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# MASTER PLAN FOR NEGLECTED TROPICAL DISEASES PROGRAMME, GHANA (2016 – 2020)

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GHANA NEGLECTED  
TROPICAL DISEASES  
PROGRAMME

PUBLIC HEALTH  
DIVISION



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Your Health - Our Concern

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## FORWARD

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### FORWARD

Ghana's Health Sector desires to see the country free from the following diseases: lymphatic filariasis, onchocerciasis, schistosomiasis, soil transmitted helminthiasis, trachoma, buruli ulcer, yaws, guinea worm, leprosy, leishmaniasis, human african trypanosomiasis among others referred to as the neglected tropical diseases (NTD). These NTDs which are debilitating and stigmatizing NTDs) are of immense public health significance in Ghana as they affect all 10 regions of the country geographically. The Ghana Health Service together with its supporting partners have put together the Neglected Tropical Diseases Programme to work towards the prevention, control, elimination or even eradication of these neglected tropical diseases by 2020. The programme focused on the Preventive Chemotherapy and Transmission Control (PCT) diseases namely lymphatic filariasis, onchocerciasis, schistosomiasis, soil transmitted helminthiasis, trachoma at its inception in 2006. Subsequently, there has been ongoing integration with the other neglected tropical diseases, which rely on innovative and intensive disease management (IDDM) as a strategy. The Ghana NTD Master Plan is a further step in consolidating this integration.

The programme's objective is to integrate these diseases in the area of mass preventive chemotherapy and IDDM in order to improve mobilization of resources and maximize the efficient use of available resources for greater public health impact.

The Ghana Health Service/Ministry of Health recognizes that there is an enormous task ahead to ensure the realization of these noble individual programme objectives. This challenge in itself provides the desire and zeal to work towards achieving these objectives.

This Master Plan spells out the vision, mission and strategic direction of the Neglected Tropical Diseases Programme of the Ghana Health Service based on the 5 pillars of the Ghana Health sector which are financial and geographic accessibility, quality of care, efficiency, partnership and equitable distribution of resources. It is also aligned to the WHO AFRO strategy for NTD Control in Africa.

I wish to acknowledge the efforts of health and other professionals who worked tirelessly to provide the ideas and suggestions for this document and the support of WHO AFRO and other partners with interest in NTD control.

The hope is that this strategic document having been developed with the full participation of all stakeholders and partners will serve as a tool for resource mobilization and a guide for programme implementation towards the achievement of the goals of prevention, control, elimination or even eradication of the neglected tropical diseases in a sustainable manner.

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All NTD programs especially Trachoma, Lymphatic Filariasis, Onchocerciasis, Schistosomiasis, Soil Transmitted Helminths, Yaws, Buruli Ulcer and HAT and all staff of the Ghana Health Service and the Ministry of Health for various ways in which they have supported the NTD control effort and strategic plan development.

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## ACRONYMS IN NTD MASTER PLAN

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ANESVAD	A Neustros Enfermos Servimos A Dios (Spanish NGO)	
APOC	Africa Programme for Onchocerciasis Control	
BMC	Budget Management Centre	
BUD	Buruli Ulcer Disease	
CHPS	Community Health and Planning Service	
CM	Case Management	
CNTD	Center for Neglected Tropical Disease	
CSOs	Civil Society Organizations	
DCE	District Chief Executive	
DDHS	District Director of Health Services	
DHIMS	District Health Management Information System	
DHMTs	District Health Management Teams	
DHSS	Demographic and Health Systems Survey	
EPI	Expanded Programme on Immunization	
FDB	Food and Drugs Board	
GDHS	Ghana Demographic and Health Survey	
GDP	Gross Domestic Product	
GES	Ghana Education Service	
GHS	Ghana Health Service	
GNI	Gross National Index	
GOG	Government of Ghana	
GPRS	Ghana Poverty Reduction Strategy	
GSS	Ghana Statistical Service	
GWD	Guinea Worm Disease GWEP	Guinea Worm Eradication Programme

HAT	Human African Trypanosomiasis
HDI	Human Development Index
HIRD	High Impact Rapid Delivery
HIV	Human Immunodeficiency Virus
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HSDS	Health Services Delivery System
ICD	Institutional Care Division
ICT	Information Communication Technology
IDSR	Integrated Disease Surveillance and Response
ITI	International Trachoma Initiative
LF	Lymphatic Filariasis
LSTM	Liverpool School of Tropical Medicine
MCH	Maternal and Child Health
MDA	Mass Drug Administration
MDAs	Ministries, Departments, Agencies
MDGs	Millennium Development Goals
MLG&RD	Ministry of Local Government & Rural Development
MoF	Ministry of Finance
MoFA	Ministry of Food and Agriculture
MoH	Ministry of Health
MoWAC	Ministry of Women And Children
MSE	Ministry of Science and Environment
MWRWH	Ministry of Water Resources Works and Housing
NEPAD	New Partnership for African Development
NGOs	Non Governmental Organizations
NHIS	National Health Insurance Scheme
NIDs	National Immunization Days
NTD	Neglected Tropical Disease
NTDP	Neglected Tropical Diseases Programme

PATTEC	Pan African Tsetse and Trypanosomiasis Eradication Campaign
PCT	Preventive Chemotherapy and Transmission Control
PHC	Primary Health Care
PoW	Plan of Work
PPME	Policy Planning Monitoring and Evaluation
RHMTs	Regional Health Management Teams
SADR	Severe Adverse Drug Reaction
SCH	Schistosomiasis
SHEP	School Health Education Programme
SSTH	Schistosomiasis and Soil Transmitted Helminths
STH	Soil Transmitted Helminths
SWOT	Strengths Weakness Opportunities Threats
TB	Tuberculosis
UNICEF	United Nations Children Emergency Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WVG	World Vision Ghana
WVI	World Vision International

## INTRODUCTION

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Ghana is endemic for a number of neglected tropical diseases namely Lymphatic Filariasis, Onchocerciasis, Trachoma, Schistosomiasis, Soil transmitted helminthiasis, Buruli ulcer, Yaws, Leprosy, Guinea worm, Human African Trypanosomiasis (HAT), Cutaneous leishmaniasis and Rabies. The Ghana government is very much concerned about these diseases and has put in place the national master plan to address the situation in an integrated manner and link NTD plans to include costing and financing requirements. A strategic plan for the Neglected Tropical Diseases Programme (NTDP) has as its vision **“Ghana free from ancient diseases and afflictions that have burdened humanity for centuries”**.

The goal is to improve on the capacity of the GHS to establish an integrated NTDs programme capable of delivering interventions to prevent, control, eliminate or eradicate the neglected tropical diseases by the year 2020.

The Ghana NTDs Master Plan is a comprehensive multi-year plan (2013-2017) that addresses all the components of the NTD programme spelt out in this document. It includes preventive chemotherapy and case management of NTDs and is based on national strategic priorities and not disease specific. It will rely on integration and co-implementation and captures cost and financial plan for sustainability. This document provides the basis for national, regional and district annual work-plans.

It also forms the basis for harmonizing the joint support of all partners working in NTD, in terms of resource mobilization, information sharing, monitoring and evaluation and periodic reviews.

The Ghana NTD master plan is organized in three parts; situation analysis, NTD strategic agenda and Operational framework. There is also a section on detailed budget plan as well as annexes.

