 = Solar	Multiple select
203	Does any member of your household own land? (ownership of land refers to having either a kibanja or titled land)?	Acres: _____ Don't Know	Integer

SECTION 2: HOUSEHOLD CHARACTERISTICS & AMENITIES			
CODE	**QUESTION**	**RESPONSES**	**TYPE/SKIP**
204	How many acres of agricultural land do members of your household own?	1= Yes 2= No	Single select
205	Does any member of this household have a bank account, mobile money account, or account with an agent?	1= Yes 2= No 3= don't know	Single select
206	Does this household own any livestock, herds, other farm animals, or poultry?	1= Yes 2= No	Single select
207	If yes in 206, Which livestock does this household own	1=Cattle 2=Poultry 3=Goats 4=Sheep 5=Pigs 6=Rabbits 7=Others (specify) 8=None 9=Don't know	Multiple select
	Main source of lighting	1 = Electricity 2 = Gas Paraffin (Lantern) 3 = Paraffin (Tadooba) 4 = Candle Wax, 5 = Firewood/ Cow Dung/ Grass, 6 = Solar 7 = Other (Specify) 96 = Don't Know	Single select
	Type of Kitchen	1 = Inside, 2 = Outside, Built, 3 = Outside, Makeshift, 4 = None 96=Don't Know	Single select
	Fuel for Cooking	1 = Firewood, 2 = Charcoal, 3 = Paraffin, 4 = Electricity, 5 = Gas, 6 = Cow Dung/Grass, 7 = Biogas, 8 = Other (Specify) 96=Don't Know	Single select

	SECTION 3: SANITATION SERVICES		
CODE	**QUESTION**	**RESPONSES**	**TYPE/SKIP**
201	Main source of Drinking Water	1= Tap/Piped Water, 2 = Borehole/Hand pump 3=Solar powered pump, 4 = Protected Well/ Spring, 5 = Open Water Sources/shallow well 6 = Rainwater, 96= Other (Specify)	Single select
202	For the source where you collect water, what is the quality of water you collect?	1=Salty 2=Rusty 3=Turbid 4=Greenish 5=Brownish 6=Smelly 7=Clear with no smell 96=Don't Know	Multiple select
203	Is the source functional?	1=Yes 2=No	Single select

	SECTION 3: SANITATION SERVICES		
CODE	**QUESTION**	**RESPONSES**	**TYPE/SKIP**
		8=Don't Know	
204	If the source is not functional, why?	1=Chain broken 2=Pump bucket not functional 3=Handle broke 4=Source dried up 5=Source got dried up flooded 6=Batteries were stolen 7=Stolen solar panels 8=Low underground water potential 9=Broken pipe 10=Silting 11=Reservoir tank is leaking 12=Other technical challenges (Specify)	Multiple select
205	Distance to Water Source	1= On the Premises, 2= Less than 200mtrs 3=Btn 0.2 to 1 Km, 4 = Btn 1km to 5Kms 5 = More Than 5 Kms	Single select
206	Who is responsible for collecting water?		
207	How much time does it take to collect water and reach back home	Note the amount (hours, minutes)	
208	Do you do anything to the water to make it safer to drink?	1 = Yes 2 = No	Single select
209	What do you usually do to make the water safer to drink? Anything else?	1 = Boil 2 = Add Bleach/Chlorine 3 = Strain Through A Cloth 4 = Use Water Filter (Ceramic/ Sand/ Composite/etc.) 5 = Solar Disinfection 6 = Let It Stand and Settle 7 = Other (Specify)_____ 96 = Don't Know	Multiple select
210	Type of Solid Waste Disposal	1 = Skip Bin, 2 = Pit, 3 = Heap, 4 = Garden, 5 = Burning, 6 = Other	Multiple select
211	Distance to nearest primary school	1=Less than 1 Km, 2= Btn 1km to 5Kms 3= Btn 5 to 10 Kms 4=Btn 10 to 20KM 5=More than 20KMs 8=Don't know	Single select
212	Distance to nearest secondary school	1=Less than 1 Km, 2= Btn 1km to 5Kms 3= Btn 5 to 10 Kms 4=Btn 10 to 20KMs 5=More than 20KMs 8=Don't know	Single select
213	Type of toilet facility	1 = Flush Toilet connected to public sewer 2 = Flush Toilet connected to Septic tank 3 = Flush toilet connected to pit/latrine 4 = VIP lined pit latrine 5 = VIP unlined pit latrine 6 = Unlined pit latrine with slab 7 = Lined pit latrine with slab 8 = Unlined pit latrine without slab 9 = Lined pit latrine without slab 10 = Composting toilet 11 = No Facility	Single Select

	SECTION 3: SANITATION SERVICES		
CODE	**QUESTION**	**RESPONSES**	**TYPE/SKIP**
214	Type of Bathroom Facility	1 = Inside, 2 = Outside, Built, 3 = Outside, Makeshift, 4 = None 96 = Don't Know	Single select
215	Do you share this sanitation location with others who are not members of your household?	01 = Yes 02 = No 03 = I use a private stall/stance in a shared latrine block	Single select
216	Type of ownership of toilet facility	1 = Public 2 = Single home 3 = Shared among tenants 4 = Not Applicable	Single select
217	Do you share this sanitation location only with members of other households that you know, or is the facility open to the use of the general public?	01 = Shared with known households (not public) 02 = Shared with general public	Single select
217a	If shared, how many additional households use it?	_____	

SECTION 3: SAFE WATER AND SANITATION PRACTICES			
CODE	**QUESTION**	**RESPONSES**	**TYPE/SKIP**
301	Do you wash your hands in-between chores?	1=Yes 2 = No	Single Select
302	How do you wash your hands?	1=With water 2= With water and soap 3=With water and ash	Single Select
303	Does the household have hand washing facility next to the toilets?	1=Yes, observed 2=Yes, not observed 3=NO	Single Select
304	What type of the hand washing facilities is available	1=Tippy tap 2=Tap with hand wash basin 3=Water tank 4=Jerrican 8=Others	Multiple select
305	OBSERVATION ONLY: Observe presence of water at the Place for handwashing	1 = Running water is available 2 = Stagnant water is available 2 = Water is not available	Single select
306	OBSERVATION ONLY: Observe presence of soap, detergent, or other cleansing agent at the place for Handwashing	1 = Soap or detergent (bar, liquid, powder, paste) 2 = Ash, mud, sand 3 = Traditional soap 4 = None	Single Select
307	OBSERVATION ONLY: Observe presence of daytime toilet facility that household said they used.	1 = Toilet facility is available 2 = Toilet facility is not available 3 = Not observed 4 = Not Observed, No Permission to See 5 = Not Observed, Other Reason	Single Select
308	Please list five critical moments for hand washing. [Do not read the answers. When zero, one, or more answers are given by the respondent, ask two more times if there is anything else.	1 = Before eating 2 = After eating 3 = Before praying 4 = Before breastfeeding or feeding a child 5 = Before cooking or preparing food 6 = After defecation or urination 7 = After cleaning a child who has defecated or after changing a child's diaper 8 = When hands are dirty 9 = After using the toilet 10 = Other 96 = Don't know	Multiple Select

SECTION 3: SAFE WATER AND SANITATION PRACTICES			
CODE	**QUESTION**	**RESPONSES**	**TYPE/SKIP**
	If the respondent indicates that he/she does not know, do not probe for additional responses. After recording all responses, probe twice asking for any other occasions.]		
309	What are the main containers you use for collecting water used in the household?		Single select
310	Are the water collection containers always covered while collecting from the sources?	1=Yes 2=No 3=Don't Know	Single select
311	What is the main container you use for storing drinking water OBSERVE THE CONTAINER	1=Bucket 2=Jerricans 3=Saucepans 4=Clay pots 5=Basin 6=Others (Specify)	Single select
312	How do you draw water for drinking from the storage container?		

