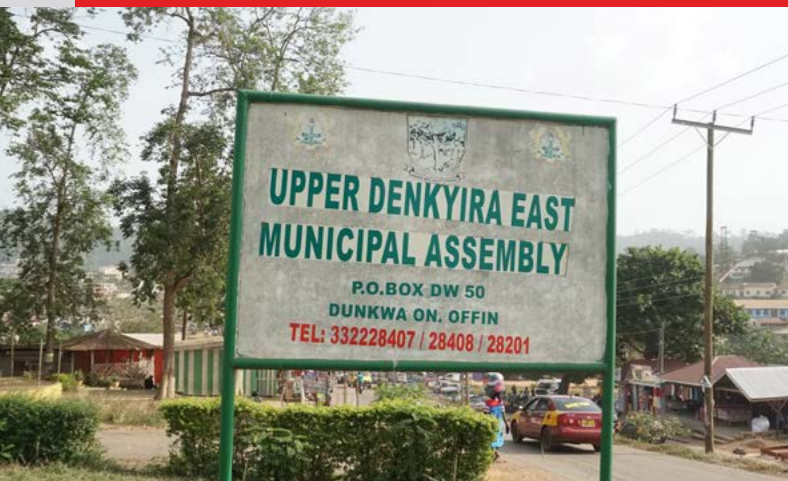




# WATER, SANITATION AND HYGIENE (WASH) AND NEGLECTED TROPICAL DISEASES (NTDS) MASTER PLAN

UPPER DENKYIRA EAST MUNICIPAL ASSEMBLY  
May 2022



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# CONTENTS

<b>ACRONYMS AND ABBREVIATIONS</b>	<b>8</b>
<b>EXECUTIVE SUMMARY</b>	<b>9</b>
<b>1 INTRODUCTION TO THE WASH AND NTD MASTER PLAN</b>	<b>12</b>
1.1 BACKGROUND	12
1.2 RATIONALE	12
1.3 PROCESS OF DEVELOPING THE MASTER PLAN	13
1.4 NATIONAL OVERVIEW OF WATER, SANITATION, AND HYGIENE	13
1.4.1 National Commitment	14
1.4.2 WASH Policy Environment	14
1.5 NATIONAL OVERVIEW OF NEGLECTED TROPICAL DISEASES	15
1.5.1 National Commitment for Neglected Tropical Diseases	15
1.5.2 NTD policy environment.	15
<b>2 UPPER DENKYIRA EAST MUNICIPAL ASSEMBLY PROFILE</b>	<b>16</b>
2.1 LOCATION AND SIZE	16
2.2 VISION, MISSION, AND OBJECTIVES	17
2.3 FUNCTIONS OF THE MUNICIPAL ASSEMBLY	17
2.4 LEGAL FRAMEWORK OF THE DISTRICT ASSEMBLY	17
2.5 GOVERNANCE	18
2.6 PHYSICAL FEATURES	18
2.6.1 Geology	18
2.6.2 Climate	18
2.6.3 Soil	18
2.6.4 Environment and Natural Resources	19
2.7 DEMOGRAPHIC CHARACTERISTICS	19
2.8 SOCIAL SERVICES	19
2.8.1 Education	19
2.8.2 Health	20
2.8.3 Vulnerability and Social Protection	20
2.9 ECONOMIC CONTEXT	21
2.10 KEY DEVELOPMENT ISSUES/CHALLENGES	21
<b>3 ANALYSIS OF WASH AND NTD ISSUES IN UDEMA</b>	<b>23</b>
3.1 WATER SERVICES (URBAN AND RURAL)	23
3.1.1 Water service delivery models: infrastructure and management models	24
3.1.2 The GWCL-managed Dunkwa scheme	24
3.1.3 Community-manged piped schemes	25
3.1.4 Limited mechanised boreholes	25
3.1.5 Community-managed handpumps	26
3.2 SANITATION AND HYGIENE	27
3.2.1 Sanitation service levels	27

3.3	WASH IN INSTITUTIONS	28
	3.3.1 WASH service levels in schools	29
	3.3.2 WASH service levels in health care facilities	30
3.4	WATER RESOURCES MANAGEMENT	30
3.5	NEGLECTED TROPICAL DISEASES	31
	3.5.1 The Burden of NTDs in the Municipality	31
	3.5.2 NTDs control activities in the municipality	32
3.6	INSTITUTIONAL AND ASSESSMENT OF WASH BUILDING BLOCKS	34
	3.6.1 Local water, sanitation and hygiene service system strengthening	34
3.7	SUMMARY OF MAIN CHALLENGES IN WASH AND NTDS	35
<b>4</b>	<b>PROJECTIONS AND STRATEGIC ACTIONS</b>	<b>36</b>
4.1	INTRODUCTION	36
4.2	POPULATION PROJECTIONS	36
4.3	MEDIUM- AND LONG-TERM WASH TARGETS	37
	4.3.1 Water service targets	37
	4.3.2 Sanitation and hygiene targets	37
	4.3.3 Water, sanitation, and hygiene in schools	38
	4.3.4 Water, sanitation, and hygiene in health care facilities	38
4.4	MEDIUM AND LONG TERM NTD TARGETS	39
4.5	STRATEGIC DIRECTIONS AND ACTIONS	39
	4.5.1 Water services	40
	4.5.2 Sanitation and hygiene services	41
	4.5.3 Water, sanitation, and hygiene in schools	42
	4.5.4 Water, sanitation and hygiene in health care facilities	42
	4.5.5 Effective control, elimination, and eradication of neglected tropical diseases	43
4.6	CROSS-CUTTING PRINCIPLES FOR THE EFFECTIVE WORKING OF THE WASH/NTD GROUP	44
4.7	RISKS AND MITIGATION	45
<b>5</b>	<b>PARTNERSHIPS AND IMPLEMENTATION ARRANGMENTS</b>	<b>46</b>
5.1	MUNICIPAL ASSEMBLY ACTORS	46
5.2	REGIONAL AND NATIONAL GOVERNMENT ACTORS	46
5.3	DEVELOPMENT PARTNERS AND NGOS	46
<b>6</b>	<b>COMMUNICATION, ADVOCACY AND NETWORKS</b>	<b>47</b>
6.1	OBJECTIVES AND ACTIVITIES	47
6.2	TARGET AUDIENCES	47
6.3	KEY MESSAGES AND THEMES	48
6.4	CHANNELS OF COMMUNICATION	49
<b>7</b>	<b>MONITORING, EVALUATION AND LEARNING</b>	<b>50</b>
7.1	MONITORING FRAMEWORK	50
7.2	MONITORING AND EVALUATION	51
7.3	KNOWLEDGE MANAGEMENT AND LEARNING	52

<b>8</b>	<b>COSTS OF THE MASTER PLAN</b>	<b>53</b>
8.1	INTRODUCTION	53
8.2	METHODOLOGY	53
8.3	COSTING WATER SERVICES	54
8.4	COSTING SANITATION SERVICES	55
8.5	COSTING FOR WASH IN SCHOOLS	56
8.6	COSTING FOR WASH IN HEALTH CARE FACILITIES	56
8.7	COSTING FOR NTD STRATEGIES AND ACTIVITIES	57
8.8	TOTAL COSTS FOR UNIVERSAL WASH COVERAGE AND REDUCTION IN NTD INCIDENCE BY 2030	57

<b>REFERENCES</b>	<b>58</b>
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<b>ANNEX CONSOLIDATED COST ESTIMATES FOR THE WASH AND NTD MASTER PLAN</b>	<b>59</b>
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### LIST OF TABLES

TABLE 1:	NATURAL RESOURCE ENDOWMENT, UTILISATION, CHALLENGES, AND BENEFITS	19
TABLE 2:	VULNERABILITY ISSUES IN THE UPPER DENKYIRA EAST MUNICIPAL ASSEMBLY (UDEMA)	20
TABLE 3:	KEY DEVELOPMENT ISSUES/CHALLENGES	21
TABLE 4:	NUMBER OF STANDPIPES AND HOUSEHOLD CONNECTIONS PER SMALL TOWN PIPED SCHEME	25
TABLE 5:	WATER SERVICE PROVIDER PERFORMANCE	27
TABLE 6:	OVERVIEW OF ASSESSED SCHOOLS	29
TABLE 7:	OVERVIEW OF ASSESSED HCFS	30
TABLE 8:	CASES OF SKIN RELATED NTDS IN UDEMA	31
TABLE 9:	ACTIVE CASE SEARCH FINDINGS - YAWS	33
TABLE 10:	ACTIVE CASE SEARCH FINDINGS – LEPROSY	33
TABLE 11:	ACTIVE CASE SEARCH FINDINGS – BURULI ULCER	34
TABLE 12:	BUILDING BLOCK ASSESSMENT FOR WASH IN UPPER DENKYIRA EAST MUNICIPAL ASSEMBLY	34
TABLE 13:	SUMMARY OF MAIN CHALLENGES IN WASH AND NTDS	35
TABLE 14:	PROJECTED POPULATION FROM 2021 THROUGH TO 2030	36
TABLE 15:	WATER SERVICE COVERAGE (%) AND PROJECTIONS	37
TABLE 16:	SANITATION SERVICE COVERAGE (%) AND PROJECTIONS	37
TABLE 17:	WASH SERVICE COVERAGE (%) AND PROJECTIONS IN SCHOOLS	38
TABLE 18:	WASH SERVICE COVERAGE AND PROJECTIONS IN HCFS	38
TABLE 19:	INCIDENCE TARGETS OF SKIN RELATED NTDS IN UDEMA	39
TABLE 20:	POLICY OBJECTIVES, STRATEGIES, AND ACTIONS FOR WATER SERVICES	40
TABLE 21:	POLICY OBJECTIVES, STRATEGIES, AND ACTIONS FOR SANITATION AND HYGIENE SERVICES	41
TABLE 22:	POLICY OBJECTIVES, STRATEGIES, AND ACTIONS FOR WASH IN SCHOOLS	42
TABLE 23:	POLICY OBJECTIVES, STRATEGIES, AND ACTIONS FOR WASH IN HEALTH CARE FACILITIES	42
TABLE 24:	ACTIVITIES TO IMPLEMENT STRATEGIES TO ENSURE NTD TARGETS ARE ACHIEVED	43
TABLE 25:	POLICY OBJECTIVES, STRATEGIES, AND ACTIONS FOR CROSS CUTTING ISSUES ON WASH AND NTDS	44
TABLE 26:	ANTICIPATED RISKS AND MITIGATIONS	45
TABLE 27:	TARGET AUDIENCES	47
TABLE 28:	SOCIAL BEHAVIOUR CHANGE COMMUNICATION (SBCC) MESSAGES FOR WASH AND NTD INTERVENTIONS	48
TABLE 29:	DETAILED WASH AND NTD INDICATORS	50



TABLE 30:	COST ESTIMATES FOR WATER SERVICES	54
TABLE 31:	COST ESTIMATES FOR SANITATION ACTIVITIES	55
TABLE 32:	COST ESTIMATES FOR WASH SERVICES IN SCHOOLS	56
TABLE 33:	COST ESTIMATES FOR WASH IN HEALTH CARE FACILITIES	56
TABLE 34:	COST ESTIMATES FOR NTD STRATEGIES AND ACTIVITIES	57

## **LIST OF FIGURES**

FIGURE 1:	UPPER DENKYIRA EAST IN THE NATIONAL AND REGIONAL CONTEXT	16
FIGURE 2:	POPULATION SERVED BY TYPE OF WATER SERVICES.	23
FIGURE 3:	WATER SERVICES BY TYPE	24
FIGURE 4:	HANDPUMP FUNCTIONALITY	26
FIGURE 5:	PROPORTION OF POPULATION WITH ACCESS TO SANITATION SERVICES	28
FIGURE 6:	WASH IN SCHOOLS	29
FIGURE 7:	WASH IN HCF	30
FIGURE 8:	UDEMA MAP ILLUSTRATING COMMUNITIES, ENDEMIC WITH NEGLECTED TROPICAL DISEASES	32

# ACRONYMS AND ABBREVIATIONS

<b>CHOs</b>	Community Health Officers
<b>CHPS</b>	Community Health Planning and Services
<b>CWSA</b>	Community Water and Sanitation Agency
<b>DACF</b>	District Assemblies Common Fund
<b>DESSAP</b>	District Environmental Sanitation Strategy and Action Plan
<b>DPP</b>	Dual Path Platform
<b>EHSD</b>	Environmental Health and Sanitation Directorate
<b>ESP</b>	Environmental Sanitation Policy
<b>GES</b>	Ghana Education Service
<b>GHS</b>	Ghana Health Service
<b>GWCL</b>	Ghana Water Company Limited
<b>G2D</b>	Grade 2 Disabilities
<b>JMP</b>	Joint Monitoring Programme report
<b>MDTP</b>	Medium-Term Development Plan
<b>MMDAs</b>	Metropolitan, Municipal and District Assemblies
<b>MSWR</b>	Ministry of Sanitation and Water Resources
<b>MB</b>	Multibacillary
<b>MHD</b>	Municipal Health Directorate
<b>NMTDPF</b>	National Medium-Term Development Policy Framework
<b>NTDs</b>	Neglected Tropical Diseases
<b>NTDP</b>	Neglected Tropical Diseases Programme
<b>NWP</b>	National Water Policy
<b>OPD</b>	Outpatient Department
<b>PCR</b>	Polymerase Chain Reaction
<b>PHC</b>	Population and Housing Census
<b>RDT</b>	Rapid Diagnostic Testing
<b>SHEP</b>	School Health Education Programme
<b>SDGs</b>	Sustainable Development Goals
<b>UDEMA</b>	Upper Denkyira East Municipal Assembly
<b>WRC</b>	Water Resources Commission
<b>WSMTs</b>	Water and Sanitation Management Teams
<b>WASH</b>	Water, Sanitation, and Hygiene
<b>WHO</b>	World Health Organization



# EXECUTIVE SUMMARY

The provision of safe water, sanitation, and hygiene (WASH) has broad public health benefits that reduce multiple diseases and contribute to non-disease outcomes. Neglected tropical diseases (NTDs) affect more than one billion people and populations living in poverty, without adequate sanitation and those in close contact with infectious vectors and domestic animals and livestock are worst affected. The World Health Organization 2030 road map sets global targets and milestones to prevent, control, eliminate and eradicate 20 neglected tropical diseases (NTDs) and disease groups. By shifting away from single-disease vertical programmes to integrated approaches, it aims to promote improved coordination and collaboration.

Ghana has a rich endowment of water resources which provide for the necessities of life and socio-economic development, but despite improvement in access to water services many people do not enjoy safe, reliable, and affordable water services. A significant number of the population also do not have access to improved sanitation especially in the rural communities. Ghana is endemic for over 12 of the neglected tropical diseases including lymphatic filariasis, onchocerciasis, trachoma, schistosomiasis, soil-transmitted helminthiasis, buruli ulcer, yaws, leprosy, guinea worm, human African trypanosomiasis (HAT) and cutaneous leishmaniasis.

The Joint Monitoring Programme report (JMP 2020) indicates that 41.4% of the population have access to safely managed water services, 44.4% have access to basic water services, 6.6% have limited water services, 2.8% use unimproved water sources and the remaining 4.8% use surface water sources. Only 13.3% of the population have access to safely managed sanitation services, 10.4% have access to basic services, 47.4% have access to limited services, 11.1% use unimproved facilities and 17.8% practice open defecation. A large proportion of liquid waste is not properly disposed of and thus poses a threat to human health and the environment. Inadequate financing and poor enforcement of regulations also contribute to the poor WASH service delivery.

The Upper Denkyira East Municipal Assembly is one of the twenty-two (22) Administrative Districts of the Central Region, and the total population of the Municipality is 110,141 (2021 PHC). The municipality is largely youthful with 50% of the population under 20 years. More than half (51.71%) of the population are urban dwellers.

In the central region, 20 (90.9%) out of the 22 Municipal Metropolitan, Municipal and Districts Assemblies are endemic for Neglected Tropical Diseases (NTDs) including Upper Denkyira East Municipal Assembly. According to data from the National NTD Control Programme, the Municipality is endemic for onchocerciasis, has a high prevalence (50% and above) for schistosomiasis and over 20% prevalence of soil-transmitted helminths. This includes skin related NTDs which disfigure and deform people, and in most cases rendering those affected incapable of earning a livelihood.

Findings<sup>1</sup> from 2021 in the Upper Denkyira East Municipal Assembly, indicate that only 10% of the population have access to potentially safely managed water services, 72% have access to basic services, 6% have limited water services, 11% are using an unimproved source. 38% of the population have access to pit latrines (potentially safely managed services), 20% have access to pour flush systems (at least basic sanitation services), 13% have access to shared sanitation facilities, 19% use unimproved sanitation facilities and 10% practice open defecation. According to the municipal environmental sanitation strategy and action plan, 5% of the sillage disposal within the Municipality is through sewerage, 54% through soak away pit, 26% through gutters, 5% through ditches and 10% in open spaces.

Ghana's health sector desires to see the country free from any Neglected Tropical Diseases (NTD) and through the efforts of the Ghana Health Service and other partners guinea worm and trachoma have been successfully eliminated in Ghana in 2015 and 2018 respectively. The National Health Policy (revised edition, January 2020, page19) and

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<sup>1</sup> WASH services monitoring for Upper Denkyira East Municipal Assembly

Health Sector Medium-Term Development Plan (2014 – 2017) provides the policy framework and direction for national NTD response. The Ghana NTD Master Plan 2021-2025 articulates collaboration with the WASH sector as part of the strategies for the control and elimination of NTDs.

The vision of the WASH sector is to ensure that “all people living in Ghana have access to adequate, safe, affordable and reliable water services, practise safe sanitation and hygiene and that water resources are sustainably managed.” The goal is “to contribute to improvement in the living standards of Ghanaians through increased access to and use of safe water, sanitation and hygiene and sustainable management of water resources.”

The Upper Denkyira East Municipal WASH and NTD master plan provides an integrated approach to the provision of WASH services in a manner that simultaneously mitigates the incidence/prevalence of skin related NTDs through the achievement of safe and sustainable water and sanitation for all. The plan was developed in a participatory manner with stakeholders from the Municipal Assembly, representatives from regional government and the focal persons from the national programmes for NTDs from the Ghana Health Service. Based on consultation with key stakeholders in the Municipal Assembly the context was assessed to establish gaps and to jointly create a vision for 2030 and to set strategies to achieve the set targets.

31 out of the 114 communities in the Municipality are endemic in these NTDs (yaws, buruli ulcer and leprosy). The strategic direction and actions are informed by the fact that the availability of WASH will be an enabler for effective control, elimination, and eradication of NTDs. The endemic and marginalised communities must be prioritised to receive the needed WASH interventions. The strategies are captured by subsectors; however, they are cross-cutting strategies and activities which reflect the areas of convergence of NTDs with WASH. The targets and strategies for the subsectors are summarised as follows:

**Water services** - The key targets, strategies and actions aim to increase universal coverage to at least basic water services in the municipality by 2030. Specifically, it targets to increase the proportion with access to safely managed services (access to water which is free from contamination, and available on premises, when needed) from 10% to 15 %, with the remaining 85% having access to basic water services. The strategies include:

- Extending piped networks within the existing water systems (Ghana Water Company Limited and Community Managed Piped Schemes)
- Expanding and rehabilitating water infrastructure (handpumps and limited mechanised systems) in underserved and unserved communities
- Ensuring sustainable water provision through improving reliability of water services, reducing breakdown rates, and reducing non-revenue water (NRW) losses
- Building the capacities of Water and Sanitation Management Teams in community managed systems.