Several disease control programmes in Ghana covering major diseases such as Trachoma, Lymphatic Filariasis, Onchocerciasis, Schistosomiasis and Soil-transmitted Helminths overlap geographically. Furthermore some of these programmes use the same drugs for treatment and use similar strategies of drug delivery. In view of the existence of these common factors, there is need to integrate these related activities in order to maximize available resources and rationalize the operation of the various programmes. Tackling these diseases together will go a long way to increase knowledge in the causes, prevention and treatment of these diseases and produce the desired attitudinal and behavioural changes in a harmonized and cost effective way.

## STRATEGIC DIRECTION

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The strategic direction of the Neglected Tropical Diseases Program is based on the five pillars of the Ghana health sector - financial and geographical accessibility, quality of care, efficiency, partnership and equitable distribution of resources. In addition it includes covering all the strategic elements (which are preventive, curative and rehabilitative/corrective) for the control and elimination of the target diseases. It seeks to integrate in all activities to achieve higher population coverage and significant prevalence reduction than through the single-disease approach. This reduces cost per person treated and burden on human resources. It further lays the foundation for a sustainable model and mobilize more resources and generate more demand for the services.

## SPECIFIC OUTCOME OBJECTIVES

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The objectives, outputs and activities for this strategic plan are derived from the results of a situational and SWOT analysis. The expected outputs for the objectives are described and have been well harmonized with activities to achieve these outputs. The plan has been put in a Logical Framework Approach.

The objective of this document is to present a clear vision and 5-year strategic plan for the integrated prevention, control, elimination or even eradication of the Preventive Chemotherapy diseases and the Case Management diseases under the NTD programme.

The specific objectives of the programme are:

1. To maintain 100% geographical coverage of all districts by 2017 with integrated mass drug administration for all the preventive chemotherapy diseases while scaling down for those earmarked for elimination
2. To undertake case search and management for all the listed case management diseases in Ghana
3. To document the lessons and best practices of NTD programme in Ghana

## PROGRAMME ACTIVITIES

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Planning for the NTDP will be held at all levels of programme delivery. To ensure effective ownership and active participation by community members for the control of the Neglected Tropical Diseases Programme, effective social mobilization will be carried out through sensitization and mobilization of the community members for the programme.

Training of health workers, teachers, environmental health officers and community based volunteers will be done at regional, district and community levels jointly for all the diseases. Similar strategies for health promotion activities using mass media, print and interpersonal communication will be used to reach out to endemic communities. Two rounds of joint mass drug administration will be conducted to reach all endemic communities in the

country from 2011 to 2016. During the first round of treatment Ivermectin and Albendazole will be given to cover LF, Onchocerciasis and STH. The second round of treatment will be given 6 months after the first round to cover Onchocerciasis, STH and SCH with Ivermectin, Mebendazole and Praziquantel respectively.

Case search and management will be done all year round by trained health workers and volunteers. Rehabilitation and corrective surgery for the NTDP will involve the provision of surgery for patients who will need it and different forms of treatment provided for cases identified.

Joint or coordinated monitoring and evaluation of the entire programme will be done at all levels. Relevant surveys will be carried out for specific diseases.

Advocacy meetings will be held at all levels to increase awareness of NTDs and seek for support. Continuous advocacy will be made for partners to continue to provide safe water and sanitation facilities in all the endemic communities.

## PART ONE: SITUATION ANALYSIS

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The Ghana NTD master strategic plan is developed and implemented within the context of three major environments, namely;

- Country Profile
- The Health system environment, and
- The NTD Programme Environment.

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### 1.1. COUNTRY PROFILE

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#### 1.1.1 GEOGRAPHY

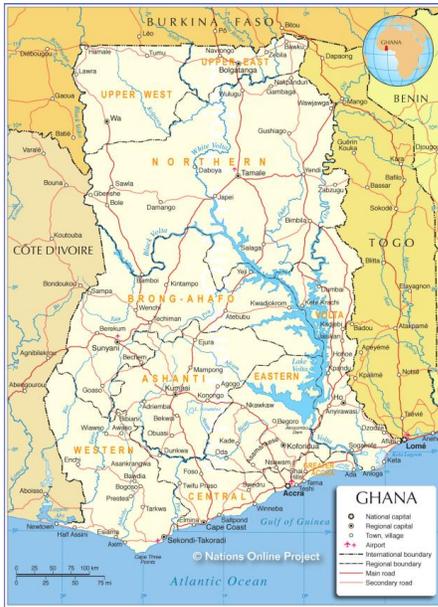
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##### 1.1.1.2: Location and Borders

Ghana lies on the West Coast of Africa between Latitudes 5<sup>o</sup> and 11<sup>o</sup> North of the Equator and between longitudes 1<sup>o</sup> East and 3<sup>o</sup> West of the zero meridian. It is bordered by the Gulf of Guinea in the South, Togo in the East, Cote d'Ivoire in the West and Burkina Faso in the North. The country has an area of 238,537 sq km with 550 kilometres of coastline.

Ghana has typical tropical climate with temperatures between 21 and 32 degrees Celcius. There are three clear geographic zones; dry northern savanna, the humid middle forest rainfall zone and the coastal savannah and mangroves. There are six major rivers with several tributaries some of which are fast flowing. One of the rivers, River Volta has been dammed covering 3% of the country. Yaws and Buruli Ulcer are prevalent in the humid forest zone while the rivers and lakes predispose to Onchocerciasis along the fast flowing tributaries and Schistosomiasis in the areas with more stagnant waters. The coastal and dry northern zones are found to be more prevalent with Lymphatic Filariasis.

Figure 1: Map Of Ghana



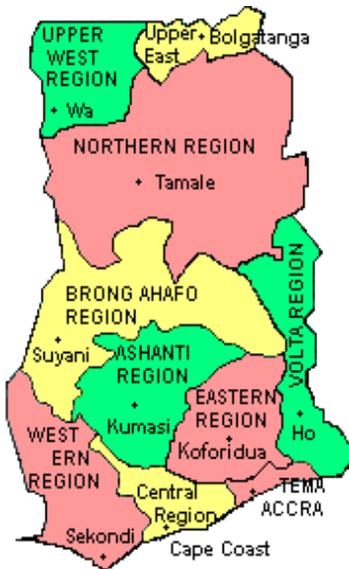
## 1.1.2: ADMINISTRATIVE, DEMOGRAPHY AND COMMUNITY STRUCTURES

### 1.1.2.1: Administrative Structure

Ghana is divided into 10 administrative regions and 170<sup>1</sup> administrative districts. Each region is headed by a political administrator (Regional Minister) while the districts are headed by District Chief Executives. All districts have been subdivided into an average of 6 sub-districts with each covering a defined geographic area of 20,000-30,000 people. The implementation unit of health programmes is the district, sub-district or community levels.