	Section 4: Child health services			
CODE	**QUESTION**	**RESPONSES**		**TYPE/SKIP**
401	How many children in this household are aged below 5 years?			
		402 **Name of child**	**403 Sex of child**	**404 Age of child**
	Child # 1	_____	1. Male 2. Female	____Years___ Months
	Child # 2	_____	1. Male 2. Female	____Years___ Months
	Child # 3	_____	1. Male 2. Female	____Years___ Months
	Child # 4	_____	1. Male 2. Female	____Years___ Months
	Child # 5	_____	1. Male 2. Female	____Years___ Months
405	Has (NAME) had diarrhea in the last 2 weeks? DIARRHEA IS DEFINED AS 3 OR MORE WATERY STOOLS A DAY	YES . . . . . .……..1 NO . . . . . .……2 DON'T KNOW.....8		Single select
406	Was there any blood in the stools?	YES . . . . . .……..1 NO . . . . . .……2 DON'T KNOW.....8		Single select
407	Now I would like to know how much (NAME) was given to drink during the diarrhea (including breast milk). Was he/she given less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was he/she given much less than usual to drink or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS..... 2 ABOUT THE SAME .... 3 MORE . . . . . 4 NOTHING TO DRINK..... 5 DON'T KNOW 8		Single select
408	Did you seek advice or treatment for the diarrhea from any source?	YES . . . . . .……..1 NO . . . . . .……2 DON'T KNOW.....8		Single select
409	Where did you seek advice or treatment?	**PUBLIC SECTOR** 1=Gov't hospital	**PUBLIC SECTOR** 1=Gov't hospital	**PUBLIC SECTOR** 1=Gov't hospital

	Section 4: Child health services			
CODE	QUESTION	RESPONSES		TYPE/SKIP
	Anywhere else? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. __________ (NAME OF THE PLACE)	2=Health centre 2 3=Health centre 3 4=Health centre 4 5=Village health team 6=Other public sector __________ (specify) **PRIVATE MEDICAL SECTOR** 7=Private Hospital/clinic 8=Mission hospital 9=Pharmacy. . . . 10=Fieldworker 11=Drug shop 12=Other private med. Sector __________ (Specify) **OTHER SOURCE** 13=Shop 14=Traditional practitioner 15=Market 96=Other __________ (Specify)	2=Health centre 2 3=Health centre 3 4=Health centre 4 5=Village health team 6=Other public sector __________ (specify) **PRIVATE MEDICAL SECTOR** 7=Private Hospital/clinic 8=Mission hospital 9=Pharmacy. . . . 10=Fieldworker 11=Drug shop 12=Other private med. Sector __________ (Specify) **OTHER SOURCE** 13=Shop 14=Traditional practitioner 15=Market 96=Other __________ (Specify)	2=Health centre 2 3=Health centre 3 4=Health centre 4 5=Village health team 6=Other public sector __________ (specify) **PRIVATE MEDICAL SECTOR** 7=Private Hospital/clinic 8=Mission hospital 9=Pharmacy. . . . 10=Fieldworker 11=Drug shop 12=Other private med. Sector __________ (Specify) **OTHER SOURCE** 13=Shop 14=Traditional practitioner 15=Market 96=Other __________ (Specify)

Section 5: Perceptions of improved health					
Now, I would like to ask you some questions about quality and quantity of water supply within your household over the past 12 months. For each statement I read, please tell me if you agree or disagree with it.					
	Question	Agree	Disagree	Don't know	TYPE OF RESPONSE
501	Has the quality of water improved over the past two years?	1	2	8	SINGLE SELECT
502	Has the quantity of water in your household increased over the past two years??	1	2	8	SINGLE SELECT
503	Is the water supply more reliable over the past two years?	1	2	8	SINGLE SELECT
504	In your household, do you now have a constant supply of water over the past two years?	1	2	8	SINGLE SELECT
505	Over the past two years, is the water more affordable?	1	2	8	SINGLE SELECT
506	Water for drinking must be treated before drinking	1	2	8	SINGLE SELECT
507	Consuming untreated water is dangerous to your health	1	2	8	SINGLE SELECT
508	It is not necessary to cover drinking water all the times	1	2	8	SINGLE SELECT
509	It is the responsibility of local authorities and agencies to clean water sources	1	2	8	SINGLE SELECT
510	It is the responsibility of the community to have a clean water source	1	2	8	SINGLE SELECT

Section 6: Perceptions of education services					
Now, I would like to ask you some questions about quality of education services within your community over the past 12 months. For each statement I read, please tell me if you agree or disagree with it.					
	Question	Agree	Disagree	Don't know	TYPE OF RESPONSE
601	The quality of teaching and learning for children in this community has improved over the past two years.	1	2	8	SINGLE SELECT

Section 6: Perceptions of education services					
Now, I would like to ask you some questions about quality of education services within your community over the past 12 months. For each statement I read, please tell me if you agree or disagree with it.					
	Question	**Agree**	**Disagree**	**Don't know**	**TYPE OF RESPONSE**
602	The quality of teachers in the surrounding schools has improved over the past two years.	1	2	8	SINGLE SELECT
603	Our children have increased access to text books over the past two years	1	2	8	SINGLE SELECT
604	The children have increased access to scholastic materials (exercise books, pens, pencils etc) over the past two years	1	2	8	SINGLE SELECT
605	The teachers in the surrounding schools have increased access to teaching materials and aides	1	2	8	SINGLE SELECT
606	The completion rates at P5 and P7 have increased over the past two years	1	2	8	SINGLE SELECT
607	We now have fewer children dropping out of school over the past two years	1	2	8	SINGLE SELECT
608	The quality and quantity of sanitary facilities(toilets, urinals etc) at the schools have improved over the past two years	1	2	8	SINGLE SELECT
609	There is increased access to safe water at the schools over the past years	1	2	8	SINGLE SELECT
610	There is an increase in the number of children joining secondary and vocational training institutes over the past two years	1	2	8	SINGLE SELECT

Section 7: Knowledge of key sanitation practices			
CODE	**QUESTION**	**RESPONSES**	**TYPE/SKIP**
701	What are the dangers of drinking untreated water?		Multiple select
702	What are the benefits of using treated water for drinking and cooking?		
703	What are the waterborne diseases you know of?	Typhoid Diarrhea Cholera Dysentery Hepatitis A Others(Specify)	Multiple select
704	In your opinion, what are the things you can do to protect yourself or your family from getting waterborne diseases?	Always drink treated water Washing hands with soap before and after eating Washing hands with soap before breastfeeding or feeding a child Washing hands before cooking or preparing food Washing hands after defecation or urination Washing hands after cleaning a child who has defecated or after changing a child's diaper Washing hands when hands are dirty Other Don't know	Multiple select
705	What are the dangers of not having/building a pit latrine or toilet for the household		Multiple select
706	What are the dangers of not properly disposing off solid waste?		Multiple select
707	What are the stages where water for drinking or cooking can get contaminated?		Multiple select
708	In the past 12 months, have you attended any community meetings?		Single select
709	If yes, did you discuss sanitation issues during these meetings?		Multiple select
710	How many times did you discuss sanitation issues in these meetings		

THANK YOU VERY MUCH, YOUR ANSWERS HAVE BEEN VERY HELPFUL

END TIME: Time interview ended [interviewer hour and minute use 24hr clock	

701 INTERVIEWER: I hereby certify that this interview was conducted in accordance with instructions received during training. All responses recorded here are those of the respondent.

COMMENTS ON THE INTERVIEW:
Please report anything significant that may have affected the quality and accuracy of the information contained in this questionnaire.

Annex V b: Key informant guides

External Evaluation of Buikwe-Iceland Development Partnership:
Education Development in Fishing Communities 2019-2020 Phase II and WASH Development in Fishing Communities 2018-2019 Phase II.
(KI Guide District Officials)

Introduction

Good morning/afternoon/evening.

Hello, our names are _____. We are here on behalf of the Embassy of Iceland in Kampala, Uganda to conduct an External Evaluation of Buikwe-Iceland Development Partnership: Education Development in Fishing Communities 2019-2020 Phase II and WASH Development in Fishing Communities 2018-2019 Phase II. The overall objective of this external evaluation is to assess the programme design, scope and implementation status and the capacity of stakeholders to achieve the expected outcomes. The final evaluation also aims at assessing the management and performance of the programmes against the planned results You have been invited to the focus group because we believe that you have the knowledge, experiences and perspectives that we need to learn more about. During the **discussion**, we will ask you questions around the number of schools in the area, the quality of classrooms, the quality and numbers of teachers, your experiences with the programme, benefits from the programme as well as challenges and recommendations in relation to education development in the fishing communities in your area among young people. We will be **recording** your responses but will not record any identifying information for the research and all data will be strictly **confidential**.

We also request all participants to keep the focus group discussion confidential. However, we can't control what others say, so we also remind everyone not to share anything they don't want others to know.
Participating in this study is completely **voluntary**. If you are uncomfortable with being a part of this discussion, you are free to opt out now or at any time during the discussion. You can also choose not to answer any of the questions you are uncomfortable with. Please stop us at any time during the interview if you have questions or concerns.
During this meeting, we would like to record the discussion and take written notes. The recording and notes are only to help us remember everything that we "hear." Only people who are working on this study will ever hear any of the recordings or read the notes we take. Does anyone have any objections to being recorded? I anticipate that this discussion will last not more than one hour. Is there anyone who can't stay for this time?

