COMMUNITY DRUG DISTRIBUTORS PREPARE FOR MASS DRUG ADMINISTRATION FOR LYMPHATIC FILARIASIS. PHOTO: FHI 360/BENIN

ACT TO END NEGLECTED TROPICAL DISEASES | WEST

Landscape Analysis:

Ghana

Country Sustainability Profile
Date: August 26, 2020

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ACRONYMS AND ABBREVIATIONS

ALB	Albendazole
BCC	Behavior Change Communication
CDD	Community Drug Distributor
CHPS	Community-based Health Planning and Services
CHW	Community Health Worker
CONIWAS	Coalition of NGOs in WASH
CST	Coverage Survey Tool
DHD	District Health Directorate
DHMT	District Health Management Team
DHIS2	District Health Information System
DMO	District Medical Officer
DPC	Disease Prevention and Control
DQA	Data Quality Assessment
DSA	Disease Specific Assessment
EU	Evaluation Unit
FAA	Fixed Amount Award
FAQ	Frequently Asked Questions
FGD	Focus Group Discussion
FTS	Filariasis Test Strip
FY	Fiscal Year
GDP	Gross Domestic Product
GES	Ghana Education Service
GHS	Ghana Health Service
HDI	Human Development Index
HD	Health District
HKI	Helen Keller International
HMIS	Health Management Information System
HSS	Health Systems Strengthening
ICCC	Intra-Country Coordinating Committee
IM	Independent Monitoring
INDB	Integrated NTD Database
ITI	International Trachoma Initiative
IVM	Ivermectin
KII	Key Informant Interview
LF	Lymphatic Filariasis
M&E	Monitoring and Evaluation
MDA	Mass Drug Administration
MOF	Ministry of Finance
MOH	Ministry of Health

MOU	Memorandum of Understanding
MTEF	Medium-Term Expenditure Framework
MNCH	Maternal, Newborn, and Child Health
NGO	Non-Governmental Organization
NHIS	National Health Insurance Scheme
NMCP	National Malaria Control Program
NSAHP	National School and Adolescent Health Program
NTD	Neglected Tropical Diseases
NTDP	National NTD Program
ONA	Organizational Network Analysis
OV	Onchocerciasis
PBMIS	Planning and Budget Information System
PCT	Preventive Chemotherapy and Transmission Control
PHU	Peripheral Health Unit
PPME	Policy, Planning, Monitoring, and Evaluation Division
Pre-TAS	Pre-Transmission Assessment Survey
PZQ	Praziquantel
SAC	School-Aged Children
SAE	Severe Adverse Event
SCH	Schistosomiasis
SCM	Supply Chain Management
SDG	Sustainable Development Goal
SHEP	School Health Education Program
SMM	Sustainability Maturity Model
SOP	Standard Operating Procedure
STH	Soil-transmitted helminths
TAS	Transmission Assessment Survey
TIPAC	Tool for Integrated Planning and Costing
TOR	Terms of Reference

EXECUTIVE SUMMARY

Ghana has made significant achievements over the last decade in the fight to eliminate and control neglected tropical diseases (NTDs). Ghana successfully eliminated Guinea worm in 2015 (World Health Organization [WHO] 2015) and trachoma in 2018 (WHO 2018). Ghana also achieved significant reductions in the prevalence of onchocerciasis and lymphatic filariasis as well as modest reductions in the prevalence of schistosomiasis and soil-transmitted helminthiasis through the use of mass drug administration (MDA). Ghana's NTD Program (NTDP) goals are sustained elimination of lymphatic filariasis and onchocerciasis and sustained control of schistosomiasis and soil-transmitted helminthiasis.

This document was prepared by the USAID-funded Act to End Neglected Tropical Diseases | West program (Act | West) as a synthesis of the program's assessments, analyses, key findings, and recommendations since June 2019. The program works to strengthen and integrate Ghana's NTDP into national financial, governance, information systems and service delivery structures. The purpose of this country profile is to (1) establish a baseline of shared information on NTD sustainability and (2) discuss findings that promote coordinated assistance supporting NTD sustainability efforts in Ghana.

Currently, strategies and policies of the NTDP are driven by Ghana's 5-year NTD Master Plan, but these strategies and policies have not yet been fully integrated into the national health sector strategy or into related non-health sector policies. The NTDP aims to advocate for broader integration and engage relevant health and non-health sector stakeholders in cross-cutting strategies and collaboration efforts. The NTDP and Act | West partners have identified opportunities to enhance collaboration and coordination in NTD programming, including leveraging the decentralized health system to increase cross-ministerial collaboration and coordination at the regional and district levels. In addition, the NTDP will revitalize and reconstitute the Intra-Country Coordinating Committee (ICCC) as the NTD cross-sector collaboration mechanism. In the assessment of operational capacity, the NTDP has identified steps for building capacity in the health and non-health sector workforce in comprehensive core competencies for NTD care.

Through strong collaborative frameworks, the NTDP could leverage multiple service delivery platforms for mutually beneficial service integration and program implementation. For example, the Ghana Health Service (GHS) has established a fully government-funded surveillance system that could include post-elimination surveillance for the NTDP. The NTDP could leverage the GHS's integrated monitoring tool to raise awareness and understanding around how NTDs fit into regional and district priorities and issues. Under the GHS leadership, the NTDP has made great progress toward eliminating and controlling NTDs but more domestic resources need to be mobilized from both the public and private sectors. Undertaking a financial needs analysis and using the results to advocate for resources from these sectors will be critical for closing the NTDP's funding gaps.

In summary, this country sustainability profile provides a holistic snapshot of the status, strengths, challenges, and future priorities related to NTDs and NTD programmatic sustainability in Ghana.

INTRODUCTION

Neglected tropical diseases (NTDs) impact over 1.5 billion people across 140 countries, exposing and exacerbating structural inequities and cyclical poverty. National NTD Programs (NTDPs), with support from global initiatives and donor financing, have made significant progress over the last decade. This has led to global declines in the disease burden for five of the NTDs responsive to preventive chemotherapy and transmission control (PCT): lymphatic filariasis (LF), trachoma, onchocerciasis (OV), schistosomiasis (SCH), and soil-transmitted helminthiasis (STH). Several countries have already met or are near to meeting disease elimination targets set by the World Health Organization (WHO) and the United Nations (UN) Sustainable Development Goals (SDGs). As countries approach NTD elimination and control targets, the operational and financial sustainability of national NTDPs has become an increasingly important part of the global conversation. Today, most NTDPs are largely funded by donors, creating a parallel system that puts long-term sustainability at risk. In 2020, the WHO incorporated an NTD sustainability framework into a new 10-year NTD 2030 Roadmap, calling for better integration of NTDPs into national financial, governance, and service delivery structures. NTD sustainability also aligns with the SDGs, including global efforts to provide Universal Health Coverage (UHC), and USAID's Journey to Self-Reliance framework.

In Ghana, the NTDP, under the Ghana Health Service (GHS) and Ministry of Health (MOH), has focused on the five PCT NTDs since its establishment in 2006. Outside the NTDP, the GHS also oversees three programs that focus on Buruli ulcer and yaws; leishmaniasis and human African trypanosomiasis; and leprosy. To date, Ghana has successfully eliminated guinea worm in 2015 (WHO 2015) and trachoma in 2018 (WHO 2018). Ghana has also achieved significant reductions in the prevalence of LF and OV, which are targeted for elimination in 2030. . Ghana has also reduced the prevalence of SCH and STH, and these NTDs are targeted for sustained control, as they remain endemic across the country. Significant improvements in environmental sanitation are required to achieve sustained control of these NTDs.

USAID's Act to End Neglected Tropical Diseases | West program (Act | West), which works closely with the national NTDPs of 11 countries in West and Central Africa (Benin, Burkina Faso, Cameroon, Cote d'Ivoire, Ghana, Guinea, Mali, Niger, Senegal, Sierra Leone, and Togo), focuses on the following three priorities in Ghana:

1) Elimination of lymphatic filariasis and onchocerciasis
2) Promotion of a sustainable, nationally owned disease control program (i.e., for soil-transmitted helminthiasis and schistosomiasis), primarily through integration of mass drug administration (MDA) into existing delivery platforms
3) Strategic efforts to strengthen the NTDP within the national governance process of appropriate government agencies

This document is a structured synthesis of assessments, analyses, key findings, and next steps to advance NTD sustainability (priorities 2 and 3) based on collaboration between Ghana's NTDP and Act | West. This document is divided into three main sections: (1) Introduction, (2) Methodology, and (3) Key Findings. The Introduction provides a brief snapshot of the status of NTDs and NTD sustainability in Ghana, a high-level overview of the USAID Act | West program, the specific objectives of this document, and details on the geographic, demographic, socio-economic, and health sector contexts of NTDs in Ghana. The Methodology section details the various data collection, syntheses and analyses, validation and dissemination approaches, methods, and tools used since the launch of Act | West in 2019 to produce the key findings shared in this document. Lastly, the Key Findings section, which is organized in alignment with the six sustainability outcomes from USAID's Framework and Strategy for Promoting Sustainable NTD

Control and Elimination (Coordination, Policy, Operational Capacity, Information Systems, Services, and Financing), includes key insights, results, and next steps to advance sustainability.

Country Profile Objectives

The main objective of this document is to highlight contextual factors that can influence and facilitate the mainstreaming of NTDP functions into national policies, planning, monitoring, and financing systems for long-term NTD sustainability. More specifically, the purpose of this document is to:

- Raise awareness about the state of NTDs and NTDP sustainability in Ghana
- Serve as a resource for the NTDP, the MOH, and other government stakeholders that address NTDs or other relevant issues/sectors in Ghana
- Serve as a resource for USAID, other donors, and donor-funded programs that work on NTDs or other relevant issues/sectors in Ghana
- Inform and facilitate coordinated interventions by the NTD donor community in Ghana

COUNTRY BACKGROUND

Ghana has achieved significant milestones in human and economic development over the last 30 years. Since 1990, Ghana's Human Development Index (HDI) value has improved by 31.1%, with increases in life expectancy and years of schooling and 120% growth in gross national income per capita (United Nations Development Programme [UNDP] 2019b). Today, Ghana has an HDI value of 0.596, ranks 142 out of 189 countries on the HDI, and is categorized as a country with medium human development (UNDP 2019a). Ghana was the first country in Sub-Saharan Africa to decrease extreme poverty in the country by half, achieving UN Millennium Development Goal 1 (UNDP 2020). Within the health sector, the National Health Insurance Scheme (NHIS) was established in 2003, and since then, the Government of Ghana has made significant progress towards providing universal healthcare, with the NHIS covering 40% of the population as of 2014 (Wang et al. 2017). Economically, Ghana achieved middle-income status in 2011 and, since 2017, has ranked consistently among the 10 fastest growing economies in Africa (Africa Development Bank Group 2020). Building on this progress, Ghana recently adopted the Ghana Beyond Aid agenda to strengthen national ownership and capacity to build on the country's development gains while increasing fiscal independence. The Ghana Beyond Aid agenda envisions building Ghana's capacity to plan, finance, and implement solutions to ongoing development challenges and ensuring commitment to sustain those solutions effectively, inclusively, and with accountability. To that end, the Ghana Beyond Aid agenda prioritizes 10 "Growth Pillars" such as maintaining macroeconomic stability; increasing government resource mobilization; adopting a more professional, efficient, and transparent approach to public investments; and building technological capabilities (Anklorbortu 2019).

In the context of NTDs, Ghana Beyond Aid is in alignment with the NTDP's goal of building national capabilities and securing resources to sustain NTD programming. Consistent with the Ghana Beyond Aid agenda, the NTDP strives for sustained elimination of LF and OV and sustained control of SCH and STH. Ghana has made significant progress towards achieving its targets. In 2015, Ghana eliminated guinea worm. Subsequently, in 2018, Ghana became the first country in Sub-Saharan Africa to eliminate trachoma. The NHIS covers 95% of diagnosed conditions, with explicit exceptions (Wang et al. 2017); treatment of NTDs fall under the covered conditions. Though Ghana has reduced the national prevalence of LF, OV, SCH, and STH, each region of the country is still endemic for at least two NTDs. The following section provides an overview of Ghana's demographics, geographic administration, and socioeconomic context, and how they affect NTD prevalence and programming in the country.

Geographic Administration and Demographics

The administrative divisions, geography, and demographics of Ghana have implications on (1) how NTD interventions are organized, managed, and implemented as well as on (2) NTD prevalence in certain areas and the population's risk of exposure to NTDs.

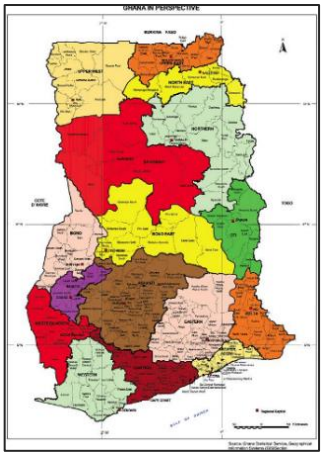


Figure 1. Regions of Ghana (Source: Ghana Statistical Service)

Like other public health programs in Ghana, NTD programming is organized and implemented in line with the government's administrative regions. Ghana is divided into 16 administrative regions (Figure 1); NTDs are endemic in all regions. Regions are composed of districts, which are further sub-divided into sub-districts and community-based health planning and services (CHPS) zones. As of 2019, there are 260 districts and 54,547 communities (MOH/GHS NTDP 2019). Each region is headed by a Regional Minister and districts are headed by District Chief Executives.

In 2020, Ghana's population is estimated at 29.34 million, with an estimated annual population growth rate of 2.15% (Central Intelligence Agency [CIA] 2020). The population is approximately 50.4% female and 49.6% male, with a higher proportion of the urban population being female (CIA 2020; Ghana Statistical Service 2014). (Gender is an important factor to consider in the implementation of NTD interventions. Interviews with the NTDP found that in Ghana, women play a significant role in mobilizing communities for community-based health programs such as distribution of medicines.) Children under 5 years of age make up 20% of the population, and 27.3% of the population is composed of school-aged children (SAC) (between 5 and 15 years), which are a target population for certain NTD interventions (MOH/GHS NTDP 2019). Ghana's primary education net enrollment rate is reported at 86.16%, and the secondary education net enrollment rate was 57.24% in 2019, which is relevant for school-based NTD interventions (UNESCO Institute for Statistics 2017).