**Sanitation services** - The target is to increase the proportion of its population with access to at least basic toilet services to 65 % by 2030. This will involve programmes to intensify Community-Led Total Sanitation with the aim to increase the proportion of households with toilet facilities in the municipality. Programmes will be implemented as well to reduce the proportion of people that practise open defecation. The strategies include:

- Extending the implementation of the Community-Led Total Sanitation (CLTS) programme to remaining rural communities in Asikuma and Opponso Zonal Councils
- Improving existing public sanitation facilities to make them disability and gender friendly
- Establishing engineered final disposal sites for both liquid and solid waste management
- Ensuring adequate sanitation equipment and logistics
- Developing and implementing a Behaviour Change Communication (BCC) Strategy
- Strengthening staff capacity within the Environmental Health Department

**WASH in schools** – The target is to increase schools with access to water on premises from 35% in 2021 to 55% in 2030. Similarly, access to safe sanitation services in schools for pupils will increase from 18% in 2021 to 56% in 2030. The target for hand hygiene services with soap and water is to achieve 100% access in the midterm and maintained by 2030. The strategies include:

- Extending water facilities to schools in the Kyekyewere, Asikuma, Oponso and Buabin zonal councils (min. of 5 schools/council).
- Improving basic sanitation to schools in the Municipality
- Sustaining the existing hygiene facilities in schools (96%)
- Providing access to hygiene facilities in remaining schools (4%)

**WASH in health care facilities** - The target is to increase access to improved water supply on premises from 55% in 2021 to 87% in 2030. To increase access to basic sanitation from 21% in 2021 to 71% in 2030 and increase access to basic hygiene services from 15% to 71% by 2030. The strategies include:

- Providing basic water services on the premises of health care facilities
- Providing basic sanitation facilities which are usable, separate for patients and staff, separate for women, and providing menstrual hygiene facilities and meeting the needs of people with limited mobility in health care facilities
- Providing at least three waste collection bins (for sharps, infectious, and non-infectious) for health facilities
- Implementing strategies for safe treatment and disposal of sharps and infectious waste for health facilities
- Providing handwashing facilities for health care facilities (available at points of care and toilets)

**Neglected Tropical Diseases** - The strategies and actions aim to build on the efforts to reduce the incidence, prevalence, morbidity, and/or mortality to a locally acceptable level through deliberate efforts. The targets are to eradicate yaws, control the incidence of buruli ulcer, eliminate leprosy and control schistosomiasis by 2030. The strategies include:

- Capacity building in case detection and treatment of all cases and contacts at all levels for neglected tropical diseases
- Strengthen neglected tropical diseases surveillance at all levels
- Research and innovation
- Collaborative Integrated Vector Management in collaboration with the malaria programme

Cost estimates have been established for all these key areas in the WASH and NTD master plan to provide details and to support prioritisation and budgeting. The cost of strengthening the WASH service delivery system, to ensure universal access to services are sustained, have not been analysed in a comprehensive manner. The costing approach considers the existing and projected population, technology, strategies, and interventions for WASH and NTD service delivery and the costs for sustaining these services.

The estimates include elements of the life cycle costs approach such as the cost for providing the WASH infrastructure, the cost of replacing assets or asset renewal and the cost for supporting service delivery, which includes monitoring and evaluation, technical support, backstopping, capacity building. However, it does not include the cost of routine operations and minor maintenance.

The unit costs are based on estimates from the Upper Denkyira East Municipal Assembly estimates from recent projects in Ghana cedis. Annual inflation adjustments have been applied to the costs over the nine-year period at an inflation rate of 15% using the price levels in December 2021 for the analysis. However, with the increasing rate of inflation over the past twelve months, these estimates must be revised to reflect costs figures at the time of implementation. All the estimates exclude salaries and personnel costs of the government staff - Municipal Assembly, Municipal Health Directorate and SHEP-GES etc.

# 1 INTRODUCTION TO THE WASH AND NTD MASTER PLAN

## 1.1 BACKGROUND

Globally, it has been acknowledged that the provision of safe water, sanitation, and hygiene (WASH) has broad public health benefits that reduce multiple diseases and contribute to non-disease outcomes. The lack of potable water, occurrence of drought or floods expose people to water-borne and sanitation-related diseases as well as relocation problems.

Neglected tropical diseases (NTDs) are a diverse group of communicable diseases that affect more than one billion people and cost developing economies billions of dollars every year. Populations living in poverty, without adequate sanitation and in close contact with infectious vectors and domestic animals and livestock are those worst affected.

Linking WASH and NTDs therefore has potential to impact on multiple NTDs through a single area of intervention. The World Health Organization acknowledges that the provision of safe water, sanitation, and hygiene (WASH) is a key intervention within the global NTD roadmap, as it is critical in the prevention and the provision of care for all neglected tropical diseases.

The 2030 road map sets global targets and milestone to prevent, control, eliminate and eradicate 20 neglected tropical diseases (NTDs) and disease groups. By shifting away from single-disease vertical programmes to integrated approaches, it aims to promote improved coordination and collaboration. Another distinct feature is to drive greater ownership by national and local governments, including communities. It is important to mobilise WASH and NTD actors to work together to meet the NTD roadmap targets.

## 1.2 RATIONALE

The WASH and NTDs master plan provide an integrated approach to the provision of WASH services in a manner that simultaneously mitigates the incidence/prevalence of skin related NTDs through the achievement of safe and sustainable water and sanitation for all in Upper Denkyira East Municipal Assembly.

The master plan serves as a tool for the local governments and development partners to harmonise and localise their efforts towards achieving the relevant sustainable development goals (SDGs) and national targets in their jurisdiction. The master plan supports the effective and efficient provision and utilisation of resources from all stakeholders as they jointly plan to provide resources to attain universal access to safe water, sanitation, and hygiene and to reduce/eliminate neglected tropical diseases.

The WASH master planning is useful as it supports to:

1. Enhance collaboration and coordination between stakeholders through the development of a joint vision, strategy, and plan
2. Increase insights in required costs for achieving the set targets (national and SDGs) and
3. Provides a basis for mobilising resources and commitment from various partners to implement the plan.

### **1.3 PROCESS OF DEVELOPING THE MASTER PLAN**

The development process for the master plan has been participatory and involving multi-stakeholders at municipality level. Key stakeholders and strategic partners have been engaged to jointly deliberate and support the process. IRC Ghana engaged the focal persons of the National Buruli Ulcer Control and Yaws Eradication Programme and the National Leprosy Elimination Programme at the Ghana Health service.

IRC Ghana also worked through a technical committee formed with key stakeholders from Upper Denkyira East Municipal Assembly (UDEMA), Upper Denkyira East Municipal Health Directorate, Ghana Water Company Limited (GWCL), Ghana Education Service (GES), the Anesvad focal person(s), and civil society.

The process involved collecting both primary and secondary data through surveys, face to face meetings and interviews, stakeholder consultation and validation meeting. The key stakeholder meetings held at the UDEMA premises were:

- Inception workshop - With participants from government, private sector, service providers, private operators, NGOs, service users, assembly members, and traditional authorities, the meeting provided a platform to present the findings from the context analysis. The ensuing discussions and feedback provided a basis for identifying the data gaps and the focus on data collection for the planning process to establish a good basis for target setting, monitoring, and reviewing. The members of the technical working group who represent the various departments and agencies supported the team to respond to the questions and comments from the participants.
- Strategic planning workshop – The findings from the surveys, community interviews and field visits were presented to stakeholders in the Municipal Assembly. The participants were guided through a series of exercises to discuss the findings and to deliberate of strategies for addressing the challenges identified. This process is part of engaging multiple stakeholders to create a joint vision for the WASH and NTD master plan. The participants included the Municipal Chief Executive, the Municipal Coordinating Director, and various heads of department from the Municipal Assembly (including Planning, Budgeting, Environmental Sanitation, and Works departments). Other workshop participants include the Municipal Health Director, representatives from the Central Regional Office of Community Water and Sanitation Agency (CWSA), representatives from the Regional Coordinating Council, NGOs, and assembly members from some area councils in the municipality.
- Costing and Validation Workshop – The draft plan was presented to the technical working group from the WASH and Health departments. The participants were grouped to provide feedback and provide further inputs on thematic areas – water, sanitation, WASH in Health and NTD programme, and WASH in schools. In plenary the groups each presented the areas and provided preliminary costs estimates for the thematic areas. The workshop also helped everyone to align the plans of the various departments to develop an integrated WASH and NTD plan.

### **1.4 NATIONAL OVERVIEW OF WATER, SANITATION, AND HYGIENE**

Ghana has a rich endowment of water resources which provide for the necessities of life and socio-economic development and despite improvement in access to water services, many people do not enjoy safe, reliable, and affordable water services. The Ministry of Sanitation and Water Resources established in 2017, provides policy direction, coordinates, monitors, and evaluates the efficiency and effectiveness of the performance of the sanitation and water subsectors.

A significant number of the population also do not have access to improved sanitation especially in the rural communities. The Joint Monitoring Programme report (JMP 2020) indicates that 41.4% of the population have access to safely managed water services, 44.4% with access to basic services, 6.6% have limited water services, 2.8% use unimproved sources and the remaining 4.8% use surface water sources.

A large proportion of liquid waste is not properly disposed of and thus poses a threat to human health and the environment. The JMP report indicates that only 13.3% of the population have access to safely managed sanitation services, 10.4% have access to basic services, 47.4% have access to limited services, 11.1% use unimproved facilities and 17.8% practice open defecation. Inadequate financing and poor enforcement of regulations also contribute to poor WASH service delivery.

### 1.4.1 NATIONAL COMMITMENT

The National Medium-Term Development Policy Framework (NMTDPF) 2022-2025, seeks to operationalise Article 36, Clause 1 of Ghana's 1992 constitution, which enjoins the government to ensure that the national economy is managed efficiently to maximise the welfare of the citizenry. It guides the preparation of MDA/MMDA development plans to ensure the achievement of both regional and national development goals and objectives.

The vision of the WASH sector is "sustainable water and basic sanitation for all" which means ensuring that "all people living in Ghana have access to adequate, safe, affordable and reliable water services, practise safe sanitation and hygiene and that water resources are sustainably managed." The goal is "to contribute to improvement in the living standards of Ghanaians through increased access to and use of safe water, sanitation and hygiene and sustainable management of water resources."

The government priorities are aligned to the SDG targets<sup>2</sup> and they are as follows:

- Target 6.1 – By 2030, achieve universal and equitable access to safe and affordable water for all.
- Target 6.2 – By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying attention to the needs of women and girls and those in vulnerable situations.
- Target 6.3 - By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and substantially increasing recycling and safe reuse globally.

Some other relevant targets for schools and health care facilities are:

- Target 3.3 – Communicable diseases: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases.
- Target 4.A - Build and upgrade education facilities that are child, disability, and gender sensitive and provide safe, nonviolent, inclusive, and effective learning environments for all.

### 1.4.2 WASH POLICY ENVIRONMENT

The Environmental Sanitation Policy (ESP) was first published in 1999, revised in 2010 and plans are underway to revise the policy to meet current development objectives and address aspirations of sector actors. A consolidated National Water Policy (NWP) was first prepared in 2007 and it is currently being revised (2021).

There are strategies and action plans with guide implementation within the subsectors. The urban water subsector is led by Ghana Water Company Limited (GWCL) and the rural water subsector is led by the Community Water and Sanitation Agency (CWSA). The Environmental Health and Sanitation Directorate (EHSD) of the Ministry of Sanitation and Water Resources (MSWR) leads the sanitation and hygiene subsector while, the Water Resources Commission (WRC) leads on water resources management.

The Water Sector Strategic Development Plan (2012-2025) provides a framework for implementing Ghana's vision (sustainable water and basic sanitation for all by 2025), policy objectives and targets for the water and sanitation sector. The National Environmental Sanitation Strategy and Action Plan (2010) provides strategies and action plans specifically for the environmental sanitation subsector and to inform planning at the district level (for the development of the District Environmental Sanitation Strategy and Action Plan - DESSAP) by the Metropolitan, Municipal and District Assemblies (MMDAs) for implementation.

The Ghana Water, Sanitation and Hygiene Sector Development Programme (GWASHSDP) 2021-2030 is being developed to create one unified water resources management, water supply, sanitation, and hygiene development programme for Ghana.

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<sup>2</sup> Ghana SDGs Indicator Baseline Report- 2018

## **1.5 NATIONAL OVERVIEW OF NEGLECTED TROPICAL DISEASES**

For the promotion of good health and delivery of efficient health services, the government interventions being pursued to reduce disability, morbidity and mortality includes accelerating implementation of the national strategy to eradicate yaws, control the incidence of buruli ulcer and eliminate filariasis, schistosomiasis and other neglected tropical diseases.

### **1.5.1 NATIONAL COMMITMENT FOR NEGLECTED TROPICAL DISEASES**

Ghana's health sector desires to see the country free from any Neglected Tropical Diseases (NTD) such as: lymphatic filariases, onchocerciasis, schistosomiasis, soil-transmitted helminthiasis, trachoma, buruli ulcer, yaws, guinea worm, leprosy, leishmaniasis, human African trypanosomiasis amongst others. In this regard, the Ghana Health Service and other partners put in a lot of efforts resulting in the successful elimination of guinea worm and trachoma in Ghana in 2015 and 2018 respectively.

Also, there has been a significant reduction in the prevalence of onchocerciasis and lymphatic filariasis and modest prevalence in the other NTDs such as schistosomiasis, soil-transmitted helminthiasis. Overall, the country is endemic for over 12 of the neglected tropical diseases including lymphatic filariasis, onchocerciasis, trachoma, schistosomiasis, soil-transmitted helminthiasis, buruli ulcer, yaws, leprosy, guinea worm, human African trypanosomiasis (HAT) and cutaneous leishmaniasis. In Ghana, NTD predominantly impact people living in remote rural or urban slum areas where there is limited access to healthcare, clean water, and proper sanitation.

### **1.5.2 NTD POLICY ENVIRONMENT.**

The National Health Policy (revised edition, January 2020, page19) and Health Sector Medium –Term Development Plan (2014 – 2017) provides the policy framework and direction for national NTDs response. Besides creating the enabling policy environment for NTDS, the government has also put in place the Ghana NTD Master Plan 2021-2025 to address the situation in an integrated manner. The Ghana NTD Master Plan 2021-2025 is a strategic plan for the Neglected Tropical Diseases Programme (NTDP) and has as its vision “Ghana free of NTDs and its associated morbidities and disabilities”. The goal is to improve on the capacity of the GHS to establish an integrated NTDs programme capable of delivering interventions to prevent, control, eliminate or eradicate the neglected tropical diseases by the year 2025. This Master Plan provides the basis for national, regional and district annual work plans<sup>3</sup>. The NTD Master Plan articulates collaboration with the WASH sector including provision of water as part of the strategies for the control and elimination of NTDs. Importantly, the Master Plan emphasises integration and co-implementation as well as financing and sustainability and provides a framework for national, regional and district annual work plans for NTD interventions. It is also aligned with the WHO AFRO strategy for NTD Control in Africa.

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<sup>3</sup> Ghana NTD Master Plan 2021-2025

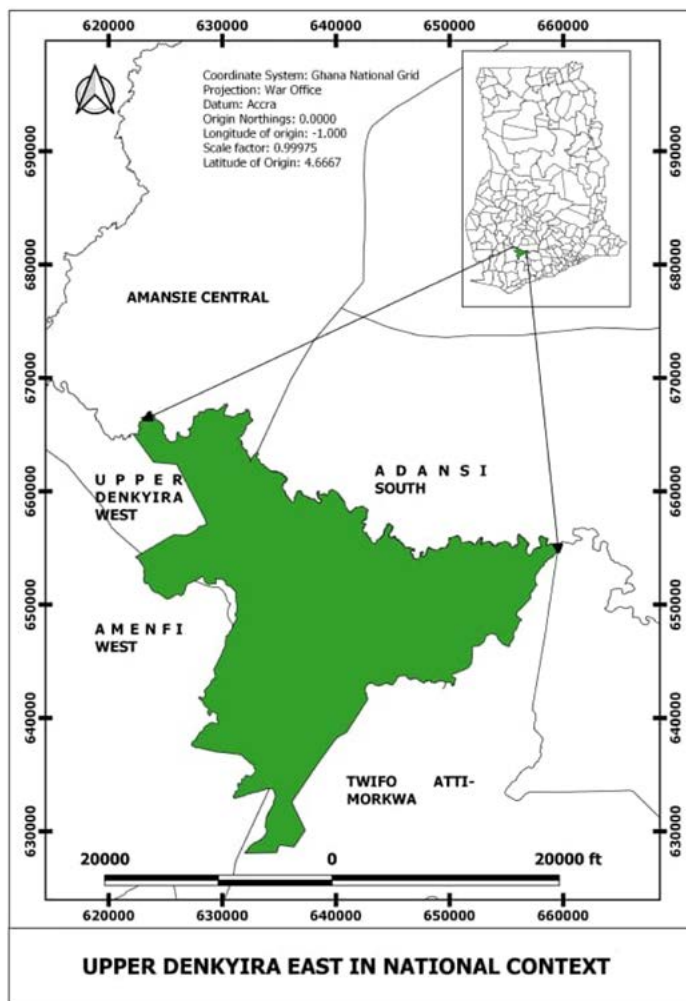


# 2 UPPER DENKYIRA EAST MUNICIPAL ASSEMBLY PROFILE

## 2.1 LOCATION AND SIZE

The Upper Denkyira East Municipal Assembly is one of the twenty-two (22) Administrative Districts of the Central Region which was established in 2007 by Legislative Instrument (LI 1877) from the then Upper Denkyira District. It was inaugurated in February 2008. The administrative capital is Dunkwa-On-Offin.

The Municipality lies within Latitudes 5° 30' and 6° 02' North of the Equator and Longitudes 1° W and 2° West of the Greenwich Meridian. It shares boundaries with Amansie Central District in the North, Assin Fosu Municipality in the Southeast, Atti-Morkwa District in the South and Upper Denkyira West District in the North-West, Wassa Amenfi East in the West and Adansi South in the East. The Upper Denkyira East Municipality has a total land area of 524 square kilometres, which is about 5.33 percent of the total land area of Central Region. Figure 1 below is a map showing Upper Denkyira East in the national and regional context.



**Figure 1** Upper Denkyira East in the national and regional context

## **2.2 VISION, MISSION, AND OBJECTIVES**

The vision of the Upper Denkyira East Municipal Assembly is to become a world class assembly providing client-focused and customer-friendly services to its population. The Municipal Assembly exists to improve the quality of life of the people in the Municipality by initiating sustainable programmes to promote good health, education, environmental sanitation, and economic development. To fulfil its mission, the Upper Denkyira East Municipal Assembly has set itself the following objectives:

- To strengthen institutional capacity of the Municipal Assembly
- To promote high standards for education and good health conditions in the Municipality
- To improve the financial base of the Assembly
- To improve sanitation and waste management
- To support the government flagship policies (One district one factory, planting for food and jobs, free senior high school (SHS) etc.)