Do you have any questions?
1=Yes, you may ask the question…. [*Write the question below and answer appropriately*]

2=No, Go to Next question

Do you agree to participate in this study?
1= Yes, Continue with interview
2= No, Thank the respondent and discontinue the interview

A. ROLE OF DISTRICT

1. What kind of support has the district or your department provided towards implementation of the BDFCDP in the district**?**

FOR THE INTERVIEWER, PROBE ON:

a. *Key activities in – supervising project activities*
b. *Quality assurance*
c. *Procurement,*
d. *training and mentoring,*
e. *reporting and overall coordination*

2. To what extent has the district coordinated with the Embassy of Iceland in the design, implementation, monitoring and reporting of the programme?

PROBE for:
Involvement of district in all stages of the programme
Monitoring and reporting of the programme results
Training, mentoring and capacity building for the programme

Relevance

1. Were the programme components in line with Buikwe district development plans and strategies, district priorities in relation to improving WASH and education services in the district? Probe for specific interventions and objectives; how it strengthened the district's capacity to improve the use and access to basic services in the district?

2. Are there any related aspects of the programme which should be considered to make the project more relevant to the current and future needs of Buikwe DLG and Uganda?

Coherence/partnerships/collaboration

1. How well does the programme fit with other development efforts, is duplication of efforts avoided and synergies maximized?

Probe:

- Are synergies from different development efforts in the WASH and Education sectors within the district ensured? Is there sufficient partner consultation and collaborations?

  Probe for

  - *Probe for their level of involvement and participation in all stages/phases of the programme*
  - *Comment on the overall coordination and partnership mechanisms for the programme by the coordination and implementation unit, Embassy of Iceland*
  - *Comment on the effectiveness of the collaboration/partnership*

- Do programme activities overlap and duplicate other similar interventions funded in the district by other Goals?

Effectiveness

2. To what extent is the programme achieve the planned results for each of the objectives, outputs and outcomes? Were the results achieved in a timely manner?

Probe:

- The implementation periods
- The management structure of the programme.
- External shocks/effects of covid on the programme implementation.
- WASH services improved through training and logistical support at village and district level?
- Have communities in the programme sub-counties been upgraded with classrooms and textbooks for the first 2 grades?

- Has management of Education sector improved through capacity building of and upgrading of facilities

3. What factors have contributed to achieving or hindering achievements of implementation and were appropriate actions taken to adjust the programme design and action?
   - Could a different approach have produced a better result?
   - How did the Covid-19 pandemic impact the project? Were appropriate actions taken to adjust the programme design and actions?

4. To what extent did the programme improve the capacity of Buikwe DLG in the provision of WASH and Education services to the fishing communities?

5. Did the project equally benefit both women and men? How did the project benefit vulnerable groups?

Efficiency

1. Did the embassy of Iceland and the district local government fulfil their respective roles towards meeting their financial obligations? [To be asked directly to department responsible for the programme and the CAO]

2. How did Buikwe DLG perform in relation to financial transparency and reporting?

3. How did Buikwe DLG perform in relation to sound programme procurement practices?

4. Did the programme undertake any internal quality assurance activities (e.g. program reviews, regular supervision, QA and compliance training, beneficiary feedback interviews, etc (*these should be documented*)- [***TO BE ASKED FOR PEOPLE DIRECTLY IMPLEMENTING THE PROGRAMME***] Were they effective?

5. Was the budget allocation for the programme been sufficient to support the execution of planned interventions for the all the two programmes including their components over the past three years? p*robe for reason why*?

FOR THE IN TERVIEWER, PROBE ON:

Adequacy of the budget allocated to implement activities over the past three five years

How the district implements activities with less funds (Coping mechanisms).

Sustainability

1. To what extent are benefits of the programme sustainable after the withdrawal of the donor funding?
   - What is the likelihood that the schools and water systems continue to operate and be maintained without financial support from the programme?
   - Did the project have positive or any negative environmental impact?

2. What are the key factors that will require attention in order to improve prospects of sustainability of outcomes? What are the recommendations for similar support in future?

3. How has Covid-19 impacted/affected the sustainability of the programmes, and what measures was taken/being taken to counter the risks to sustainability?

4. To what extent did the programme put in place suitable O&M procedures that ensure the long-term functionality of WASH services?

5. To what extent have the programme activities been integrated in other Buikwe DLG structures? Probe for inclusion of programme interventions and components in Buikwe DLG structures at the sub-county level, capacity building for other staff and partners etc

6. Did the programme management unit establish any partnerships beyond the project life to continue with some aspects of the project post implementation and funding?

7. What are some of the aspects of the project interventions that are likely to continue beyond the project life as a result of project interventions?

Impact

1. What are the long-term implications of the programmes for stakeholders, beneficiaries and their environment?
   - Have the capacities been strengthened at the individual and organizational level and is there evidence that capabilities will remain and be relevant for long term?
   - What are the positive and negative changes in the livelihoods and living conditions produced and trends that can be identified for the longer term?

2. How have the individual programme interventions or components successfully contributed to the improved access to safe water (in terms of service reliability, quality and quantity) and access to basic education at the household level?
   a. Overall improvement in the quality of basic education in schools and institutions serving fishing communities of Buikwe district
   b. Reduction in incidence of waterborne diseases in the fishing communities
   c. Improved hygiene behaviour and practices at the household, community and school levels
   d. Increased access to safe water and sanitation facilities at household, community and school level

Crosscutting issues

1. Were both men and women (boys and girls) equally selected as beneficiaries for the programme interventions, including actively participating in implementation of the programme?

2. Does the programme (EDU II and WASH II) have at least two gender sensitive indicators that are being used to track programme progress?

3. How did the programme address human rights based approaches (especially for women, youth and the disabled) in the delivery of WASH and education services?

Lessons Learnt and Challenges

1. What challenges did you experience while implementing the programme interventions? How can they be overcome?

2. What lessons did you learn from BDFCDP projects?

Thanks for your time

Annex V c: Focus group discussion guide

External Evaluation of Buikwe-Iceland Development Partnership:
Education Development in Fishing Communities 2019-2020 Phase II and WASH Development in Fishing Communities 2018-2019 Phase II. (FGD Parents)

Introduction

Good morning/afternoon/evening.

Hello, our names are _____. We are here on behalf of the Embassy of Iceland in Kampala, Uganda to conduct an External Evaluation of Buikwe-Iceland Development Partnership: Education Development in Fishing Communities 2019-2020 Phase II and WASH Development in Fishing Communities 2018-2019 Phase II. The overall objective of this external evaluation is to assess the programme design, scope and implementation status and the capacity of stakeholders to achieve the expected outcomes. The final evaluation also aims at assessing the management and performance of the programmes against the planned results You have been invited to the focus group because we believe that you have the knowledge, experiences and perspectives that we need to learn more about. During the **discussion**, we will ask you questions around the number of schools in the area, the quality of classrooms, the quality and numbers of teachers, quality of WASH services, your experiences with the programme services, benefits from the programme as well as challenges and recommendations in relation to education development and WASH in the fishing communities. We will be **recording** your responses but will not record any identifying information for the research and all data will be strictly **confidential**.

We also request all participants to keep the focus group discussion confidential. However, we can't control what others say, so we also remind everyone not to share anything they don't want others to know.
Participating in this study is completely **voluntary**. If you are uncomfortable with being a part of this discussion, you are free to opt out now or at any time during the discussion. You can also choose not to answer any of the questions you are uncomfortable with. Please stop us at any time during the interview if you have questions or concerns.
Does anyone have any objections to being recorded? I anticipate that this discussion will last not more than one hour. Is there anyone who can't stay for this time?

Do you have any questions?
1=Yes, you may ask the question…. [*Write the question below and answer appropriately*]

2=No, Go to Next question

Do you agree to participate in this study?
1= Yes, Continue with interview
2= No, Thank the respondent and discontinue the interview
Details of FGD Participants: *Please enter participant details in the table below.*

No.	Name of Participant	Sex	Contact	Number of children enrolled and attending this school
1.				
2.				
3.				
4.				

5.				
6.				
7.				
8.				
9.				
10.				
11.				

Ask the following questions to the respondent and probe accordingly.

1) Before we get started, tell me a little bit about the general life in this community. How long have you lived in this community?

2) What do you think are the key social services delivery problems among the fishing community in this district? *Probe for issues around quality of schools, availability of teachers, availability of water and sanitation services, etc* .