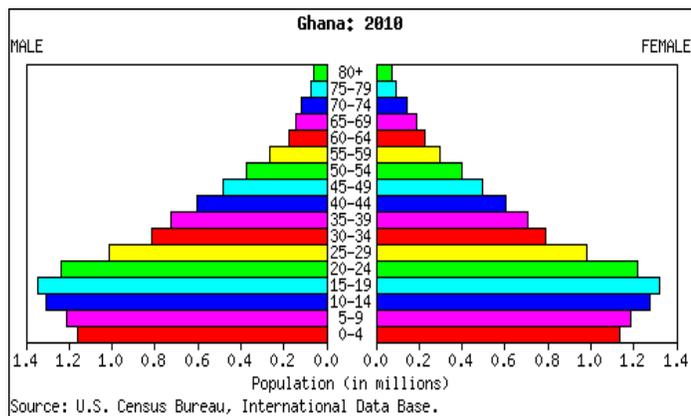
Figure 2: Administrative Map Of Ghana

<sup>1</sup> Administrative districts have been re-demarcated to 215



Ghana's population is estimated to be about 25 million (49.5% males and 50.5% females) in 2012 extrapolated from the population census in 2000. The population growth rate is 2.7 percent. Children under 5 years of age make up 20% of the population, while children between 5 and 15 years (school-aged) constitute 27.3% of the population.

Figure 3: Ghana Population Pyramid By Age And Sex



About 70% of the population live in rural areas and are mainly engaged in agriculture and fishing. Infant mortality rate is estimated at 50 per 1000 live births based on Demographic Health Survey (GDHS 2008) data. The under 5 mortality is estimated at 80 per 1000 live births.

Table 1: National population data for 2013 (projection from 2010 population census), schools and health facilities by region

Region	District	Total Population	Under fives (13.8%)	5-14 years (24.5%)	No. Primary schools	No. health facilities
Ashanti	27				3991	510

		5,178,140	714,583	1,268,644		
Brong Ahafo	22	2,474,136	341,431	606,163	2369	270
Central	17	2,413,050	333,001	591,197	2030	223
Eastern	21	2,802,551	386,752	686,625	2839	523
Greater Accra	10	4,394,669	606,464	1,076,694	1765	320
Northern	20	2,701,490	372,806	661,865	2174	237
Upper East	9	1,084,675	149,685	265,745	766	178
Upper West	9	742,895	102,520	182,009	661	164
Volta	18	2,281,126	314,795	558,876	2122	356
Western	17	2,521,452	347,960	617,756	2384	329
Total	170	26,594,185	3,669,997	6,515,575	21101	3110

In Ghana communities are the smallest units of human settlements in any given area. The focus of most control activities of the Neglected Tropical Diseases Control Programme are the rural communities and urban slums where neglected tropical diseases most prevalent. These rural communities are in remote and hard to reach areas, where subsistence farming is the most common occupation. In these parts of the country, basic amenities are non-existent. Some of these farmers have seasonal farmsteads. Rural communities have chiefs who rule the inhabitants of the community with a team of elders, a queen mother and other opinion leaders such as the assemblyman who represents the community at the district assembly. There may be other women and men's groups in these communities with their own leaders who represent these groups as opinion leaders in

the communities. Religious groups with their leaders are also very important in rural and sub-rural settings. Their leaders are influential and influence greatly community issues. Other groups that may be found in these communities are occupational groups such as those for farmers, fishermen, different artisans.

Subsistence farming is the main occupation of most rural communities. The crops farmed are mainly cash crops in non-commercial quantities though many of them sell these at very cheap prices in order to raise some money for other household expenses. Their farming activities are rain dependent. The country has two main rainy seasons, the major one occurring between April and August and the minor one between October and November. Farming activities are therefore concentrated within these two major time periods.

Communities located along the coast and within some inland river basins also have fishing as their main occupation. Though fishing occurs all year round, bumper fish harvest of fish occurs during the major rainy season when the weather in most parts of the country is cold. A few communities may have skilled workers or artisans who may be involved in carpentry, masonry, sewing among others. However, white-collar jobs tend to be completely absent in most rural communities. In others there is difficulty in finding an educated person to even help in undertaking community based health activities that might require some basic skills in reading and writing.

Most rural communities depend on town criers, public address systems and meetings to facilitate communication and information sharing.

Rural communities in Ghana have existing community associations or groups which meet regularly and are represented in higher community level meetings involving opinion leaders. These social groupings include those for market women, men and women's social groups, ethnic groups where different ethnic groups are present, religious groups, and where present groups of skilled workers. In these communities every adult may be a member of at least one of these social or religious groups. The presence of these groups makes it possible to reach members of these communities especially the larger communities with health information and community based health activities.

Some of the NTD Control Programmes such as Onchocerciasis, Lymphatic Filariasis, Trachoma, schistosomiasis and soil transmitted helminths., require oral preventive chemotherapy at the community level. The method adopted for distribution takes advantage of the community structures available, making sure that community participation and leadership are key.

Some communities which will be involved in the implementation of these Neglected Tropical Diseases Programmes have some experience with the implementation the disease specific programmes such as Community Directed Treatment with Ivermectin (CDTI) in Onchocerciasis which has been in existence since 1998.

Women either as groups or individuals have played a significant role in mobilizing communities for community based health programmes such as distribution of medicines

and bed nets as well record keeping. Early case detection requires the participation of the communities as in the case of Buruli Ulcer.

### 1.1.3: SOCIO-ECONOMIC SITUATION AND INDICATORS

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Ghana is the second largest producer of Gold in Africa. It has other exports such as cocoa, oil, timber, electricity, diamond, bauxite, and manganese also being major sources of foreign exchange. Also, horticultural products, handicraft, processed food and manufactured goods are produced. The non-traditional exports, are increasingly contributing to the Gross National Index (GNI) as well as tourism. An oilfield which is reported to contain up to 3 billion barrels (480,000,000 m<sup>3</sup>) of light oil was discovered in 2007. Oil exploration is still ongoing though drilling and export of the first oil was carried out in 2011.

Ghana's labor force in 2008 totaled 11.5 million people. The economy continues to rely heavily on agriculture which accounts for 37.3% of GDP and provides employment for 56% of the work force. Manufacturing is only a small part of the Ghanaian economy totaling 7.9% of Gross Domestic Product in 2007.

Surface mining activities which leaves scores of pits that serve as breeding sites for mosquitoes may predispose individuals to Lymphatic filariasis and Malaria. Dams and irrigational canals support dry season farming, however, they predispose farmers to guinea worm and schistosomiasis. The Human Development Index (HDI) rose by 0.8% annually from 1980 to 2010. The data for 2010 is 0.467 which gives Ghana a rank of 130 over 169 countries compared. Table 1.1 below shows some socio-economic data; for example, the GDP growth rate in 2009 was 2.1% while GDP stood at \$26.2 billion during the same year (World Bank).

The water coverage as at 2010 was 58% (Ministry of Water Resources) and 27% of the 25 million population living in rural and urban areas have access to improved sanitation. Inadequate potable water supply and poor sanitation are the primary causes of STH and Trachoma, among other diseases.