It is worth noting that certain aspects of Ghana's geography and demographics also affect the population's risk of exposure to NTDs. Geographically, Ghana is composed of three zones that impact NTD prevalence: dry northern savannah, humid middle forest rainfall zone, and coastal savannah and mangroves. In the forest zone, OV is prevalent along flowing rivers and lakes and SCH is prevalent in areas with stagnant waters. LF is prevalent in the dry northern and coastal zones. Beyond these three zones, OV is endemic countrywide, and SCH and STH are found in all regions across Ghana.

Approximately 44% of Ghana's population live in rural areas and 56% live in urban areas (World Bank 2018). NTDs predominantly affect people living in rural areas and urban slum areas, where access to healthcare, clean water, and proper sanitation is limited. According to interviews with the NTDP, the focus of most control activities in Ghana are in rural communities and urban slums, where NTDs are most prevalent. Moreover, the NTDP interviewees noted that many target rural communities are in remote and hard-to-reach areas, where subsistence farming is the most common occupation (see "Socioeconomic Context Relevant to NTDs" below for subsistence farming on exposure to NTDs). In addition, cross-border trade and migration between Ghana and neighboring countries affect NTD prevalence and, therefore, programming. As outlined in the 2016-2020 NTD Master Plan, the NTDP engages in cross-border collaboration with other endemic neighboring countries, namely Guinea, Togo, Cote d'Ivoire, and Burkina Faso.

Socioeconomic-Context Relevant to NTDs

Socioeconomic factors in Ghana have implications on (1) the population's risk of exposure to NTDs and (2) medical treatment uptake for NTDs.

Ghana's gross domestic product (GDP) is 65.5 billion USD and annual GDP growth is 6.3 percent (World Bank 2018). Ghana's three main exports are oil, gold, and cocoa (Observatory of Economic Complexity

n.d.). Ghana is the second largest producer of gold in Africa (UNDP 2020). Pits from gold mining can serve as breeding sites for mosquitos; thus, gold miners may be at higher risk than the general population for mosquito-borne diseases like LF and malaria. Ghana is also the second largest producer of cocoa in the world (UNDP 2020). Like in gold mining, cocoa and other farming activities that use dry farming techniques such as dams and irrigation canals can predispose farmers to NTDs such as LF and SCH.

Certain socioeconomic factors and social practices prevent some parts of the endemic population in Ghana from seeking proper treatment for NTDs (MOH/GHS 2007). A 2004 study conducted on the determinants of health-seeking behavior for SCH by the Noguchi Memorial Institute for Medical Research in Ghana and the University Medical Center in Rotterdam found that more than 70% of respondents with blood in the urine or painful urination, both symptoms associated with SCH, self-medicated with herbs or medications instead of seeking treatment at a health facility (Danso-Appiah et al. 2004). The study attributed the low rate of treatment at health facilities to perceived lack of seriousness of symptoms, availability of drug peddlers in endemic communities, and lack of access to money or ability to pay for health services (Danso-Appiah et al. 2004). Similarly, a 2008 WHO study on the social context around SCH noted that in northern Ghana, red urine is seen as a rite of passage for young boys. Likewise, in southern Ghana, red urine is misattributed to eating sugar cane, participating in sexual intercourse with an infected person, or bathing and drinking in ponds or rivers (Bruun and Aagaard-Hansen 2008). The WHO further noted that if treatment is needed, villagers in southern Ghana tend to seek remedies from drug peddlers, drug shops, or herbs prepared at home by elders instead of treatment from medical professionals (Bruun and Aagaard-Hansen 2008). Like the 2004 study, the 2008 WHO study noted that the choice of treatment depended on the interpretation of symptoms and access to social and economic resources (Bruun and Aagaard-Hansen 2008). Similarly, in a 2000 ethnographic study conducted by the MOH in the Kassena-Nankana District in northern Ghana, the MOH found that fears around surgery and morbidity management can prevent people from seeking professional medical help (Gyapong et al. 2000). The MOH found that men with hydrocele delayed seeking formal health care and instead, chose to seek out treatment from drug peddlers to manage the pain (Gyapong et al. 2000). Fears around the cost of surgery, death, and inability to care for their families were among the major factors that prevented these men from seeking professional treatment or surgeries (Gyapong et al. 2000).

Ghana's Ministry of Gender, Children, and Social Protection implements the National Gender Policy, which aims to prioritize gender equality across government sectors. However, budgetary and capacity constraints have affected implementation. Through its Gender Equality and Social Inclusion (GESI) study, Act | West found that women in Ghana are disproportionately affected by NTDs. While women may be at higher risk of NTD infection, women may also face cultural barriers to care. Gender dynamics are not always considered in the selection of community drug distributors (CDDs) and some unaddressed disparities were noted in the power dynamics and decision-making between men and women. For example, although most women reported being able to make decisions about their own health care, some men from the Kpandai district reported that women needed consent from their husbands to take NTD drugs. Women are expected and are generally more likely to care for ill or disabled family members. Women are also more likely to experience lymphedema from LF or trichiasis from trachoma. The study also revealed cases of men abandoning wives with visible symptoms of lymphedema, but no women were reported to abandon their husbands under such circumstances.

Health Policy and NTD Management

The GHS is the implementing agency of the MOH that oversees national NTD control activities led by the NTDP (Figure 2) under the Disease Control Department of the Public Health Division. The NTDP was established in 2006 as a consolidated program for all five PCT NTDs (trachoma, LF, OV, SCH, and STH), and scabies, snake bite, and rabies were recently added to its mandate. There are three additional programs for NTDs administered outside the main NTDP: Buruli ulcer and yaws; leishmaniasis and human African trypanosomiasis; and leprosy. Ghana's decentralized health system implements health programs at the regional, district, sub-district, and community levels. Regional and district officials implement NTD programming under the direction of the national level. Regional Health Directorates, District Health Directorates (DHDs), and traditional leadership structures in rural communities are key to NTD programming and provide coordination at the sub-national level. The NTDP works with the Regional Health Directorates to coordinate case detection, case management, and surveillance and with the DHDs and sub-district officials to implement MDAs and impact surveys.

The NTDP's Master Plan for Neglected Tropical Diseases (2016–2020), an extension of the 2013–2017 plan, guides all stakeholders in the implementation of NTD control, elimination, and eradication activities and aims to build capacity of the GHS to establish an integrated NTDP by 2020. Ghana's Medium-Term Health Sector Strategic Plan has five pillars which include increasing access to health services and improving efficiency of health service delivery. While not explicitly stated, the Strategic Plan implicitly promotes service integration to optimize resources.

A number of policies and strategies guide the planning, implementation, and financing of health interventions in Ghana. These include:

- The Health Sector Medium Term Development plan (latest version 2014–2017),[1] which aims to bridge equity gaps in access to quality physical and mental healthcare and nutrition care and services (MOH 2014).
- The Ghana National Healthcare Quality Strategy (2017–2021) provides a framework for a coordinated strategy for stronger health systems, in which implementation approaches are evidenced by the delivery of quality services across the strata of the health system pyramid (MOH 2016a).
- Community-based Health Planning and Services (CHPS): To achieve universal health care coverage for primary health services deemed essential at the community level, Ghana has implemented the internationally recognized CHPS since 2005. In 2016, CHPS was revised to focus on service delivery in underserved sub-districts and communities (MOH 2016b).
- Health financing in Ghana is dictated by the 2015 Ghana Health Financing Strategy and the 2018 – 2021 Medium-Term Expenditure Framework (MTEF), both designed to enhance efficiency in governance, management, and sustainable financing for a resilient and adaptive health system (Ministry of Finance 2018; MOH 2015).

The National Decentralization Policy and Action Plan for the period 2015-2019 formalizes decentralization and clarifies the important role of local government in health service delivery. Ghana's decentralization

[1] The Health Sector Medium Term Development Plan, which expired in 2017, is currently being revised and updated by MOH stakeholders. As of June 2020, the official updated version has not been finalized and made available to the public.

process designates District Assemblies as the highest legislating, funding, planning and implementing bodies at the local level. The Local Government Act (Act 462) of 1993 reinforces these constitutional provisions. To facilitate the decentralization process for health programs, various structures have been created at the sub-national level, with the Regional Coordinating Councils (RCCs) serving as coordinating bodies to facilitate NTD implementation at the lower level.

Ministry policies can be somewhat vertical in nature. They tend to address a specific topic in depth, but they may not look at cross-cutting, related aspects affecting that topic. For example, Ghana's National Water Policy discusses Guinea worm but does not mention other NTDs. Similarly, the National Environmental Policy discusses water and sanitation-related diseases but not NTDs (other than Guinea worm).

Overall, general health agenda, strategies, and policies in Ghana do not currently prioritize NTD integration or substantively discuss NTD activities. (See "Key Findings: Policy" below for additional information on NTD integration into national health strategies and policies.)

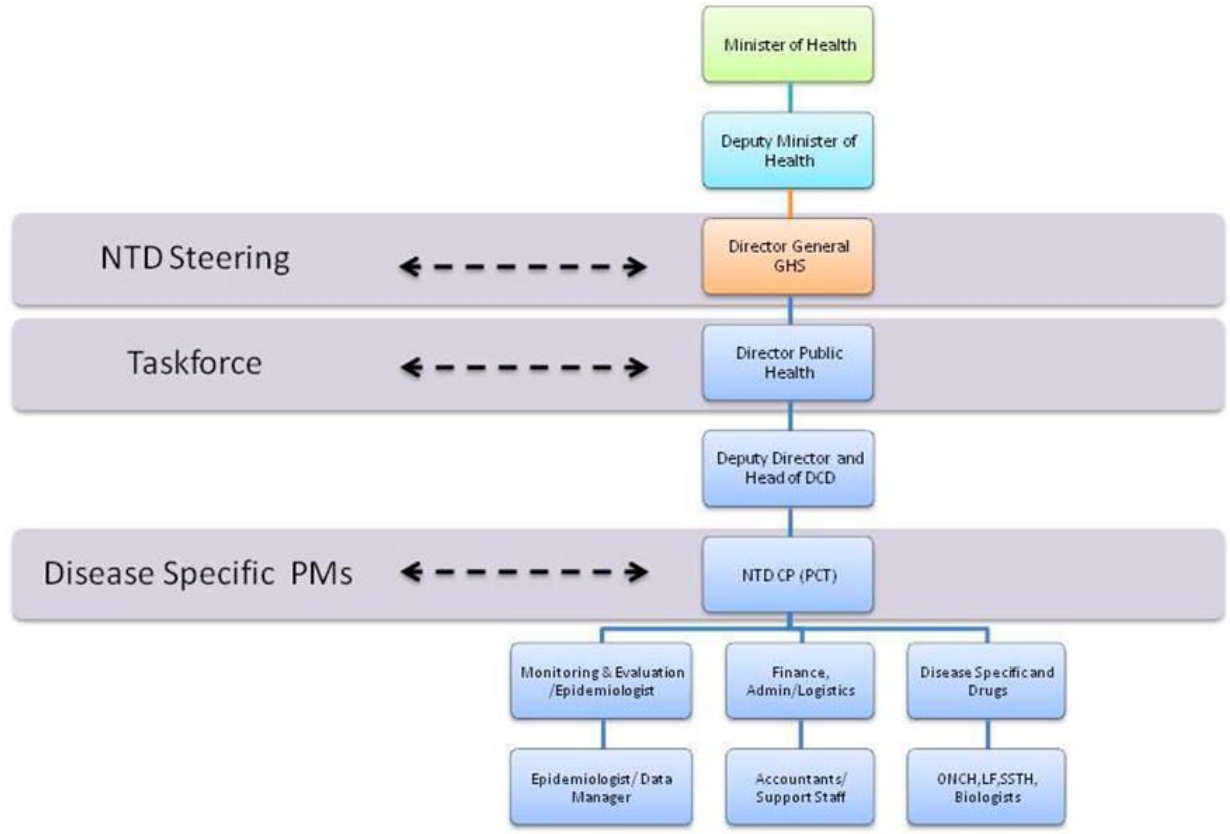


Figure 2. Ghana NTDP Organizational Chart

Disease Status and Challenges for NTD Elimination and Control

Ghana, with support from the Carter Center and other partners, successfully eliminated Guinea worm in 2015 through a comprehensive eradication program including improved access to safe water, chemical

treatment, health education, case containment, and surveillance systems, among other measures (Hotez et al. 2019). Ghana was the first country in WHO's Africa region to eliminate trachoma (July 2018). Ghana also achieved significant reductions in the prevalence of OV and LF through MDA with ivermectin and albendazole. As of this report, Ghana has achieved modest reductions in the prevalence of NTDs such as SCH, hookworm, and other STHs. MDA, vector control activities, and health education have been employed in Ghana as strategies for NTD control and elimination. However, targets have not been achieved in regard to reaching people needing MDA for most NTDs (GHS n.d.). Table 1 shows the progress made in reducing the prevalence of selected NTDs (Global Health Data Exchange 2018).

Table 1. Comparison of Prevalence of Selected NTDs in Ghana between 2000–2017

Neglected tropical diseases	Baseline prevalence range	Endemic districts at baseline	Endemic districts/status 2020
Guinea worm[2]	179,483 cases	6,515 localities and communities	WHO validated eradication in 2015
Trachoma	TF: 2.8-16.1% TT: 0.4-8.4%	18 districts	WHO validated elimination in 2018
Onchocerciasis	14.5 – 89.6%[3]		137
Lymphatic Filariasis	0.6 – 84.5%	114 districts[4]	11
Schistosomiasis	2.0 – 78%[5]	50 districts[6]	260
Soil-transmitted helminthiasis	2.0 – 51.7%	50 districts	260

Mainstreaming NTDs into the health system can help close the gaps in achieving NTDP goals and better leverage existing service delivery platforms at the facility and community levels. To facilitate integration of NTD interventions, key barriers need to be addressed, including implementation of a systematic approach to collect and analyze NTD data, improving access to accurate and reliable data, improving evidence-based planning in health policies, and increasing equitable access to NTD treatment and care. (de Souza et al. 2016). (See "Key Findings: Information Systems" for further detail on data-related challenges.)