3) In your opinion, have the needs of your children in terms of education services improved in this community over the past three years? Probe for

- Increased availability of scholastic materials to the learners
- Improved feeding at the schools
- Improved retention and completion rates
- Improved sanitation services at the schools
- Improved quantity and quality of teachers
- Increased number of classrooms
- Increased number of girls attending school

4) In your opinion, have the water and sanitation needs of households improved in this community over the past three years? Probe for

- Increased availability of improved toilets
- Improved quality of water
- Reduced distance to safe water sources
- Availability of community sanitation facilities
- Cost of water services

5. In your view, do you think the number of households using improved sanitation services has increased in the past three years in this community? How?

6.In your opinion, has the overall quality of education and WASH services improved in this community over the past three years? *Probe for distance to water sources, quality f teachers, availability of scholastic materials etc*

*7.*In your opinion has the cost of education and water services decreased over the past three years as a result of the programme? *Probe for cost of education services, feeding children at school, cost of water services*

8. In your community, where do people obtain information on education and WASH services? Probe for different sources.

9. As beneficiaries of the project, what are the major challenges and constraints you face in having improved education and WASH services in this community? How can they be overcome?

10. Any other general comments that you have about the programme?

Annex VI: Water Quality testing report

Water Quality Testing summary report

External Evaluation of Buikwe- Iceland Development Partnership: Education development in Fishing Communities 2019-2022 Phase II & WASH development in Fishing Communities 2018-2019 Phase II

Procurement Reference; UGA 14030-1502 / UGA 11220

Extra Requirements of Water Safety and Quality Testing

Submitted to

Government of Iceland, International Development Coordination

Buikwe District Local Government

February, 2022

EXTERNAL EVALUATION FINAL REPORT

WATER QUALITY SURVEILLANCE REPORT CARRIED OUT IN BUIKWE DISTRICT, ICELAND FUNDED WATER SUPPLY PROJECTS.

The report is an outcome of water quality sampling, testing, analysis and sanitary inspection carried out in Buikwe district, household drinking water and community mini schemes water supply systems. The activity was done in 13 (thirteen) Iceland funded Water projects. These are: Busaana, Nanso, Bugoba A, Bugoba B, Gimbo, Bufumbe, Busagazi, Natyole, Upper Ssenyi, Muvo, Muyubwe, Bubwe and Kigugo water supply systems.

Main objective: The main objective of this water quality surveillance activity was to assess and ascertain the quality of water from the mini piped water supply systems and follow up on the handling of the drinking water at the household level (safe water chain). The activity involved sampling water from the water sources, reservoir tanks, tap stands (AQs) and household drinking water containers and made observation on safe water chain.

A total of 182 samples were drawn, 13 water sources, 09 from reservoir tanks, 46 from water tap stands and 114 from household drinking water containers. These samples were tested and analyzed to assess the physical, chemical and microbiological parameters i.e. **Temperature, pH, Turbidity, colour, nitrates, ammonia, total hardness, fluoride, total iron, residual chlorine, electrical conductivity, total dissolved solids, salts and Escherichia coli (E- coli)** commonly known as bacteriological levels as well as checking sanitation and hygiene around hydraulic structures.

The assessment of the water quality was based on the Ugandan National Guideline values/ Standards for safe drinking water which provides as follows (acceptable water quality ranges);

Table 1: Recommended value ranges for Uganda and WHO

S/N	*Parameters*	*Ugandan National Guideline Value*	*WHO Guideline Value*	*Reason*
01	pH	5.5 – 9.5	6.5 – 8.5	Health
02	Turbidity	<25 NTU	< 05 NTU	Aesthetic
03	Conductivity	<2500µs/cm	< 1000 µg/l	Health
04	Total Dissolved Solutes (TDS)	<1500mg/l	< 500 mg/l	Health
05	Colour	<50 mg/l Pt	< 20 mg/l Pt	Aesthetic
06	Escherichia coli	0 CFU/100ml of water.	0 CFU/100ml of water.	Health
07	Salts / salinity	<500 mg/l	< 250 mg/l	Health and Aesthetic
08	Temperature	Ambient	Ambient	Affects sample parameters.
09	Ammonium as N	<0.5 mg/l	<0.5 mg/l	Health
10	Nitrates	<10 mg/l	<11 mg/l	Health
11	Total hardness	<600 mg/l	<250 mg/l	Health and Aesthetic
12	Total iron	<0.5 mg/l	<0.3 mg/l	Health and Aesthetic
13	Fluoride	<1.5 mg/l	<1.5 mg/l	Health
14	Residual chlorine	<0.2 - 0.5 mg/l	<0.2 -0.5 mg/l	Health

The table below shows the water quality results from the production water sources, reservoir tanks, tap stands and household drinking water containers.

Table 2: Summary of results by type of water source sampled

S/N	Type of water source sampled	No. tested	%age that met Uganda standards(Bacteriological test)	%age that met Uganda standards (chemical test)	%age that met Ugandan standards(physical tests)
01	Water sources	13	84.6%	96.9%	97.8%
02	Reservoir tanks	09	100%	100%	100%
03	Tap stands/AQ	46	100%	100%	100%
04	Households containers	114	85.1**%**	100%	100%
	Overall samples	182	**89.6%**	**99.8%**	99.7%

Table 3: Detailed results by sample source

S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B1	Nyenga	Busaana - Bakamunye	Busaana	The water source	5.74	24.1	205	144	101	N/A	00	1.1	0.19	0.1	7.59	66	0.36	00
B2	Nyenga	Busaana	Ndugu Jabeli	Tap	6.17	26.7	210	150	103	0.05	05	00	0.10	0.07	3.42	64	0.23	00
B3	Nyenga	Busaana	Ndugu Jabeli	Household	6.45	27.3	207	147	102	0.01	05	00	0.06	0.00	2.90	65	0.19	**06**
B4	Nyenga	Busaana	Wakundungu Ahamdi	Household	6.56	29.1	209	149	103	0.05	05	00	0.00	0.00	2.87	67	0.23	00
B5	Nyenga	Busaana	Kimwelo Ahmadi	Household	7.0	26.9	210	149	103	0.04	00	00	0.00	0.00	2.18	66	0.26	00
B6	Nyenga	Busaana	Mugaba Suleiman	Tap	6.31	26.8	210	149	103	0.07	05	02	0.08	0.09	2.56	65	0.21	00
B7	Nyenga	Busaana	Kisaala Hamuza	Tap	6.36	27.0	210	149	103	0.10	00	00	0.09	0.04	2.70	63	0.23	00
B8	Nyenga	Busaana	Kisaala Hamuza	Household	6.89	33.1	210	149	104	0.02	10	02	0.00	0.00	2.96	64	0.28	**12**
B9	Nyenga	Busaana	Ocheng Derrick	Household	6.47	29.3	211	150	104	0.05	00	00	0.00	0.00	2.70	67	0.18	00
B10	Nyenga	Busaana	Malwa Issa	Tap	6.33	27.0	211	150	103	0.09	00	00	0.04	0.00	3.23	68	0.15	00
B11	Nyenga	Busaana	Malwa Issa	Household	6.30	27.5	211	150	103	0.00	10	02	0.00	0.00	2.90	66	0.22	00
B12	Nyenga	Busaana	Wakimuri Ritah	Household	6.96	27.5	211	150	103	0..03	05	02	0.00	0.00	1.78	62	0.24	00
B13	Nyenga	Busaana	Kanyere Juliet	Household	6.43	28.7	210	150	103	0.01	00	00	0.00	0.05	2.65	60	0.20	00
B14	Nyenga	Busaana	Kawuta Abdullah	Household	6.62	28.7	211	150	103	0.03	15	04	0.04	0.00	2.70	62	0.17	00
B15	Nyenga	Busaana	Busaana	Reservoir tank	6.04	27.1	211	150	103	0.17	05	00	0.00	0.00	2.65	60	0.12	00