## **2.3 FUNCTIONS OF THE MUNICIPAL ASSEMBLY**

Through Act 936 of the Local Governance Act, the Municipal Assembly is mandated to perform the following functions:

- Exercise political and administrative authority in the district
- Promote local economic development
- Provide guidance, give authorities in the district as may be prescribed by law
- A District Assembly shall exercise deliberative, legislative and executive functions
- Be responsible for the overall development of the district
- Formulate and execute plans, programmes, and strategies for the effective mobilisation of resources necessary for the overall development of the district
- Promote and support productive activity and social development in the district and remove any obstacle to initiative and development
- Be responsible for the development, improvement and management of human settlement and the environment in the district
- In co-operation with the appropriate national and local security agencies, be responsible for the maintenance of security and public safety in the district
- Ensure ready access to courts in the district for the promotion of justice
- Act to preserve and promote the cultural heritage within the district
- Execute approved development plans for the district
- Guide, encourage and support sub-district local structures, public agencies, and local communities to perform their functions in the execution of approved development plans.

## **2.4 LEGAL FRAMEWORK OF THE DISTRICT ASSEMBLY**

The Upper Denkyira East Municipal Assembly performs its functions through the following legal frameworks:

- The 1992 Constitution of the Republic of Ghana which enshrines decentralisation policy
- Local Governance Act, 2016 (Act 936)
- Public Financial Management Act (PFM), 2016 Act 921
- Public Procurement Amendment Act, 2016 (Act 914)
- The National Development Planning Commission Act, 1994 (Act 479)
- The National Development Planning Systems Act, 1994 (Act 480)
- The National Development Planning System Law, 2016 (LI 2232)
- Local Government (Departments of District Assemblies) (Commencement) Instrument, 2009 (L.I. 1961)
- Internal Audit Agency Act, 2003 (Act 658)
- Land Use and Spatial Planning Act, 2016, (Act 925)
- Ghana Audit Service Act, 2000 (Act 584)

## **2.5 GOVERNANCE**

The Municipal Assembly is made up of a Municipal Chief Executive, twenty-nine (29) elected members from the electoral areas, twelve (12) members appointed by the President in consultation with chiefs and interest groups in the district, and one Member of Parliament who has no voting right. The Presiding Member, who is elected from among the Assembly Members, convenes and presides over the meetings of the Assembly.

The Assembly performs its functions through the Executive Committee and a network of Sub-Committees. The Executive Committee exercises executive and administrative functions of the Assembly while the Sub-Committees collate and deliberate on issues relevant to their functional areas. Currently, the Executive Committee has the following sub-committees:

- i. Development Planning Sub-Committee
- ii. Education Sub-Committee
- iii. Social Services Sub-Committee
- iv. Works Sub-Committee
- v. Finance and Administration Sub-Committee

There is also the Public Relations and Complaints Committee chaired by the Presiding Member. The Committee is mandated to:

- Educate members of the public on the activities of the District Assembly
- Promote transparency, probity, and accountability in the dealings of the District Assembly and also
- Investigate the complaint or allegations made against the conduct of the District Chief Executive (DCE) and staff of the Assembly.

## **2.6 PHYSICAL FEATURES**

### **2.6.1 GEOLOGY**

The rocks in the Municipality are predominantly of Birimian and Tarkwaian formation. The Birimian formation consists of metamorphosed sediments such as phyllite, schist and lava. This accounts for the Municipality's rich mineral deposits particularly alluvial gold deposits along the valleys of River Offin and its tributaries and gold deposits inland.

### **2.6.2 CLIMATE**

The Municipality falls within the semi-equatorial zone with its characteristics. The mean annual temperatures are 29°C in the hottest months and about 24°C in the coolest months. There are two rainfall regimes with a total annual mean rainfall between 120 mm and 200 mm. The first rainy season is from June to July with the heaviest in July, while the second rainy season is from September to Mid-November. The main dry season is from late December to February.

### **2.6.3 SOIL**

The principal soil found in the area is forest ochrosols. The colour of these soils range between brown and orange. The soil is not highly leached like oxysol. Due to the reduction in the amount of rainfall, the soils contain greater quantities of soil nutrients and are generally alkaline. From the viewpoint of crop production, they are the best soils in the country. Tree crops such as cocoa and oil palm thrive in the area. Cocoa covers about 50% of the Municipality's entire arable land. Other crops like cassava, plantain and maize also do well.

## 2.6.4 ENVIRONMENT AND NATURAL RESOURCES

The area falls under a forest-dissected plateau, rising to about 250m above sea level. The Dunkwa Forest District covers an area of approximately 2,300.00 km<sup>2</sup> (i.e., 1,861.66 km<sup>2</sup> for off-reserve and 438.34 km<sup>2</sup> for on-reserve). The Opon Mansi (Northern Range) is the ONLY forest reserve range within the Upper Denkyira East Municipality. The Opon Mansi (Northern Range) is surrounded by some fringe communities such as Tegyamouso, Atobiase, Denyase, Twifo Kyebi, Kwakudum, Mbraim, Asikuma, Buabin and Fawomayo among others.

The major river in the area is the River Offin. Rivers Offin and Pra have several streams as tributaries which flow through the municipality. Prominent among them are the Subin Ninta, Aponapon and Tuatian in the South, Afiefi and Subin in the North. Table 1 indicates the natural resource endowment, utilisation, challenges, and benefits.

**Table 1** Natural resource endowment, utilisation, challenges, and benefits

Resource Type	Mineral Resources (Gold)	Arable Land	Forest Reserves	Water Resources
<b>Utilisation</b>	Gold sales and making ornaments e.g., rings, necklaces	<ul style="list-style-type: none"> <li>• Fish Farming</li> <li>• Oil Palm Production</li> <li>• Cassava Production</li> <li>• Vegetable Production</li> <li>• Livestock and Poultry</li> <li>• Cocoa Farming etc.</li> </ul>	Timber production and game and wildlife	Source of drinking water, irrigation, fishing
<b>Challenges for utilisation</b>	Activities of illegal small scale mining operators (galamsey) resulting in the destruction of forest and land degradation and degrading water resources	Encroachment by the mining companies reducing arable lands	Illegally felling of trees	Galamsey operators destroying the water bodies
<b>Benefits derived from the resources</b>	Employment Mining Companies Making of rings, necklaces etc.	Employment <ul style="list-style-type: none"> <li>• Processing (Palm Oil/ Palm Kernel</li> <li>• Production Cassava Processing (Gari)</li> </ul>	Employment (Timber firms)	Employment Fishing and Fish Farming Purposes, Irrigation, Sachet water production

Source: Upper Denkyira East Municipal Assembly (2022)

## 2.7 DEMOGRAPHIC CHARACTERISTICS

The total population of the Municipality is 110,141 (2021 PHC). Out of the total population, males constitute 55,280 representing 50.2% and females constitute 54,861 representing 49.8%. The municipality is largely youthful with 50% of the population under 20 years. More than half (51.71%) of the population are urban dwellers.

The Municipality has a total number of 31,995 households with an average household size of 3.4 which is higher than the regional average household size of 3.3. The Municipality has a household population of 107,587 constituting 54,467 males and 53,120 females and a non-household population of 2,554 constituting 831 males and 1,741 females.

## 2.8 SOCIAL SERVICES

### 2.8.1 EDUCATION

The government has sought to enhance inclusive and equitable access to, and participation in quality education at all levels; strengthen school management systems; and ensure sustainable sources of financing for education. Upper Denkyira East Municipality has a total of 332 educational institutions made up of 122 kindergarten schools, 119 primary schools, 87 junior high schools and 4 senior high schools.

The teaching staff strength of the municipal education service stands at 1,183, made up of 134 kindergarten teachers, 427 junior high schools and 419 senior high school and 203 senior high school teachers.

### 2.8.2 HEALTH

The Government of Ghana has pursued the provision of affordable, equitable, easily accessible, and universal health coverage (UHC) for all its citizens to achieve the right to good health care as enshrined in Article 34 (2) of the Constitution of Ghana.

Generally, the Municipal health infrastructure is relatively inadequate. The Municipal clinical services are carried out in all thirty-three (33) operational health facilities consisting of 24 Community Health Planning and Services (CHPS) zones, 2 clinics, 3 health centres, 1 maternity home and 3 hospitals in the Municipality which report in District Health Information Management System 2. The CHPS contribute to bridging equity gaps and bringing services closer to deprived communities.

Health care services are provided by medical doctors, midwives, general nurses, psychiatrics, Community Health Officers (CHOs) and enrolled nurses. All facilities and CHPS zones render 24hr Outpatient Department (OPD) services.

### 2.8.3 VULNERABILITY AND SOCIAL PROTECTION

The vulnerable and excluded segments of society in this Municipality include:

- Food crop farmers who become vulnerable especially during the dry season, which lasts for about six (6) months
- Children especially girls
- The district at large, which is often under threat of conflicts
- The elderly and persons with disability
- Unemployed
- HIV/AIDS victims

As part of the vulnerability analysis, the Municipal Assembly has identified the following issues across the gender and age groups shown in Table 2.

**Table 2** Vulnerability issues in the Upper Denkyira East Municipal Assembly (UDEMA)

	Women	Children	Men
Issues	<ul style="list-style-type: none"> <li>• Little or no involvement in decision making</li> <li>• Low level of education and/ or high school dropout rate</li> <li>• High levels of poverty due to absence of gainful employment</li> <li>• Limited economic activities - only few economic activities such as petty trading, farming and galamsey are available</li> <li>• Lack of financial assistance to do business</li> </ul>	<ul style="list-style-type: none"> <li>• High school dropout rate due to poverty and involvement in illegal small scale mining activities (galamsey)</li> <li>• Incidence of child labour</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate employment opportunities</li> <li>• Non-availability of land for agricultural purposes because of illegal mining activities</li> <li>• Risks involved in engagement in illegal small scale mining activities (galamsey operations)</li> <li>• Increasing burden from the demands from family members</li> </ul>

Source: Upper Denkyira East Municipal Assembly (2022)

The social protection interventions identified in the NMTDPF 2022-2025 as well as the National Social Protection Strategy (NSPS) and the Livelihood Empowerment against Poverty (LEAP) will be adopted and implemented. Special programmes for the vulnerable and excluded will establish systems and provide resources to reduce conditions of extreme poverty and social deprivation.

## 2.9 ECONOMIC CONTEXT

The main forms of economic activities in the Municipality are farming, mining, trading, banking, and agricultural activities. About 60% of the working population are engaged in farming, 15% of the working population are engaged in small scale mining and 10% engaged in trading and other varied economic activities. Crops such as cocoa, oil palm, pineapple, plantain, cassava, and corn are cultivated in the Municipality with cocoa being the major cash crop. The Municipality is also endowed with valuable timber species such as mahogany and wawa.

The main funding sources for the Municipal Assembly comprise of a) The District Assemblies Common Fund (DAF); b) Internally Generated Funds (IGFs) and c) Grants from donors/ development partners. The DAF is the main source of funding for the Municipality, however, the disbursements are often delayed. The internally generated funds of the Municipality, though a more consistent source of funding, are significant but less than the consolidated funds and not sufficient to fill the funding gaps. Over the years, additional funding has come through grants from donors, but the records indicate a decline over the past few years.

## 2.10 KEY DEVELOPMENT ISSUES/CHALLENGES

The Upper Denkyira East Municipal Assembly as planning authority is required to prepare Medium Term Development Plans (MDTPs) with guidelines from National Development Planning Commission (NDPC). The Medium-Term Development Plan (MTDP) broadly outlines interventions to address key development issues under the various sectors including the WASH sector. Some of the key issues identified in the Municipality are shown in Table 3.

**Table 3** Key development issues/challenges

Sector	Issues
<b>Social Services</b>	
<b>Health</b>	<ol style="list-style-type: none"> <li>Challenges in accessing health facilities and services</li> <li>Huge gaps in geographical access to quality health care</li> <li>High incidence of HIV and AIDS among young persons</li> </ol>
<b>Education</b>	<ol style="list-style-type: none"> <li>Inadequate trained teachers at the Basic School Level</li> <li>Inadequate access to educational facilities</li> <li>Low participation in non-formal<sup>4</sup> education</li> </ol>
<b>Water, Sanitation and Hygiene</b>	<ol style="list-style-type: none"> <li>Inadequate potable water</li> <li>Inadequate maintenance of water facilities</li> <li>Poor sanitation and waste management</li> <li>Open defecation in some parts of the Municipality</li> <li>Poor waste disposal practices</li> <li>Poor hygiene practices</li> </ol>
<b>Vulnerability and Social Protection</b>	<ol style="list-style-type: none"> <li>Growing incidence of child marriage, teenage pregnancy, and accompanying school drop-out rates</li> <li>Gender disparities in access to economic opportunities</li> <li>Low participation of persons with disability in decision making</li> <li>Inadequate and limited coverage of social protection programmes for vulnerable groups</li> <li>Inadequate opportunities for persons with disabilities to contribute to society</li> </ol>
<b>Economic</b>	
<b>Finance</b>	<ol style="list-style-type: none"> <li>Revenue underperformance due to leakages and loopholes, among others</li> </ol>
<b>Employment</b>	<ol style="list-style-type: none"> <li>Lack of entrepreneurial skills for self-employment</li> <li>High levels of unemployment and under-employment amongst the youth</li> </ol>
<b>Infrastructure</b>	<ol style="list-style-type: none"> <li>Poor quality and inadequate road transport network</li> <li>Poor and inadequate maintenance of infrastructure</li> <li>Inadequate electricity grid extension of network to remote and isolated areas</li> </ol>
<b>Governance</b>	
<b>Institutional</b>	<ol style="list-style-type: none"> <li>Limited capacity and staff at the municipal level</li> <li>Ineffective sub-district structures</li> <li>Ineffective monitoring and evaluation of implementation of development policies and plans</li> <li>Poor coordination in preparation and implementation of development plans</li> </ol>

<sup>4</sup> The objective of non-formal education is to increase the number of functionally literate Ghanaians particularly women, youth, people with disabilities, other marginalized groups, and the rural poor.

Sector	Issues
<b>Environment</b>	
<b>Environment</b>	28. Scattered and unplanned human settlements 29. Illegal mining activities 30. Destruction of forests and farmlands, 31. Recurrent incidence of flooding

Source: Upper Denkyira East Municipal Assembly, Medium Term Development Plan (MTDP) 2022 – 2025 (Final Draft)

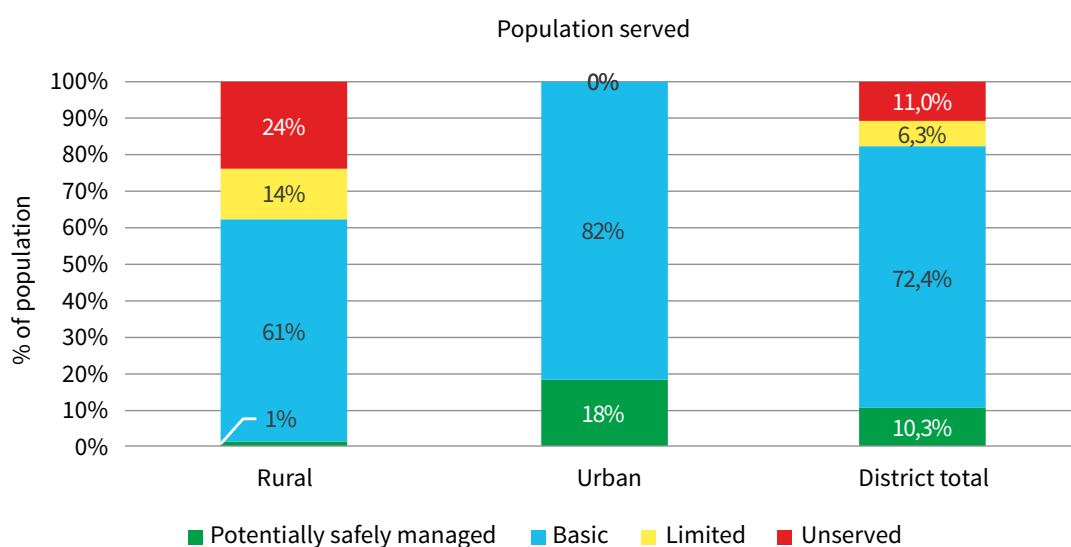


# 3 ANALYSIS OF WASH AND NTD ISSUES IN UDEMA

This section provides an analysis of the water, sanitation, and hygiene (WASH) and neglected tropical diseases (NTDs) situation and challenges in the Upper Denkyira East Municipal Assembly. It discusses findings from surveys to assess the state of water services, sanitation services, WASH in Institutions (schools and health care facilities) and NTDs. The challenges and gaps associated with these subsectors in the Municipality are also presented.

## 3.1 WATER SERVICES (URBAN AND RURAL)

The main sources of water in the Municipality for both domestic use and economic activities are pipe borne water, small town water systems, boreholes, wells, and rivers. The water service levels<sup>5</sup> from the situational assessment carried out in the Municipality in Figure 2 shows that 100% of the urban population have access to at least basic water services while 62% of the rural population have access to at least basic services.

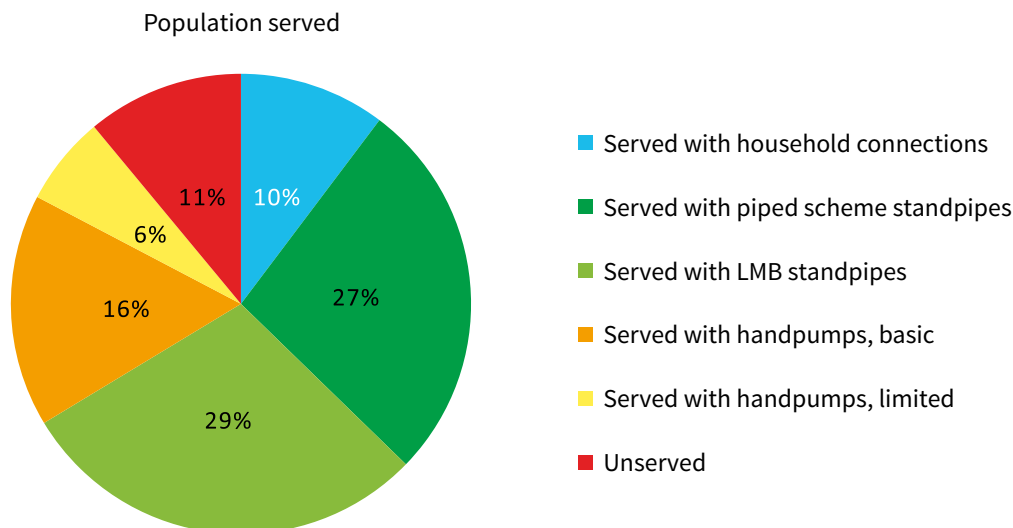


**Figure 2** Population served by type of water services.

24% of the rural population which is unserved are in communities which are underserved. This includes Denkyira Fosu, Bonah, Kwabena Badukrom, Anakrom, Agave, Akwadutrem, Sunkwa, Powerline, Anwhunahene, Mmatodie, Manktukwa, Cedikrom, AdyeiKwame, Brepro.