[2] Guinea worm prevalence is always expressed in absolute figures because even one case is a threat and because it was also an eradication programme. In the year 1989, a case search conducted to ascertain the disease burden counted 179,556 cases. This was the baseline survey. A total of 6,515 localities or communities reported Guinea worm disease.

[3] Baseline survey, conducted in 1975-1976.

[4] Out of 260 administrative districts, per the current administrative district structure

[5] Baseline survey, conducted in 2007

[6] Out of 216 districts, per the administrative district structure in place at the time of the baseline survey

Highlights on PCT NTD Elimination and Control Status

Lymphatic Filariasis

The Ghana Filariasis Elimination Program was established in 2000. LF was included in the integrated NTDP portfolio at its inception in 2006. With targeted elimination by 2022, LF is prevalent in 114 districts and affects about 12 million people. The prevalence of lymphedema is between 0-4%, and more females than males are affected. The percentage of the population requiring MDA treatment dropped from 74% in 2016, to 49% in 2017 (Uniting to Combat NTDs 2017). There are currently 11 presumed LF 'hotspots' across the country. Three of these hotspots have undergone Pre-Transmission Assessment Surveys (Pre-TAS) and are awaiting TAS to determine if treatment can be stopped and post-treatment surveillance can commence (Table 2). MDA is carried out for co-endemicity of LF and OV in 138 districts across the country using ivermectin and albendazole.

Table 2. LF 'Hotspots' by Region

Region	**Upper East Region**	**Upper West Region**	**Savannah Region**	**Bono Region**	**Western Region**
'Hotspot'	Nabdam	Lawra	Bole	Suyani Municipal	Ahanta West
	Kassena-Nakana West		Sawla-Tuna-Kalba	Suyani West	Nzema East
		Wa West	**West Gonja**		Elembelle
		Wa Municipal	**North Gonja**		
The three 'hotspots' shaded in dark blue have undergone Pre-TAS.					

Onchocerciasis

The Onchocerciasis Control Program in Ghana, which started in 1974, focused on vector control. In 1998, MDA with ivermectin was added to accelerate progress towards control and elimination. Since 2006, Ghana's NTDP has conducted integrated MDA for OV and LF with support from USAID and other partners. Currently in Ghana, OV affects an estimated at-risk population of over 22 million in more than 10,000 communities in 132 endemic districts. Apart from the Greater Accra region, OV was endemic in all regions, as of 2016. OV transmission has persisted despite long-term control efforts, with some districts experiencing levels above WHO thresholds. The NTDP aims to eliminate OV by 2025.

Schistosomiasis

SCH is endemic in all 260 districts nationwide and affects all age groups, especially SAC. The burden of urinary SCH is high among communities living along rivers, and communities along the Volta Lake have some of the highest prevalence rates in the country. Endemic districts are categorized at baseline as high prevalence (greater than 50%), moderate prevalence (10%–49%), and low prevalence (less than 10%). High prevalence districts undergo MDA annually while moderate and low prevalence districts undergo MDA every two years and three years, respectively. An impact assessment conducted in 2015 showed prevalence reductions, compared to 2008, with fewer high-prevalence (3 vs 47 districts in 2008) and moderate-prevalence (54 vs 138 districts in 2008) districts and more low-prevalence districts (159 vs 31 districts in 2008). A survey is planned in 2020 to re-assess SCH prevalence and endemicity in the country, as SCH is targeted for control by 2025.

SAC are the main targets of the SCH control interventions, and the NTDP started treatment of SAC in 2008. In 2018, a total of 1,120,123 SAC were registered for school deworming interventions, of which 961,731 (85.8%) were treated with albendazole and praziquantel tablets. Ghana follows the WHO recommendation that adults in districts with high SCH prevalence must be treated in addition to SAC.

For this reason, community MDA is implemented along the Volta Lake. One major challenge for SCH control in Ghana is the unavailability of drugs for adult treatment; as such, the country often resorts to using drugs meant for SAC to treat adults.

Soil-Transmitted Helminths

Prevalence of STH is generally low across the country, with very few districts meeting criteria for MDA. Between 2000 and 2017, Ghana reduced the country-wide prevalence of STH from 19.7% to 14.3%. In 2017, the prevalence of the three most common helminths were ascariasis (3.1%), hookworm (10.2%), and trichiasis (1.7%). Recurrence rates are high due to poor environmental sanitation, particularly in SAC, making it necessary to continue with annual MDA campaigns. MDA with albendazole is ongoing. Ghana is targeting STH for control by 2025.

Trachoma

Ghana was the first country in the WHO's Africa region to eliminate trachoma as a public health problem, as validated by WHO in June 2018. Supported by partners, Ghana implemented the WHO-recommended elimination strategy—the SAFE (surgical, antibiotics mass treatment using azithromycin, facial wash, and environmental improvement) intervention package—to reach this goal. Currently, the NTDP implements post-validation surveillance.

METHODOLOGY

This section describes the various methodologies used by Act | West partners over the past two years to assemble, process, and validate the information shared in this document. Given that this is a synthesis of several approaches and methods, the descriptions provided below are brief summaries, divided into (A) the Health Systems Strengthening (HSS) Analysis Methodology and (B) the Cross-Sector and Barrier Analysis Methodology, with additional details included in the appendices.

Health Systems Strengthening Analysis Methodology

HSS Desk Review: In January 2019, Act | West began desk research to establish a baseline understanding of health systems strengthening in Ghana using literature and publicly available data sources (e.g., budgets, prevalence data). Sources included relevant websites for general demographic data and publicly available information on the status of NTDs in Ghana (e.g., Ghana Statistical Services, WHO, USAID) and literature/documentation specific to the Ghana NTDP (e.g., NTD country evaluation reports, strategic plans). Research included information related to the country's background, geographic administration, relevant socio-contextual factors, gender dynamics, disease epidemiology, and NTDP. This desktop research was summarized and vetted internally within the consortium for accuracy. The goal of this initial research was to inform the Guided Self-Assessment activity described below.

HSS Stakeholder Interviews: Act | West conducted a series of in-country interviews with four key stakeholders to complement the HSS Desk Review with information not readily available online or in documents. An interview guide was developed to faciliate the interviews in October 2019, and interviewees were selected by their roles within the NTDP or for their unique perspectives on the program. Interview questions covered topics such as NTDP financing and financial management, monitoring and evaluation (M&E), Health Management Information System (HMIS) integration, disease surveillance, data management, human resources for health, strategic planning, and advocacy efforts. A list of interviewees is available in the appendices. The goal of these conversations was to inform the Guided Self-Assessment activity described below.

Financial Data Collection: In April 2019, Act | West supported the NTDP in collecting and entering NTD financial data into the Tool for Integrated Planning and Costing (TIPAC), developed by USAID and the ENVISION Program with contributions from the WHO. Program costs captured in TIPAC are related to strategic planning, advocacy, mapping, M&E, drug logistics, social mobilization, training, MDA registration, MDA drug distribution, case management, and vector control. The data collection and entry exercise was completed over the course of a three-day 'TIPAC Data Entry' workshop, with the participation of key NTDP staff. The dual objectives of this approach were to (1) identify key financial data for the NTDP in preparation for financial analysis and (2) develop the critical competencies necessary for the NTDP to repeat this activity independently and use other financial management tools in the future.

Financial Analysis: Following financial data entry, in August 2019, Act | West supported the NTDP with financial data analysis using TIPAC. This was done in a three-day workshop with key NTDP staff. Act | West provided an overview of the automatically generated reports available in the TIPAC and facilitated a discussion on data usage, primarily for out-year budgeting and advocacy purposes. The analysis was also used to inform other activities within the Act | West program, namely the Guided Self-Assessment and Sustainability Planning.

NTDP Guided Self-Assessment: Act | West developed the Sustainability Maturity Model (SMM) as an approach for both measuring and articulating gains over time in sustainability and facilitating country-ownership. The SMM is an Excel-based tool that allows NTDPs to self-assess their overall state of sustainability across USAID's six sustainability outcomes. Each outcome domain is composed of several unique parameters that describe the domain's core functions (Figure 3). For each domain and parameter, the SMM outlines four stages of maturity on the path to sustainability and provides clear descriptions of what sustainability looks like at each stage. The SMM's domains, parameters, and maturity stages are tailored to NTDs and the country context and, in turn, enable NTDPs to effectively self-assess and specify sustainability priorities. In December 2019, the NTDP completed the SMM during a three-day "Guided Self-Assessment Workshop" facilitated by Act | West. Participants were composed of eight stakeholders, including key NTDP members, representatives from the Policy, Planning, Monitoring, and Evaluation (PPME) division, and Act | West consortium partners. The NTDP completed the SMM by scoring their current state for each stage of maturity, based on information from the desk review, interviews and financial analysis.

Once filled in, the SMM automatically generates a series of tables and graphs. Act | West compiled these along with key discussion points and shared them with the NTDP for validation following the workshop. A set of summary tables from the SMM is included in the appendices.

Cross-Sector and Barrier Analysis Methodology

Cross-Sector Literature Review: In May 2019, Act | West began conducting an in-depth review of existing national documents such as strategic and operational documents, policies, plans, interventions, and reports. The Act | West team used PubMed and Google Scholar to search for additional peer-reviewed articles and grey literature, as well as those documents collected in-country, focusing on Ghana disease incidence, prevalence, and research. The search emphasized documents on cross-sector collaboration in NTD management, especially documentation of successes, failures, and lessons learned from past collaborations. Articles were systematically extracted, and references were saved into a Zotero reference library.

After identifying the resources, the team performed a document analysis, reviewing and synthesizing the content from each document into a findings, conclusions, and recommendations matrix. The findings from the provided documents and the additional search informed the development of the landscape and barrier analysis tools for Ghana. The main output from the review was a literature synthesis of key findings in terms of opportunities for cross-sector coordination and sustainability.

Cross-Sector Key Informant Interviews (KII) and Focus Group Discussions (FGD): From October 21 through November 5, 2019, the Act | West team conducted KII and FGD with cross-sector stakeholders. The developed KII guide focused on four central research questions exploring (i) the stakeholder landscape, (ii) existing platforms for cross-sector collaboration, (iii) barriers and opportunities for cross-sector collaboration and sustainability, and (iv) potential service delivery platforms for integrated interventions to sustain NTD services. The team interviewed 41 stakeholder representatives (19 women and 22 men) from 31 organizations from the national to sub-national governments, NGOs, academia, UN agencies, and the private sector (see the appendices for a complete list of interviewees). Additional data collection tools included Excel spreadsheets used to collect organizational network analysis (ONA) data.

Cross-Sector Landscape and Barrier Analysis: Data obtained from the KII and FGD were uploaded in Dedoose qualitative data analysis software for coding. The team conducted a preliminary review of the

data for completeness. The first cycle coding method was structural coding to label and index the data (e.g., categorizing partners as government or community, education or malaria). After preliminary structural coding, the team conducted another round of process coding (i.e., identifying processes or actions) to prepare and summarize the findings in a findings, conclusions, and recommendations matrix. Geographical coverage data from the different NTD stakeholders and their regions of intervention were imported into QGIS, a map making software, to develop MDA coverage maps[7] for LF, OV, SCH, and STH.

Act | West summarized key organizational information and relationships in an Excel spreadsheet and imported it into Kumu.io, an organizational network analysis (ONA) software. Act | West then used Kumu.io to analyze the partner connectedness and collaboration. Centrality and connectivity of the NTDP and all partners were assessed. The parameters used were degree centrality (number of connections for a partner), closeness centrality (each partner's distance from other partners), and betweenness centrality (the flow of information between partners). The ONA illustrates current coordination networks among partners, and visualizes connections, distance, and information flow to identify existing strengths and gaps in NTDP collaboration and engagement with other sectors, programs, or organizations.

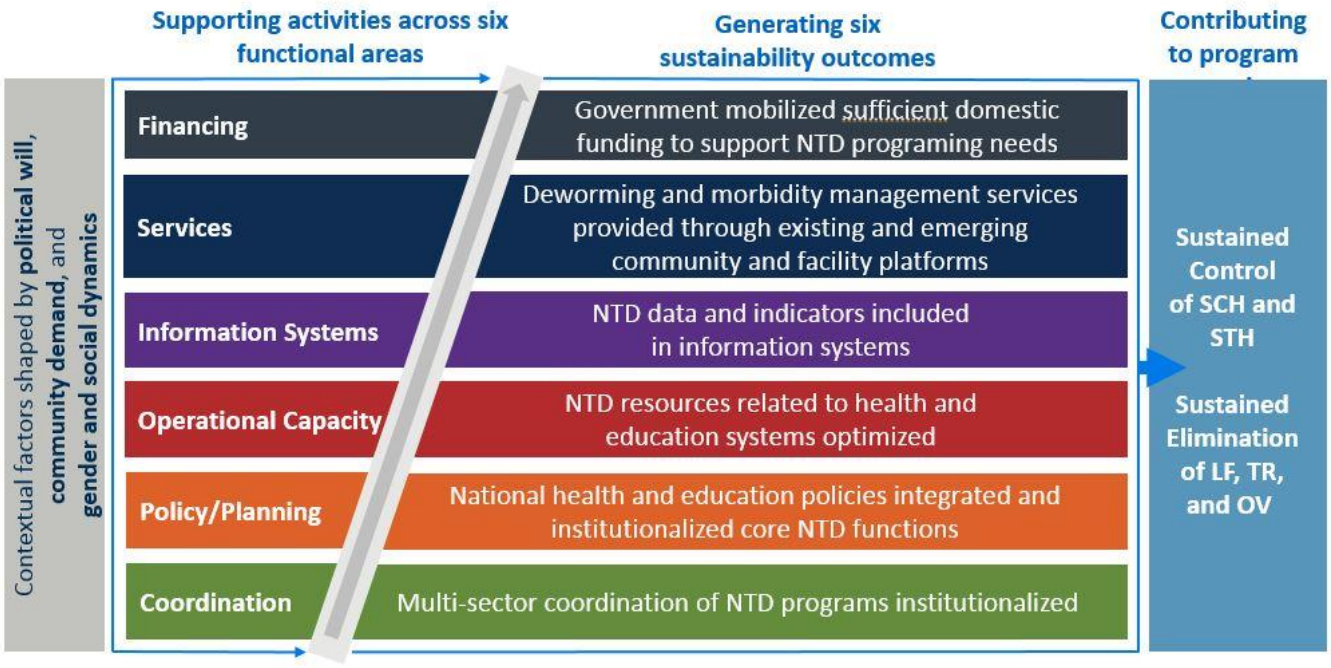
Cross-Sector Landscape and Barrier Analysis Findings Dissemination and Validation: Findings from the cross-sector landscape and barrier analysis were disseminated through a participatory and iterative process. Following the qualitative data analysis and ONA, a first draft report of findings was shared with the NTDP for initial review. In collaboration with the NTDP, the Act | West team facilitated a data dissemination workshop on February 5–6, 2020 to share the first round of assessment results, key findings, conclusions, and recommendations with 50 cross-sector stakeholders. This workshop provided an opportunity for the relevant stakeholders to fill in gaps and participate in the validation of the presented results. The feedback obtained during the workshop was used to further refine the results and the findings. A follow-up review meeting was held in April 2020 with the NTDP and the Act | West team to incorporate feedback received from the cross-sector stakeholders, update findings and recommendations, and perform another thorough joint review of the findings report and finalize the country-owned validation process.