EXTERNAL EVALUATION FINAL REPORT

S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B16	Nyenga	Busaana	Okyali Yonah	Household	6.38	32.8	212	151	105	0.06	05	02	0.05	0.00	2.45	69	0.16	00
B17	Nyenga	Busaana	Mutebya Mohamad	Tap	6.17	26.6	214	150	104	0.05	00	00	0.08	0.04	2.64	72	0.15	00
B18	Nyenga	Busaana	Mutebya Mohamad	Household	6.88	30.1	210	148	102	0.02	05	00	0.00	0.01	1.92	66	0.11	00
B19	Nyenga	Busaana	Kamadda Ibrahim	Household	6.57	33.2	211	150	104	0.03	00	00	0.00	0.03	1.86	67	0.24	00
B20	Nyenga	Nanso B	The source	Spring	5.99	23.1	160	112	79.3	N/A	00	1.6	0.05	0.1	3.12	39	0.20	00
B21	Nyenga	Nanso B	Wambi Michael	Tapstand	6.67	27.2	165	117	81.7	0.08	05	02	0.00	0.00	1.76	37	0.12	00
B22	Nyenga	Nanso B	Nanso B	AQ2	6.24	26.8	167.3	119	82.8	0.10	00	00	0.00	0.02	1.90	40	0.10	00
B23	Nyenga	Nanso B	Osonga Moses	Household	6.65	28.7	166.6	118	82.8	0.02	05	02	0.00	0.00	1.66	35	0.09	00
B24	Nyenga	Nanso B	Wabuyobo Misach	Household	6.60	28.6	164.5	117	81.8	0.00	10	04	0.00	0.00	2.34	35	0.13	**01**
B25	Nyenga	Nanso B	Wenani Francis	Tapstand	6.46	27.4	166.4	118	82.5	0.06	05	02	0.00	0.00	2.15	41	0.10	00
B26	Nyenga	Nanso B	Muzungu Yohana	Tap stand	6.50	28.5	166.0	118	82.3	0.08	10	02	0.00	0.00	1,98	36	0.23	00
B27	Nyenga	Nanso B	Mwebaza Billa	Household	6.57	29.2	164.4	117	82.1	0.03	20	04	0.00	0.03	2.11	33	0.11	00
B28	Nyenga	Nanso B	Nanso B	AQ3	6.28	29.6	166.3	118	82.9	0.08	15	04	0.00	0.00	2.67	34	0.15	00
B29	Nyenga	Nanso B	Wambi Michael	Household	6.65	29.1	165.9	117	81.5	0.01	05	02	0.00	0.00	1.90	35	0.09	00
B30	Nyenga	Nanso B	Wenani Francis	Household	6.71	28.8	164.8	115	80.9	0.00	02	00	0.00	0.00	1.89	38	0.12	00
B31	Nyenga	Nanso B	Muzungu Yohana	Household	6.69	29.3	166.7	119	83.1	0.03	05	00	0.00	0.00	1.77	35	0.16	00

EXTERNAL EVALUATION FINAL REPORT

S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B32	Nyenga	Nanso B	Wabwire James	Household	6.75	29.0	165.7	117	81.8	0.01	05	02	0.00	0.00	2.12	38	0.14	00
B33	Nyenga	Bugoba A	The source	Borehole	**4.96**	23.3	50	35	28.9	N/A	00	1.6	0.02	0.1	1.39	18	0.51	00
B34	Nyenga	Bugoba A	Reservoir tank	Storage unit	5.84	27.5	48.2	33.7	29.4	0.11	15	04	0.00	0.06	1.06	17	0.28	00
B35	Nyenga	Bugoba A	Dwabyo Florence	Household	6.52	24.0	52.3	37.2	31.3	0.05	05	02	0.00	0.00	1.12	20	0.19	00
B36	Nyenga	Bugoba A	Kakoma Twaha	Tap stand	5.91	26.3	50.8	35.7	30.5	0.04	05	02	0.00	0.09	1.22	16	0.22	00
B37	Nyenga	Bugoba A	Kakoma Twaha	Household	5.76	29.0	44.5	31.7	28.6	0.01	10	04	0.00	0.02	1.07	14	0.26	**13**
B38	Nyenga	Bugoba A	Onjangi Jacob	Household	6.12	26.9	58.6	41.7	34.2	0.03	05	02	0.00	0.06	1.16	14	0.13	00
B39	Nyenga	Bugoba A	Waidunuga Irene	Tap stand	5.90	27.0	51.9	36.9	31.3	0.06	05	02	0.00	0.00	0.98	17	0.07	00
B40	Nyenga	Bugoba A	Waidunuga Irene	Household	6.01	26.7	55.6	39.6	32.7	0.03	00	00	0.00	0.03	1.23	16	0.19	00
B41	Nyenga	Bugoba A	Nantongo Aisha	Household	5.86	27.1	52.3	37.1	31.4	0.01	05	00	0.00	0.02	2.12	16	0.20	00
B42	Nyenga	Bugoba A	Muhinda Ahamodda	Household	6.33	27.1	51.0	35.0	30.7	0.00	05	02	0.00	0.00	1.98	18	0.11	00
B43	Nyenga	Bugoba A	Resty Mercy	Tap stand	5.75	27.4	51.3	36.4	31.1	0.03	10	02	0.00	0.01	1.54	13	0.12	00
B44	Nyenga	Bugoba A	Resty Mercy	Household	5.72	25.3	45.6	32.5	28.2	0.00	05	00	0.00	0.00	1.08	16	0.17	00
B45	Nyenga	Bugoba A	Namatembe Loy	Tap stand	5.90	27.2	49.9	35.5	30.5	0.04	15	04	0.00	0.03	0.95	14	0.13	00
B46	Nyenga	Bugoba A	Namatembe Loy	Household	5.87	25.5	45.0	32.1	28.0	0.01	10	02	0.00	0.02	1.23	14	0.17	00
B47	Nyenga	Bugoba A	Nayimba Aisha	Tap stand	5.81	26.4	45.0	31.9	28.1	0.04	05	02	0.00	0.05	1.07	13	0.13	00
B48	Nyenga	Bugoba A	Nayimba Aisha	Household	6.44	25.3	52.4	37.3	31.0	0.01	05	02	0.00	0.00	1.00	16	0.14	00

S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B49	Nyenga	Bugoba B	The source	Borehole	4.63	23.9	51.3	37.2	32.5	N/A	00	1.5	0.19	0.1	3.65	18	0.31	00
B50	Nyenga	Bugoba B	Reservoir tank	Storage unit	6.21	27.2	53.7	38.0	32.0	0.09	25	05	0.10	0.06	2.90	15	0.12	00
B51	Nyenga	Bugoba B	Dwake Grace	Tap stand	5.91	28.3	53.1	37.8	32.1	0.05	10	02	0.12	0.04	2.23	16	0.11	00
B52	Nyenga	Bugoba B	Dwake Grace	Household	6.22	27.0	54.3	38.6	32.4	0.07	05	02	0.08	0.02	2.78	10	0.09	00
B53	Nyenga	Bugoba B	Wadeya Rogers	Household	6.24	28.2	50.6	36.2	31.1	0.01	00	00	0.09	0.07	1.90	16	0.16	00
B54	Nyenga	Bugoba B	Dimbo Kanifah	Tap stand	5.96	26.3	53.7	38.0	31.7	0.00	00	00	0.05	0.00	1.98	12	0.12	00
B55	Nyenga	Bugoba B	Dimbo Kanifah	Household	6.44	24.9	52.1	37.0	30.8	0.03	05	02	0.00	0.00	2.15	18	0.14	00
B56	Nyenga	Bugoba B	Ndaluzi Banuli	Tap stand	5.94	28.1	54.0	38.5	32.3	0.03	05	00	0.03	0.03	2.45	15	0.12	00
B57	Nyenga	Bugoba B	Ndaluzi Banuli	Household	5.93	27.0	51.2	36.2	30.8	0.03	00	00	0.06	0.00	2.38	12	0.18	**01**
B58	Nyenga	Bugoba B	Muwanguzi Yusuf	Household	5.91	27.3	53.7	38.2	32.1	0.04	00	00	0.06	0.00	2.12	16	0.14	00
B59	Nyenga	Bugoba B	Mayobo Abdullah	Household	6.04	27.9	49.9	35.5	30.7	0.05	05	02	0.02	0.00	1.90	13	0.16	00
B60	Nyenga	Bugoba B	Mugero Mathias	Tap stand	6.00	27.3	51.5	37.0	31.4	0.05	05	00	0.09	0.02	2.34	14	0.23	00
B61	Nyenga	Bugoba B	Mugero Mathias	Household	5.94	26.0	55.5	39.3	32.5	0.00	05	02	0.07	0.00	1.96	12	0.11	00
B62	Nyenga	Bugoba B	Kabakubya John	Tap stand	6.02	29.2	51.8	36.9	31.7	0.00	00	00	0.13	0.05	1.45	13	0.14	00
B63	Nyenga	Bugoba B	Kabakubya John	Household	5.68	26.1	45.7	32.4	28.4	0.04	00	00	0.11	0.02	1.40	15	0.12	00
B64	Nyenga	Bugoba B	Kaigo Hussein	Household	5.78	25.5	43.7	31.1	27.2	0.02	05	02	0.09	0.04	1.23	13	0.19	00
B65	Najja	Bufumbe	The source	Borehole	5.61	24.3	74.0	52.0	40.4	N/A	<0.5	1.1	0.14	<0.1	1.57	31	0.38	00
B66	Najja	Bufumbe	Bufembe	Reservoir tank	6.90	26.1	71.5	50.8	39.3	0.11	00	00	0.08	0.00	1.02	23	0.26	00