As shown in Figure 3, a considerable part of people with access to basic services, access these services through standpipes connected to piped schemes (27%) and limited mechanised boreholes (29%).

<sup>5</sup> Definitions: access to potentially safely managed (from an improved source, on premises), basic (from an improved source, within a 30 min round trip), limited (from an improved source, but not within a 30 min round trip) and no improved (communal) water services.



**Figure 3** Water services by type

### 3.1.1 WATER SERVICE DELIVERY MODELS: INFRASTRUCTURE AND MANAGEMENT MODELS

Improved water services in UDEMA are provided through several service delivery models. These include:

- GWCL (utility)-managed piped scheme, supplying water to the town of Dunkwa
- community managed small town piped schemes, supplying water to small towns through a mix of public standpipes and household connections:
  - Akropong-Adwuman small town piped scheme
  - Asikuma small town piped scheme
  - Buabin Sobroso small town piped scheme
  - Kyekyewere small town piped scheme
  - Kwameprakrom Agyimpaboa Amissakrom small town piped scheme
- 45 limited mechanised boreholes, which can mainly be found in Dunkwa (36), Kyekyewere (6) and Asikuma (3) area council. The majority (73%) of these are privately managed
- 193 community-managed handpumps.

### 3.1.2 THE GWCL-MANAGED DUNKWA SCHEME

The GWCL-managed Dunkwa piped water scheme was originally constructed in 1980 and rehabilitated in 2008 and 2015. It is based on groundwater with iron removal to meet the demand of a population of 45,167 people. It includes 1,626 household connections and some 63 public standpipes. The scheme is managed by 18 staff members of the Ghana Water Company Limited.

Over the last 14 years, the number of household connections more than tripled (from 522 in 2007 to 1626 in 2021), while the number of public standpipes almost doubled (from 34 in 2007 to 63 in 2021). Production has slightly increased from 425,357 m<sup>3</sup> in 2007 to 460,303 m<sup>3</sup> in 2020. The amount of water sold has increased considerably, from 220,870 m<sup>3</sup> in 2007 to 345,021 m<sup>3</sup> in 2020. Non-revenue water has almost halved, from 48% in 2007 to 25% in 2020.

Water quality testing is done on a regular basis and water quality was found to be of acceptable level. The scheme was reported to have provided water services throughout 2021, without days of complete breakdowns. However, for at least part of the year, rotation of water services among different parts of the city, is practised, where each part of the scheme generally provided water for two days per week for some four hours per day.

The 2021 tariff as set by the Public Utility Regulatory Commission (PURC) was 3.29 GHC/m<sup>3</sup> for the first 5 m<sup>3</sup>/month and 5.60 GHC/m<sup>3</sup> for consumption of 5 m<sup>3</sup> and above per month. Furthermore, there is a service charge of 6 GHC per month. For a household of 5, using 60 lpcd, this means expenditure of 39.43 GHC per month.

### 3.1.3 COMMUNITY-MANGED PIPED SCHEMES

The Municipality is served by five (5) community managed small-town piped schemes, supplying water to small towns through a mix of public standpipes and household connections. An overview of the number of standpipes and household connections is provided in Table 4 below.

**Table 4** Number of standpipes and household connections per small town piped scheme

	Number of public standpipes	Number of household connections
<b>Akropong Adwuman Small Town Pipe Scheme</b>	12	40
<b>Asikuma Small Town Piped Scheme</b>	10	3
<b>Buabin Sobroso Small Town Piped Scheme</b>	9	50
<b>Kyekyewere Small Town Piped Scheme</b>	9	174
<b>Kwameprakrom Agyimpaboa Amissakrom Small Town Piped Scheme</b>	8	58

The Kyekyewere scheme was constructed around 2010, and the Akropong, Buabin and Kwameprakrom schemes were constructed around 2014/15. Except for the Kyekyewere scheme, which is serviced by one borehole, all schemes are supplied by two boreholes each, powered by the national electricity grid.

Although there was no recent water quality data (less than one year ago) for any of the five community-managed small-town schemes, the water users perceived the water quality as acceptable.

The town schemes were reported to provide water services throughout the year. The Kyekyewere, Buabin, and Kwameprakrom schemes were reported to provide water services 24 hours per day, while the Asikuma and Akropong schemes were reported to provide water services for about six hours per day. However, the Kyekyewere and Buabin schemes were reported to not have provided services from some 30 days over the last year. At the time of data collection, the Asikuma scheme had recently started functioning again, after a down period of some two years.

For households connected to the small-town schemes, the tariffs per m<sup>3</sup> vary from 4.5 GHC/m<sup>3</sup> in Kyekyewere, to 6 GHC/m<sup>3</sup> in Buabin and Kwameprakrom to 7 GHC/m<sup>3</sup> in Akropong. This is (slightly) higher than the GWCL tariff.

### 3.1.4 LIMITED MECHANISED BOREHOLES

At the time of the assessment, a total of forty-six (46) limited mechanised boreholes (LMBs) were identified and 71% of these were implemented and managed by private persons.

At the time of the situational assessment, 61% (28 of 46) of the LMBs were fully functional, with all standpipes functioning; 28% (13 out of 46) were partially functioning, with one or more non-functional taps and 11% (5 out of 46) were not functional. Three (3) LMBs in Denkyira Adwumam had no functional standpipes while the LMBs from Pokukorm and Esaase had been abandoned (non-functional for more than one year).

83% of the LMBs that were either functional or partially functional provided reliable services (being functional for at least 95% of the year, with a maximum downtime of 18 days in the year).

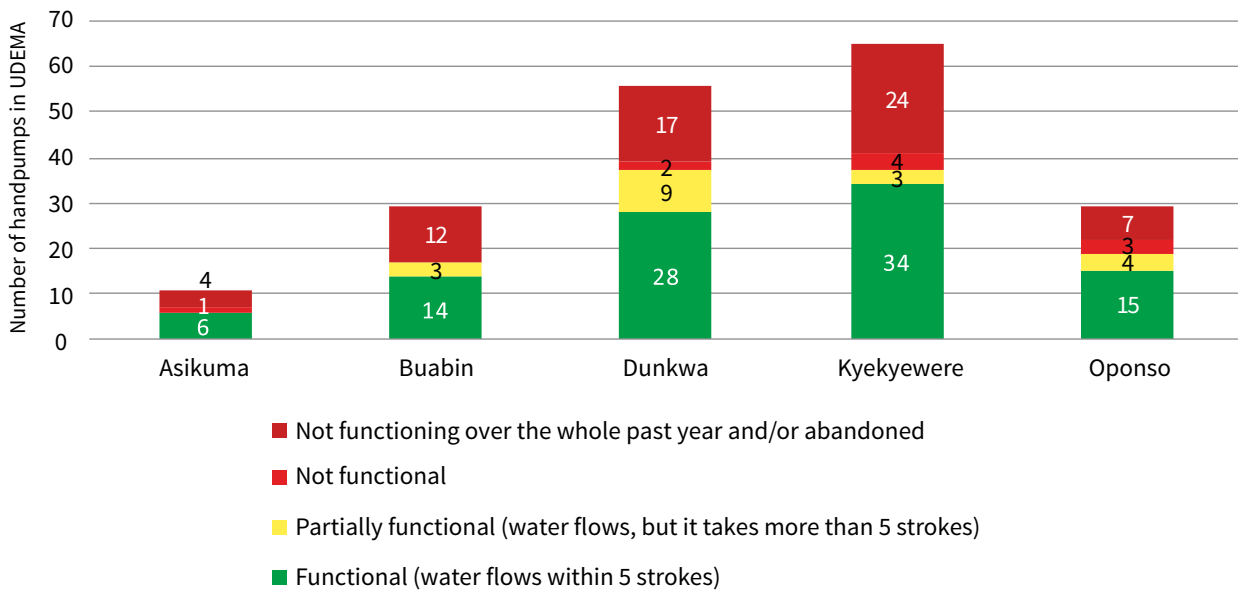
Although water quality testing had been done at the time of construction for many of the facilities, only four out of 46 reported to have water quality data which was more than a year old. The users, however, perceived that the water quality was acceptable.

Tariffs have been set for all (functioning and partially functioning) LMBs. Tariffs vary from 0.1 to 0.3 GHC/bucket, which at 5.56 GHC/m<sup>3</sup> to 16.67 GHC/m<sup>3</sup> is (considerably) higher than the GWCL tariff.

### 3.1.5 COMMUNITY-MANAGED HANDPUMPS

At the time of the assessment, there were 193 community-managed handpumps. The finding indicates that the main handpump types are Vergnet, AfriDev and Ghana Modified India Mark II. There are a limited number of Nira pumps, especially on hand dug wells, and few (3) solar pumps.

About 60% (116 of 193) HPs were either fully or partially functional, while 5.1% (10 of 193) handpumps were not functional. About a third (34.7%) of these handpumps have been abandoned (not providing water services for over a year). As shown in Figure 4, most handpumps are in Kyekyewere, followed by Dunkwa, at the time of the situational assessment.



**Figure 4** Handpump functionality

Of the 126 (not abandoned) handpumps, 59% were reported to have provided reliable services (being functional for at least 95% of the last year - with a maximum downtime of 18 days).

80% of these handpumps (101 of 126) were managed by Water and Sanitation Management Teams (WSMTs). Some 22 handpumps were reported not to have a management structure in place, and three were reported to be managed by a private person. However, performance of these water service providers is generally poor, as shown in Table 5.

**Table 5** Water service provider performance

Number of assessed water service providers	121
<b>G1: Composition of WSMT (BM: WSMT, composed in line with the CWSA guidelines, and has received initial training)</b>	0%
<b>G2: Record keeping and accountability (BM: All records are kept and up to date)</b>	14%
<b>G3: Freedom from political interference (BM: Any change that had occurred in the WSMT was not due to political or chief-taincy interference)</b>	99%
<b>O1a: Spare parts supply (BM: Supply within 3 days)</b>	43%
<b>O1b: Area mechanic services (BM: Available within 3 days)</b>	44%
<b>O2a: Breakdown repair (BM: Generally done within 3 days)</b>	34%
<b>O2b: Routine maintenance (BM: Carried out)</b>	36%
<b>O3: Water quality testing (BM: Carried out by certified institution)</b>	12%
<b>FM1: Revenue and expenditure balance (BM: R/E ratio &gt;1)</b>	4%
<b>FM2: There is sound financial management (BM: Bank account and up-to-date account records in place)</b>	11%
<b>FM 3: Tariff setting (BM: Tariff in place)</b>	28%
<b>FM4: Facility management plans (BM: Facility management plan that spells out the rules for the WSMT in place)</b>	14%

For almost half (45%) of the handpumps, community members were reported to not contribute to the costs of O&M of the handpump. Only 34 (27%) of the 126 non-abandoned handpumps had a volumetric tariff in place. In addition, monthly tariffs were reported to be in place for six handpumps (5%) and for 29 (23%) handpumps money was reported to be collected on ad hoc basis in case of breakdowns.

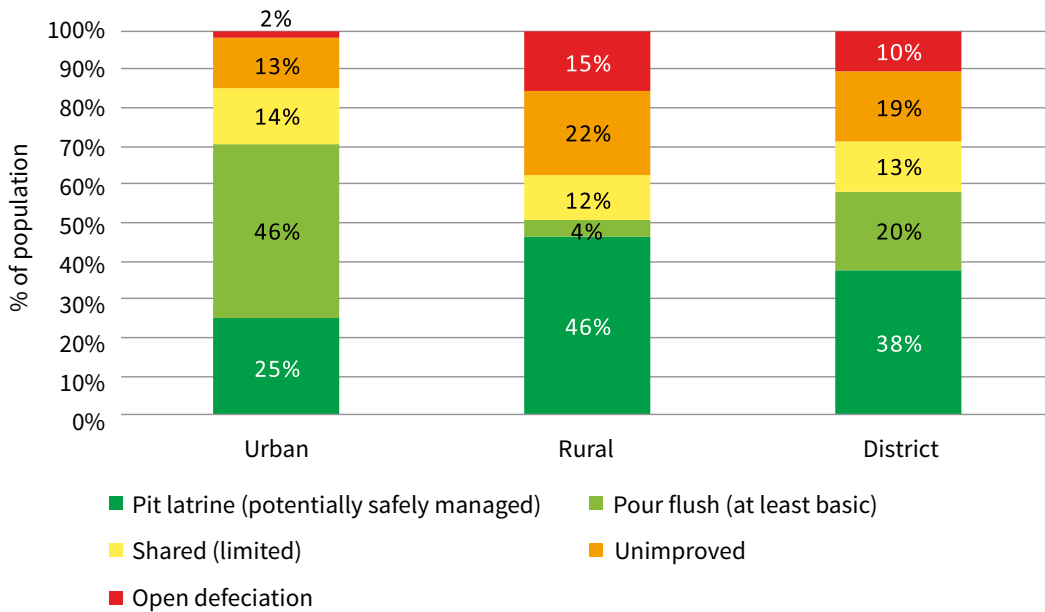
### 3.2 SANITATION AND HYGIENE

The Municipality has developed a Municipal Environmental Sanitation Strategy and Action Plan (MESSAP) 2020-2023, which provides information on environmental sanitation and other facilities in the Municipality.

#### 3.2.1 SANITATION SERVICE LEVELS

For this plan, the situational assessment involved a household survey to get insight into the proportion of people with access to different sanitation service levels. The total sample size was 309 households with proportional sampling in purposely selected communities, based on representation. In total, 121 urban and 188 rural households were surveyed.

The findings show that 10% of the population practised open defecation, especially in the rural areas, where some 15% of rural households practised open defecation. The proportion of the population with access to potentially safely managed sanitation services amounts to 38% in the Municipality with more urban dwellers having access to improved sanitation facilities as shown in Figure 5.



**Figure 5** Proportion of population with access to sanitation services

The data also shows that about 19% of the population use unimproved facilities which do not hygienically separate human excreta from human contact. Overall, 72% of the population have access to improved sanitation services.

The liquid waste in the Municipality is made up of human and animal excreta (faecal matter), wastewater from bath houses and other drainage facilities. The sullage disposal within the Municipality is through sewerage (5%), soak away pit (54%), gutters (26%), ditches (5%) and in open spaces (10%).

The solid waste generated in the Municipality is mainly organic (85%) made up of food remains, animal waste and wood and the remaining being inorganic (15%) made up of plastics, glass etc. Dumping of refuse by households, institutions and others are done at both approved (44%) and unapproved (56%) disposal sites. The collection, storage and transportation of solid waste generated in the Municipality is done by Zoomlion Ghana Limited (a private waste company) and the Assembly’s Environmental Health and Sanitation Department.

Although the Upper Denkyira East Municipal Assembly has a final waste disposal site, it is a non-engineered dumping site about 2 kilometres away from the Municipal Capital, Dunkwa. People residing close to the final disposal site face several environmental challenges.

### 3.3 WASH IN INSTITUTIONS

Children spend a significant portion of their day at school where WASH services can improve educational opportunities and decrease the potential for disease transmission between students, in addition to addressing issues around dignity, particularly for girls.<sup>6</sup>

Achieving and maintaining WASH services in health care facilities is a critical element for several health aims including those linked to quality universal health coverage, infection prevention and control, patient safety, and child and maternal health, in particular the time around child delivery. WASH also extends beyond health impacts to issues of dignity and respect, staff morale, and performance and safety<sup>7</sup>. Without clean water and soap, it is difficult to implement simple and effective public health actions that can prevent and manage debilitating NTDs<sup>8</sup>.

<sup>6</sup> [Schools | JMP \(washdata.org\)](#)

<sup>7</sup> [Health care facilities | JMP \(washdata.org\)](#)

<sup>8</sup> <https://www.who.int/news/item/22-03-2021-water-sanitation-and-hygiene-closing-the-gap-to-end-neglected-tropical-diseases>

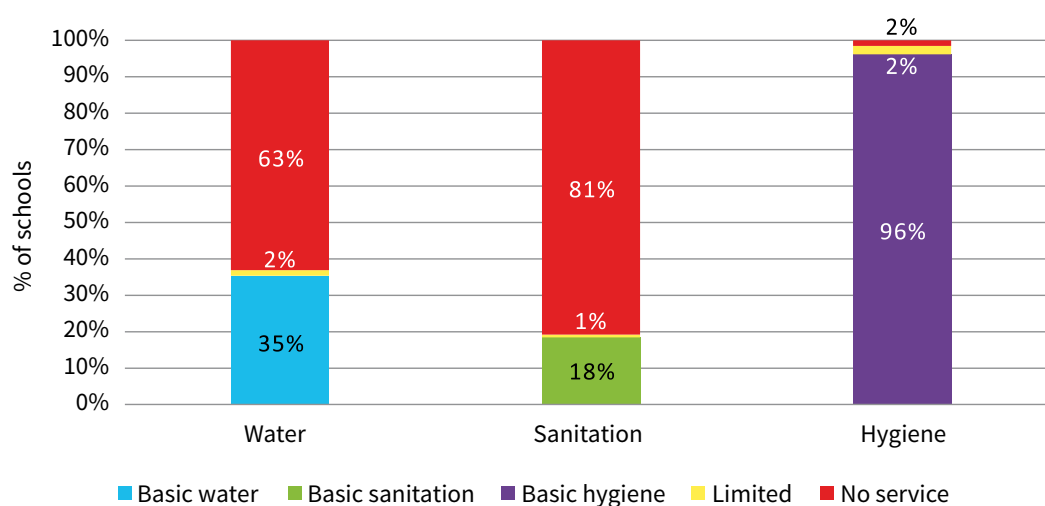
### 3.3.1 WASH SERVICE LEVELS IN SCHOOLS

All the schools in the Municipality have been mapped and assessed as part of the master plan situational analysis. Pre-school and kindergarten were captured as part of the data for primary and combined primary and Junior High School (JHS). The table below presents an overview of the number of schools assessed per school type and area council. It shows that most schools can be found in the mostly urban Dunkwa area council.

**Table 6** Overview of assessed schools

	Asikuma	Buabin	Dunkwa	Kyekyewere	Oponso	Total
Primary	3	2	29	9	2	45
JHS	1	1	13	3	1	19
Combined primary and JHS	6	9	32	17	7	71
SHS / Vocational			5	1		6
<b>Total</b>	<b>10</b>	<b>12</b>	<b>79</b>	<b>30</b>	<b>10</b>	<b>141</b>

Figure 6 shows the proportion of schools which have been assessed to have basic, limited and no water, sanitation, and handwashing (hygiene) services.



**Figure 6** WASH in schools

It shows that although most schools have handwashing facilities with soap and water, only 35% of schools had improved water supply on the premises, and only 18% of schools had basic sanitation (in terms of having sex-separated, improved, usable toilet facilities in place).