[7] These MDA coverage maps were included in the detailed cross-sector landscape and barrier analysis report.

KEY FINDINGS

The following sections provide a summary of key insights from the assessments conducted to date. Each sub-section reports on one of the six sustainability outcomes from USAID's Framework and Strategy for Promoting Sustainable NTD Control and Elimination: Coordination, Policy, Operational Capacity, Information Systems, Services, and Financing (Figure 4). The sub-sections begin with the definition of that outcome, followed by an analysis of the current state and challenges related to that outcome, and ends with next steps to advance towards NTD sustainability.

Figure 4. USAID NTD Sustainability Framework



Coordination

Current State & Challenges:

In Ghana, regions and districts implement NTD programming following national guidance. The opportunity for coordination exists at all administrative levels with a wide range of public, private, and international stakeholders.

NTD Stakeholders in Government

NTD stakeholders in government include:

- **National/Program Level:** The NTD Master Plan document states that the GHS collaborates with the Ministry of Local Government and Rural Development, the Ministry of Education, the Ministry of Food and Agriculture, the Ministry of Water Resources Works and Housing, and the Ministry of Finance (MOF) and Economic Planning to implement activities. At the time of this report, there was GHS-level collaboration but no NTDP-level collaboration.
    - **Intra-Country Coordination Committee (ICCC):** Initially designed as the national cross sector collaboration mechanism for NTDs, the ICCC last met in 2018.
- **Sub-National Level:** Regional Health Directorates are key sub-national-level partners for coordinating case detection, case management, and surveillance work. At this level, there are also traditional leadership structures in rural communities, where 44% of the Ghanaian population lives and targeted districts for elimination and control are located. These leadership structures are key stakeholders for compliance and behavior change at the local level.
- **Regional/District Level:** Ghana Education Service's (GES) School Health Education Program (SHEP) is a key regional-level partner in supporting MDA programs. At the district level, decentralized government entities or local government (such as district assemblies) routinely support NTD interventions during MDA. The District Health Directorate (DHD) sometimes works with environmental health officers and implementing partners to carry out case detection, case management, and surveillance work, but this work remains largely managed by the DHD. The DHD also works with traditional leaders, assembly men, faith leaders, the media, and community volunteers to carry out MDA. At the district level, the SHEP is key to coordinating teachers and schools for school-based MDAs.

Missing Partnerships

While many robust coordination mechanisms already exist in Ghana, opportunities remain for NGO partners, donors, and Ministry counterparts to create partnerships and plan jointly. For example, partnerships have yet to be created for coordination and planning with the following NTDP stakeholders at the regional and national levels: The National Malaria Control Program (NMCP); GHS units such as the Nutrition Unit, the Maternal and Child Health Unit, and the Expanded Program on Immunization under the Disease Control Unit (which also conducts programs similar to MDA); and GHS CHPS compounds. Three important opportunities for partnerships are with the:

- **Policy, Planning, Monitoring and Evaluation (PPME) Division's Strategic Social Partnership (SSP) program:** Part of the PPME's role under the GHS is to promote NTD advocacy, facilitate

mainstreaming under national health policies, and mobilize resources for NTD programming. However, the PPME has been faced with operational challenges that have affected its ability to support mobilization of public and private domestic resources for NTD programming.

- **National Malaria Control Program (NMCP):** Although the NTD Master Plan identified opportunities for integration with the NMCP, coordination at the national level has been limited. Recently, however, the NMCP has supported the NTDP to develop an electronic database.
- **Community-based Health Planning and Services (CHPS) Compounds:** With their strong presence in rural settings, where many NTDs are prevalent, these community-based health delivery posts aim to provide preventive care for rural Ghanaians and could be a key factor in NTD control and elimination. Although the NTD Master Plan recognized the potential of CHPS compounds as vehicles for implementing integrated public health interventions, they are not part of national-level planning.

Public-Private Partnerships

The Ghana NTDP recognizes that public-private partnerships can play an important role in financial sustainability; it has engaged private partners, particularly banks, with limited success. For example, the NTDP successfully advocated for financial support from Unibank to provide funds to support morbidity management and disability prevention activities. However, the funding from Unibank was only partially realized before Unibank was consolidated with other banks in Ghana and funding was discontinued.

In addition, Ghana has leveraged strong partnerships with donors and implementers, crucial for an effective response to NTDs in the country. Thus far, Ghana has received support from major global players in the NTD space, such as the Carter Center, WHO, and UNICEF. National NTD policies have been created with global targets in mind, following WHO guidance. Key donors and global and local implementers are highlighted in Table 3 below.

Table 3. Major NTD Donors and Implementers in Ghana

Donors	WHO; World Bank; USAID; DFID; Bill & Melinda Gates Foundation; Carter Center; UNICEF; Water Aid; GlaxoSmithKline; FAO; WFP
Global Implementers	Sightsavers; World Vision; FHI 360; Water Aid; SM Aid; CRS; RTI; Deloitte
National/Local Implementers	MOH; NTDP—GHS; Family Health Division—GHS; Public Health Division—GHS; SHEP—Ministry of Education; Volta River Authority; AIM Initiative; Catholic Relief Services; New Energy; Rural Aid; Community Water and Sanitation; Biomedical & Public Health Unit—Water Research Institute; Noguchi Memorial Institute for Medical Research

Organizational Network Analysis (ONA)

Based on the stakeholder groups outlined above, ONA illustrates the NTDP's position within the stakeholder network. Currently, the NTDP does not actively engage with other GHS units or sectors. Water, sanitation, and hygiene (WASH), Health Promotion, Maternal, Newborn, and Child Health,(MNCH), Nutrition, and Malaria partners are not at the table with the NTDP for planning, coordination, and collaboration efforts. In addition, these partners' policies have limited definitions of their own roles in NTD prevention. Two key findings from the network maps are:

- **NTD-WASH Collaboration:** The overview of the entire network (Figure 5) shows the divide between the partners focused on NTDs (green arcs) and those focused on WASH (red arcs). While there are some nodes that link the partners across both areas—notably World Vision, SHEP, WHO

and the Health Promotion Unit of the GHS—generally, NTD-focused organizations and WASH-focused organizations work separately. While WASH is critical to NTDs, Ghana's current major WASH providers generally do not participate in NTD control or elimination activities and they have limited interest in partnership due to scarce funding and capacity.

- **GHS Vertical Programming:** GHS disease programs currently operate vertically, competing for scarce resources within the GHS, donor resources, and time from actors at the regional and district level. They typically do not routinely participate in each other's planning sessions and no common platform exists for coordination or collaboration between them. GHS entities tend to plan within their own health units with their direct partners and donors and without much cross-service or cross-ministry coordination.

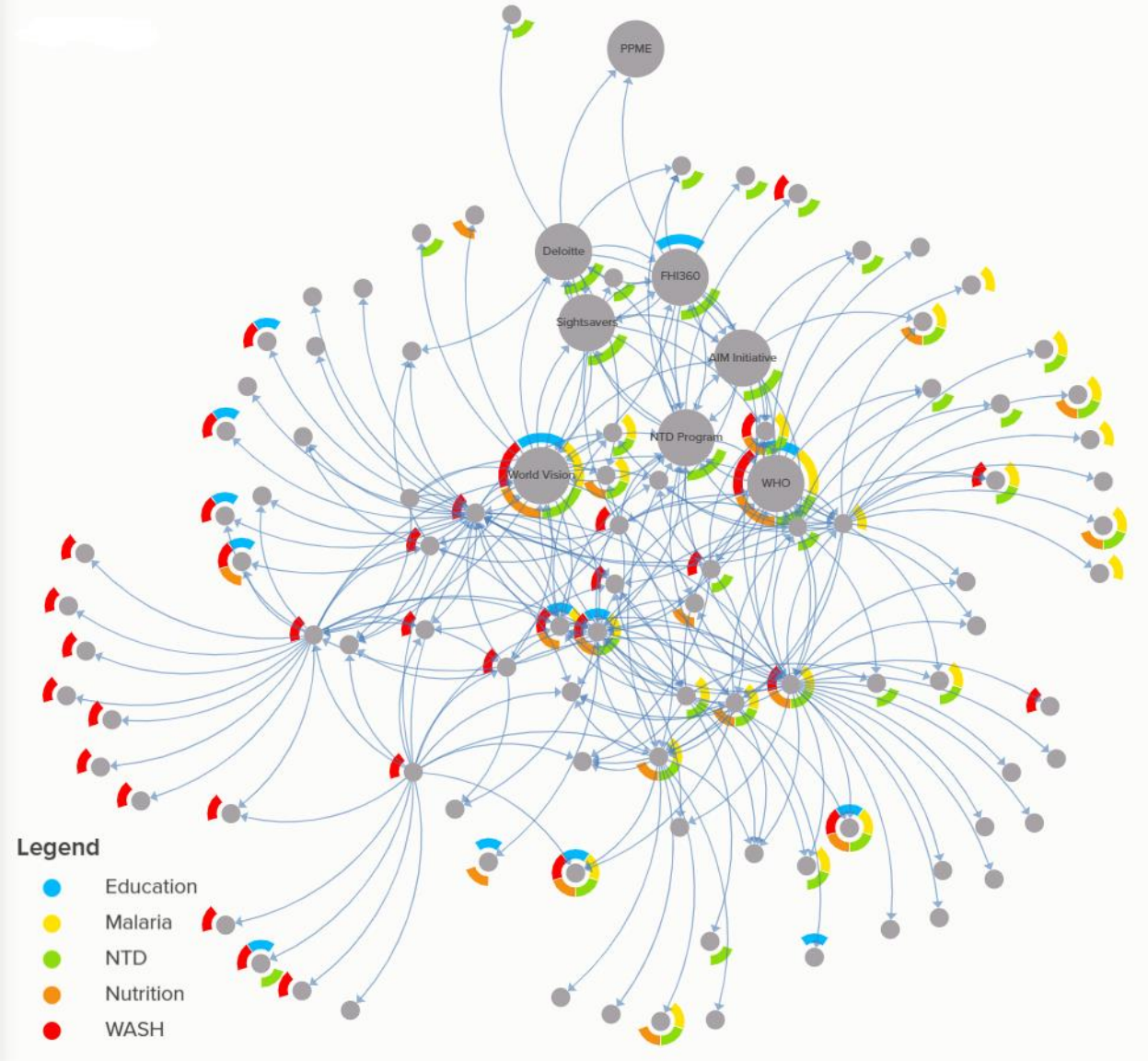


Figure 3. Ghana Organizational Network

(See Appendix II "Ghana Organizational Network Maps" for additional maps showcasing organization by sector. To view additional data, see: [Ghana Organization Network Interactive Maps)]

Intra-sectoral Collaboration Mechanisms

Three intra-sectoral collaboration mechanisms for NTDs and related programming currently exist in Ghana: the NTDP Annual Work Plan Meeting, the ICCC, and the Onchocerciasis Expert Committee (Table 4). These mechanisms are active to varying degrees. The NTDP leads all three mechanisms. Each mechanism faces challenges, however, including that they do not yet have formal, agreed-upon terms of reference (TOR) or memoranda of understanding (MOU), and internal engagement with GHS units/programs has been limited (Table 4). Act | West is currently supporting the NTDP to revitalize and formalize the ICCC's TOR and multisectoral engagement.

Table 4. Intra-sectoral Collaboration Mechanisms

Mechanism	NTDP Annual Work Plan Meeting	Intra-Country Coordinating Committee (ICCC)	Onchocerciasis Expert Committee
Convener	NTDP	NTDP	NTDP
Members	NTD partners (e.g., SHEP, NGOs)	All partners, NTDP	Onchocerciasis/ NTD experts, researchers, implementors, etc.
Purpose	Provide input for annual work plans; review implementation performance and plans for activities	Identify resources; technical resource for program implementation	Discuss issues raised by the NTDP and propose recommendations
TOR	No TOR available; Invitations sent to agencies	No TOR available; Letters of engagement sent from GHS/MOH	Individuals received invitation letters and TOR from the Minister
Frequency	Annually, in February/March	Quarterly, last convened in 2018	Twice yearly, last convened in 2018
Funder	NTDP (additional donor support)	Donors	Donors

Intersectoral Coordinating Mechanisms

As mentioned previously, ONA of in-country partners indicates a divide between organizations focused on NTD programming and those focused on WASH programming in Ghana. Notable exceptions include SHEP and the Health Promotion Unit of the GHS. However, the Coalition of NGOs in WASH (CONIWAS) is an example of an efficient cross-sector collaboration mechanism outside the NTD focal area. Two other mechanisms – the One Health Coordinating Committee and the Anti-Microbial Resistance Coordinating Committee – are mechanisms with diverse Ministry-level participation and broad participation across government sectors. However, donors support these mechanisms either directly or indirectly, driving the convening of meetings and the forward movement toward deliverables (Table 5).