Table 1.1: National health indicators

Indicator	Figures
Birth rate / 1000	28.6 (GHS 2009 Facts & Figures)
Death rate / 1000	9.4 (GHS 2009 Facts & Figures)
Population growth rate	2.5% (2010 Census)
Total fertility rate (children born per women)	4 (2008) GDHS

Infant mortality rate/1000 live births	50 (2008) GDHS
Under five mortality rate/1000	80 (2008) GDHS
Maternal mortality ratio/100,000 live births	560 (GHS 2009 Facts & Figures)
Population: % < Age 15	38.3% (2010 pop census)
Population: % Age 15 – 64	57.1% (2010 pop census)
Population: ≥Age 65 years	4.6% (2010 pop census)
Life expectancy at birth male (years)	59 (GHS 2009 Facts & Figures)
Life expectancy at birth female (years)	60.7 (GHS 2009 Facts & Figures)
Stunted children	28% (2008) GDHS
GDP (current US\$) (billions)	26.2 (2009)
GDP per capita (current US\$)	1,098 (2009)
GDP growth (annual %)	4.7 (2009)

#### 1.1.4: TRANSPORT AND COMMUNICATION

Transport in Ghana is accomplished by road, rail, air and water. Ghana's transportation and communications networks are centered in the southern regions, especially the areas in which gold, cocoa, and timber are produced. Road transportation in Ghana constitutes about 97% of passenger and freight traffic in Ghana. Trunk roads in Ghana are classified as National roads, Regional roads, and Inter-regional roads, all of which form the Ghana road network. All districts are connected to their regional capitals by a network of roads most of which are tarred. The regional capitals are also linked through major road networks to the national capital; some areas, however, remain relatively isolated. Foreign donor support

helped to increase the number of new vehicle registrations from 8,000 in 1984 to almost 20,000 in 1989. The distribution of vehicles was skewed in favour of urban areas however, a large percentage of intercity buses are available for commuters to different parts of the country. Transportation is especially difficult in the rural areas and in the vast, underdeveloped northern regions, where vehicles are scarce.

TABLE 2: Road Distances from Accra

Town	Distance in km	Town	Distance in km
Aburi	38	Kpandu	206
Ada	114	Kintampo	478
Aflo	193	Kumasi	272
Akosombo	101	Lawra	799
Bamboi	474	Navrongo	845
Bawku	828	Nkawkaw	163
Bibiani	265	Nsawam	35
Bole	592	Obuasi	324
Bolgatanga	815	Oda	143
Cape Coast	145	Salaga	643
Damongo	782	Sekondi	218
Elmina	158	Sunyani	403
Ejura	336	Swedru	85
Gambaga	811	Tamale	654
Half-Asini	403	Takoradi	229
Ho	166	Tarkwa	317
Hohoe	221	Techiman	398
Keta	214	Wa	721
Koforidua	85	Winneba	66
Konongo	217	Yeji	499

Until recently the telephone system in Ghana was run by Ghana Telecom. Today there are many mobile telephone companies namely; MTN, Expresso, Tigo, Airtel, Vodafone and Glo. In 2010 there were 15 million mobile telephone subscribers from 218,000 in 2000. There

are over 3 million fixed telephone lines and over 5,000 pay phones. Telephone services are available and accessible in almost all parts of the country.

Ghana Broadcasting Corporation has nationwide coverage. There are many private radio stations with over 60 stations in the country. Many district capitals also have radio stations.

TV stations and services are about 10 in number with only the state-owned Ghana TV having national coverage.

There are several registered newspapers, some dailies, others weeklies, bi-weeklies, monthly and quarterly newspapers, most of them privately owned. Some are state owned and most of the others being private owned.

The existing communication system in the country can be relied on to a large extent for programme implementation and disease surveillance. The communication system can help communication with the programmes partners externally and also internally within the regions, districts and sub-districts most of which now have both mobile and fixed line telephone systems in place as well as internet accessibility. The challenge may however be fluctuation in network coverage and accessibility at some rural communities.

Public transportation cannot always be relied on for public health duties in most African countries including Ghana. Partners have supported health programmes by providing project vehicles and also the Ghana Health Service has a pool of vehicles that is available for all health programmes. Competition for and pressure on these pool vehicles greatly reduces their availability to many programme which therefore resort to acquiring their own vehicles to improve efficiency and cost-effectiveness.

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## **1.2: HEALTH SYSTEM SITUATION ANALYSIS**

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### **1.2.1: HEALTH SYSTEM GOALS & PRIORITIES**

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The Ghana National Vision for Health is “Create wealth through health and contribute to the national vision of attaining middle income status by 2015”.

“The mission is to contribute to socio-economic development and wealth creation by promoting health and vitality, ensuring access to quality health, population and nutrition services for all people living in Ghana and promoting the development of a local health industry.”

The sector goal is to ensure a healthy and productive population that reproduces itself safely. The national top 10 diseases as indicated by the Centre for Health Information and Management [CHIM] 2009 are; Malaria, Diarrhoea, Upper Respiratory Tract Infection, Skin diseases and ulcers, Hypertension, Pneumonia, Anaemia, Intestinal worms, Rheumatism and Ear infections

The Ghana Health Service ranks NTDs (Buruli Ulcer, Guinea worm, Leishmaniasis, Lymphatic Filariasis, Leprosy and Schistosomiasis) prevention control and management third in the medium term policies of the health sector.

#### 1.2.1.1: THE PROCESS OF PRIORITY SETTING

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The National Health Policy (2006) focuses on behavioral and lifestyle changes. The foreground to the new focus is premised on the fact that most of the burden of diseases are preventable and avoidable and can be curtailed by changing our lifestyles in terms of nutrition, physical activities and observing good hygiene practices. These among others have culminated in the introduction of regenerative health and nutrition interventions. The Ghana Health Service as the forerunner in providing health services to all in the country will be a stronghold in this direction by emphasizing on addressing risk factors through impact-oriented health promotion, healthy lifestyle, and behavioral change activities. To attain the key indicators of the MDGs, the service throws enormous weight behind the High Impact Rapid Delivery (HIRD) programme and further strengthen the capacity of the service to deliver efficient and effective services under the NHIS, work with donors and local assemblies in establishing more functional CHPS zones and also address the seemingly insurmountable problem of erratic resources flow and inequitable distribution of health service resources.

The Ghana Health Service five-year Strategic Framework 2007-11 was formulated based on extensive consultation and collaboration with allied agencies and stakeholders involved in health care delivery in the country. The service is therefore strategically positioned to deliver its mandate and to work towards improving the health of all residents in Ghana and aims to contribute towards government socio-economic development agenda of moving the country into middle income status by the 2015. While largely drawing from the National Health Sector Policy and the third 5yr Programme of Work (PoW) 2007-11, its framework is also developed in line with the objectives of Ghana Poverty Reduction Strategy (GPRS 2), Millennium Development Goals (MDGs) and the New Partnership for African Development (NEPAD) health strategy.

#### 1.2.2: ANALYSIS OF OVERALL HEALTH SYSTEM

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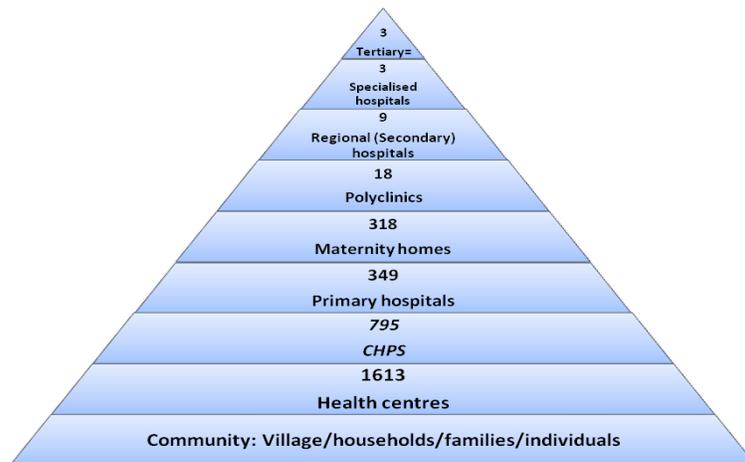
The Ghana Health Service (GHS) is the implementing agency of the Ministry of Health (MOH) responsible for health service delivery in the country. Health management in Ghana is decentralized. The Service comprises the Primary level at the district, the secondary level at the region and the tertiary referral level. District Health Management Team (DHMT) led by a District director of health services and reporting to the District Chief Executive (DCE) is

responsible for district health service; the Regional Health Management Team (RHMT) led by a Regional Director of Health Services and reporting to the Regional Minister is responsible for the entire regional health service, and the National Headquarters and tertiary level where the Director General of GHS and Chief Executives of Tertiary Hospitals, reporting to the Minister of Health are responsible for the whole country. Complementing this arrangement are institutional/ health facility management teams. Each of these management levels is a budget and management centre (BMC) responsible for each team with definite operational budget.