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S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B67	Najja	Bufumbe	Nakayiza Grace	Tap stand	6.09	27.1	69.8	49.5	39.2	0.18	00	00	0.02	0.00	1.05	26	0.18	00
B68	Najja	Bufumbe	Nakayiza Grace	Household	6.53	25.2	78.7	55.9	42.4	0.01	05	02	0.00	0.00	1.21	23	0.15	00
B69	Najja	Bufumbe	Ssemanda Living	Household	6.06	25.7	79.5	56.6	42.9	0.02	00	00	0.12	0.00	1.13	20	0.13	00
B70	Najja	Bufumbe	Hayuni Muzamilu	Household	6.36	25.4	71.7	50.8	39.3	0.00	05	00	0.06	0.00	1.08	16	0.12	00
B71	Najja	Bufumbe	Walukanga Fred	Tap stand	6.12	26.5	70.6	50.1	39.1	0.04	00	00	0.05	0.00	1..23	19	0.15	00
B72	Najja	Bufumbe	Walukanga Fred	Household	6.20	26.5	69.9	49.7	39.0	0.02	00	00	0.06	0.00	1.15	23	0.17	00
B73	Najja	Bufumbe	Namuhenge Zabrani	Household	6.14	26.5	71.6	50.8	39.6	0.00	10	02	0.03	0.00	1.24	24	0.14	**06**
B74	Najja	Bufumbe	Otuke Okia 1	Household	6.16	27.7	73.4	52.3	40.6	0.00	05	02	0.06	0.00	1.30	26	0.16	00
B75	Najja	Bufumbe	Okia	AQ	6.03	27.1	70.2	49.9	39.1	0.06	00	00	0.10	0.02	1.23	19	0.11	00
B76	Najja	Bufumbe	Otuke Okia 2	Household	6.08	26.1	72.7	51.8	40.0	0.00	10	02	0.02	0.00	1.17	20	0.07	00
B77	Najja	Bufumbe	Kigongo Godfrey	Household	6.89	25.9	85.2	60.6	45.4	0.00	00	00	0.06	0.00	1.24	17	0.15	**03**
B78	Najja	Bufumbe	Akwale Getrude	Household	6.63	24.7	79.5	56.5	42.6	0.01	05	02	0.08	0.00	1.12	22	0.10	00
B79	Najja	Bufumbe	Akwale Getrude	Tap stand	6.25	26.6	69.9	49.8	38.9	0.04	00	00	0.02	0.00	1.14	25	0.13	00
B80	Najja	Bufumbe	Nansamba Caro	Household	6.10	26.9	79.3	56.5	43.1	0.00	00	00	0.03	0.00	1.16	21	0.16	00
B81	Najja	Busagazi	The source	Borehole	6.03	24.3	272	180	128	N/A	<0.5	1.0	0.25	<0.1	1.29	125	0.03	00
B82	Najja	Busagazi	Busagazi	Reservoir tank	6.27	26.3	289	203	138	0.05	05	02	0.12	0.00	1.06	110	0.00	00
B83	Najja	Busagazi	Nabwiso Gerald	Tap stand	6.68	25.6	289	204	139	0.03	00	02	0.13	0.00	1.20	105	0.01	00
B84	Najja	Busagazi	Nabwiso Gerald	Household	6.70	25.8	287	203	138	0.00	00	00	0.15	0.00	1.02	120	0.00	00

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S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B85	Najja	Busagazi	Tidibuka Mary	Tap stand	6.77	25.6	286	203	138	0.04	05	00	0.16	0.00	1.09	100	0.00	00
B86	Najja	Busagazi	Tidibuka Mary	Household	7.66	26.9	328	234	159	0.00	00	02	0.13	0.00	1.10	105	0.00	00
B87	Najja	Busagazi	Namwase Fida	Household	6.91	28.7	286	204	140	0.00	00	00	0.12	0.00	1.12	120	0.00	00
B88	Najja	Busagazi	Basemera Ester	Household	8.10	26.0	285	202	138	0.00	00	00	0.13	0.00	1.12	105	0.00	00
B89	Najja	Busagazi	Mawejje Zabina	Household	7.18	26.2	286	204	139	0.00	05	00	0.15	0.00	1.06	90	0.00	00
B90	Najja	Busagazi	Bamaririza Erina	Household	6.99	26.3	286	202	138	0.03	00	00	0.14	0.00	1.13	100	0.00	00
B91	Najja	Busagazi	Lwogose Lwajuma	Household	6.84	26.1	283	201	138	0.01	05	02	0.13	0.01	1.10	110	0.00	**02**
B92	Najja	Busagazi	Nakibure Cissy	Household	7.76	26.1	284	202	137	0.00	10	04	0.20	0.00	1.04	100	0.00	00
B93	Najja	Busagazi	Park	AQ	6.72	25.6	282	200	137	0.04	00	00	0.14	0.00	1.00	100	0.00	00
B94	Najja	Busagazi	Kataike Annet	Household	6.88	27.4	289	205	140	0.00	00	00	0.12	0.00	1.16	105	0.00	00
B95	Najja	Busagazi	Mukadasi Debrah	Household	6.90	25.7	288	205	139	0.01	00	00	0.13	0.00	1.09	110	0.00	00
B96	Najja	Busagazi	Najjembe Eva	Household	7.14	27.4	287	204	139	0.00	00	00	0.12	0.00	1.12	100	0.00	00
B97	Najja	Gimbo	The source	Borehole	**5.38**	23.5	64.8	47.1	32.1	N/A	<0.5	1.2	0.03	<0.1	5.03	21	**0.54**	00
B98	Najja	Gimbo	Nabukonde Oliver	Tap stand	6.46	25.9	88.2	63.1	46.8	0.05	00	00	0.00	0.00	2.98	19	0.28	00
B99	Najja	Gimbo	Nabukonde Oliver	Household	6.51	26.1	86.3	61.7	45.9	0.01	10	02	0.00	0.00	3.11	22	0.34	**03**
B100	Najja	Gimbo	Bugingo Ivan	Household	5.88	25.7	105.1	74.6	54.2	0.00	05	02	0.00	0.00	2.07	20	0.27	00
B101	Najja	Gimbo	Alor Minyonsi	Household	6.60	26.8	85.3	60.1	45.4	0.01	10	04	0.00	0.00	2.12	18	0.26	00
B102	Najja	Gimbo	Church	AQ	6.24	25.9	85.4	60.8	45.6	0.02	00	00	0.00	0.00	2.40	18	0.26	00

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S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B103	Najja	Gimbo	Pump house	AQ	6.18	25.6	85.5	61.1	45.7	0.04	00	00	0.00	0.00	2.16	19	0.19	00
B104	Najja	Gimbo	Grace Nekimite	Household	6.27	24.3	86.0	61.2	45.4	0.03	05	02	0.00	0.00	2.40	20	0.18	00
B105	Najja	Gimbo	Nakijoba Lydia	Household	6.31	26.3	84.8	60.3	45.3	0.02	00	00	0.00	0.00	2.12	22	0.23	00
B106	Najja	Gimbo	Mulongo Waswa	Household	6.16	25.7	85.5	60.7	45.5	0.00	00	00	0.00	0.00	2.18	17	0.18	00
B107	Najja	Gimbo	Wangoda Difasi	Household	6.30	27.0	82.2	58.4	44.3	0.01	05	00	0.00	0.00	2.23	19	0.18	00
B108	Najja	Gimbo	Bagalwa Mohamad	Tap stand	6.23	26.9	86.3	61.2	46.1	0.04	00	00	0.00	0.00	2.34	17	0.14	00
B109	Najja	Gimbo	Bagalwa Mohamad	Household	6.67	25.6	90.4	64.3	47.8	0.01	05	02	0.00	0.00	2.20	19	0.16	00
B110	Najja	Gimbo	Nanyanzi Faridah	Tap stand	6.40	25.6	85.3	60.8	45.2	0.03	00	00	0.00	0.00	2.12	20	0.23	00
B111	Najja	Gimbo	Nanyanzi Faridah	Household	6.52	24.4	90.8	64.6	47.6	0.00	00	00	0.00	0.00	1.98	18	0.21	00
B112	Ngogwe	Natyole	The source	Borehole	6.25	23.9	205	144	99	N/A	<0.5	1.0	0.06	<0.1	5.41	48	0.03	00
B113	Ngogwe	Natyole	Karema Karoli	Tap stand	6.34	28.0	211	150	103	0.03	00	00	0.02	0.00	4.89	45	0.00	
B114	Ngogwe	Natyole	Karema Karoli	Household	6.63	25.2	210	149	103	0.00	10	02	0.00	0.00	4.23	40	0.01	**02**
B115	Ngogwe	Natyole	Natyole	Reservoir tank	6.60	26.6	210	145	103	0.03	05	02	0.00	0.00	4.28	43	0.00	00
B116	Ngogwe	Natyole	AQ3	AQ	6.28	27.5	211	150	103	0.01	00	00	0.03	0.00	4.34	42	0.00	00
B117	Ngogwe	Natyole	Kisambira Nassuri	Household	6.37	26.9	211	150	103	0.00	00	00	0.00	0.00	4.30	48	0.00	00
B118	Ngogwe	Natyole	Mukiibi Livingstone	Household	7.09	32.6	216	154	107	0.00	05	02	0.00	0.00	4.46	46	0.00	00