Greater cross-sector collaboration occurs at the sub-national level, where there is less bureaucracy, facilitating communications across ministerial lines, and stronger informal networks bring actors together, as needed. At the national level, a written process is followed before cross-ministry coordination occurs, where one unit within the GHS writes to a division, which then writes to the Director General of the GHS, who in turn writes to the other ministry. The ministry is the only actor authorized to reach out to other ministries. Sub-national coordination is facilitated by mechanisms like

Regional Coordinating Committees, which coordinate across ministries at the regional level. Coordination at the community level has also proven successful with appropriate support, delivering locally driven solutions and creating program ownership where local partnerships, behavior change, and action can occur.

Table 5. Existing Inter-sectoral Coordinating Mechanisms in Ghana

Mechanism	**Country Coordinating Mechanism (Global Fund)**	**One Health Coordinating Committee**	**GHS Weekly Directors' Meeting**	**Anti-Microbial Resistance Coordinating Committee**	**Nutrition**	**CONIWAS/ WASH Platform**
Leader/ Convener	Principal Recipient	NADMO	Director General, GHS	MOH	Family Health Division, GHS	President, CONIWAS
Members	WHO, UNAIDS, USAID, NGOs, CSOs, MOF, MOH, GHS, MOLG, MGCSP, CHRAJ, research, academia, private sector	Health, Agriculture, Veterinary Sciences, EPA	All GHS Directors, Program Managers, and Heads of Units	Health, Research Institutions, MESTI, and others	Nutrition Unit (Family Heath Division, GHS), SHEP, UNICEF, KOICA, and others	All WASH partners, international agencies, and government. Via TWGs
Purpose	National priorities, allocation and use of financial resources for target diseases, and proposal development	Jointly address animal borne diseases; currently developing policy for Ghana	Review programs and activities; planning	Develop the strategy and policy for managing antimicrobial resistance	Discuss / share information and technology; plan activities to improve nutrition in communities	Review performance and make inputs to work plan; organize annual Mole Conference convening all WASH partners
TOR	No	Yes	No	No	No	No
Frequency	Meets quarterly	As needed	Weekly	Quarterly	Was 2x/year, last met Q1 2019	Quarterly, semi-annual reviews
Funder	Global Fund	WHO & FAO	GHS—through directors and programs	Fleming Fund	UNICEF/Global Affairs Canada	Members (WASH NGOs/partners); Donors indirectly fund participation

Next Steps Towards Advancing Sustainability: History and current data show that the highest functioning coordinating mechanisms in Ghana, for most programs, have strong donor support and funding. In addition, past examples suggest that programs do not plan for coordination unless mandated by an external funder. Thus, organizational sustainability and ownership of the process are limited. Given the current state and challenges described above, the NTDP and Act | West partners have identified the following steps to enhance NTDP coordination towards sustainability:

- To effectively leverage Ghana's decentralized health system, where coordination and collaboration may be easier due to co-location of some personnel, especially at the district level. While the decentralization process is still evolving (Sumah et al. 2014), the NTDP can assess lessons learned from the Guinea worm eradication process (Hopkins 1998), where regional-level decision making was key to ensuring action at the district and community levels and ultimately led to the campaign's success.

- To engage the private sector effectively and secure public-private partnerships, the NTDP identified the need to establish an advocacy team to develop and implement a strategy, work plan, and policy around private sector engagement. In addition, the NTDP identified the need to integrate with and leverage relevant resources currently available within the health system, such as the Resource Mobilization Subcommittee and Policy, Planning, Monitoring, and Evaluation (PPME) division.
- To leverage the involvement of a wide range of stakeholders, beyond technical experts, to carefully reconstitute the ICCC. The NTDP identified the ICCC as a platform for disease programs across the MOH to engage continuously, integrate more effectively, enable multi-sector coordination, and interface with the Parliamentary Health Committee. Re-activating the ICCC can also serve cross-sectoral purposes in refining strategic documents such as the Master Plan.

Policy

Current State and Challenges:

NTDP Strategy and Policies

In Ghana, NTDP Strategy and Policies are driven by the NTD Master Plan, which is owned by the NTDP and applied across preventive chemotherapy and transmission control (PCT) NTD programming within the MOH. The NTD Master Plan considers progress around control and elimination targets and aligns with the sector-wide strategic plan. It is developed every five years through a collaborative, workshop-style meeting with key stakeholders.

National Health Sector Strategy and Policies

The NTDP's integration into national health sector strategy and policies is limited. NTD programming is set at the national level, then implemented by regional and district officials. NTDs are briefly mentioned in the national health sector strategy as diseases that affect poor communities and are recognized as public health problems in Ghana. However, there are no explicit strategies at the national level to address elimination and control of NTDs. Moreover, related health programs do not use or refer to the NTD Master Plan. (See "Key Findings: Coordination" for more information on GHS vertical programming and planning.)

Intersectoral Strategies and Policies

Intersectoral strategies and policies in related non-health sectors (e.g., education) do not explicitly include NTDs. However, there is an external push to identify relevant national strategies and policies outside the health sector where NTDs can be included. For instance, the Ghana Health Financing and 2018-2021 Medium-Term Expenditure Framework (MTEF) are both designed to enhance efficiency in governance, management, and sustainable financing in health systems. Similarly, the newly revised National CHPS Policy provides an opportunity to bring health services closer to underserved sub-district communities. The NTDP can be more proactive in engaging and maintaining engagement with other sector programs through intersectoral strategies and policies.

During the guided self-assessment workshop using the SMM, the NTDP identified relevant policies in health and other sectors – particularly related to malaria, WASH, and SHEP – in which the NTDP can be better integrated through advocacy and sustained stakeholder engagement. In addition, the NTDP noted that integrating with Immigration and Port Health strategies would be beneficial but acknowledged the

difficulty in doing so due to limited awareness around the connection between NTDs and immigration. The NTDP also acknowledged the need to use appropriate messaging and advocacy tools to engage stakeholders and increase integration within the MOH and with other sectors.

Next Steps Towards Advancing Sustainability: Given the current state and challenges described above, the NTDP and Act | West partners have identified the following steps to enhance the NTDP's policy integration.

- To strengthen the NTDP's integration with health sector strategy and policies, the NTDP aims to engage the GHS Policy, Planning, Monitoring, and Evaluation (PPME) Division in the development of the NTD Master Plan and to engage stakeholders in the GHS, NMCP, WASH, and SHEP to influence health sector policies and integrate NTDs into identified cross-cutting strategies and collaboration efforts.
- To include and integrate effectively with other ministries and key stakeholders that can help achieve NTD elimination and control. In line with the Government of Ghana and UN SDGs, the NTDP aims to cultivate broad support to update the NTD Master Plan in 2020. This will help ensure that the NTD Master Plan outlines an updated approach in line with the most recent MOH policies, WHO guidance, and SDG objectives, as well as a clear path towards sustainability.
- To strengthen and increase integration across the health sector and with non-health sectors in Ghana, the NTDP aims to develop appropriate messaging and advocacy tools to engage, deepen relationships with, and raise awareness among key stakeholders more effectively. The NTDP's advocacy will focus on making a compelling case for integrating NTDs into related health and non-health sector policies and program platforms and build stakeholders' understanding and buy-in around the need to integrate NTDs. Target programs identified by the NTDP include PPME, NMCP, WASH, and SHEP.

Operational Capacity

Current State and Challenges:

Human Resources and Workforce Alignment to NTDs (within the health system)

Having sufficient and appropriately trained human resources and a workforce that is aligned to NTDs within the health system is critical to NTD sustainability. In recent years, Ghana has seen tremendous growth in the number of physicians, nurses, and midwives. Between 2008 and 2018, the number of nurses (and midwives) climbed to more than 67,000, a dramatic increase over 10 years of about 370% (Asamani et al.). Though the number of health workers in Ghana has increased in recent years, the current size of the health workforce and its distribution remain insufficient to adequately control NTDs over the next five years. The MOH's most recent assessment of the health sector, released in July 2018, found that although the health workforce has grown significantly since 2013, the ratio of health workers to population has not achieved MOH targets (MOH 2018).[8] Moreover, the MOH found that inequitable distribution of the health

[8] The MOH uses the doctor to population and nurse to population ratios as proxy indicators for equitable access to health services. Though the number of doctors increased by 40% from 2013 to 2017, to a population ratio of 1 doctor per 8,098 people, on average, in 2017, inequities among regions continued. Most doctors live near regional hospitals and teaching hospitals and between 2013 and 2017, the largest doctor-to-population gains were in Greater Accra.

workforce continues to be a challenge, with wide regional disparities in the distribution of healthcare workers.

Regarding workforce alignment to NTDs, only health workers in endemic districts are currently equipped to provide preventive, palliative, and curative care. There is significant in-service training for the NTD-related workforce (e.g., nutritionists, disease prevention specialists, clinicians), primarily for those working in endemic districts. During the guided self-assessment using the SMM, the NTDP acknowledged that most health workers living outside of endemic districts are unable to identify NTDs or provide preventative care. Moreover, disease programs across GHS require support from health workers at the regional and district levels, stretching the health workforce across vertical GHS programming, including for NTDs (see "Key Findings: Coordination" for additional information). The NTDP has identified steps for improving key sectors of the health workforce (e.g., community health nurses, general nurses, field technicians, disease control officers, physician assistants, and doctors) in core competencies for NTD preventive, palliative, and curative care.

Human Resources and Workforce Alignment to NTDs (outside the health system)

The pool of qualified human resources and the NTD-aligned workforce is even smaller in sectors outside the health system (e.g., WASH, education, environment, agriculture, security).[9] Cross-sector integration is nascent and awareness of NTDs among the non-health sector workforce is limited. During the Guided Self-Assessment, the NTDP identified education, environment, and community development as sectors with jobs that are closely linked to NTDs.

Surveillance

Mainstreaming NTD surveillance into a national, government-funded Post-Elimination Surveillance system is another critical element for an operationally sustainable NTDP. In Ghana, the NTDP is making progress towards integration into surveillance functions within the health system. GHS has established a fully government-funded disease surveillance system, and the NTDP is working to include NTDs in this system (see "Key Findings: Information Systems" for further detail). The GHS surveillance system is fully funded by the MOH at all levels of the health system. Monitoring, collection, and reporting of data depend largely on health workers for implementation.

Supply Chain

[9] Training the non-health sector workforce in relevant NTD competencies has been found to strengthen NTD control efforts. A 2017 study on long-term practical approaches to NTD sustainability noted that the education sector, particularly primary schools, are central to rural community life and are critical to connecting with vulnerable groups, such as mothers and children. Training the education workforce can help raise community awareness around NTD prevention, treatment, and control (see Ortu 2017). Similarly, a 2018 study on integrated control of NTDs conducted by Georgetown University Medical Center and the University of Texas School of Public Health found that integrated NTD responses require strengthening intersectoral collaboration at the operational level. Examples include linking NTDs with poverty reduction efforts in Brazil, and integrating STH control programs in school health and nutrition programs in India, both of which required a non-health workforce with relevant NTD competencies (see Standley et al. 2018).

Supply chain is another key component of sustainable operational capacity for the NTDP. During the guided self-assessment using the SMM, the NTDP reported that the NTD and MOH supply chains are sufficiently aligned and current processes are functional. To determine drug needs for MDA, the NTDP examines the affected population and calculates the total needs by district and sub-district. It then inputs this data in the WHO integrated NTD database and places drug orders. The WHO manages the complete drug procurement process until the drugs are delivered to the MOH's central medical stores. The NTDP then allocates drugs to the districts and, in some cases (e.g., in remote areas), uses private vendors for last-mile distribution, which is integrated with the national last-mile distribution system. The NTDP stores NTD drugs in the MOH's national, regional, and district warehouses without cost and distributes the drugs using GHS vehicles and the national last-mile distribution system. The NTDP realizes cost savings by integrating with the MOH supply chain.

However, challenges remain in reverse logistics. The largest challenge identified by the NTDP is the return of unused medications. Drugs must be collected at the sub-district level, then returned to the district level and stored at pharmacies. Though reverse logistics processes are in place, staff need more training and/or accountability for implementing these standard procedures. In the medical stores, NTD drug storage and use are expected to follow the "first-to-expire-first-out" principle, whereby drugs with the closest expiration dates leave the medical stores first. Thus, expiration of NTD drugs is not anticipated.

Challenges in Reverse Logistics

Though the NTD and MOH supply chains are sufficiently aligned and reverse logistics are in place, the NTDP's most critical challenge is ensuring that unused NTD medications are returned. More health workforce training and/or accountability are needed to properly implement standard reverse logistics procedures.

Next Steps Towards Advancing Sustainability: Given the current state and challenges described above, the NTDP and Act | West partners have identified the following steps to enhance the NTDP's operational capacity.

- Including NTDs in the national workforce training policy will ensure that health workers outside the NTDP are trained in NTD care.
- Leveraging the health system's decentralization process as an opportunity for NTD sustainability through increased collaboration and coordination among the health workforce at the district level. (See "Key Findings: Coordination" for additional information on Ghana's health system decentralization and opportunities for NTD sustainability.)
- Strengthening collaboration between the NTDP and relevant cross-sector stakeholders to identify core competencies related to NTDs in non-health sectors and develop a training plan to build the capacity of the non-health sector workforce to support NTD prevention activities. Leadership buy-in from relevant non-health sectors will help enable collaboration and operationalization of the training plan.
- Conducting regular in-service training around reverse logistics to build health workers' understanding of and capacity to manage reverse logistics processes. Forecasting NTD drug needs at the district level (rather than at the central NTDP level) to improve the accuracy of forecasts. Establishing sustainable supply chain practices and training supply chain professionals to better handle reverse logistics of unused or expired drugs will help address reverse logistics challenges.