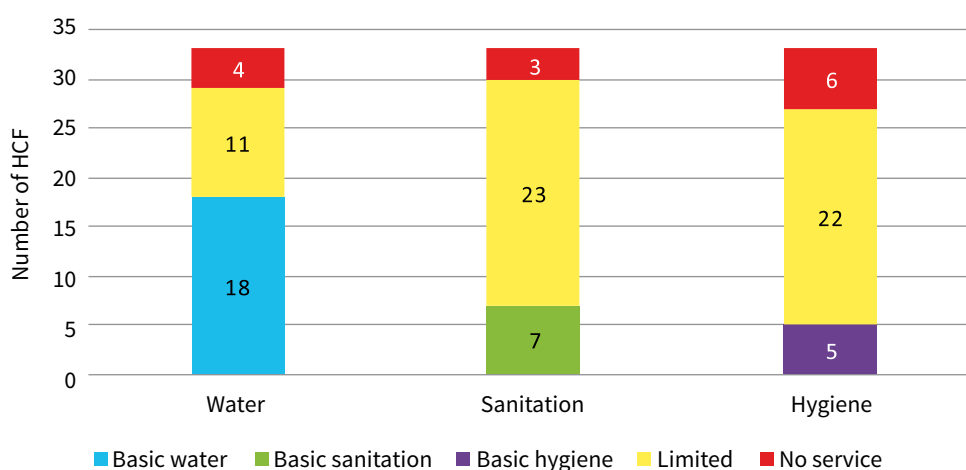
### 3.3.2 WASH SERVICE LEVELS IN HEALTH CARE FACILITIES

A total of 33 health care facilities have been mapped and assessed as part of the master plan situational analysis. The table below presents an overview of the number of health care facilities assessed per HCF type and area council. It shows that most HCF can be found in the mostly urban Dunkwa area council, closely followed by Kyekyewere and Oponso.

**Table 7** Overview of assessed HCFs

	Number of HCFs	Number of HCFs	Number of HCFs	Number of HCFs	Number of HCFs	
	Asikuma	Buabin	Dunkwa	Kyekyewere	Oponso	Total
<b>CHPS Compound</b>	4	1	4	7	8	24
<b>Health Centre</b>			4	1	1	6
<b>Hospital</b>			3			3
<b>Total</b>	<b>4</b>	<b>1</b>	<b>11</b>	<b>8</b>	<b>9</b>	<b>33</b>

Figure 7 below presents the findings of the survey, showing the proportion of HCFs which have been assessed to have basic, limited and no water, sanitation, and handwashing (hygiene) services.



**Figure 7** WASH in HCF

It shows that only 18 of the 33 HCFs (55%) had improved water supply on the premises, only seven (21%) had basic sanitation (in terms of having improved sanitation facilities in place which are usable with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, and at least one toilet accessible for people with limited mobility). And only five of the 33 HCFs (15%) has basic hygiene services (in terms of having functional hand hygiene facilities (with water and soap and/or alcohol-based hand rub) available at points of care, and within 5 metres of toilets).

### 3.4 WATER RESOURCES MANAGEMENT

The Upper Denkyira East Municipality is within the Offin sub-basin and is part of the Pra Basin with a complex configuration, which is such that the hydro-environmental stakes tend to be circumscribed around the major sub-basins (the main Pra, Birim, Offin and Lake Bosomtwe) rather than at the basin. Considering the complexity of the basin, a three-tier operational structure was established for the management of the Pra, and will be composed as follows:

- An Upper Pra sub-committee manages the Offin (including Oda), Lake Bosomtwe, and other sub-basins in the upper reaches (e.g., the Anum)
- The Birim sub-committee in charge of the Birim sub-basin
- The Lower Pra sub-committee manages the sub-basin between Twifo-Praso and the coast.

The Pra Basin IWRM Plan identified key environmental challenges that affect water resources management which are still relevant in the Municipality. They include:

- Land degradation and water quality deterioration from land from poor agricultural practices, forest excision for settlements and illegal mining, discharges of waste from mining, industrial and urban centres affect the availability and quality of water resources to supply the people of the Municipality. The increasing urbanisation due to rapid population growth has further put pressure on water and forest resources.
- Climate change also poses a threat to water resources management in the Municipality because of lack of integrated flood management in development planning, inadequate coping mechanisms for climate change, and inadequate financing of water resources development and management.

Although the Pra Basin IWRM Plan also identifies strategies and actions to mitigate the challenges, many of these have not been implemented. Government as part of its initiatives to manage the impact of illegal and small-scale mining activities on water resources, has initiated some measures across the country, but implementation has been slow, and the results were not evident in the Municipal Assembly.

### 3.5 NEGLECTED TROPICAL DISEASES

#### 3.5.1 THE BURDEN OF NTDs IN THE MUNICIPALITY

In the central region, 20 (90.9%) out of the 22 Metropolitan, Municipal and Districts Assemblies are endemic for Neglected Tropical Diseases (NTDs). One of these endemic municipalities is Upper Denkyira East Municipal Assembly. According to data from the National NTD Control Programme, the Municipality is endemic for onchocerciasis, has a high prevalence (50% and above) for schistosomiasis and over 20% prevalence of soil-transmitted helminths. Also, the skin related NTDs which disfigure and deform people, and in most cases rendering those affected incapable of earning a livelihood, are present in the Municipality.

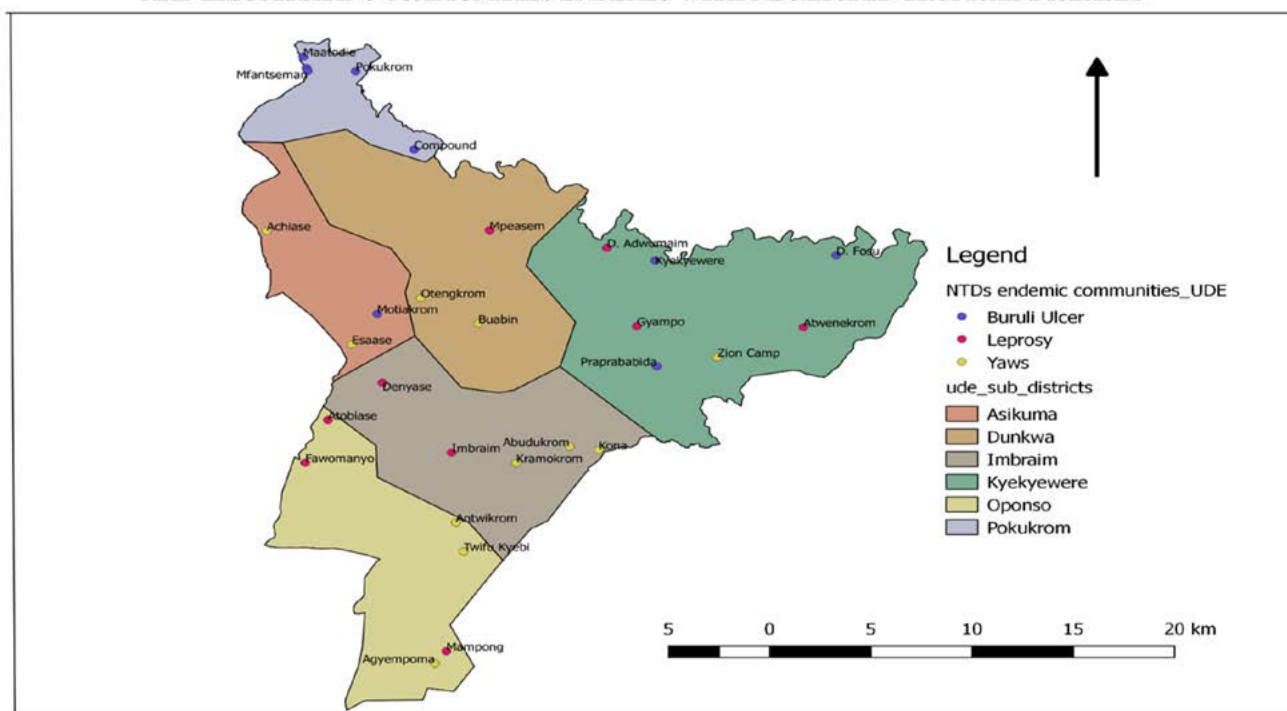
A four-year trend, shown in Table 8 below, shows a mixed trend for the various NTDs in the Municipality. While three of the NTDs namely yaws, buruli ulcer, and leprosy showed a significant drop in the number of confirmed cases from 2018 to 2021, schistosomiasis rather showed an increasing trend from 2018 up to 2021 with a yearly increase of five cases in the four-year period.

**Table 8** Cases of skin related NTDs in UDEMA

Cases of Skin Related NTDs in UDEMA				
Year	Yaws	Buruli Ulcer	Leprosy	Schistosomiasis
2018	64	13	7	3
2019	5	2	2	8
2020	1	3	1	12
2021	1	2	1	25
<b>Total</b>	<b>70</b>	<b>20</b>	<b>11</b>	<b>48</b>

Furthermore, these NTDs (yaw, buruli ulcer and leprosy) are endemic in 31 out of the 114 communities in the Municipality. With regards to the distribution, buruli ulcer is largely confined to two sub-districts in the Municipality namely Pokukrom and the Kyekyewere sub-districts located in the North-western and North-eastern parts of the Municipality. Also, leprosy is endemic in four sub-districts in the Municipality namely Dunkwa, Kyekyewere, Ibraim and Oponso sub-districts while yaws is endemic in five sub-districts namely Asikuma, Dunkwa, Ibraim, Kyekyewere and Oponso. The demographic map of NTDs in the Municipality is shown in Figure 8.

**MUNICIPAL HEALTH DIRECTORATE, UPPER DENKYIRA EAST  
MAP ILLUSTRATING COMMUNITIES ENDEMIC WITH NEGLECTED TROPICAL DISEASES**



**Figure 8** UDEMA Map illustrating communities, endemic with neglected tropical diseases

### 3.5.2 NTDS CONTROL ACTIVITIES IN THE MUNICIPALITY

Disease control and surveillance continue to be the backbone of public health at the Municipal Health Directorate (MHD). In this regard, cost effective and rapid delivery interventions were planned and implemented to achieve the set objectives at the beginning of the year. Some of these interventions include prevention and control of diseases of public health importance; eradication/elimination of targeted diseases; strengthening surveillance to reduce the frequency and outcome of epidemics; and provision of adequate strategies for neglected tropical diseases that affect the poor<sup>9</sup>. As part of the general objectives of the MHD, for the year 2020, the following were specific to NTDS:

- To enhance greater awareness of skin diseases in general and skin NTDS (buruli ulcer, leprosy, and yaws) to encourage early reporting.
- To enhance integrated active and passive case detection of skin diseases in general and the skin-NTDS (e.g., buruli ulcer, leprosy, yaws) especially at community, school, and health facility level.
- To encourage integrated management of skin diseases and skin-NTDS including referrals, stigma, and rehabilitation at community and health facility level.
- To ensure greater access to diagnosis, treatment, and rehabilitation services of NTDS.
- To achieve at least 80% therapeutic coverage for all MDAs by the end of the year 2020.

In line with the above objectives, the Municipal Health Directorate (the Disease Control Unit) in collaboration with the Anesvad NTD project carried out sensitisation and case search activities in schools, churches, and communities. The case search was a mop-up of a previous exercise conducted to cover some communities not reached in 2018 and the aim was to detect common NTDS such as yaws, onchocerciasis, lymphatic filariasis, buruli ulcer, schistosomiasis, and other skin lesions for timely treatment. The activity enabled the Municipality to identify suspected cases and do tests to confirm them. This activity provided the incidence and prevalence data for planning.

<sup>9</sup> Municipal Health Directorate Upper Denkyira East Annual Performance Report 2020. February 2021

From the exercise and as shown in Table 9, more yaws cases (64) representing 8% were confirmed and treated in 2018. Though much fewer cases were confirmed and treated in 2020 and 2021, it is obvious the diseases are still present in the Municipality and that more efforts are needed to eradicate yaws entirely from the area. Community surveillance reports have reported incidences of yaws, buruli ulcer and leprosy as shown in the Tables below.

**Table 9** Active case search findings - Yaws

Active Case Search Findings - Yaws					
	2018	2019	2020	2021 (till date)	Total
<b>No. suspected of yaws</b>	796	257	11	5	<b>1069</b>
<b>No. tested with RDTs</b>	796	257	11	5	<b>1069</b>
<b>No. RDT+</b>	71	6	1	1	<b>79</b>
<b>No. tested with DPP</b>	71	6	1	1	<b>79</b>
<b>No. DPP+</b>	64	3	1	1	<b>69</b>
<b>No. of samples picked for PCR</b>	4	3	0	0	<b>7</b>
<b>No treated with Azithromycin</b>	64	3	1	1	<b>69</b>

#### Active Case Search Findings - Yaws

The case searches for leprosy shown in Table 10 below mirror a similar trend to yaws, with more cases (8) confirmed in 2018 and fewer cases (2, 3 and 2) confirmed in the subsequent years (2019, 2020 and 2021 respectively). Since 2020, the active case searches in the communities appear to have stalled, but surveillance has continued through the health care facilities. Again, it's important note that though fewer numbers of cases tested and confirmed in the last three years given a general downward trend for the disease, the Municipality is not free of the disease. Importantly, to have one child testing positive and confirmed to having the disease is a significant outcome of the exercise that must engage the attention of key stakeholders in the Municipality and at national level.

**Table 10** Active case search findings – Leprosy

Active Case Search Findings - Leprosy					
	2018	2019	2020	2021	Total
<b>No. suspected of leprosy</b>	11	5	3	2	<b>21</b>
<b>No. confirmed for leprosy</b>	8	2	3	1	<b>14</b>
<b>No. of children among confirmed cases</b>	0	0	0	1	<b>1</b>
<b>No. of MB cases among confirmed cases</b>	8	1	3	1	<b>13</b>
<b>No. of confirmed cases with G2D</b>	0	0	1	0	<b>1</b>

As shown in Table 11, over 50% (14 out of 24) of the suspected buruli ulcer cases tested positive for the disease in 2018, while 100% of the suspected cases (3 and 4) in 2019 and 2020 respectively were confirmed. In 2021, none of the suspected cases (2) tested positive for the disease and although this is good news, it calls for more planning and resources for a robust and sustained surveillance to be sure there are no undetected cases of the disease in the Municipality.

**Table 11** Active case search findings – Buruli ulcer

Active Case Search Findings – Buruli ulcer					
	2018	2019	2020	2021	Total
No. suspected of BU	24	3	4	4	34
No. of samples taken for PCR	24	3	4	4	34
No. PCR positive (Confirmed)	14	2	3	2	21
No. of CAT I (PCR Pos)	1	1	2	0	4
No. of CAT II (PCR Pos)	7	0	1	2	10
No. of CAT III (PCR Pos)	6	1	0	0	7
Tot. No. treated with antibiotics	13	2	2	2	19
Tot. PCR positive treated with antibiotics	13	2	2	2	19

### 3.6 INSTITUTIONAL AND ASSESSMENT OF WASH BUILDING BLOCKS

The WASH system building block assessment tool<sup>10</sup> was used to analyse the WASH system in the Municipal Assembly. By assessing the status of each building block and the linkages between them weak points within the institutional framework can be identified and targeted interventions can be drawn up for greater effect.

#### 3.6.1 LOCAL WATER, SANITATION AND HYGIENE SERVICE SYSTEM STRENGTHENING

The scoring of the building blocks was done in a participatory manner together with key WASH officers and stakeholders in the Municipal Assembly. Table 12 shows the scores for the WASH building block assessment.

**Table 12** Building block assessment for WASH in Upper Denkyira East Municipal Assembly

Country: Ghana					District: Upper Denkyira East Municipal Assembly (2021)					
	Institutional	Legislation	Finance	Planning	Infrastructure Development	Infrastructure Management	Monitoring	Regulation	Learning and Adaptation	Water Res Management
Water_District	3.3	4.0	3.2	3.8	4.3	3.8	2.8	3.3	1.4	1.2
Sanitation_District	3.8	3.3	3.4	3.6	4.0	3.5	3.3	3.5	3.6	1.2

Scale: Colour + Score range



The results of the assessment show that the districts have many of the building blocks in place for WASH service delivery. It shows that the systems, processes, and mechanisms for planning, infrastructural development and management are strong. In sanitation, the institutional set-up, regulation, learning and adaptation are also in place. There are, however, weaknesses in the water resource management systems in the Municipality. Some further attention is required to strengthen especially financing and monitoring within the Municipality.

<sup>10</sup> WASH system building block assessment tool - [WASH system building block assessment tool](https://www.ircwash.org/) :: IRC ([ircwash.org](https://www.ircwash.org/)) assessed Dec 2021

### 3.7 SUMMARY OF MAIN CHALLENGES IN WASH AND NTDS

The main challenges identified through the stakeholder meetings and surveys in the Upper Denkyira East Municipal Assembly are summarised in Table 13.

**Table 13** Summary of main challenges in WASH and NTDS

Sector	Challenges
<b>Water services</b>	<ul style="list-style-type: none"> <li>• 24% of the rural population which is unserved are in communities which are underserved.</li> <li>• 35% of the assessed handpumps were found to be non-functional for more than a year</li> <li>• There are challenges with reliability of piped water services, for both the GWCL-managed piped scheme, and 4 of the 5 small town piped schemes.</li> <li>• Lack of water quality testing in the community-managed smalltown schemes</li> <li>• Low performance of handpump service providers, especially related to financial management and tariff setting and record keeping and accountability.</li> <li>• Challenges with oversight and support from service authority level (Municipal Assembly).</li> </ul>
<b>Basic sanitation services</b>	<ul style="list-style-type: none"> <li>• 15% of people in rural areas are practising open defecation. Proportion of people practising OD is highest in Asikuma and Oponso, where almost 19% (1 in 5) practice OD.</li> <li>• A considerable part of the population depends on shared facilities, including public latrines. This is especially the case in Asikuma.</li> </ul>
<b>WASH in schools</b>	<ul style="list-style-type: none"> <li>• only 35% of schools had improved water supply on premises</li> <li>• only 18% of schools had basic sanitation (<i>in terms of having sex-separated, improved, usable toilet facilities in place</i>)</li> </ul>
<b>WASH in health care facilities</b>	<ul style="list-style-type: none"> <li>• only 55% (18 of the 33) HCFs had improved water supply on premises               <ul style="list-style-type: none"> <li>- Some hospitals do not have access to mechanised community water supply systems.</li> </ul> </li> <li>• only 21% (7 of the 33) HCFs had basic sanitation (<i>in terms of having improved sanitation facilities in place which are usable with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, and at least one toilet accessible for people with limited mobility</i>).</li> <li>• only 15% (5 of the 33) HCF have basic hygiene services (<i>in terms of having functional hand hygiene facilities (with water and soap and/or alcohol-based hand rub) are available at points of care, and within 5 metres of toilets</i>).</li> <li>• Inadequate solid waste disposal facilities (no incinerator but have pit-incinerator approaches).</li> </ul>
<b>Neglected tropical diseases</b>	<ul style="list-style-type: none"> <li>• From 2018 up to 2021, while three of the skin NTDS namely yaws, buruli ulcer, and leprosy showed a significant drop in the number of confirmed cases, schistosomiasis rather showed an increasing trend with a yearly increase of 5 cases in the four-year period.</li> <li>• Though much fewer cases were confirmed and treated in 2020 and 2021, it is obvious the diseases are still present in the Municipality and that more efforts are needed to eliminate it entirely.</li> </ul>
<b>Water resources management (WRM)</b>	<ul style="list-style-type: none"> <li>• Activities of illegal small scale mining operators (galamsey) resulting in degrading water resources.</li> <li>• Limited capacity and resources at the Municipality to address WRM issues.</li> </ul>

# 4 PROJECTIONS AND STRATEGIC ACTIONS

## 4.1 INTRODUCTION

This chapter presents the population projections for the next nine years (2021-2030) and implications for addressing the WASH needs of the Municipality. Based on the findings from the WASH and NTDs analysis, it derives the targets from the current baseline (2021) to the medium (2025) and long term (2030) according to the thematic areas. It also presents how the strategies and actions at the district will respond to national targets and priorities. The risks and mitigation measures are assessed and presented.