Primary level (Primary Health Care-PHC) is delivered by the District Health System. It comprises all institutions (clinics, health centres and hospitals), whether private, public or traditional. The health centre is responsible for providing clinical, public health and maternity services to the catchment population. It uses a combination of facility-based services, regular outreaches and mass campaigns in close collaboration with communities, community institutions, leaders and Community based health workers. The district hospital serves as the first referral point in the primary health care system. They provide clinical (out-patient and in-patient), surgical, laboratory and maternity services.

At the secondary level, the regional hospital is the secondary referral point and offers specialized services. The teaching hospitals form the apex of specialized care in the country. The NTDs health intervention programmes have been integrated into the PHC in Ghana.

Figure 4: Levels of Service Delivery



### 1.2.2.1: Service Delivery

Even though indicators on specific programmes, such as EPI, TB control, malaria, HIV/AIDS and nutrition, show positive trends, the coverage of priority health interventions remains inadequate, leading to slow improvements in health outcomes. Weaknesses of the health system (staffing, funding, capacity etc) further impede the scaling up of proven cost-effective interventions. Most health centers do not provide a full complement of services and the rollout of CHPS which is a proven effective strategy to take health to the doorstep of the community has been extremely slow. In addition, not enough attention has been given to reducing risk factors and complications.

With the introduction of the NHIH (National Health Insurance Scheme), access to care has improved considerably, however, the health system is confronted with a lot of challenges such as inadequate infrastructure and equipment, data management, ICT, health care financing and quality of care.

However, it is worthy of note that some health indicators have improved over the last three years as indicated below.

Table 2.1: Reduction In Infant Mortality In Ghana (GDHS)

Indicator / years	1988	1998	2008
Infant mortality / 1000 lives	77	57	50

#### 1.2.2.2: Health Workforce

Production of the human resource has not been matched with need; the number of health workers is inadequate. The Doctor Patient ratio is 1: 13,074 and the Nurse Patient ratio is 1:1109 in 2008.

The human resource planning process does not take into account the standard institutional requirements. This is compounded by GHS inability to define and attract resources to meet the standards and norms for each level of operation.

Chronic staffing imbalance due to attrition and inequitable distribution continue to plague the GHS despite various efforts and initiatives to retain and deploy staff to the rural areas. The situation is further compounded by an ageing workforce negatively affecting the uptake of services. The introduction of NHIS has brought with it challenges leading to increased workload and overreliance on casual staff. There also appears to be lack of coordination between population needs and the management of the human resources available.

The current workforce number and distribution will need to be addressed in order to adequately control the NTDs. Moreover, the existing workforce will require additional capacity development to efficiently and effectively contribute to the control of the NTDs.

There is health investment plan and policy on human resources that guides the recruitment and deployment of health staff.

The GHS has a mix of skilled health workers and professionals. As at July 2007 GHS had employed 30,000 staff accounting for 71% of the total health sector workforce in the country. The cadre of health workers found in the districts and the peripheral health facilities include; doctors, midwives, nurses, pharmacists, dispensary technicians, biomedical scientists, x-ray, technicians, community health nurses, disease control officers, community health officers and health extension officers . Some areas are however affected by inadequate health workers and inequity in distribution.

There are also community based volunteers for health. This includes community-based surveillance volunteers, community directed drug distributors. There are also traditional birth attendants who offer service at the community level.

#### 1.2.2.3: Health Information Management

The Centre for Health Information Management is a department under the PPME division and is in charge of health information in the GHS. It receives data routinely from all health facilities (Government, Private, mission, quasi- government).The IDSR 1 has been revised and awaiting endorsement. The IDSR is a strategy to record and report on major diseases in the country. IDSR now captures data on NTDs from the community through the sub-district to the district to the regional level and finally to the national level.

There is a huge challenge with reporting systems within the service. Hence data is often not used in defining district priorities, planning and resource allocation. This creates a gap between data collection and the decision-making process. Inadequate information also hinders effective planning, monitoring and evaluation of health services, and poor data quality leads to inadequate utilization of information for policy decision-making. In spite of numerous efforts to improve communication and coordination within GHS, ICT has been slow to develop, especially at the regional and district levels. Existing technologies for communication are under utilized by GHS managers, and new initiatives to expand ICT throughout the Service are disjointed and poorly-coordinated. In addition, the introduction of new software for data collection by some programmes is creating parallel systems of data collection within the GHS and overburdening staff at the district level.

The recently introduced District Health Management Information System (DHIMS) provides the GHS a chance to standardize, collect and collate essential data at the district level. Community Health Planning Services (CHPS) as a promising strategy which has shown remarkable success in reducing maternal mortality rates, improving family planning acceptor rates, immunization and mass drug administration coverage in poor and underserved areas. If the CHPS concept is fully embraced nationwide as a strategy to bring health care closer to the communities it can serve as the vehicle for implementing most integrated public health interventions that include preventive chemotherapy and case search for the neglected tropical diseases.

#### 1.2.2.4: Medical Products

The GHS procurement division, under the national procurement Act 265 of the 2001 will ensure due process in the procurement of medical products

There is a central medical store where all procured medical items are stored and later distributed to the regional medical stores. A few districts have storage facilities. Coordination, transportation logistics, timely distributions of commodities are some of the challenges anticipated.

#### 1.2.2.5: Pharmaco-Vigilance

The Pharmacy department of the Institutional Care Division (ICD), GHS is responsible for the execution of Pharmacovigilance activities. The department collaborates with the Food and Drugs Board (FDB) in the discharge of pharmacovigilance activities. For any SADR the patient quickly reports based on the training offered to the community. Patient is seen by a health worker/ clinician who documents the reaction in the pharmaco-vigilance form and sends report through the DHMT to the Pharmaco-vigilance centre for further investigation.

The NTD drugs in use in the country also undergo similar process.

#### 1.2.2.6: Health Financing

The Government allocation to the health sector is still below the Abuja recommendation of 15%. In 2009, the health sector allocation in Ghana was 12.76%. The bulk of the government allocation is spent on health workers' salaries, infrastructure and biomedical. Other sources of funding for the health sector are Development Partners, International NGOs, and a few private sector organizations.

The GHS continues to suffer from inadequate budgetary provision and irregular flow of funds hampering planning and implementation of programmes. Decentralization of financial and personnel responsibility have lagged far behind managerial responsibility. Systems of financial management and audit are weak and other government regulations are often not complied with. The inability of districts to capture all available resources during their annual planning process, mainly attributed to continued existence of vertical funding of programs and initiatives is leading to duplications and inefficiencies.