Information Systems

Current State and Challenges:

Data Management

The Ghana NTDP applies effective practices in data management, complying with established data governance and policies. The NTDP's internal data management includes processes, tools, and guidelines to help staff manage data efficiently. Specifically, the Program's internal data governance and policies address personally identifiable information and privacy issues, data availability and access, and roles and responsibilities of data users. The Program stores NTD data on an official NTDP laptop and backs up data to an external hard drive; both the primary and back-up storage are password protected. The NMCP stores back-up data for the NTDP on the NMCP's server.

Health sector data management policies are documented in the GHS Standard Operating Procedures (SOPs) on Health Information Management II, with which the NTDP complies. Two SOPs, in particular, explicitly include NTDs and provide guidance for the NTDP, namely the *Neglected Tropical Disease Control Programme MDA Reporting Form* and the *Neglected Tropical Disease Control Programme (CDTI Reporting Form)*. The NTDP complies with established health sector data management policies.

Monitoring and Evaluation (M&E)

The NTDP applies advanced practices in M&E, which are integrated into the overall GHS dashboard used to manage and monitor programs. The NTDP's M&E tracks progress beyond the minimum requirements and is routinely used by the Program to inform drug requests and creation of surveys. The M&E of some NTDs is already being conducted within the District Health Management Information System (DHMIS2), Ghana's HMIS and the NTDP are taking steps to ensure that all the diseases that they track are built into the DHMIS2. The DHMIS2 provides the GHS with a way to standardize, collect, and collate essential data at the district level. NTDs are also incorporated and monitored through the existing Integrated Disease Surveillance and Response system, including program self-monitoring. Prevalence and incidence reports are produced on a monthly basis from data entered in the DHMIS2, then distributed to key stakeholders throughout the government.

Although the NTDP has a strong data management and integration process, data reporting for LF is a significant challenge (AIM Initiative 2019). For example, data on treatment coverage and case identification reports for cases of lymphedema and hydrocele are primarily collected by low-skilled community volunteers during MDA. It can be difficult to confirm the actual number of LF cases, as lymphedema and hydrocele need to be verified by a qualified health professional. In addition, double counting can occur during the reporting of lymphedema and hydrocele cases in a given area if the same cases are reported at both the out-patient department and community levels. Similarly, a 2017 study assessing MDA data quality for all five PCT NTDs in endemic areas in Ghana found that a high-quality data reporting system, data quality controls, back-up procedures, confidentiality of personal data, and feedback on data quality were often not available (de Souza et al. 2016).

Inclusion of NTD Indicators into National HMIS

In the broader health sector, data are entered into Ghana's HMIS, the DHMIS2, through the process illustrated in Figure 6. The NTDP has been approved to integrate NTD indicators into the national HMIS and has defined the indicators that will be integrated. In this process, the NTDP has engaged stakeholders and decisionmakers to review key NTD indicators and recommend those for inclusion into the national HMIS. The NTDP is awaiting the requisite budget approval for roll-out and training of health workers around NTD indicators.

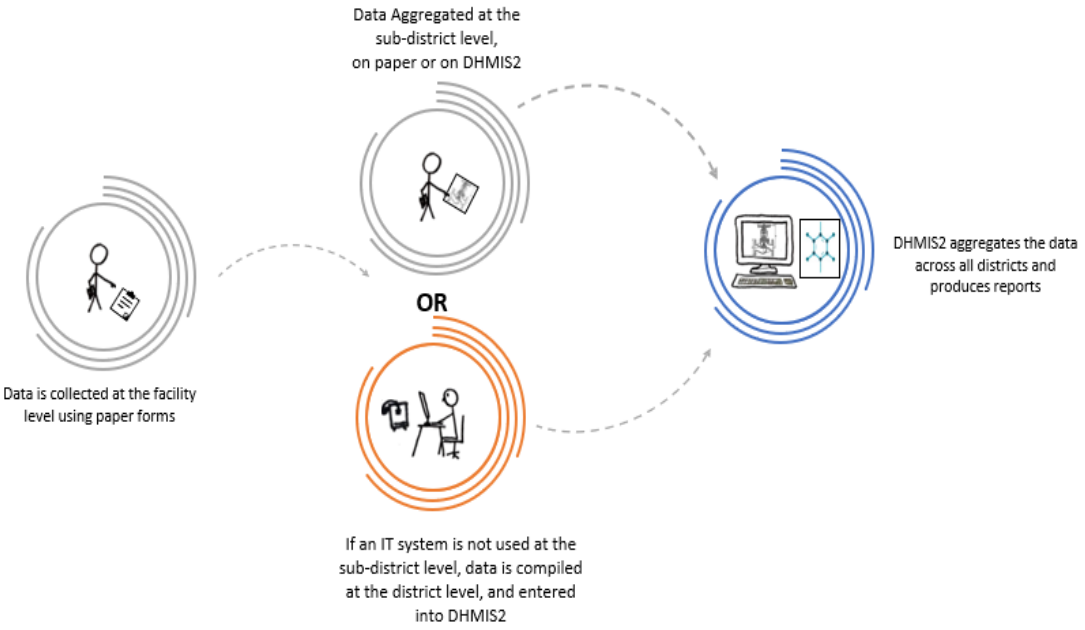


Figure 4. Data Entry Process in the DHMIS2

Next Steps Towards Advancing Sustainability: Given the current state described above, the NTDP and Act | West partners have identified the following steps to enhance the Program's information systems.

- Engaging a broad spectrum of stakeholders through targeted, data-driven advocacy to secure the requisite resources for training, rolling out the NTD indicators in the national HMIS and strengthening NTDP capacity to use indicators included in the HMIS for decision making. This is linked to the NTDP's broader advocacy efforts to mobilize domestic resources for NTDs.
- Including NTD indicators in the national HMIS will help decentralize M&E around NTDs and, in turn, increase accountability of district-level directors and health workers around monitoring NTDs.
- Once NTDs are included in the national HMIS, training health workers will help ensure that NTD data are reported accurately.
- Leveraging the GHS's integrated monitoring tool, developed to monitor and oversee the implementation of activities in the regions, will help the NTDP raise awareness and understanding around how NTDs fit into the larger landscape of regional and district priorities and issues and enhance coordination around addressing NTDs. The integrated monitoring tool, available through PPME, provides a comprehensive look at regions and samples of districts and includes a public health surveillance section that mentions the functionality of the NTD case management and MDA process.

Services

Current State & Challenges:

Currently, in Ghana, there are multiple service delivery platforms that have the potential to sustain long-term MDA coverage. Through strong collaborative frameworks, the NTDP could leverage those for mutually beneficial service integration and programmatic mechanisms. This section outlines these key service delivery platforms.

School Health Education Program

A current NTDP collaborator, Ghana Education Service's (GES) SHEP supports pre-school, elementary, and high school health screening for children (supported by the Family Health Division) and annual or semi-annual MDA with albendazole and praziquantel in target districts. They are active participants in NTD programming at the national, regional, and district levels and work across all levels of the GES structure. As SHEP's scope includes both WASH and health, it is well-positioned to bridge the gap between the two sectors. Additionally, SHEP administers a health education platform that reaches a population of interest to the NTDP (children ages 5–15), as well as older youth in primary schools. Through the health screening of students included in Ghana's free secondary school tuition package, SHEP also reaches high school students.

Water, Sanitation, and Hygiene

While WASH activities are widespread, with actors throughout the country, the Coalition of NGOs in Water and Sanitation (CONIWAS) provides a strong coordinating mechanism to gather and disseminate the growing experience of NGOs and to use field lessons to influence policies in the sector and advocate for social change. WASH partners recognize the relationship between WASH and NTDs and are open to working with the NTDP. On their own, WASH partners use their platforms to educate communities about water-related health conditions; with some guidance, they can include NTD-specific education and advocacy.

Regional and District Health Directorates

One challenge to integrating with the regional and district health directorates is that multiple competing programs currently request their attention. Existing reporting and documentation requirements already stretch the capacity of community-level volunteers; adding to these might reduce service and data quality. However, these structures can be leveraged for service delivery integration, as Ghana's decentralized health system can support collaboration between GHS units at the regional and district levels more easily than at the national level.

Community-based Health Planning and Services

The CHPS approach comes from the MOH's strategy to achieve universal health care, especially in rural areas. CHPS is another potential service delivery platform, particularly for health education and screening. Currently, their community health nurses are qualified to deliver MDA and visit the community once per month.

National Malaria Control Program

The NTDP could contribute to the strategic planning process of the NMCP, particularly in the area of vector management in the 15 districts treated for LF, ensuring that the NMCP considers these districts in its own

programming. Additionally, the NMCP and NTD could collaborate on MDA programs, with joint distribution of drugs and long-lasting insecticide-treated nets.[10]

Extended Program on Immunization

Ghana still conducts national immunization days, despite integrating routine immunization into health facility delivery to ensure higher coverage levels. While the target populations for the routine Extended Program on Immunization are narrow, the required logistics for national immunization days also apply to distributing other drugs in targeted areas and reaching both households and schools. The annual Child Health Week celebration is similar to national immunization days. In fact, the NTDP identified Child Health Week as an opportunity for integration across multiple programs. Typically, the week's activities focus on scaling up general child health services across the country and highlighting a single issue as the week's theme.

Community Development Agency

WASH participants also mentioned the Community Development Agency, under the Ministry of Local Government and Rural Development. While the agency is not currently involved in NTDs, its responsibilities include mass education and behavior change communication, skills training, livelihoods programs, and child protection.

Primary Health Clinics

For facility-based delivery of morbidity management services, the NTDP has relied on primary health clinics to address NTDs in endemic areas. The NTDP has trained primary health providers to conduct morbidity management in endemic areas and medical doctors to carry out hydrocele surgery. Across the country, there are eight facilities equipped to conduct hydrocele surgery. With support from DFID (through ASCEND), the NTDP is training healthcare staff on a district by district basis across the country. However, the NTDP does not return to districts that have received training to monitor NTD service delivery performance in facilities, due to budget limitations.

Next Steps Towards Advancing Sustainability: Given the current state described above, the NTDP and Act | West partners have identified the following steps to enhance sustainability in NTD service delivery:

- Increase NTDP access to community volunteers by standardizing community volunteer reimbursement rates across government programs. The NTDP already uses a standardized rate for all community volunteers implementing national control and elimination programs. When better-resourced government programs pay community volunteers higher rates, the NTDP cannot attract sufficient community volunteers to implement programs. A standard approach to volunteer reimbursement across government programs would resolve this problem.
- Strengthen NTD integration into the SHEP by including NTD information in the SHEP curriculum. The NTDP has identified opportunities to supply NTD drugs through the SHEP platform, making SHEP a critical partner for MDA and annual planning. In addition, engaging with cross-ministerial

[10] One respondent expressed concern about having too many "services" provided in communities at the same time, despite potential efficiencies, citing the limited capacity of community volunteers.

decision-makers for education and health will be critical to include deworming among the responsibilities of school programs.

- Streamline NTDP delivery and reduce duplication of efforts by increasing regional and district-level involvement in program scheduling and service coordination. Increasing involvement at these levels can facilitate local scheduling and coordination and avoid the bottlenecks that result from multiple overlapping/uncoordinated programs directed from the national level. Focusing resources on cross-training and integrated case detection and management—across all NTDP levels, in coordination with malaria and WASH services—would be a better use of resources.
- Monitor facility-based service delivery in districts that the NTDP has trained to assess primary healthcare facility performance in addressing NTDs and providing morbidity management care effectively. To enable district-level monitoring of service delivery, the NTDP will need to secure sufficient funding through targeted advocacy. (See "Key Findings: Financing" for next steps related to advocacy for domestic resources.)
- Strengthen communications and high-level advocacy to support demand for NTD services and integrated service delivery. At the present time, NGOs assist with promoting the need for NTD programming and creating demand for NTD services. NTD sustainability planning should focus on developing economic arguments to appeal to parliamentarians and garnering high-level political support for securing future resources and ensuring integration for the fight against NTDs. (See "Key Findings: Financing" for additional recommendations around using financial needs analysis in advocacy.)

Financing

Current State and Challenges:

Independent Dedicated Government Budget

While the health sector receives significant government funding in Ghana, the NTDP currently does not have an independent dedicated government budget. Based on TIPAC analysis, GHS received 5.02% (3.5B Cedis) of the national expenditure in FY 2019. The NTDP in FY 2019 had a 37% (11,220,559 Cedis) budget funding gap, with the largest gap in morbidity management, at 11% (3,445,014 Cedis). The NTDP currently relies on donors including USAID, the largest single funder of the NTDP, providing 38% (11,669,535 Cedis); Sight Savers, which provides 6% of the funding; and AIM Initiative, which provides 2% of the funding (Figure 7). The Government of Ghana funds the NTDP salaries and infrastructure, including the program office, office equipment, and utilities, which represent 17% of the total program budget and less than 1% of the GHS budget (0.14%). The NTDP is preparing to engage the sub-parliament health committee to increase awareness, raise visibility, and eventually advocate for a budget line that supports NTDP activities.

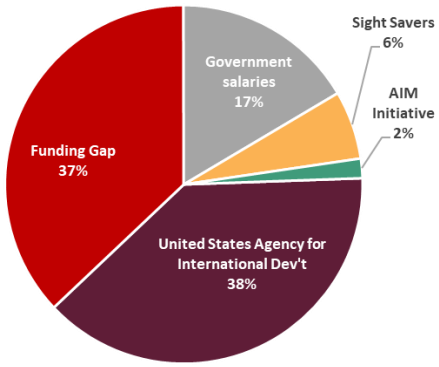


Figure 5. NTDP Funding by Source (Source: FY 2019 TIPAC)

The Ghana NTDP is integrated with the GHS budget process, which aligns with the annual national budget process. The Government of Ghana has used the MTEF for the past 20 years for budget preparation of public sector entities. The annual national budget process begins with the development of the country's medium-term macroeconomic and fiscal frameworks, which then inform budget ceilings for each ministry. The National Deployment and Planning Center distributes the budget ceilings to the ministries, which in turn solicit budgets from programs within their respective ministries. In the MOH, GHS adapts the national guidelines to the GHS's needs and employs program-based budgeting, which aligns spending to specific program objectives. The GHS then requests that each program within the GHS, including the NTDP, carry out a microplanning process. Programs within GHS, including the NTDP, submit their budgets to PPME within GHS through an IT system called the Planning and Budget Information System (PBMIS). Once the budget has been finalized in the PBMIS, GHS transfers the budget to the MOH-level system, the Ghana Integrated Financial Management Information System. Then, the MOH continues through the national annual budget process by submitting the MOH budget to the MOF budget office by the end of July. Figure 8 outlines the full national budget process.