## 4.2 POPULATION PROJECTIONS

The total population of the Upper Denkyira East Municipality is 110,141 (2021 PHC) and is projected to increase to 167,530 by 2030. The WASH targets are based on the population projections, based on growth over the next nine years. Table 14 shows the projected population from 2021 through to 2030 using the prevailing regional population growth rate of 0.0466 %.

**Table 14** Projected population from 2021 through to 2030

YEAR	PROJECTED POPULATION
2021	110,141
2022	115,395
2023	120,900
2024	126,667
2025	132,709
2026	139,040
2027	145,673
2028	152,622
2029	159,902
2030	167,530

Source: UDEMA Statistical Office

The proportion of growth of the rural and urban population will have implications for facility provision and service levels. Based on the population projections and considering the status of WASH service provision in the Municipality, the following section presents the medium- and long-term targets set towards achieving the SDGs for water, sanitation, WASH in institutions and NTDs.



## 4.3 MEDIUM- AND LONG-TERM WASH TARGETS

### 4.3.1 WATER SERVICE TARGETS

The policy objective is to improve access to safe and reliable water supply services for all. Table 15 presents the targets for water within the medium to long term.

**Table 15** Water service coverage (%) and projections

Service Level	2021 (baseline)		2030
	Rural	Urban	Municipality
<b>Safely managed</b>	1	18	15
<b>Basic</b>	61	82	85
<b>Limited</b>	14		
<b>Unimproved</b>	24		

The medium-term target (2025) is to increase the proportion of population in rural areas with access to at least basic drinking water sources from 77.2% in 2021 to 87% in 2025 and the proportion of population in urban areas from 95% in 2021 to 100% in 2025.

By the end of 2030, the Municipal Assembly intends to increase the proportion of the population with access to at least basic water services to 100%. The Municipality targets to increase the proportion with access to safely managed services (access to water which is free from contamination, and available on premises, when needed) from 10% to 15 %, with the remaining 85% having access to basic water services.

### 4.3.2 SANITATION AND HYGIENE TARGETS

The policy objective of the Municipal Assembly is to improve environmental sanitation as an essential social service and major determinant for improving health and quality of life in the Municipality. Table 16 provides an overview of the coverage and projections by 2030.

**Table 16** Sanitation service coverage (%) and projections

Service Level	2021 (baseline)		2030
	Rural	Urban	Municipality
<b>Safely managed</b>	4	25	65
<b>Basic</b>	46	46	
<b>Limited</b>	12	14	27
<b>Unimproved</b>	22	13	
<b>Open Defecation</b>	15	2	8

The municipal medium term plan states that the target is to increase the proportion of population with access to improved sanitation services from 42% to 53% in 2025. The municipal environmental sanitation action plan also indicates that in the medium-term (2021-2025), the focus will be on doing away with indiscriminate disposal, burning and burying. The municipality's target is to improve solid waste collection from 66% in 2021 to 80% by 2025. It targets to improve the management of existing waste disposal sites (solid and liquid) and to develop engineered final disposal sites in the Municipality to control greenhouse gas emissions.

Within the long term, the target is to increase the proportion of its population with access to at least basic toilet services to 65 % by 2030 and to reduce the practice of open defecation from 10% to 8%.

### 4.3.3 WATER, SANITATION, AND HYGIENE IN SCHOOLS

The medium- and long-term targets, as shown in Table 17, are to increase the number of schools with access to basic WASH services:

- Supply from an improved water source on school premises,
- Improved facilities, which are single-sex and usable at the school
- Handwashing facilities, which have water and soap available

**Table 17** WASH service coverage (%) and projections in schools

Service Level	2021 (baseline)			2030		
	Water	Sanitation	Hygiene	Water	Sanitation	Hygiene
<b>Basic</b>	35	18	96	55	58	100
<b>Limited</b>	2	1	2	45	42	
<b>No service</b>	63	81	2			

The Municipality targets to increase schools with access to water on premises from 35% in 2021 to 55% in 2030. Similarly, access to safe sanitation services in schools for pupils will increase from 18% in 2021 to 56% in 2030. The target for hand hygiene services with soap and water is to achieve 100% access in the midterm and maintained by 2030.

### 4.3.4 WATER, SANITATION, AND HYGIENE IN HEALTH CARE FACILITIES

It is projected that the number of health care facilities in the next 8 years will increase from 33 to 38. The target is to ensure an increase in the number of health care facilities that have basic WASH services. This means that health facilities will have:

- Water supply on premises
- Improved sanitation facilities which are usable, separated for patients and staff, separated for women, and providing menstrual hygiene facilities and meeting the needs of people with limited mobility
- Hand hygiene materials, either a basin with water and soap or alcohol hand rub, are available at points of care and toilets
- At least three bins for disposal of sharp objects, infectious, and non-infectious materials, and sharps and infectious waste are safely treated and disposed of.

**Table 18** WASH service coverage and projections in HCFs

Service Level	2021 (baseline)			2030		
	Water	Sanitation	Hygiene	Water	Sanitation	Hygiene
<b>Basic</b>	18	7	5	33	27	27
<b>Limited</b>	11	23	22	5	11	11
<b>No service</b>	4	3	6	0	0	0

The target for WASH in health care facilities in the medium and long term is to increase access to improved water supply on premises from 55% in 2021 to 87% in 2030. To increase access to basic sanitation from 21% in 2021 to 71% in 2030 and increase access to basic hygiene services from 15% to 71% by 2030.

#### 4.4 MEDIUM AND LONG TERM NTD TARGETS

The NTD targets are described in terms of control, elimination, and eradication:

- Control means reduction of disease incidence, prevalence, morbidity, and/or mortality to a locally acceptable level because of deliberate efforts; continued intervention measures are required to maintain the reduction.
- Elimination of transmission (also referred to as interruption of transmission) means reduction to zero incidence of infection caused by a specific pathogen in a defined geographical area, with minimal risk of reintroduction, because of deliberate efforts; continued actions to prevent re-establishment of transmission may be required. The process of documenting elimination of transmission is called verification.
- Eradication means a permanent reduction to zero of a specific pathogen because of deliberate efforts, with no more risk of reintroduction.

**Table 19** Incidence targets of skin related NTDs in UDEMA

Disease	Incidence 2021 (Baseline)	Incidence Target by 2030
<b>Yaws</b>	1	Eradication: 0 new cases
<b>Buruli ulcer</b>	2	Control: 0 Category III lesions
<b>Leprosy</b>	1	Elimination: <ul style="list-style-type: none"> <li>• 0 Multibacillary (MB) cases among confirmed cases and</li> <li>• 0 Grade 2 disability amongst confirmed cases</li> </ul>
<b>Schistosomiasis</b>	25	Control: Treat 75% of school children and high-risk populations

#### 4.5 STRATEGIC DIRECTIONS AND ACTIONS

This section presents the suggested strategies and actions for responding to the challenges identified in Chapter 3 and for meeting the medium- to long-term targets for achieving full WASH coverage and control, elimination, and eradication of NTDs in the Municipality, in line with national objectives and goals. The strategies were identified through stakeholder consultations and workshops with the technical working group.

#### 4.5.1 WATER SERVICES

Table 20 shows the policy objectives, strategies, and actions for increasing the number of people with access to water services in the Upper Denkyira East Municipal Assembly. The strategies focus on:

- Increasing the proportion of people with access to safely managed (non-contaminated, on premises, available when needed) water services
- Increasing the proportion of people with access to basic water services (water facilities within 30 min round trip)
- Ensuring sustainable water provision (reducing breakdown rates and improving reliability rates) and
- Building the capacities of Water and Sanitation Management Teams in community managed systems.

**Table 20** Policy objectives, strategies, and actions for water services

National Medium-Term Policy Objectives	Strategies	Intervention Areas	Targets by 2030
<b>Improve access to safe and reliable water supply services for all</b>	Extend piped networks within the existing water systems (Ghana Water Company Limited and Community Managed Piped Schemes)	<ul style="list-style-type: none"> <li>• Provision of an additional 2,464 household with connections by 2030 (GWCL &amp; Community managed pipe systems)</li> <li>• Expand existing community-managed piped systems to allow for more household connections</li> </ul>	Increase proportion of people with access to safely managed water services from 10% in 2021 to 15% in 2030
	Expand and rehabilitate water infrastructure (handpumps and limited mechanised systems) in underserved and unserved communities	<ul style="list-style-type: none"> <li>• Provision of additional 36 standpipes in underserved communities</li> <li>• Construction of new 36 handpumps to unserved and underserved communities</li> <li>• Rehabilitation of 44 non-functional boreholes</li> <li>• Construction of 2 limited mechanised systems and /or identifying high yielding boreholes for mechanisation</li> </ul>	Increase proportion of people with access to basic water services from 72% in 2021 to 85%
	Improve reliability of water services and to reduce non-revenue water (NRW) losses	<ul style="list-style-type: none"> <li>• Provision and installation of meters and household levels at production and distribution points</li> <li>• Improve spare parts supply chain and repair services for handpumps and piped schemes</li> <li>• Develop a framework for water quality assurance and remedial actions for WSMTs</li> <li>• Develop a system for tariff settings for the WSMTs</li> <li>• Implement public education and awareness creation programmes to stimulate the interest of community members in payment of water services</li> </ul>	Improve reliability to meet with sector standards (being functional for at least 95% of the year - with a maximum downtime of 18 days)
	Build capacities of Water and Sanitation Management Teams in the management of community water systems	<ul style="list-style-type: none"> <li>• Build capacities of Water and Sanitation Management Teams (100) <ul style="list-style-type: none"> <li>- Formation and initial training for new ones and</li> <li>- Refresher training for existing WSMTs</li> </ul> </li> <li>• Set performance targets for WSMTs</li> <li>• Regular quarterly monitoring by the municipal water and sanitation monitoring team</li> </ul>	Water and Sanitation Management Teams are in place and fully functioning community-managed systems for handpumps and piped schemes

## 4.5.2 SANITATION AND HYGIENE SERVICES

The strategic directions and actions related to sanitation intend to contribute to:

- Increasing the proportion of the population with at least basic sanitation and hygiene services
- Reducing the proportion of the population practising open defecation
- Rehabilitating public latrines to make them disability friendly and gender friendly
- Improving solid and liquid waste management
- Implementing behaviour change communication programmes
- Ensuring adequate staffing and training for the environmental health unit

**Table 21** Policy objectives, strategies, and actions for sanitation and hygiene services

National Medium-Term Policy Objectives	Strategies	Intervention Areas	Targets by 2030
<b>Enhance access to improved and reliable environmental sanitation services</b>	Extend implementation of the Community-Led Total Sanitation (CLTS) programme to remaining rural communities in Asikuma and Opponso Zonal Councils	Implement CLTS in 25 communities in Asikuma and Opponso Zonal Council	19 communities by 2030, declared ODF to reduce the rate to 8% (minimum of 2 communities/year)
	Improve existing public sanitation facilities to make them disability and gender friendly	Rehabilitate existing public toilet facilities to be disability and gender friendly	27 of the existing public toilet facilities to be made disability and gender friendly
	Establish engineered final disposal sites for both liquid and solid waste management	<ul style="list-style-type: none"> <li>• Establish an engineered land fill site</li> <li>• Construct 5 final liquid disposal sites in all the capital towns of the area councils</li> <li>• Procure a sewerage treatment plant and chemicals for fumigation</li> </ul>	To improve waste disposal (liquid and solid) from 66% to 80%
	Ensure adequate sanitation equipment and logistics	<ul style="list-style-type: none"> <li>• Request for an additional compactor from ZoomLion Gh. Ltd.</li> <li>• Procure motorbikes, wheelbarrows, rakes, shovels within the Assembly</li> <li>• Provide adequate communal containers and sanitary dustbins               <ul style="list-style-type: none"> <li>- Procure/request for 20 additional communal containers</li> <li>- Request 200 additional dustbins from ZoomLion Gh. Ltd</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• 1 additional compactor</li> <li>• 9 motorbikes, 100 wheelbarrows, 200 rakes and 200 shovels</li> <li>• Increase communal containers (20) for solid waste disposal</li> <li>• Increase supply of household sanitary dustbins (200)</li> </ul>
	Develop and implement a Behaviour Change Communication (BCC) Strategy	<ul style="list-style-type: none"> <li>• Gazette and enforce sanitation by-laws</li> <li>• Implement behaviour change communication strategy via radio and local information centres               <ul style="list-style-type: none"> <li>- Undertake weekly radio and local information sensitisation,</li> <li>- Undertake quarterly community engagement</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Sanitation by-laws gazetted</li> <li>• Weekly BCC education programmes via radio in place (up to 450 sessions by 2030)</li> <li>• Quarterly local information sensitisation in communities (up to 36 communities by 2030)</li> </ul>
	Strengthen staff capacity within the Environmental Health Department	<ol style="list-style-type: none"> <li>a. Request for posting of additional staff (10) to the Municipal Environmental Health Department</li> <li>b. Undertake annual refresher training for staff</li> </ol>	Additional Environmental Health staff posted into Municipality (10) Annual refresher training for staff conducted (9)

### 4.5.3 WATER, SANITATION, AND HYGIENE IN SCHOOLS

The strategic directions and actions intend to contribute to increasing the number of schools with access to improved water, sanitation, and hygiene (handwashing facilities with water and soap) services on premises and improving solid waste management.

**Table 22** Policy objectives, strategies, and actions for WASH in schools

National Medium-Term Policy Objectives	Strategies	Intervention Areas	Targets by 2030
<b>Enhance inclusive and equitable access to, and participation in quality education at all levels</b>	Extend water facilities to schools in the Kyekyewere, Asikuma, Oponso and Buabin Zonal councils (min. of 5 schools/council).	Provide 21 schools with access to water facilities: <ul style="list-style-type: none"> <li>Ghana Education Service (GES) in collaboration with the Assembly should liaise with GWCL to extend water network to 6 schools</li> <li>Ghana Education Service (GES) to liaise with the Assembly to provide handpumps to 15 schools</li> </ul>	Increase schools with access to basic water services from 35% to 55%
	Extend improved basic sanitation to schools in Municipality	GES to liaise with the Assembly to provide 46 schools with basic sanitation services: <ul style="list-style-type: none"> <li>Kumasi Ventilated Improved Pit latrines (KVIP) in 20 schools,</li> <li>Pour flush latrines in 16 schools, and</li> <li>Water closets (WCs) in 10 schools</li> </ul>	Increase schools with access to basic sanitation from 18% to 58%
	a. Sustain the existing hygiene facilities in schools (96%) b. Provide access to hygiene facilities in remaining schools (4%)	GES to liaise with the Assembly and Environmental Health Department to provide hygiene facilities to 5 schools in the Dunkwa area council	Increase access to hygiene facilities in schools from 96% to 100%

### 4.5.4 WATER, SANITATION AND HYGIENE IN HEALTH CARE FACILITIES

The strategic directions and actions will contribute to improving the quality health care, infection prevention and control. It comprises of increasing the number of health care facilities with access to water on premises, improved and well-maintained sanitation facilities, handwashing facilities with water and soap, and improved solid waste management.

**Table 23** Policy objectives, strategies, and actions for WASH in health care facilities

National Medium-Term Policy Objectives	Strategies	Intervention Areas	Targets by 2030
<b>Ensure accessible and quality universal health coverage (UHC) for all</b>	Improve access to basic water services	Provide basic water access to 15 health facilities	Increase HCFs with water on premises from 55% in 2021 to 87% in 2030.
	Improve access basic sanitation infrastructure and services in health care facilities	<ul style="list-style-type: none"> <li>Provide sanitation facilities for 20 health facilities which are usable, separate for patients and staff, separate for women, and providing menstrual hygiene facilities and meeting the needs of people with limited mobility</li> <li>Provide at least three waste collection bins (for sharps, infectious, and non-infectious) for 20 health facilities</li> <li>Implement strategies for safe treatment and disposal of sharps and infectious waste for 20 health facilities</li> </ul>	Increase the number of HCFs with access to basic sanitation facilities from 21% in 2021 to 71% in 2030
	Improve access to basic hygiene infrastructure and services in health care facilities	Provide handwashing facilities for 22 health care facilities (available at points of care and toilets)	Increase access to basic hygiene services from 15% to 71% by 2030

#### 4.5.5 EFFECTIVE CONTROL, ELIMINATION, AND ERADICATION OF NEGLECTED TROPICAL DISEASES

The strategic direction and actions with respect to NTDs are informed by the fact that the availability of WASH is a significant enabler for effective control, elimination, and eradication of NTDs. The strategies are meant to be cross-cutting strategies and activities, which reflect the areas of convergence with WASH. The key areas of intervention for WASH and NTDs are in the use of staff.

**Table 24** Activities to implement strategies to ensure NTD targets are achieved<sup>11</sup>

National Medium-Term Policy Objectives	Strategies	Intervention Areas
<b>Reduce the incidence of new STIs, HIV and AIDS and other infections, especially among vulnerable groups (Reduction/elimination of Neglected Tropical Diseases)</b>	Capacity building in case detection and treatment of all cases and contacts at all levels for NTDs	<ul style="list-style-type: none"> <li>• 3-day annual training for 100 new frontline health workers on early case detection and reporting, sample taking case management in 3 batches</li> <li>• 2-day annual fresher training for 150 existing health workers on early case detection and reporting, sample taking, case management in 3 batches</li> <li>• 4-day annual training of 200 community health volunteers, teachers and environmental health officers on early case identification and reporting</li> </ul>
	Strengthen NTD surveillance at all levels	<ul style="list-style-type: none"> <li>• Conduct weekly health education using the FM station and community information centres in collaboration with other stakeholders</li> <li>• Conduct annual health screening per schools in collaboration with GES</li> <li>• Conduct annual video sensitisation and screening per community (130) (liaise with Environmental Department)</li> <li>• Conduct monthly data validation meetings at all levels</li> </ul>
	Research and innovation	3.1 Identify and conduct operational research on WASH and NTDs for effective eradication, control and elimination
	Collaborative Integrated Vector Management in collaboration with malaria programme	4.1 Joint capacity building and implementation of IVM with Zoomlion Ghana, Environmental Health Officers and Ghana Health service (mapping of all water bodies, environmental modification to identify larvae and spray them)

<sup>11</sup> Ghana NTD Master Plan 2021 -2025

#### 4.6 CROSS-CUTTING PRINCIPLES FOR THE EFFECTIVE WORKING OF THE WASH/NTD GROUP

The Ghana NTD master plan has identified cross-cutting principles with respective strategic actions that should guide NTD interventions in a harmonised, effective and efficient manner, design, and implementation of an integrated WASH and NTD master plan. The strategic directions and actions shown in Table 25 intend to contribute to make WASH service delivery inclusive, support national efforts to eradicate, eliminate or control NTDs in the country and enhance knowledge management and learning.