Although annual budget plans on NTDs are prepared and submitted it is not always funded. Sometimes when it is funded the funds are not released on time or at all. Persistent inequities in resource allocation, lack of rational criteria for allocating budgets and inefficiencies in resource management continue to remain within the service. There is no consensus on resource allocation criteria at all levels leading to lack of transparency in disbursement of funds.

The NHIS coverage stood at 39% for women and men 30% (DHS-2008) making health care financing for the individual and household mostly out of pocket.

#### 1.2.2.7: Leadership and Governance

The Minister of Health is the political head of the ministry with a Deputy. The Chief Director is the Administrative head and has various directors heading the divisions. The ministry of health is responsible for policy formulation, coordination, monitoring and resource mobilization.

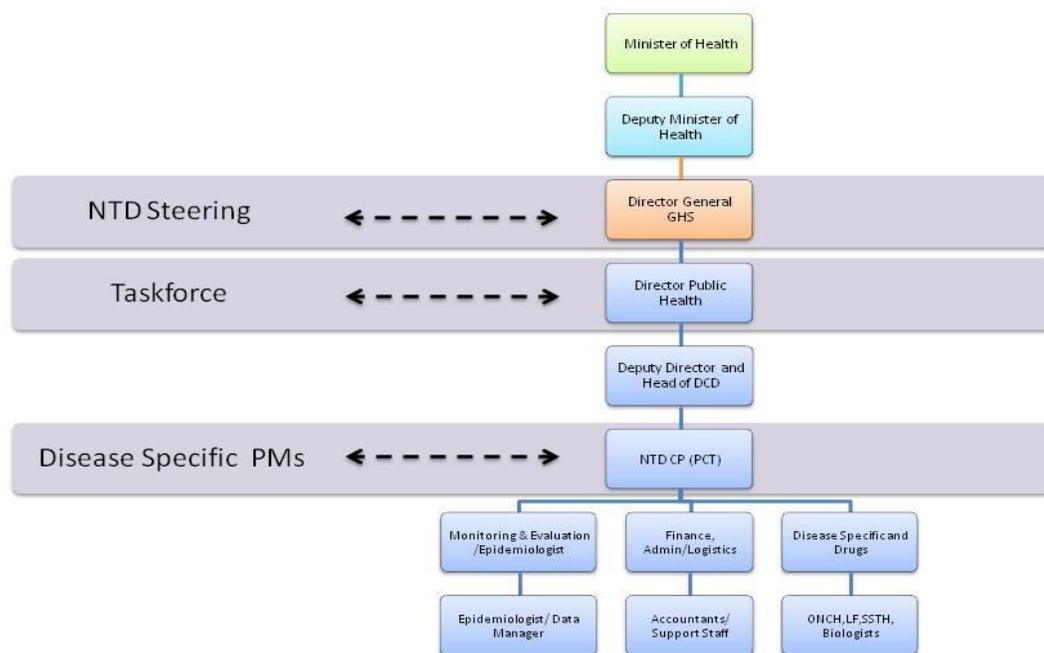
The Director General is the Head of the Ghana Health Service which is the implementation arm of the ministry of health.

Since the establishment of the GHS in 1995 as a health reform strategy, a number of weaknesses have emerged. Existing institutional arrangements do not promote efficiency and are further exacerbated by overlap of functions between the MOH and GHS. The inherent weaknesses in GHS organization and management structures to support GHS to deliver on its mandate persist with continued weakening of the health system. Furthermore the absence of a Legislative Instrument for Act 525 establishing GHS after 10 years of creation is also negatively affecting the operations of GHS.

Currently there is no NTD policy or institutional framework for NTD control, however NTDs are included in the medium term policies and priorities of the health sector strategic plan.

Also there are individual coordinating bodies for specific programmes while the national coordinating body or steering committee called the NTD Intra Country Coordinating Committee (ICCC) for Ghana has been inaugurated. The organogram below shows the position of NTD programme in the health sector.

Figure 5: Organization of NTDP



#### 1.2.2.8: Inter-Sectoral Collaboration

The GHS collaborates with the Ministry of Local Government & Rural Development (MLGRD), Ministry of Education (MOE), Ministry of Food & Agriculture (MoFA), Ministry of Water Resources Works & Housing (MWRWH), Ministry of Finance & Economic Planning (MoFEP), to implement most of its activities and ensure higher coverages. Some of these activities include MDA, control of Schistosomiasis and soil-transmitted helminthiasis through the de-worming of school-aged children, National Immunization Days (NIDs), provision of potable water and sanitation facilities.

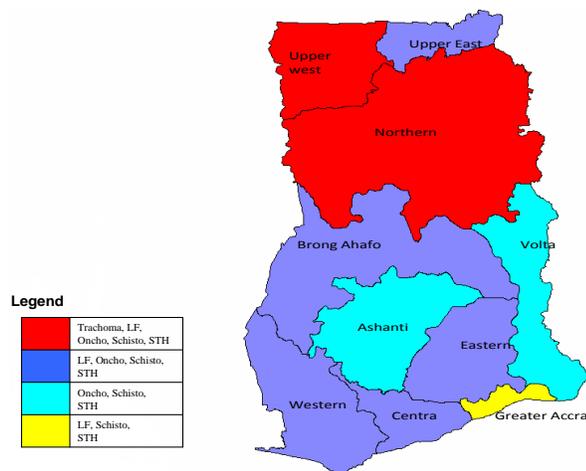
However, the public and private sector continue to operate separately with little linkages between them. The result is that services are implemented vertically without maximizing the strength of each other. Non-Governmental Organization (NGOs) and Civil Society Organization (CSOs) play a little role in planning and evaluating health services. Even though the importance of other sectors is acknowledged and recognized opportunities for collaboration and working together are weak.

### 1.3: NEGLECTED TROPICAL DISEASES SITUATION ANALYSIS

#### 1.3.1 EPIDEMIOLOGY AND BURDEN OF DISEASE

In all regions of Ghana there is co-endemicity of the preventive chemotherapy therapy (PCT) NTD as shown in Figure 6 below.

Figure 6: Distribution of Five Preventive Chemotherapy Diseases



##### 1.3.1.1: Trachoma

Trachoma is a recurrent infection of the upper eyelid conjunctiva with the *Chlamydia trachomatis* organism. It is a disease of the poor and is thus common in developing countries where there is inadequate supply of safe water and sanitation facilities. Repeated infection over a number of years lead to scarring of the conjunctiva. This may cause the eyelid to turn inwards (entropion) and the eyelashes to rub on the eyeball (trichiasis) often resulting in visual loss due to corneal scarring and opacification. Active trachoma, manifested by trachoma follicles (TF) and intense inflammation (TI) is mainly in children while the complications of trichiasis (TT) leading to visual loss are usually found in adults.

While active disease affects boys and girls equally, TT is more common among older women than in men of comparable age. Environmental factors such as shortage of potable water, poor personal and environmental hygiene practices are the main risk factors that increase the incidence of the disease. Trachoma typically affects poor and remote communities living in dry, dirty and dusty conditions. Eye discharges that contain the Chlamydia organism causes recurrent transmission through agents like flies, fingers and fomites among family members<sup>2</sup>

Worldwide it is estimated that about 84 million people are affected by Trachoma with 7.6 million having trichiasis, the potentially blinding stage of the disease. Trachoma is the leading cause of avoidable or preventable blindness, and is estimated to be responsible for at least 3.6% of all blindness worldwide.