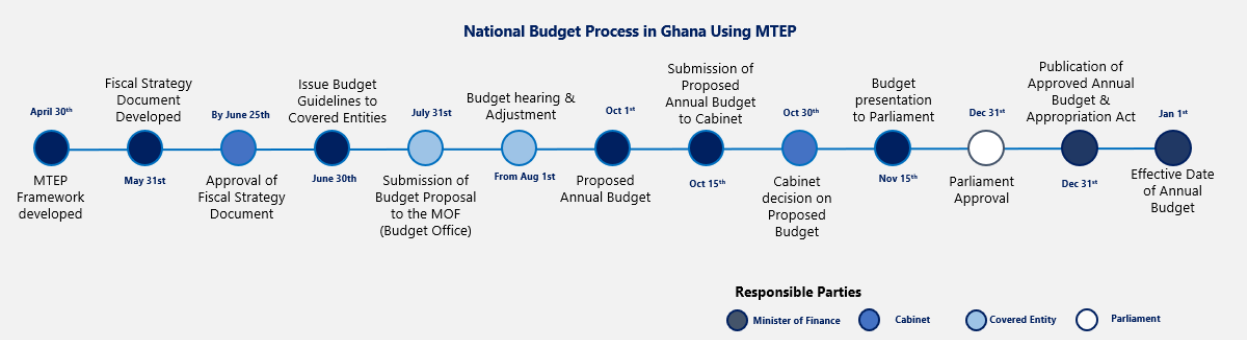


Figure 6. Ghana's Annual National Budget Process and Timeline

Within the GHS budget development process, the NTDP creates its annual budget through donor-funded work planning meetings and then submits the annual budget to the GHS through the PBMIS. Although annual budget plans on NTDs are prepared and submitted, these plans are not always funded. According to an interviewee in PPME, the MOH sees its financial contributions to the NHIS as sufficient, and therefore is hesitant to provide funding to disease-focused programs such as the NTDP. This hesitation is also linked to limited available funding. Furthermore, there is also no consensus on resource allocation criteria across all levels.

Financial Management

When managing its funds, the NTDP complies with and consistently uses the financial management processes and systems of GHS for all key financial operations. Financial controls are consistent with organizational reporting objectives and meet policy requirements. The core financial staff are fully trained in managing financial information and routinely execute policies, processes, and SOP.

Financial Needs Analysis

Though the NTDP has access to and has inputted data into a financial needs analysis tool (i.e., TIPAC) for several years, it rarely uses this tool to inform programmatic decisions, forecast budget needs, raise awareness, or advocate for funding. One noteworthy exception is when the NTDP used TIPAC to successfully advocate for financial support from Unibank (see “Key Findings: Coordination” for further details on the NTDP’s private sector engagement). Although the NTDP has the capacity to update TIPAC, this is unlikely to be prioritized, given resource constraints and other competing priorities. The NTDP has highlighted the need for return on investment analysis at the district level to engage in advocacy with parliamentarians from these districts.

Multi-year Budget Projections

The NTDP does not produce multi-year budget projections and does not have a formal tool or process for forecasting program costs more than a year in advance. The NTDP also does not have a practice of analyzing past expenditures to inform future budget needs. All budgeting is done on a single-year basis, with some high-level calculations for future year projections. Though the NTDP does not use a forecasting tool to calculate future needs for elimination and control, it recognizes that a tool with this capability can improve the accuracy of budgeting and needs forecasts as the country approaches disease elimination.

Next Step Towards Advancing Sustainability: Given the current state described above, the NTDP and Act | West partners have identified the following next steps to advance sustainability in financing:

- Mobilize domestic resources from both the public and private sectors to sustain the advances that Ghana NTDP has made in the elimination and control of NTDs.
- Leverage financial needs analysis to drive advocacy with key decision-makers and close the NTDP's funding gaps. Equipped with financial needs analysis, the NTDP can develop targeted messages and materials to more effectively engage a broad spectrum of relevant stakeholders to address funding gaps.
- Develop a tool to understand expected post-elimination costs and adopt a process for multi-year budget forecasting to enable the NTDP to better understand and plan for Ghana's post-disease elimination needs.

HIGHLIGHTS AND CONSIDERATIONS FOR SUSTAINABILITY PLANNING DISCUSSIONS

The NTDP has identified several milestones, spanning the six sustainability outcomes described above, to achieve in the next five years as it improves programmatic sustainability for NTDs. The first national NTD Sustainability Plan will serve as the roadmap for the NTDP and relevant health and cross-sector stakeholders to achieve these milestones. Despite the number of priorities, the NTDP is confident that the plan can be achieved over the medium term due to the following:

- Several of the high priority milestones are interrelated; once one milestone is achieved, it paves the way for other milestones to follow.
- The NTDP is supported by a team of national and international partners to reach the NTDP's stated goals and priorities for sustainability.
- The NTDP has informally secured commitments from additional stakeholders for achieving certain milestones. With continued advocacy and engagement, they expect these milestones to be formalized, as appropriate (e.g., in written policies, with budget top-ups).
- The NTDP will work to ensure information and training on current approaches to NTD elimination and control are available to health professionals by investigating and updating the current training curricula for doctors, nurses, midwives, and community health nurses.

Strengthening the sustainability of NTD programming and mainstreaming NTDs across sectors will help further Ghana's progress towards achieving its elimination and control targets. Further, strengthened programming will empower, equip, and position Ghana to sustain NTD elimination and control for a healthier population for the long term. The NTDP and national cross-sector stakeholders will contribute to, and further actualize, the Ghana Beyond Aid agenda through a more sustainable, integrated NTD program for all Ghanaian citizens.

APPENDICES

I. Ghana SMM Heat Maps
II. Ghana Organizational Network Maps
III. Sustainability Plan Outcomes
IV. List of Persons Interviewed
V. Bibliography

Appendix I: Ghana SMM Heat Maps

Coordination			
Parameters	**Current Score**	**Target Score**	**Priority**
Intra-Sectoral Coordination (within MOH)	Basic	Advanced	Medium
Inter-Sectoral Coordination (external to MOH)	Basic	Developing	High
Public-Private Partnerships	Basic	Developing	High
Policy			
NTDP Strategy	Leading	Leading	High
National Health Policy	Basic	Advanced	High
Inter Sectoral Policy	Basic	Developing	Medium
Operational Capacity			
HR (within health systems)	Basic	Advanced	High
HR (outside of health systems)	Basic	Developing	Medium
Surveillance	Advanced	Leading	Low
Supply Chain	Developing	Leading	Medium

Figure 7 (A-1). Ghana SMM Heat Map: Coordination, Policy, Operational Capacity

Information Systems			
Parameters	**Current Score**	**Target Score**	**Priority**
Inclusion of NTDs Indicators into National HMIS	Developing	Leading	High
Monitoring and Evaluation	Advanced	Advanced	Medium
Data Management	Advanced	Leading	High
Services			
Facility-Based Service Delivery	Developing	Advanced	High
Integrated Service delivery	Basic	Developing	High
NTD Surveillance	Developing	Leading	Medium
Financing			
Financial Needs Analysis	Advanced	Leading	High
Independent Dedicated Government Budget	Basic	Developing	High
Financial Management	Leading	Leading	Low
Multi-Year Budget Projections	Developing	Advanced	Medium