**Table 25** Policy objectives, strategies, and actions for cross cutting issues on WASH and NTDs

National Medium-Term Policy Objectives	Strategies	Intervention Areas
<p><b>Ensure accessible and quality Universal Health Coverage (UHC) for all</b></p> <p><b>Promote full participation of Persons with disabilities (PWDs) in social and economic development of the country</b></p>	<ul style="list-style-type: none"> <li>Minority and marginalised populations identified and prioritised in the application of interventions</li> <li>Reduce inequalities and exclusion in the delivery of WASH services</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that endemic and marginalised communities are prioritised for the needed intervention i.e., adequate water facility, good sanitation facility as a matter of priority</li> <li>Provide boreholes with handpumps for unserved communities in remote and poor communities</li> <li>Introduce inclusive designs of WASH facilities to cater for the needs of PWDs</li> </ul>
<p><b>Promote sustainable water resources development and management</b></p>	<p>Monitor mining and logging activities to ensure they are undertaken in an environmentally sustainable manner</p>	<ul style="list-style-type: none"> <li>Education and awareness creation of the impact of illegal mining on water resources to enhance self-regulation</li> <li>Strengthen involvement of local communities in the management of water resources, forests and wetlands</li> </ul>
<p><b>Ensure responsive governance and citizen participation in the development dialogue</b></p>	<p>Promote effective stakeholder involvement in planning, monitoring, and accountability</p>	<ul style="list-style-type: none"> <li>Strengthen the sub-municipal assembly structures such as the assembly members, zonal councils, to enhance citizen participation and support for effective WASH delivery</li> <li>Organise radio discussions on the master plan and the related projects and programmes</li> <li>Organise town hall meetings and community durbars to engage communities in the master plan and the related projects and programmes</li> </ul>
<p><b>Strengthen plan preparation, implementation, and coordination at all levels</b></p> <p><b>Integrate WASH into health programming, including NTDs at all levels</b></p>	<ul style="list-style-type: none"> <li>Strengthen monitoring and evaluation systems</li> <li>Reinforce the institutional arrangements with adequate capacity to support and sustain effective monitoring and evaluation</li> <li>Enhance efficiency and performance at all levels</li> </ul>	<ul style="list-style-type: none"> <li>Organise routine monitoring and evaluation of the plan, related Assembly projects and programmes</li> <li>Enhance the capacity, skills, logistics and knowledge of the staff to provide technical leadership and coordination of WASH and NTD activities</li> <li>Harmonise institutional mandates and responsibilities for WASH and NTD activities in the Municipality</li> <li>Ensure NTDs form part of the GHS holistic assessment indicators at all levels to identify areas of the GHS/NTDP financial management system that require strengthening through refresher training</li> </ul>
<p><b>Strengthen fiscal decentralisation</b></p>	<p>Strengthen and improve resource mobilisation for plan implementation</p>	<ul style="list-style-type: none"> <li>Prepare and implement a plan for improving revenue and mobilising funds for implementing projects and programmes</li> <li>Merge WASH and NTD data to enhance planning, resource allocation, implementation and performance</li> </ul>
<p><b>Enhance knowledge management and learning</b></p>	<ul style="list-style-type: none"> <li>Promote evidence-based decision-making at all levels</li> <li>Strengthen capacity for data management and surveillance</li> </ul>	<ul style="list-style-type: none"> <li>Broaden the WASH team in the Municipality to include other departments with shared goals</li> <li>Share information on WASH and NTDs to stakeholders for evidence based decision-making NTD</li> <li>Develop a systemic methodology to track, analyse and communicate WASH and NTDs</li> </ul>



## 4.7 RISKS AND MITIGATION

To ensure successful implementation of the WASH and NTDs master plan, likely risks with the potential of minimising the outcomes of the plan have been identified and appropriate mitigation measures put in place to reduce the risks. Table 26 presents the risks and mitigation measures.

**Table 26** Anticipated risks and mitigations

	Challenges or Risks	Probability	Mitigation Measures
1	Inadequate political commitment for the implementation of the WASH/ NTD Master Plan	Low- Medium	The WASH/NTD master plan development process involved the both the political and technical leaders in the Municipal Assembly to determine the priorities, strategies, and interventions. Continue to maintain engagement with the leaders and citizens to ensure the issues are prioritised for implementation.
2	Inadequate financial commitment for the implementation of the WASH/ NTD Master Plan	Medium	As indicated in the UDEMA MTDP, the Revenue Improvement Action Plan (RIAP) will be prepared and implemented to improve its revenue mobilisation in the Municipality. The Assembly will continue to engage with other development partners and NGOs to jointly implement the WASH NTD master plan.
3	Degrading quality of water resources because of illegal mining activities	Medium to High	Engage with the relevant Government institutions (Water Resources Commission, Ghana Water Company Limited and the Minerals Commission etc.) to implement the actions and plans for managing water resources and small-scale mining in the Municipality (e.g., the Pra Basin IWRM plan, artisanal and small-scale mining (ASM) framework etc.)
4	Limited capacity and staff to implement the WASH/ NTD Master Plan	Medium	Assess staff capacity and organize capacity building programmes for the relevant staff (Municipal Assembly, Municipal Health Directorate, SHEP-GES, etc.) in the implementation of the WASH master plan.

# 5 PARTNERSHIPS AND IMPLEMENTATION ARRANGMENTS

This chapter describes the roles of the various actors for the delivery of the WASH and NTD master plan. It also presents the required structures that will enable the most effective and efficient approach to ensuring the best alignment of WASH interventions to support improving the NTD situation.

## 5.1 MUNICIPAL ASSEMBLY ACTORS

The technical working group has provided inputs, strategic direction, and technical support for the overall development of the plan. The technical working group is comprised of representatives from the Municipal Assembly (Planning, District Works Department, Finance Officer, Community Development, Environmental Health Assistant, Statistical Service), the Municipal Health Directorate (Director, Disease Control Officers), the School Health Education Programme (SHEP) coordinators of the Ghana Education Service in the Municipality, Ghana Water Company Limited, Rural Relief Services and IRC Ghana.

Meetings with wider stakeholders in the Municipal Assembly provided the platform for building consensus, clarifying the roles and responsibilities and to provide updates within the project. The Municipal Assembly and the Municipal Health Directorate will lead the drive towards mobilising resources and partnerships for the implementation of the master plan.

## 5.2 REGIONAL AND NATIONAL GOVERNMENT ACTORS

The key national and regional institutions that will be relevant to the implementation include the following:

1. Central Regional Coordinating Council - coordinate and harmonise reporting by MMDAs
2. Community Water and Sanitation Agency (Central regional office) to collaborate with the Municipal Assembly on infrastructure provision and to provide technical backstopping
3. Ghana Health Service (Central regional office) to provide technical backstopping to the Municipal Assembly and to facilitate the linkages with WASH and elimination of NTDs
4. School Health Education Programme (SHEP), Ghana Education Service (Central regional office)
5. Water Resources Commission (Central regional office) to support the Municipal Assembly to plan, enforce regulations and manage water resources, and
6. National Development Planning Commission to guide in aligning priorities and improving reporting, monitoring, and evaluation, set medium-term development priorities, planning guidelines and report on progress of medium-term plan.

## 5.3 DEVELOPMENT PARTNERS AND NGOS

Over the past five years, these development partners and NGOs have been active in the Municipality, namely:

1. Anesvad Foundation through the partnership with the Ghana Health Service and Municipal Health Directorate towards the elimination of skin NTDs
2. UNICEF – collaboration with the School Health Education Programme (SHEP) to improve WASH in schools
3. The World Bank through the Community Water and Sanitation Agency in implementing the Sustainable Rural Water and Sanitation Project (SRWSP)
4. Rural Relief Services, a local NGO engaged in WASH and NTD programmes in the Municipality.

# 6 COMMUNICATION, ADVOCACY AND NETWORKS

This section sets out a communication, and advocacy strategy for the master plan. Communication and advocacy are central to the plan and focus on social learning, multi-level interactions using existing platforms, evidence-based approaches, and advocacy for change.

## 6.1 OBJECTIVES AND ACTIVITIES

The social and behaviour change communication will aim to stimulate social transformation and change in behaviour and attitudes towards WASH and NTDs. The communication aspect of the plan will focus on building awareness, targeting advocacy activities, and engaging local actors towards improved WASH- and NTD-related behaviours and attitudes.

The key activities that will be undertaken to achieve the communication objectives include:

- Raise awareness on the WASH and NTD master plan to create the needed critical mass for support and to build synergies with key stakeholders. The outreach in communities will involve campaigns, community durbars and town hall meetings
- Promote institutional partnerships for managing the implementation of the master plan
- Publicise the master plan strategic activities and events through the local media and sharing with wider sector stakeholders
- Undertake stakeholder engagements to influence behaviour change towards WASH and NTDs in the Municipality
- Engage and support the development of the capacity of civil society partners to advance all aspects of WASH and NTD master plan.

The Upper Denkyira Municipal Assembly has put in place measures to disseminate its plans and development strategies to the public to promote their participation and perspectives. The dissemination of the master plan will be through the MDTP communication plan and processes. As indicated in the municipal medium-term plan, the outreach in communities will involve meeting with public hearings, political leadership, popular participation (via community durbars and town hall meetings) etc.

## 6.2 TARGET AUDIENCES

The primary audiences are at the core of the communication plan while secondary audiences help bridge certain gaps and extend the outreach scale as is shown in Table 27.

**Table 27** Target audiences

Primary audiences	Secondary audiences
Municipal Chief Executive	Ghana Health Service
Heads of Department and Agencies in the Municipal Assembly	Central Regional Coordinating Council
Assembly Members	School Health and Education Programme of the Ghana Education Service (SHEP-GES)
Traditional Leaders	Water Resources Commission
Community members	Community Water and Sanitation Agency
Representatives of Zonal Councils and other Opinion Leaders	National Development Planning Commission
Market Queens and Business Associations	Ministry of Local Government and Rural Development

Primary audiences	Secondary audiences
Artisans, Mechanics, Ghana Private Road Transport Union (GPRTU) etc.	Ministry of Sanitation and Water Resources
Faith Based Organisations (FBOs)	
Civil Society Organisations	
Development Partners	
Local Media	

### 6.3 KEY MESSAGES AND THEMES

There will be specific messages tailored to each target audience. For the stakeholders in the Upper Denkyira East Municipal Assembly, the messages developed will aim to promote active participation, accountability and to garner support from stakeholders for the local development interventions. The intervention areas and focus of messages are as in the Table 28 below.

**Table 28** Social Behaviour Change Communication (SBCC) messages for WASH and NTD interventions<sup>12</sup>

Intervention area	Key Messages
Personal hygiene (Handwashing)	<p><i>Always wash hands with soap and clean water, at least for 20 seconds frequently, specially at critical times:</i></p> <ul style="list-style-type: none"> <li>• Before preparing, serving food and before eating</li> <li>• Before feeding babies/before breastfeeding, before feeding little children</li> <li>• After latrines use, also after disposing little children's faeces</li> <li>• After handling animals or animal waste (i.e., slaughtering a chicken): be sure to wash your hands before and after dealing with raw meat</li> <li>• Wash your dishes with clean water and soap</li> </ul>
Drinking water hygiene	<p><i>Keep drinking water safe</i></p> <ul style="list-style-type: none"> <li>• Keep all water sources free from contamination</li> <li>• Collect water in a clean and safe container</li> <li>• Wash your hands after having collected water once you reach home</li> <li>• Keep water drawing and storage containers clean and covered</li> <li>• Use a clean glass/ cup when drinking water</li> </ul> <p><i>If the water is dirty, clean this water by:</i></p> <ul style="list-style-type: none"> <li>• Get the settled water and carefully filter (through a clean cloth) into the clean container. Make sure the settled dirt does not pour out.</li> <li>• After pouring the water through the cloth, boil or treat it.</li> <li>• Drinking water can also be made safe by purifying it with chlorine tablets. Follow instructions on the packet by putting the purifying tablet into the water and then it will be safe for drinking.</li> </ul>
Ensure a safe environment	<ul style="list-style-type: none"> <li>• Keep your home and surrounding environment clean</li> <li>• All faeces, including those of babies and young children, should be disposed of in latrine. Where there are no latrines, faeces should be buried</li> <li>• Always cover your pit latrine after use</li> <li>• Properly dispose the rubbish in the pit /designated disposal sites.</li> <li>• Avoid keeping animals in the house. Provide a separate area for the animals to stay</li> <li>• Manage drains and toilets including leakages of septic tanks to minimize the creation of continuously contaminated environment</li> <li>• Manage environmental situations such as uncovered water containers, open drains and septic tanks, water puddles or solid waste – which leads to an increase mosquito breeding (STH, SCH)</li> <li>• Encourage larvae control including insecticide treatment of larvae breeding sites (oncho)</li> </ul>
Social Behaviour	<ul style="list-style-type: none"> <li>• Avoid urinating into open water source such as a pond, river, or dam as it leads to these water sources infected with schistosomiasis eggs</li> <li>• Avoid swimming, bathing, and washing of clothing in open water sources</li> <li>• Use of personal protective equipment (gloves, boots/shoes, masks, aprons) for high-risk groups (e.g., sanitation workers, farmers)</li> </ul>

<sup>12</sup> Multiple sources - WASH BCC communication, Ghana National NTD Programme, GES and MSWRs Ghana

Intervention area	Key Messages
Equity and social Inclusion	<ul style="list-style-type: none"> <li>• Stop stigmatisation of NTD-affected persons especially those with physical disabilities</li> <li>• Identify and include people with physical and learning disabilities and people who are homeless or rough sleepers during Mass Drug Administration</li> <li>• Raise awareness and sensitise people and communities about NTDs</li> </ul>
Treatment & Care	<ul style="list-style-type: none"> <li>• Access to WASH is important for safe surgical treatment and community and home-based care for LF</li> <li>• Participate in Mass Drug Administration in endemic communities</li> <li>• Seek clinical treatment for infected persons to mitigate severity of disease, and reduce the likelihood of passing on infection to other people (All)</li> <li>• Follow-up for treatment/ surgery, and surgical aftercare to prevent severe disease outcomes and further transmission (LF, O)</li> <li>• Hygiene-based lymphedema management - Wash swollen feet and limbs and between the toes with soap and water daily to prevent bacterial infections and increased severity of disease (acute inflammatory episodes)</li> </ul>

## 6.4 CHANNELS OF COMMUNICATION

The WASH and NTD master plan implementation process will make use of a variety of channels to ensure engagement with all relevant audiences. The dissemination techniques and channels include:

- Announcements, discussions, and broadcast in the local news media e.g., local FM station, local newspapers, and Assembly’s website, social media, and newsletters
- Meeting with traditional rulers, representatives of Zonal Councils and other opinion leaders and tasking them to take the messages back to their communities
- Holding community meetings at central locations throughout the Municipality.

It will be important to develop effective feedback mechanisms for providing feedback to the Assembly so that lessons learnt can be applied to planning and decision making.

# 7 MONITORING, EVALUATION AND LEARNING

This chapter presents the framework for monitoring, evaluation, and learning. It is based on the projections, strategic actions, and targets mentioned in the plan and how they will be measured.

## 7.1 MONITORING FRAMEWORK

The National Development Planning Commission prepares guidelines and facilitates the preparation of the Monitoring and Evaluation plans for the districts. The Upper Denkyira East Municipal Assembly and the Municipal Health Department each have M&E plans to track and measure progress towards the achievement of their goals.

Monitoring of the master plan will be a continuous and integral part of the Municipal Assembly's functions and the plan implementation. Monitoring will facilitate tracking of progress in implementation and effectiveness, as well as identifying bottlenecks for timely resolution.

The Monitoring framework for the WASH and NTD master plan has been aligned with national policy objectives and indicators. Additional indicators have been included to provide further details to ensure effective monitoring of programmes and projects. Table 29 shows the policy objectives, indicators, monitoring frequency and responsibility focusing on key thematic areas.

**Table 29** Detailed WASH and NTD indicators

Focus Area	National policy objective	Indicators for measurement	Monitoring Frequency	Responsibility
Water services	Improve access to safe and reliable water supply services for all	<ul style="list-style-type: none"> <li>Proportion of population with access to safely managed drinking water</li> <li>Proportion of population with access to basic drinking water</li> <li>Percentage of distribution losses (Urban &amp; rural)</li> </ul>	Annually	Municipal Planning and Coordination Unit / Municipal Environmental Health Unit
Sanitation and hygiene services	Enhance access to improved and reliable environmental sanitation services	<ul style="list-style-type: none"> <li>Proportion of population with access to basic sanitation services</li> <li>Proportion of population practicing open defecation- (Number of communities achieving open defecation-free (ODF) status)</li> <li>Proportion of population with access to handwashing facility with soap and water</li> <li>Proportion of solid waste properly disposed of (major towns/cities)</li> <li>Proportion of population whose liquid waste (faecal matter) is safely managed</li> </ul>	Annually	Municipal Planning and Coordination Unit / Municipal Environmental Health Unit
WASH in Schools	Enhance inclusive and equitable access to, and participation in quality education at all levels	Proportion of schools with access to basic WASH services	Annually	Municipal Planning and Coordination Unit/ School Health Education Programme-Ghana Education Service
WASH in Health Care Facilities	Ensure accessible and quality Universal Health Coverage (UHC) for all	Proportion of health care facilities with access to basic WASH services	Annually	Municipal Health Directorate/ Municipal Planning and Coordination Unit

Focus Area	National policy objective	Indicators for measurement	Monitoring Frequency	Responsibility
Neglected Tropical Diseases	Reduce the incidence of new STIs, HIV and AIDS and other infections, especially among vulnerable groups (Effective Control, elimination, and eradication of Neglected Tropical Diseases)	Reduction in the prevalence or incidence of Neglected Tropical Diseases	Quarterly / Annually	Municipal Health Directorate/ Municipal Planning and Coordination Unit
Cross cutting Issues	Promote full participation of persons with disabilities in social and economic development of the country	<ul style="list-style-type: none"> <li>Inclusive services provided in WASH sectors</li> <li>Sign language interpreters engaged during public and private events</li> </ul>	Quarterly/ Annually	Community Development and Social Welfare / Municipal Planning and Coordination Unit
	Promote sustainable water resources development and management	<ul style="list-style-type: none"> <li>Proportion of bodies of water with good ambient water quality (Water quality index) (SDG 6.3.2)</li> </ul>		Municipal Planning and Coordination Unit / Water Resources Commission
	Ensure responsive governance and citizen participation in the development dialogue	<ul style="list-style-type: none"> <li>Number of WASH and NTDs engagements in municipality</li> </ul>		Community Development and Social Welfare / Municipal Planning and Coordination Unit
	Strengthen plan preparation, implementation, and coordination at all levels  Integrate WASH into health programming, including NTDs at all levels	<ul style="list-style-type: none"> <li>Staff strength of in the Municipality</li> <li>Number of functional sub-district substructures</li> <li>Percentage of Annual Action Plan implemented</li> </ul>		Municipal Assembly/ Municipal Health Directorate -GHS
	Strengthen fiscal decentralisation	<ul style="list-style-type: none"> <li>Proportion of central government transfers to Municipality</li> <li>Percentage increase in IGF</li> </ul>		Finance and Accounting department/ Municipal Assembly

## 7.2 MONITORING AND EVALUATION

It is expected that the monitoring findings will feed into the meetings of stakeholders and partners organised by the Municipality to take stock of progress and to help in re-planning for maximum result. It will also provide information for preparing the annual progress report to the NDPC.