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S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B119	Ngogwe	Natyole	Musiisi Nyansio	Household	8.92	27.3	226	160	110	0.01	05	02	0.00	0.00	4.34	38	0.00	**07**
B120	Ngogwe	Natyole	Munene John Bosco	Tap stand	6.66	25.8	211	150	103	0.00	00	00	0.00	0.00	4.34	40	0.00	00
B121	Ngogwe	Natyole	Munene John Bosco	Household	6.56	28.1	210	149	103	0.00	00	00	0.00	0.00	4.36	43	0.00	00
B122	Ngogwe	Natyole	Kigwa Francis	Household	6.68	26.8	211	150	103	0.01	05	02	0.00	0.00	4.34	45	0.00	**08**
B123	Ngogwe	Natyole	AQ4	AQ	6.23	26.3	211	150	103	0.05	00	00	0.00	0.00	3.45	44	0.00	00
B124	Ngogwe	Natyole	Jimmy Wanyina	Household	6.35	28.0	210	149	103	0.01	05	02	0.00	0.00	4.20	41	0.00	00
B125	Ngogwe	Natyole	Salongo Kimbi	Household	5.83	29.5	94.5	67.1	50.3	0.00	15	04	0.00	0.00	4.12	42	0.00	**02**
B126	Ngogwe	Natyole	Nakafero Edith	Household	6.37	27.0	209	148	102	0.00	05	02	0.00	0.00	4.40	42	0.00	00
B127	Ngogwe	Natyole	Nansamba Terreza	Household	6.85	27.9	209	149	103	0.00	00	00	0.00	0.00	4.25	45	0.00	00
B128	Sii	Upper Ssenyi	The source	Borehole	6.07	23.3	435	305	197	N/A	<0.5	1.0	0.03	<0.1	1.39	210	0.20	00
B129	Sii	Upper Ssenyi	Nsonga	Reservoir tank	7.75	25.2	444	315	214	0.07	05	00	0.00	0.00	1.21	198	0.12	00
B130	Sii	Upper Ssenyi	Upper Ssenyi	Reservoir tank	7.68	26.1	450	320	218	0.05	00	00	0.00	0.00	1.08	178	0.09	00
B131	Sii	Upper Ssenyi	Nsonga AQ2	AQ	7.26	25.8	447	318	216	0.04	05	02	0.00	0.00	1.12	189	0.14	00
B132	Sii	Upper Ssenyi	Wetase Christopher	Household	7.61	25.0	448	319	217	0.06	00	00	0.00	0.00	1.07	200	0.10	00

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S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B133	Sii	Upper Ssenyi	Matovu Robert	Household	7.59	24.5	406	288	196	0.07	00	00	0.00	0.00	1.20	190	0.12	**25**
B134	Sii	Upper Ssenyi	Nakabale Steven	Tap stand	7.31	25.3	440	291	199	0.02	00	00	0.00	0.00	1.11	190	0.13	00
B135	Sii	Upper Ssenyi	Nakabale Steven	Household	7.90	25.0	451	321	219	0.01	05	02	0.00	0.00	1.20	197	0.09	**02**
B136	Sii	Upper Ssenyi	Kyaterekera John	Household	7.49	26.1	448	318	217	0.00	10	02	0.00	0.00	1.07	187	0.11	00
B137	Sii	Upper Ssenyi	Kyaterekera John	Tap stand	7.63	25.3	449	320	218	0.01	00	00	0.00	0.00	1.12	201	0.14	00
B138	Sii	Upper Ssenyi	Gloria Waswa	Household	7.34	25.5	443	314	215	0.00	00	00	0.00	0.00	1.04	200	0.15	00
B139	Sii	Upper Ssenyi	Mayanja William	Tap stand	7.28	25.3	448	319	217	0.00	05	02	0.00	0.00	1.03	178	0.12	00
B140	Sii	Upper Ssenyi	Mayanja William	Household	7.74	24.3	447	318	216	0.01	00	00	0.00	0.00	1.21	169	0.20	00
B141	Sii	Upper Ssenyi	Kato David	Household	7.82	24.5	446	317	216	0.02	00	00	0.00	0.00	1.16	179	0.11	00
B142	Sii	Muvo	The source	Borehole	6.35	24.1	70	49	33	N/A	<0.5	1.1	0.26	0.00	1.44	32	0.16	00
B143	Sii	Muvo	Muvo	Reservoir tank	6.83	24.9	78.3	55.8	42.2	0.08	10	04	0.17	0.00	1.12	29	0.09	00
B144	Sii	Muvo	Muvo Center	AQ	6.90	26.1	81.6	58.0	43.9	0.10	00	00	0.12	0.00	1.10	28	0.10	00
B145	Sii	Muvo	Nalubowa Justine	Household	7.13	25.3	80.9	57.8	43.6	0.06	05	02	0.18	0.00	1.29	25	0.12	00
B146	Sii	Muvo	Masajja Jaffari	Household	7.10	24.6	82.5	58.6	43.9	0.08	05	02	0.16	0.00	1.00	27	0.08	00

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S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B147	Sii	Muvo	Kituka Bonny	Household	7.21	24.6	81.4	57.8	43.3	0.05	10	04	0.16	0.00	1.21	27	0.06	00
B148	Sii	Muvo	Nansubuga Eva	Household	6.97	24.4	81.6	57.9	43.5	0.06	05	02	0.20	0.00	1.09	30	0.12	00
B149	Sii	Muvo	Shabban Namalu	Household	6.92	24.9	80.4	57.0	43.0	0.07	10	04	0.18	0.00	1.07	26	0.10	00
B150	Sii	Muvo	Namuwaya Rema	Household	7.11	25.2	82.6	58.9	44.3	0.05	05	02	0.17	0.00	1.19	25	0.07	00
B151	Sii	Muvo	Wasswa Molly	Household	7.11	25.9	80.8	57.5	43.6	0.05	10	02	0.12	0.00	1.12	28	0.08	00
B152	Sii	Muvo	Nakintu Flavia	Tap stand	7.06	26.0	81.4	57.8	43.8	0.09	05	02	0.16	0.00	1.14	27	0.09	00
B153	Sii	Muvo	Nakintu Flavia	Household	7.19	25.8	82.3	58.4	43.6	0.02	15	04	0.18	0.00	1.12	25	0.12	**02**
B154	Sii	Muyubwe	Muyubwe source	Borehole	5.2	24.2	54	38	22.8	N/A	25	02	0.034	0.00	0.54	20	0.17	00
B155	Sii	Muyubwe	Kigundu Fred	Household	5.53	23.8	21.3	15.1	17.8	0.09	05	02	0.00	0.00	0.49	10	0.16	00
B156	Sii	Muyubwe	Ssekafawa Haruna	Household	7.43	23.9	52.2	36.6	30.4	0.07	10	04	0.00	0.00	0.45	16	0.09	00
B157	Sii	Muyubwe	Nakahunde Harriet	Household	6.43	23.3	28.1	20.1	19.3	0.04	15	04	0.00	0.00	0.56	10	0.14	00
B158	Sii	Muyubwe	Nakibirango Getrude	Household	7.29	23.6	102.1	72.6	52.6	0.00	15	04	0.09	0.23	0.78	40	0.18	**07**
B159	Sii	Muyubwe	Okoboi Ismail	Household	6.65	23.9	30.0	21.3	21.4	0.05	10	02	0.00	0.00	0.40	12	0.12	00
B160	Sii	Muyubwe	AQ3	Tap stand	5.87	24.1	33.9	24.1	23.2	0.09	05	02	0.00	0.00	0.43	15	0.20	00
B161	Sii	Muyubwe	Kamusime Marion	Household	6.77	23.8	30.1	20.7	21.1	0.06	10	04	0.00	0.00	0.38	09	0.19	00