Figure 8(A-2). Ghana SMM Heat Map: Information Systems, Services, Financing

Appendix II: Ghana Organizational Network Maps

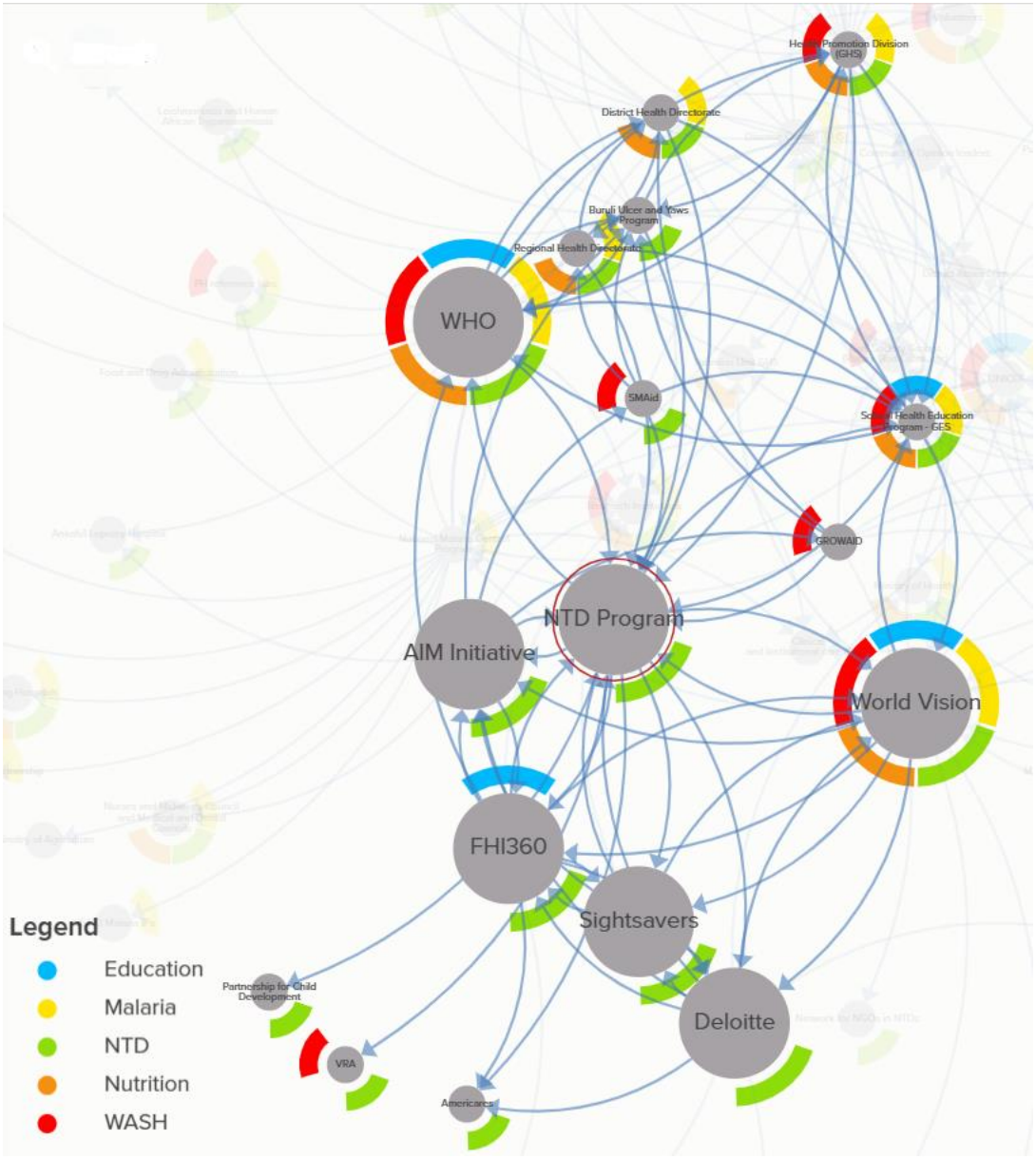


Figure 9(A-3). NTDP First Degree Connections

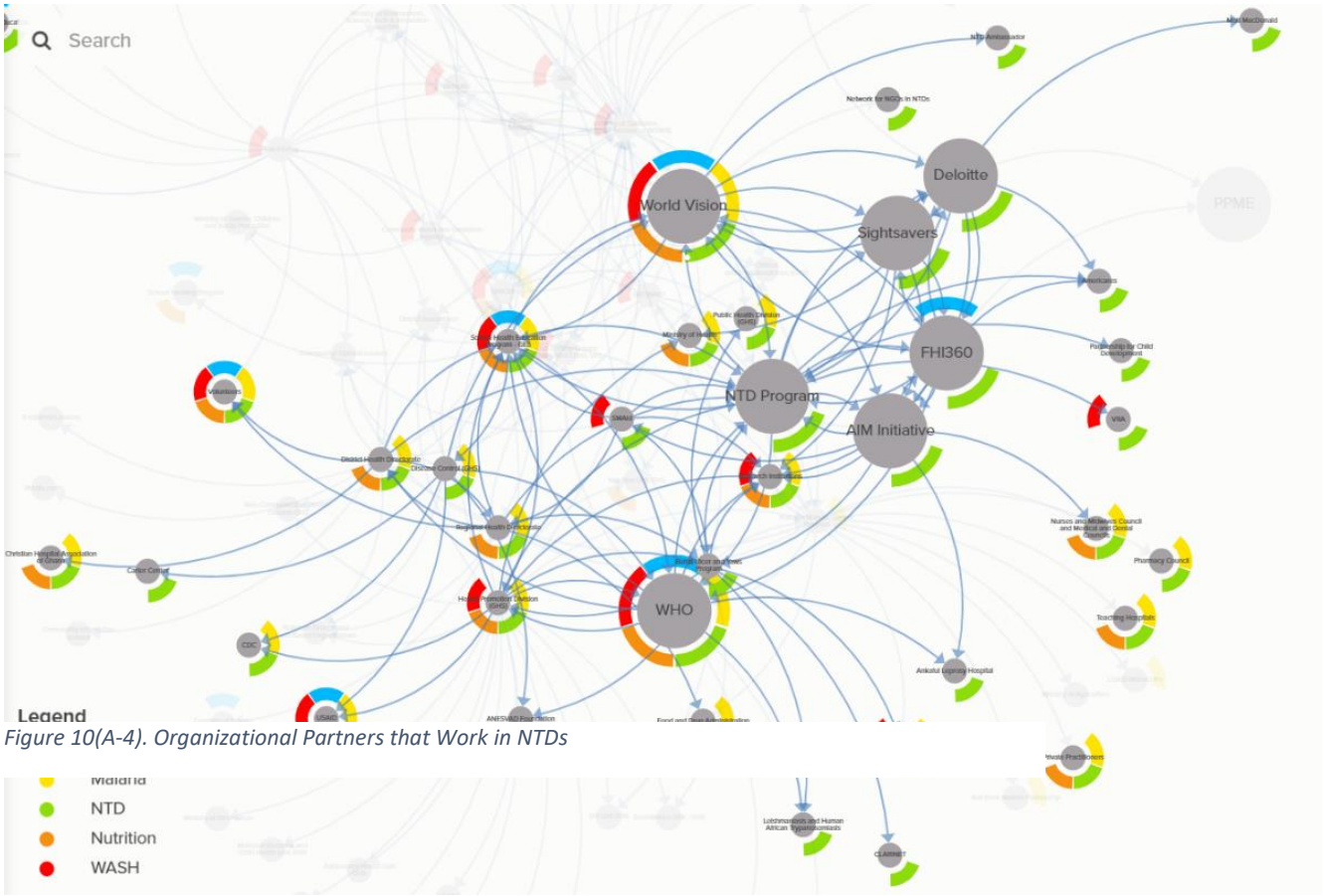


Figure 10(A-4). Organizational Partners that Work in NTDs

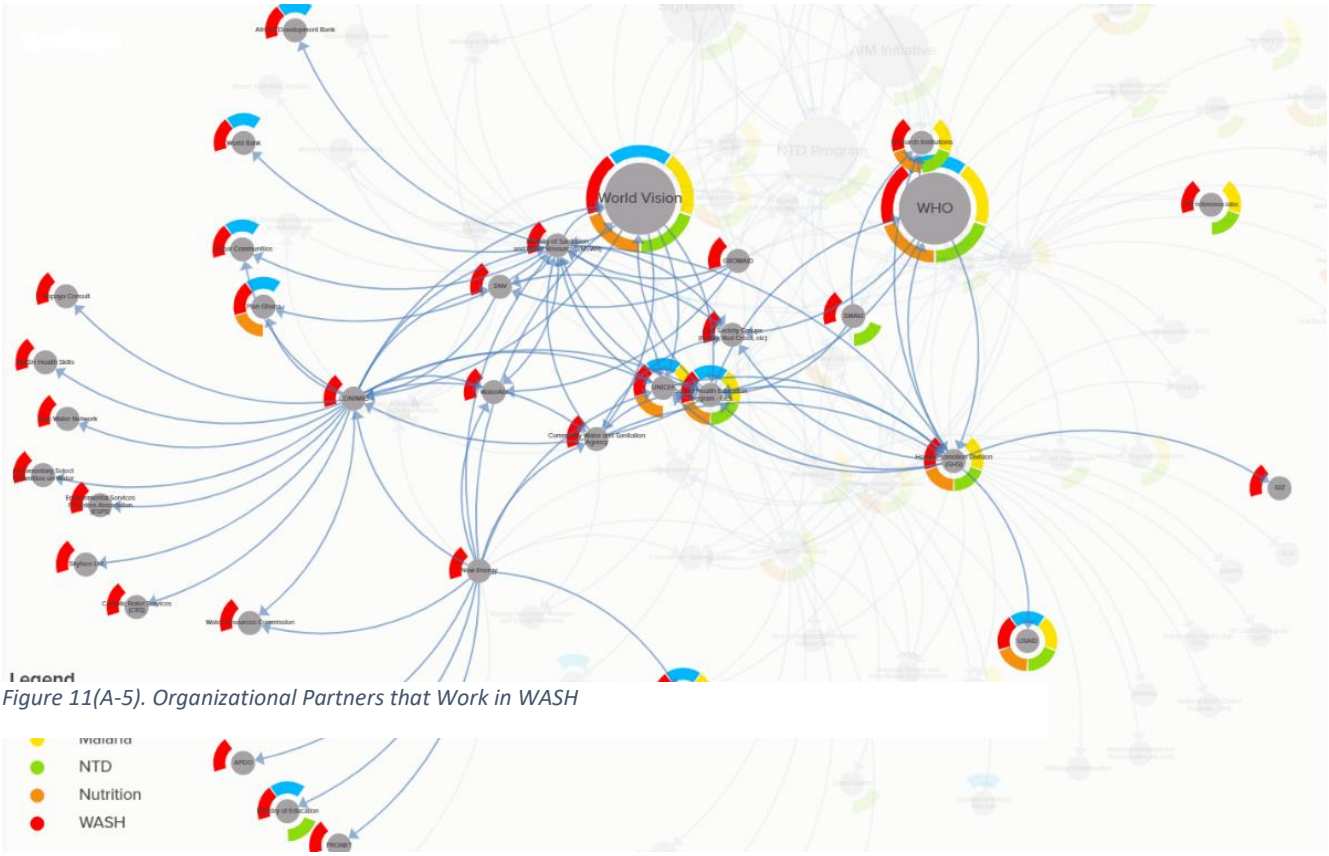


Figure 11(A-5). Organizational Partners that Work in WASH

Appendix III: Sustainability Plan Outcomes

OUTCOME 1: COORDINATION
Multi-sector coordination of NTD programs is institutionalized
Close coordination with other health or related program areas (e.g., malaria, maternal and child health (MCH)) and other sectors (e.g., water, sanitation, and hygiene (WASH), education) are key to long-term sustainability. These program areas and sectors often have established resources and platforms and work closely with the same target population as national NTDPs. By strengthening partnerships with other program areas and sectors, national NTDPs can link with pre-existing platforms, leverage supply chain and human resource infrastructure, and identify private sector resources. These linkages help national NTDPs capitalize on integration or coordination opportunities and achieve control and elimination goals. Coordination structures include NTD technical working groups (TWGs), expert committees, and other TWGs that discuss, organize, and distribute roles and responsibilities for MDA for SCH/STH (deworming); vector control; education; WASH; and other services. These mechanisms can be formal or informal and should be representative of gender and other social considerations, depending on the context.

OUTCOME 2: POLICY
National health and education policies integrate and institutionalize core NTD functions
As part of policy development, ministries of health and education need to consider how NTD-specific issues (e.g., service delivery platforms, morbidity management, supply chain mechanisms, training, surveillance) should be incorporated into health and education policies and action plans. For example, new health sector strategic plans should consider pre-existing NTD Master Plans to ensure alignment and account for new epidemiological and demographic trends and control and elimination approaches. Policies should be linked to poverty reduction strategies that show how NTD control and elimination efforts contribute to national development and equity goals. Policies should be designed in a way that considers, addresses, and builds upon the unique needs and contributions of women and men, promoting gender equality and social inclusion.

OUTCOME 3: OPERATIONAL CAPACITY

NTD resources related to the health and education systems are optimized

Integrating human resources, supply chains, surveillance, and drug donations for NTDs into national systems reinforces NTD programming. Each of these operational areas requires the ability to identify requirements, forecast needs, and manage programs to ensure high-quality services and disease monitoring. Human resources are critical to ensuring operational capacity as doctors, nurses, pharmacists, sanitation workers, teachers, and community health workers all have critical roles in providing NTD-related services. NTD drug donation, procurement, and distribution systems should be fully integrated into all stages of the pharmaceutical supply chain, including quantification, procurement, warehousing, distribution, and utilization to achieve control and/or elimination. Finally, Disease Specific Assessments and post-treatment surveillance are required to ensure that LF, trachoma, and OV are eliminated and do not return.

OUTCOME 4: INFORMATION SYSTEMS

Information systems include NTD data and indicators

National information systems should integrate NTD indicators into routine data management systems and collect gender-sensitive and sex- and age-disaggregated data. Integrating siloed data collection and management systems ensures that NTD data are collected, analyzed, and reported like other public health information, including collecting data from private providers. These data should be reported from, and available at, both the facility and district levels to improve planning, resource allocation, and responsiveness.

OUTCOME 5: SERVICES

NTD services are provided through existing and emerging community and facility platforms

MDA is part of a strong public health programming to achieve and maintain STH and SCH control. Cross-sector coordination will be instrumental in achieving long term sustainable SCH and STH MDA (deworming). To sustain deworming interventions, the government should be able to select and strengthen integrated delivery platforms such as child health services and school-based platforms and identify mechanisms to reach individuals or groups missed by other MDA platforms. As part of a comprehensive NTDP, provision of facility-based services to address LF and trachoma morbidity should be included.

OUTCOME 6: FINANCING

Sufficient domestic funding to support NTD programing needs

Government budgets (e.g., health and education at national and sub-national levels) prioritize domestic resources for elimination and control. NTD financing is mainstreamed into health governance mechanisms at national and subnational levels to ensure these funds are released and spent on high-quality, efficient, and equitable NTD programing; and spending is transparently accounted for against programmatic results. For the PCT NTDs, this should, at a minimum, include funding for deworming, surveillance, and coverage of morbidity management in health service packages. Sustainability will require health officials and other stakeholders to use financial and programmatic data to advocate for government resources for NTDs and to demonstrate cost-effectiveness, health impact, and GDP and development gains. There may be a complementary financing role for domestic resources mobilized through strategic social partnerships (e.g., with the private sector).

Appendix IV: List of Persons Interviewed

	Name	Title	Affiliation
	Michael T Biredu	Program Manager	Act to End NTDs | West (FHI360)
	Solomon Atinbire	M&E Manager	Aim Initiative
	Nana Konama Kotey	Program Manager	Buruli Ulcer & Yaws Control Program
	Yaw Atta Arhin	Vice Chair	Coalition of NGOs in Water and Sanitation (CONIWAS)
	Paul Sitsofe	Principal Community Development Officer	Community Development Agency
	Theodora Adomako-Adjei	Extension Services Coordinator	Community Water and Sanitation Agency
	Dr. Akwasi Kyei-Faried	Deputy Director	Disease Control and Prevention Dept
	Justin Tine	Health Systems Strengthening Lead	Act to END NTDs |West , FHI360
	Ernest Mensah	Regional NTD Technical Advisor & LF Focal Point	Act to END NTDs |West, FHI360
	Dorcas Hushie	Focal person - Nutrition	Ghana Education Service/ SHEP
	Ellen Gyekye	Focal person - WASH	Ghana Education Service/ SHEP
	Nana Esi Inkoom	National Coordinator	Ghana Education Service/ SHEP
	Edward Antwi	National Child Health Coordinator	Ghana Health Service/ Child Health Unit (Family Health Division)
	Christian Fiador	Regional NTD Focal Person	Ghana Health Service/ Eastern Regional Health Directorate
	Kwadwo Asante-Afari	Focal person for NTDs and NDCs	Ghana Health Service/ Health Promotion Division
*	Robert Annan	Deputy Director of Treasury	Ghana Health Service/ HQ
	Joyce Aryee	National NTD Ambassador	Ghana Health Service/ Neglected Tropical Disease Program
**	Dr. Benjamin Marfo	Program Manager, NTDP	Ghana Health Service/ Neglected Tropical Disease Program
*	Ernest Mensah	NTDP Biostatistician	Ghana Health Service/ Neglected Tropical Diseases Program
**	Sophia Kusi Ampofo	Deputy Chief Planner	Ghana Health Service/ Policy, Planning, Monitoring, and Evaluation
	Ben Bempah	Head of Planning Unit	Ghana Health Service/ Policy, Planning, Monitoring, and Evaluation
*	Dr. Anthony Ofosu	Deputy Director of PPME	Ghana Health Service/ Policy, Planning, Monitoring, and Evaluation
*	Michael Sowtie	Policy, Planning, Monitoring, and Evaluation Unit	Ghana Health Service/ Policy, Planning, Monitoring, and Evaluation
	Rachael Annan	Head of Operations	Growth Aid

	Salifu Abdul-Mujeeb	Program Manager	Intervention Forum/ People's Dialogue
	Lydia Essuah	Director, Policy, Planning, Monitoring & Evaluation	Ministry of Environment, Science, Technology, and Innovation
	Kweku Quansah	Program Officer, Environmental Health and Sanitation Directorate	Ministry of Sanitation and Water Resources
	James Frimpong	Deputy Program Manager	National Malaria Control Programme
	Thomas Sayibu	Former CEO of New Energy; First Chairman of CONIWAS	New Energy (Local NGO in WASH)
	Irene Anuwa-Armarh	DDNS, Acting District Director of Health Services	New Juabeng Municipal Health Directorate
	Deborah Huno	District Disease Control Officer	New Juabeng Municipal Health Directorate
	Jennifer Annor Antwi	District Disease Control Officer	New Juabeng Municipal Health Directorate
	Abraham Anang	Former ICC Chair, Director, NMIMR	Noguchi Memorial Institute for Medical Research, UG
	David Agyemang	Program Manager	Sightsavers
	Theresa Swanzy-Baffoe	WASH Advisor	SNV
	Josue Tchimou	Executive Director	Sustainable Mission AID International (SMAid)
	Peter Baffoe	Health Specialist	UNICEF
	Leticia Agyeiwaa Ackun	WASH Specialist	UNICEF
	Felicia Owusu Antwi	National Program Officer - Malaria and NTDs	World Health Organization, Ghana
	Akosua Kwakye	National Program Officer - Nutrition & Environmental health	World Health Organization, Ghana
	Awurabena Quayeba Dadzie	Health Technical Programme Manager	World Vision/Ghana
	Richard Nii Okai Okai	Integrated Programs Director	World Vision/Ghana
	Irene Sawerteh	Program Manager	World Vision/Ghana
*	HSS-only interview respondents		
**	Both HSS and cross-sector interview respondents		
	Cross-sector-only interview respondents		

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