Two of the ten regions (Upper West and Northern) in Ghana were suspected to have Trachoma at levels of public health significance. The baseline prevalence surveys conducted in these two regions showed that 9 districts had prevalence rates of 10 percent or more, and 17 districts had prevalence rates less than 10 percent. About 2.6 million people are at risk of trachoma. Prevalence rates of trichiasis were between the ranges of 0.4-8.4%. At the inception of the program, the trichiasis backlog was about 13,234 people and needed lid surgery to prevent blindness. Close to 70 percent of them are women. A prevalence survey conducted in the Upper East region of Ghana showed TF ranging from 0-0.09% and TT ranging from 0.20-0.54% within the districts. This means that, the level of active trachoma is not of public health significance. However, there are some few cases of trichiasis in the Upper East region that would require surgery.

Ghana started the 3 year surveillance towards WHO certification in 2012. In 2015 the Trachoma programme will conduct an epidemiological prevalence survey in all the districts in the Northern and Upper West regions as part of the WHO certification process of declaring Ghana free of blinding trachoma.

#### 1.3.1.2: Lymphatic Filariasis

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Lymphatic Filariasis, known as Elephantiasis is caused by a thread-like, parasitic filarial worm *Wuchereria bancrofti* in Ghana. These worms lodge in the lymphatic system, the network of nodes and vessels that maintain the delicate fluid balance between the tissues and blood and are an essential component for the body's immune defence system. They live for 4-6 years, producing millions of immature microfilariae (minute larvae) that circulate in the blood

In its most obvious manifestations, lymphatic filariasis causes enlargement of the entire leg or arm, the genitals, vulva and breasts. In endemic communities, up to 35% of men have hydrocoeles and up to 4% of the adult population can be affected with lymphoedema. The psychological and social stigma associated with these aspects of the disease is immense. In addition, even more common than the overt abnormalities is hidden, internal damage to the kidneys and lymphatic system caused by the filariae.

Lymphatic Filariasis was prevalent in 74 out of the 170 districts in 8 regions of Ghana. Currently four districts have met the criteria for stopping MDA and are no longer treating. The antigen prevalence was estimated to be between 20% to 40% in the north and 10% to 20% in the south. The prevalence of elephantiasis is between 0 – 4% with more females being affected than males. So far the programme has registered about 5,000 cases of elephantiasis and 10,000 cases of hydrocoele in the country as at 2005. These figures are updated annually as the programme pursues its up-scaling plan. The incidence of the acute attacks is about 95.9 per thousand patients with lymphoedema per annum. About 90% of these attacks occur in people with existing lymphoedema with 3 days of total incapacitation with its economic consequences. Occurrence of this condition is highest in the rainy season when most people are most productive on their farms.

#### 1.3.1.3: Onchocerciasis

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Onchocerciasis is also caused by the filarial parasite *Onchocerca volvulus* which invades the subcutaneous tissues of the body. The most common symptoms are itching, atrophy of the skin, lizard skin or hypertrophic skin changes or areas of hypopigmentation known as leopard skin. Microfilaria invasion of the eyes lead to various eye lesions with the associated visual impairment. The end stage of Onchocercal eye lesions is blindness which can occur as early as the age of 20 years.

In Ghana Onchocerciasis has an estimated at-risk population of over 2 million in 3115 communities in 40 endemic districts from nine out of the ten regions. Greater Accra Region is the only region that is not endemic for Onchocerciasis. Recent nationwide re-mapping of Onchocerciasis in 2009 confirmed this information. In spite of this remapping, the programme still treats all communities historically endemic for. Recent (2010) epidemiological surveillance activities showed crude prevalence for Onchocerciasis to be between 0.0% to 11.1% with 2 of the 20 sites surveyed having prevalence above the threshold of 5%. Entomological surveillance results showed that black fly infectivity rates in 9 out of 10 sites were below the threshold of 0.5%. One site that had a rate of 6.9%.

#### 1.3.1.4: Schistosomiasis

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Urinary Schistosomiasis caused by a blood fluke *Schistosoma haematobium*, is very widespread in the country. The main symptoms include dysuria, frequency and terminal haematuria. Chronic infections may lead to cancer of the bladder in both males and females. Intestinal Schistosomiasis caused by *Schistosoma mansoni* is also prevalent in the country. Its symptoms include abdominal pains, bloody diarrhoea and enlargement of the liver and spleen. Chronic infections may cause thickening of the liver, portal hypertension and eventually death.

Available data which dates back to the 1970s indicated that Urinary Schistosomiasis was widespread country-wide. The same data showed that Intestinal Schistosomiasis was restricted and patchy in its distribution. The Volta basin recorded prevalences as high as 80-90% in many communities living along the lake. Similarly, the Volta estuary was endemic

with infection rates of 76.2% for *S. mansoni* and 6.3% for *S. haematobium*. Generally Schistosomiasis was found to be highly endemic within communities located along rivers in all ten regions of Ghana.

Schistosomiasis was subsequently mapped nation-wide in 2007.. With the finalization of this mapping in 2010, a total of 6,618,064 school-aged children in all 170 districts were identified as being at risk. The NTDP started treatment of school-aged children nation-wide in 2008.

#### 1.3.1.5: Soil-Transmitted Helminths

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The major Soil-transmitted Helminths in Ghana are *Ascaris lumbricoides*, *Trichuris trichuria*, *Necator americanus*/*Ancylostoma duodenale* and *Strongyloides stercoralis*. Soil transmitted Helminths causes malnutrition, anaemia, growth retardation, cognitive impairment as well as lowering of resistance to infections. Hookworm causes blood loss into the gut and this results in Iron deficiency anaemia and growth retardation. *Ascaris lumbricoides* can cause intestinal obstruction in children and other complications when adult worms migrate from the small intestine to other parts of the body.

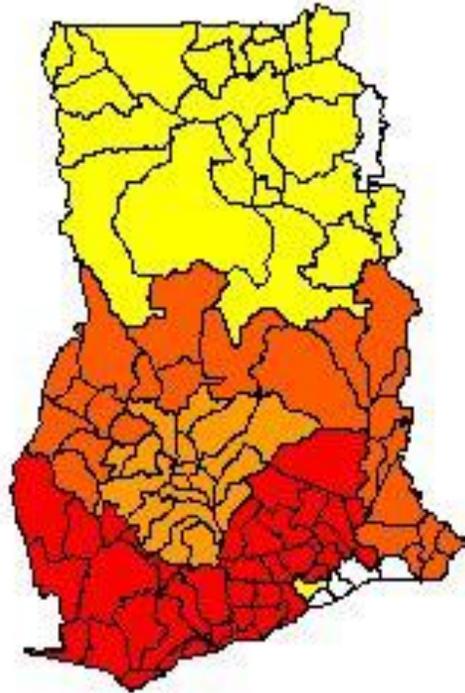
The endemicity of Soil Transmitted Helminthiasis (STH) determined during the mapping exercise showed low prevalence of STH in most of the districts in Ghana. Seventeen 17 districts with an at-risk school-aged population of 357,203 have prevalence of between 0.2 – 0.3 and would require annual treatment with albendazole or mebendazole. However, due to the high rate of recurrence of STH it is also recommended that every school aged child receives at least one dose of albendazole or mebendazole treatment annually.