Evaluation will be carried out purposely to assess whether the resources invested in a particular project have produced or are producing the desired results in terms of outputs and benefits and whether the benefits are reaching the intended target population/community.

### **7.3 KNOWLEDGE MANAGEMENT AND LEARNING**

Learning will be part of the implementation phase of the master plan. This will involve the documentation and sharing of lessons, best practices, and new insights. The sharing will be done using existing platforms

1. Stakeholder meetings to coordinate and review the implementation of WASH and NTD master plan
2. Town Hall meetings to discuss and generate feedback on performance of the implementation of the WASH and NTD master plan
3. Other regional and sector events
4. Print and electronic media: Municipal Assembly's website and social media.



# 8 COSTS OF THE MASTER PLAN

## 8.1 INTRODUCTION

This chapter focuses on the cost estimates required to cover the infrastructure and recurrent costs to provide universal access to WASH services in the Municipality.

## 8.2 METHODOLOGY

The Municipal budget is guided by the policy direction of government, instructions on the processes and procedures as well as budget expenditure ceilings provided by the Ministry of Finance. The budget is in aligned with the approved medium-term plan and the annual action plans.

The cost estimates in the WASH and NTD master plan will enhance the focus and details support prioritisation and budgeting. The costing approach considers the existing and projected population, technology, strategies, and interventions for WASH and NTD service delivery and the costs for sustaining these services. The cost estimates are based on inputs from the workshop was organised with the technical working group in the Municipal Assembly. The estimates include elements of the life cycle costs approach such as:

- Capital Expenditure (CapEx) - the cost for providing the WASH infrastructure.
- Capital maintenance expenditure (CapManEx) - the cost of replacing assets or asset renewal. This covers major maintenance activities.
- Expenditure on direct support (ExpDS) - the cost for supporting service delivery, which includes monitoring and evaluation, technical support, backstopping, capacity building etc.

They do not include cost for:

- Operational and maintenance expenditure (OpEx) - the cost of routine operations and minor maintenance.

The unit costs are based on estimates from the Upper Denkyira East Municipal Assembly estimates from recent projects. Annual inflation adjustments have been applied to the costs over the nine-year period at an inflation rate of 15%<sup>13</sup> using the price levels in 2021 for the analysis. All the estimates exclude salaries and personnel costs of the government staff - Municipal Assembly, Municipal Health Directorate and SHEP-GES etc.

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<sup>13</sup> The average rate of inflation in Ghana is estimated at 15%, however, by March 2022 the inflation rate had risen to 19%.

### 8.3 COSTING WATER SERVICES

Table 30 provides the estimates for costing some of the intervention areas for providing universal coverage (100% of the population with at least basic services) by 2030, the costs have been estimated considering the current service coverage, the targeted coverage, and the unit cost of the technologies to be employed to achieve the target.

**Table 30** Cost estimates for water services

Description	Costs/year (GHC)								
	2022	2023	2024	2025	2026	2027	2028	2029	2030
a) Extend pipe connection to about 2,464 additional household by 2030 (GWCL & Community managed pipe systems)	23,022	26,476	30,447	35,014	40,266	46,306	53,252	61,240	70,426
b) Expand and rehabilitate water infrastructure (handpumps and limited mechanised systems) in underserved and unserved communities	148,000	170,200	195,730	225,090	258,853	297,681	342,333	393,683	452,735
c) Improve reliability of water services and to reduce non-revenue water (NRW) losses	49,667	57,117	61,717	70,974	81,620	93,863	107,943	124,134	142,754
d) Build capacities of water and sanitation management teams in the management of community water systems	26,500	30,475	35,046	40,303	46,349	53,301	61,296	70,491	81,064
<b>Total</b>	<b>247,189</b>	<b>284,267</b>	<b>322,940</b>	<b>371,381</b>	<b>427,088</b>	<b>491,151</b>	<b>564,824</b>	<b>649,547</b>	<b>746,979</b>

The estimates indicate that a minimum of GHC 4.1 million is required to achieve the set targets. However, the costs in the table above are not exhaustive as indicated below:

- a. The cost estimates are for GWCL to extend its water lines into new areas. The cost estimates do not include:
  - anticipated fees to be paid by the 2,464 additional households to connect directly into their houses and
  - the provision and installation of meters at household level and production and distribution points.
- b. The costs for the community managed systems have to be assessed at the system level to determine costs. The cost estimates do not include:
  - Expanding the community- managed piped systems to allow for more household connections
  - Construction of 2 limited mechanised systems and /or identifying high yielding boreholes for mechanisation.

## 8.4 COSTING SANITATION SERVICES

The national strategy for environmental sanitation involves multiple stakeholders who contribute to achieving the set targets. The private sector plays a key role in solid waste management and partnering Government to invest in developing modern final waste disposal sites. Table 31 provides the cost estimates to increase the population with access to at least basic sanitation from 42% to 65% of the population by 2030. It also aims to intensify the campaign in the remaining communities to reduce the practice of open defecation in the municipality.

**Table 31** Cost estimates for sanitation activities

Description	Costs/year (GHC)								
	2022	2023	2024	2025	2026	2027	2028	2029	2030
a) Implement CLTS in 25 communities in Asikuma and Oponso Zonal Council	12,000	13,800	15,870	18,251	20,988	24,136	27,757	31,920	36,708
b) Rehabilitate existing public toilet facilities to be disability and gender friendly	240,000	276,000	317,400	365,010	419,762	482,726	523,829	186,201	-
c) Ensure adequate sanitation equipment and logistics (costs of private service provider not included)	54,222	62,356	71,709	82,465	94,835	109,060	125,419	144,232	165,867
d) Implement behaviour change communication strategy via radio, local information centres and community engagements	40,000	58,800	42,320	48,668	55,968	64,363	74,018	85,121	97,889
e) Strengthen staff capacity within the Municipal Environmental Health Department	5,000	5,750	6,613	7,604	8,745	10,057	11,565	13,300	15,295
<b>Total</b>	<b>351,222</b>	<b>416,706</b>	<b>453,911</b>	<b>521,998</b>	<b>600,298</b>	<b>690,342</b>	<b>562,588</b>	<b>460,775</b>	<b>315,759</b>

The estimates indicate that a minimum of GHC 4.3 million is required to achieve the targets set for sanitation by 2030. However, because of the multiple actors with responsibilities in sanitation service delivery, the team was unable to estimate costs related to private sector support. It was not possible to estimate costs for:

- Acquiring an additional compactor and purchase 200 additional refuse bins (ZoomLion Ghana Ltd is expected to bear these costs)
- Establishing engineered final disposal sites for both liquid and solid waste management.

## 8.5 COSTING FOR WASH IN SCHOOLS

Costing for WASH in schools is aligned with the target of increasing the number of schools with access to improved water, sanitation, and hygiene (handwashing facilities with water and soap) services on premises and improving solid waste management. Table 32 provides the cost estimates for achieving the set targets.

**Table 32** Cost estimates for WASH services in schools

Description	Costs/year (GHC)								
	2022	2023	2024	2025	2026	2027	2028	2029	2030
Provide 21 schools in the Kyekyewere, Asikuma, Oponso and Buabin Zonal councils (min. of 5 schools/council) with water facilities on premises	75,000	86,250	99,188	114,066	131,175	100,568	115,653	66,500	-
Provide 46 schools in Municipality with improved toilets on premises	401,111	461,278	530,469	610,040	701,546	806,778	927,794	667,961	339,891
Provide new hygiene facilities in remaining 5 schools in the Dunkwa area council and ensure existing hygiene services are sustained	5,000	59,925	68,914	79,251	91,138	104,809	120,531	138,610	159,402
Training, sensitisation and monitoring activities	15,889	18,272	21,013	24,165	27,790	31,958	36,752	42,265	48,604
<b>Total</b>	<b>497,000</b>	<b>625,725</b>	<b>719,584</b>	<b>827,521</b>	<b>951,650</b>	<b>1,044,113</b>	<b>1,200,730</b>	<b>915,336</b>	<b>547,898</b>

The estimates indicate that a minimum of GHC 7.3 million is required to meet the set targets by 2030. The cost estimates are higher than the others because they cover capital expenditure, capacity development, monitoring, activities and recurrent costs for operation and maintenance. The Ghana Education Service (GES) and the Municipal Assembly must collaborate to establish management teams and develop a plan to ensure that the services are sustained.

## 8.6 COSTING FOR WASH IN HEALTH CARE FACILITIES

Table 33 presents the cost estimates for achieving the targets for WASH in health care facilities to increase access to improved water supply on premises from 55% in 2021 to 87% by 2030. To increase access to basic sanitation from 21% in 2021 to 71% by 2030 and increase access to basic hygiene services from 15% to 71% by 2030.

**Table 33** Cost estimates for WASH in Health Care Facilities

Description	Costs/year (GHC)									Total
	2022	2023	2024	2025	2026	2027	2028	2029	2030	
a) Provide access to basic water services on 15 health facilities	41,667	47,917	55,104	63,370	72,875	83,807	96,378	110,834	127,459	<b>699,410</b>
b) Provide basic sanitation facilities for 20 health facilities, with at least three waste collection bins (for sharps, infectious, and non-infectious) per facility	218,889	251,722	289,481	332,903	382,838	440,264	506,303	582,249	669,586	<b>3,674,234</b>
c) Provide handwashing facilities for 22 health care facilities (available at points of care and toilets)	33,000	37,950	43,643	50,189	57,717	66,375	76,331	87,781	100,948	<b>553,933</b>
<b>Total</b>	<b>293,556</b>	<b>337,589</b>	<b>388,227</b>	<b>446,461</b>	<b>513,431</b>	<b>590,445</b>	<b>679,012</b>	<b>780,864</b>	<b>897,993</b>	<b>4,927,577</b>

The estimates indicate that a minimum of GHC 4.9 million is required to meet the set targets by 2030. This, however, excludes recurrent costs for sustaining WASH services in existing facilities. The cost estimates are largely for capital expenditure, capacity development and monitoring activities. Ghana Health Service (GHS) and the Municipal Assembly must collaborate to establish management teams and develop a plan to ensure that the services are sustained.

## 8.7 COSTING FOR NTD STRATEGIES AND ACTIVITIES

The costing for the NTD interventions will be harmonised with the implementation of an integrated WASH and NTD master plan. The table provides the cost estimates for key activities that will support national efforts to eradicate, eliminate or control NTDs in the country and enhance knowledge management and learning.

**Table 34** Cost estimates for NTD strategies and activities

Description	Costs/year (GHC)								
	2022	2023	2024	2025	2026	2027	2028	2029	2030
a) Capacity building in case detection and treatment of all cases and contacts at all levels for NTDs	217,000	249,550	286,983	330,030	379,534	436,465	501,934	577,224	663,808
b) Strengthen NTD Surveillance at all levels	216,800	249,320	286,718	329,726	379,185	436,062	501,472	576,692	663,196
c) Research and innovation	100,000	115,000	132,250	152,088	174,901	201,136	231,306	266,002	305,902
d) Collaborative Integrated Vector Management in collaboration with malaria programme	133,560	153,594	176,633	203,128	233,597	268,637	308,932	355,272	408,563
<b>Total</b>	<b>667,360</b>	<b>767,464</b>	<b>882,584</b>	<b>1,014,971</b>	<b>1,167,217</b>	<b>1,342,299</b>	<b>1,543,644</b>	<b>1,775,191</b>	<b>2,041,469</b>

The estimates indicate that a minimum of GHC 11 million is required to meet the set targets by 2030. The costing is largely for the field activities, training, surveillance, and research.

## 8.8 TOTAL COSTS FOR UNIVERSAL WASH COVERAGE AND REDUCTION IN NTD INCIDENCE BY 2030

It is not possible to estimate the total costs for achieving universal coverage for WASH and reduction of NTDs by 2030, however the consolidated costs per section with further cost details are presented in Annex 1. The projections focus on water and sanitation services in both rural and urban areas.

The cost of strengthening the WASH service delivery system, to ensure universal access to services are sustained, have not been analysed in a comprehensive manner, though there are elements of these costs in some of the sections. These costs include the required institutions and capacities, legal framework, regulation, monitoring, water resource management, coordination, and learning and these will be assessed and costed during implementation.

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# ANNEX CONSOLIDATED COST ESTIMATES FOR THE WASH AND NTD MASTER PLAN

## Water

Description	Costs/year (GHC)									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Increase proportion of household connections within Ghana Water Company Limited systems and Community Managed Piped Schemes	23.022	26.476	30.447	35.014	40.266	46.306	53.252	61.240	70.426	<b>386.447</b>
Expand and rehabilitate water infrastructure (handpumps and limited mechanised systems) in underserved and unserved communities	148.000	170.200	195.730	225.090	258.853	297.681	342.333	393.683	452.735	<b>2.484.305</b>
Improve reliability of water services and to reduce non-revenue water (NRW) losses	49.667	57.117	61.717	70.974	81.620	93.863	107.943	124.134	142.754	<b>789.789</b>
Build capacities of Water and Sanitation Management Teams in the management of community water systems	26.500	30.475	35.046	40.303	46.349	53.301	61.296	70.491	81.064	<b>444.825</b>
<b>Total</b>	<b>247.189</b>	<b>284.267</b>	<b>322.940</b>	<b>371.381</b>	<b>427.088</b>	<b>491.151</b>	<b>564.824</b>	<b>649.547</b>	<b>746.979</b>	<b>4.105.366</b>

## Notes

Excludes cost estimates for:

- Extending pipe connection to about 2400+ households
- Provision and installation of meters at production, distribution points and household levels
- Expanding existing community- managed piped systems to allow for more household connections
- Construction of 2 limited mechanised systems and /or identifying high yielding boreholes for mechanisation

**Sanitation and Hygiene**

Description	Costs/year (GHC)									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Implement CLTS in 25 communities in Asikuma and Oponso Zonal Council	12.000	13.800	13800	18.251	20.988	24.136	27.757	31.920	36.708	<b>199.360</b>
Rehabilitate existing public toilet facilities to be disability and gender friendly	240.000	276.000	317.400	365.010	419.762	482.726	323.829	186.201	-	<b>2.610.927</b>
Ensure adequate sanitation equipment and logistics (costs of private service provider not included)	54.222	62.356	71.709	82.465	94.835	109.060	125.419	144.232	165.867	<b>910.166</b>
Implement behaviour change communication strategy via radio, local information centres and community engagements	40.000	58.800	42.320	48.668	55.968	64.363	74.018	85.121	97.889	<b>567.147</b>
Strengthen staff capacity within the Municipal Environmental Health Department	5.000	5.750	6.613	7.604	8.745	10.057	11.565	13.300	15.295	<b>83.929</b>
<b>Total</b>	<b>351.222</b>	<b>416.706</b>	<b>451.841</b>	<b>521.998</b>	<b>600.298</b>	<b>690.342</b>	<b>562.588</b>	<b>460.775</b>	<b>315.759</b>	<b>4.371.529</b>

*Notes*

Excludes cost estimates for:

- An additional compactor from ZoomLion Gh. Ltd.
- 200No. additional dustbins from ZoomLion Gh. Ltd
- Establish engineered final disposal sites for both liquid and solid waste management Construction of 2 limited mechanised systems and /or identifying high yielding boreholes for mechanisation



### WASH in Schools

Description	Costs/year (GHC)									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Provide 21 schools in the Kyekyewere, Asikuma, Oponso and Buabin Zonal councils (min. of 5 schools/ council) with water facilities on school premises	75.000	86.250	99.188	114.066	131.175	100.568	115.653	66.500	-	<b>788.400</b>
Provide 46 schools in Municipality with improved toilets on their school premises	401.111	461.278	530.469	610.040	701.546	806.778	927.794	667.961	339.891	<b>5.446.868</b>
Provide new hygiene facilities in remaining 5 schools in the Dunkwa area council and ensure existing hygiene services are sustained	5.000	59.925	68.914	79.251	91.138	104.809	120.531	138.610	159.402	<b>827.580</b>
Training, sensitisation and monitoring activities	15.889	18.272	21.013	24.165	27.790	31.958	36.752	42.265	48.604	<b>266.708</b>
<b>Total</b>	<b>497.000</b>	<b>625.725</b>	<b>719.584</b>	<b>827.521</b>	<b>951.650</b>	<b>1.044.113</b>	<b>1.200.730</b>	<b>915.336</b>	<b>547.898</b>	<b>7.329.556</b>

### WASH in Healthcare facilities

Description	Costs/year (GHC)									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Provide access to basic water services on 15 health facilities	41.667	47.917	55.104	63.370	72.875	83.807	96.378	110.834	127.459	<b>699.410</b>
Provide basic sanitation facilities for 20 health facilities with at least three waste collection bins (for sharps, infectious, and non-infectious) per facility	218.889	251.722	289.481	332.903	382.838	440.264	506.303	582.249	669.586	<b>3.674.234</b>
Provide handwashing facilities for 22 health care facilities (available at points of care and toilets)	33.000	37.950	43.643	50.189	57.717	66.375	76.331	87.781	100.948	<b>553.933</b>
<b>Total</b>	<b>293.556</b>	<b>337.589</b>	<b>388.227</b>	<b>446.461</b>	<b>513.431</b>	<b>590.445</b>	<b>679.012</b>	<b>780.864</b>	<b>897.993</b>	<b>4.927.577</b>

**NTD strategies and Activities**

Description	Costs/year (GHC)									
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total
Capacity building in case detection and treatment of all cases and contacts at all levels for NTDs	217.000	249.550	286.983	330.030	379.534	436.465	501.934	577.224	663.808	<b>3.642.528</b>
Strengthen NTD Surveillance at all levels	216.800	249.320	286.718	329.726	379.185	436.062	501.472	576.692	663.196	<b>3.639.171</b>
Research and innovation	100.000	115.000	132.250	152.088	174.901	201.136	231.306	266.002	305.902	<b>1.678.584</b>
Collaborative Integrated Vector Management in collaboration with malaria programme	133.560	153.594	176.633	203.128	233.597	268.637	308.932	355.272	408.563	<b>2.241.917</b>
<b>Total</b>	<b>667.360</b>	<b>767.464</b>	<b>882.584</b>	<b>1.014.971</b>	<b>1.167.217</b>	<b>1.342.299</b>	<b>1.543.644</b>	<b>1.775.191</b>	<b>2.041.469</b>	<b>11.202.199</b>