EXTERNAL EVALUATION FINAL REPORT

S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B162	Sii	Bubwa	The source	Borehole washout	**4.8**	23.3	30	21	22.9	N/A	22	2.5	0.006	0.00	0.94	24	0.13	**05**
B163	Sii	Bubwa	Bubwa	AQ2	6.26	24.5	33.7	25.3	25.6	0.11	05	02	0.00	0.00	0.87	18	0.09	00
B164	Sii	Bubwa	Nankya Scovia	Household	6.59	23.3	32.3	24.2	24.8	0.07	00	00	0.00	0.00	0.91	16	0..10	00
B165	Sii	Bubwa	Twaha Ssensamire	Household	6.61	23.4	33.1	25.0	26.3	0.08	05	02	0.00	0.00	0.78	14	0.06	00
B166	Sii	Bubwa	Nabatanzi Erisa	Household	6.70	23.2	32.4	24.4	24.7	0.04	10	02	0.00	0.00	0.58	10	0.05	00
B167	Sii	Bubwa	Mukayigiro Venancia	Household	6.65	23.4	33.5	25.6	27.1	0.07	05	02	0.00	0.00	0.80	16	0.08	00
B168	Sii	Bubwa	Nandege Mariam	Household	6.65	23.1	32.4	24.3	24.7	0.05	00	02	0.00	0.00	0.88	09	0.09	00
B169	Sii	Bubwa	Bubwa	AQ3	6.10	24.1	33.9	25.9	25.3	0.09	00	00	0.00	0.00	0.74	12	0.06	00
B170	Sii	Bubwa	Namakula Josephine	Household	6.63	23.3	34.5	26.1	26.5	0.06	10	04	0.00	0.00	0.82	10	0.09	00
B171	Sii	Bubwa	Nasuuna Teopista	Household	6.53	23.5	32.9	24.8	25.3	0.06	05	02	0.00	0.00	0.18	11	0.05	00
B172	Sii	Bubwa	Wetaka Rogers	Household	6.71	23.4	33.8	26.2	25.7	0.03	00	00	0.00	0.00	0.12	18	0.12	00
B173	Sii	Bubwa	Maama Sophia	Household	6.55	23.2	11.0	7.8	13.9	0.06	00	02	0.11	0.09	0.14	05	0.19	**10**
B174	Sii	Kigugo	The source	Borehole	**5.2**	24.3	30	21	19.4	N/A	12	02	0.001	0.00	0.81	16	0.15	**16**
B175	Sii	Kigugo	Kigugo police	AQ	6.17	24.4	30.6	26.0	20.1	0.06	00	00	0.00	0.00	0.62	14	0.09	00

S/N	S/C	Village	Sample Name	Source Description	pH	Temp	EC	TDS	Salts	Free cl_2	Colour	Turbidity	Ammonia	Fluoride	nitrates	Hardness	Total Iron	E-coli
B176	Sii	Kigugo	Nagenda William	Household	6.27	23.8	30.5	26.1	19.9	0.03	05	02	0.00	0.00	0.34	16	0.06	00
B177	Sii	Kigugo	Kigugo police	Household	6.35	24.5	39.4	25.3	19.5	0.01	05	02	0.00	0.00	0.45	13	0.12	00
B178	Sii	Kigugo	Middle	AQ	6.31	24.2	30.3	25.7	19.8	0.08	00	00	0.00	0.00	0.40	16	0.10	00
B179	Sii	Kigugo	Mirembe Prossy	Household	6.84	23.2	39.0	24.5	18.7	0.03	05	02	0.00	0.00	0.45	17	0.07	00
B180	Sii	Kigugo	Nakibirango Sarah	Household	6.77	23.9	39.5	25.2	19.0	0.01	00	00	0.00	0.00	0.30	19	0.08	00
B181	Sii	Kigugo	Kasambwa Joseph	Household	6.77	23.0	39.8	25.4	19.3	0.04	10	02	0.00	0.00	0.52	13	0.06	00
B182		Kigugo	Reservoir tank	AQ	6.28	23.2	39.5	25.1	19.4	0.06	00	00	0.00	0.00	0.34	14	0.10	00

Interpretation of results in the table above:

1) **pH;** According to the results above, most water samples from water sources, storage units, tap stands and households drinking water container samples met the pH Ugandan guideline value of (5.5 – 9.5) for portable water **except** Bugoba A water source, Muyumbe water source, Bubwe water Source and Kigungo water source. The pH value was slightly low compared Ugandan guideline value for drinking water.
2) **Electrical conductivity**: All the samples tested met Ugandan conductivity specifications of less than 2500µs/cm of drinking water.
3) **Total dissolved solutes (TDS)**: All samples met TDS specifications of less than 1500 mg/l, Ugandan guideline value for drinking water.
4) **Salts**: All the samples tested met the salinity specification of less than 500 mg/l for drinking water.
5) **Turbidity**: The maximum accepted turbidity value for Ugandan drinking water quality standards is 25 NTU. All samples from the above water sources, reservoir tanks, tap stands and drinking water household containers met specifications for turbidity value.
6) **Colour**: Good water quality should be colour less. High colour levels in any water sample is an indication of poor controls for runoffs, poor borehole casing and sometimes an indication of rust in borehole pipes. For household drinking water samples, colour may be caused by the presence of algae in water or colloids or refractive clay soil particles. The accepted range for colour is <50 pte mg/l. All samples tested showed good colour levels. Colour as a parameter has no reported effect on human health but together with turbidity may affect one's appetite for water consumption and in most cases it acts as indicators of Microbiological contamination.
7) **Ammonium:** All the samples tested met the Ammonium Ugandan guideline value for drinking water of O.5 mg/l.
8) **Nitrates:** All the samples tested met Nitrates Ugandan guideline value of 10mg/l.
9) **Total Hardness:** All the samples drawn from the water sources, reservoir tanks, tap stands and households met the hardness specification level of 600mg/l for drinking water.
10) **Fluorides:** All the samples tested met the fluoride guideline values for drinking water of 1.5 mg/l .
11) **Total Iron:** Only two samples from Bugoba A production borehole and Gimbo production borehole showed slightly high total iron value compared to Ugandan guideline value for total iron.

12) **Escherichia coli (E- coli**): Two water samples from production boreholes Bubwe and Kigugo showed traces of e-coli contamination and seventeen household drinking water samples showed traces of e- coli too. This indicates that most households don't follow the water safe chain at collection, transportation, storage and even at consumption point thus causing microbiological cross contamination. E-coli contamination is a sign that water has some pathogens and can cause severe water borne diseases like typhoid, diarrhea, cholera and dysentery. The population is advised to properly follow safe water chain at the source, collection, transportation, storage and consumption stage and to boil water for drinking especially for water drawn from point water sources that are at high risk for **e- coli** contamination.

Specific Recommendation

1) Generally, the water samples from Buikwe Iceland funded water projects showed that water is of good quality though with a few exceptions. Since there was no any traces of e-coli contamination at reservoir tanks and tap stands, we can conclude that the water supplied from these water projects is safe for human consumption.

2) It was observed during this water quality sampling and testing activity that most households or water users don't practice safe water chain. Though safe drinking water was provided through constructed mini piped water supply systems, we still get contaminated samples from household drinking water containers. This implies that the containers used to draw the water are not safe. There is need for massive sensitization of water users about the safe water chain.

3) The water for drinking was not kept in a separate container from the water for other domestic purposes at household level. The households that tried to separate it, put it in pots which have their own challenges at consumption level. For instance, drawing water for drinking from the pots involves high chances of contamination either through the cups used or hands used to draw water.

4) The other challenge observed was that the containers used to draw water from the tap stands or AQs taps are the same containers used to draw water from lakes or other highly contaminated water sources. That means that if safe and clean water is introduced into highly contaminated containers, the so called safe water will be prone to contamination.

5) It was also observed that all households visited didn't treat nor boil water for drinking; there is need for people to know reasons why they should boil water for drinking.

6) Most containers used to draw water had no covers or lids and even those that tried to provide, had either cassava or banana fingers or maize cobs; this means that as water is being collected, transported or stored, a lot of foreign matter is introduced in it.

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Ministry of Wat r and Environm nt