#### 1.3.1.6: Yaws

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Yaws is a treponemal infections associated with acute and chronic morbidity characterized by deformities due to scarring and destruction of bone and cartilage of the face, hands and long bones. Poor personal hygiene, overcrowding, poor water and sanitation in some rural communities is responsible for high prevalence of yaws. Despite global and repeated national efforts at elimination, the prevalence of yaws is estimated at 0.7% of the population of Ghana (National Yaws Elimination Program Annual Report, 2008). All districts in Ghana apart from 9 in Greater Accra report yaws cases but the most affected are rural and deprived communities in Eastern, Volta, Central, Ashanti, Brong Ahafo and Western Regions due to the high humid climate of these forest areas. Pilot studies in Eastern Region in 2008 recorded prevalence between 10 and 20% in some schools (NYEP Annual Report 2008). From annual routine reports children under 15 years constitute about 75% of cases with a small but consistent preponderance of males. Cases are reported all year round.

Figure 7: Yaws Distribution Based On Cases Notified 2005 - 2008



#### 1.3.1.6.1: The Ghana Policy on Yaws

Ghana restated her policy to eliminate yaws in a strategic plan policy document prepared by the National Yaws Elimination Program in 2008. This is consistent with WHO/UNICEF policy of elimination and eventual eradication in 1950 and renewed in 1978 and 2007 in Geneva. The Ghana program strategies to eliminate yaws are as follows.

1. Active and passive surveillance and treatment of cases and contacts
2. Promotion of personal and environmental hygiene practices
3. Advocacy for improved water supply
4. Cross border collaboration with other endemic West African neighbours

#### 1.3.1.7: Human African Trypanosomiasis (HAT)

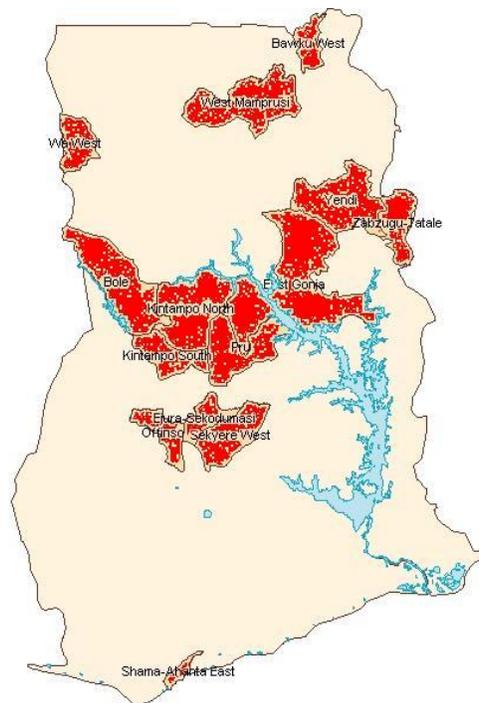
Human African Trypanosomiasis is caused by *Trypanosoma gambiense* and *Trypanosoma rhodesiense*. It is transmitted by the tsetsefly. The most common symptoms are headache,

fever, stiffness of the body and neurologic changes including psychiatric disorders, seizures, coma and death.

In Ghana HAT has an estimated at risk population of 4,500,000 in five out of the ten regions. Since 1980, over 103 cases have been registered in health institutional records. The last case was detected in year 2000 in Western Region. Screening exercises were carried out in 2005, 2008 and 2011.

The 2011 cross-sectional active screening survey for HAT carried out in 4 districts bordering Cote d'Ivoire in the Brong Ahafo district indicated that there was no active infection in survey participants. Given the results of these screening activities, a surveillance system will be instituted to monitor emergence of new cases.

Figure 8: Distribution of Places Where HAT Has Ever Been Reported, 1980-2010 (Shaded Red)



### 1.3.1.8: Rabies

Rabies is spread by infected saliva of warm blooded animals that enters the body through a bite or broken skin. The virus travels from the wound to the brain, where it causes swelling, or inflammation. This inflammation leads to symptoms of the disease. The actual time between infection and when you get sick ranges from 10 days - 7 years. The average incubation period is 3 - 7 weeks. Symptoms may include [anxiety](#), [stress](#), hydrophobia and death. Rabies has been present within the dog population of Ghana for decades. Control methods have included dog vaccinated and stray dog removal. There are however few published reports on rabies.

Between 1970 and 1974 an average of 72 cases of canine rabies were reported annually in Ghana. Between 2000 and 2004, public health officials reported 123 clinically confirmed human cases. Unfortunately human rabies cases are rarely confirmed using laboratory diagnosis but rather on clinical diagnosis when the patient is in the advanced stage. Rabies prevention and control activities are under the Veterinary Services Department of the Ministry of Food and Agriculture. It involves vaccination of dogs which has been in recent years been erratic. There is limited post exposure prophylaxis.

#### 1.3.1.9: Leishmaniasis

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Cutaneous leishmaniasis, the most common form of the disease, causes skin ulcers. Visceral leishmaniasis causes a severe systemic disease that is usually fatal without treatment. Muco-cutaneous leishmaniasis is a rare but severe form affecting the nasal and oral mucosa.

Leishmaniasis is transmitted by the bite of small insects called sand flies. Many leishmanial species infect animals as well as humans. The disease has been identified in the Volta Region where between 2002 to 2004, 8980 cases were registered through case search<sup>i</sup>.

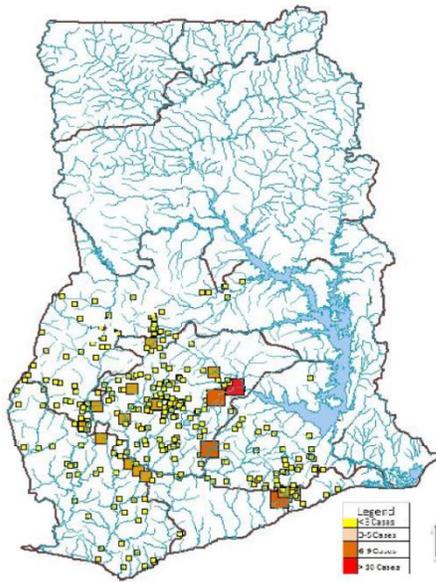
#### 1.3.1.10: Buruli Ulcer

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Buruli ulcer, a neglected tropical disease mainly affects children from poor rural communities. In Ghana, an average of 1,000 cases is reported annually. Since 1994 over 15,000 cases have been reported. However, official data underestimate the reality of the human affliction of this disease due to the following: a) most data obtained are exclusively based on passive detection, b) numerous cases are not diagnosed, grossly under-reported c) some cases are misdiagnosed as other conditions

In Ghana, six regions routinely report on the disease, though in 1999, a national survey indicated the presence of the disease in all the regions of the country. The number of known reporting endemic districts has increased. Over 46 out of the 170 districts in the country report on the disease. Surveillance systems are insufficient and inadequate. There is a lack of human resources trained for clinical, diagnostic Prevention of Disability, treatment, and control measures and low/lack of interest.

Figure 9: Buruli Ulcer Endemicity Map, Ghana



The main challenges that confront Buruli ulcer control in Ghana are: inaccessibility to patient care, late reporting of the disease, lack of organized social involvement and insufficient use of information for decision-making,

1. The main objective is to minimize the morbidity and disability associated with Buruli ulcer through an early detection, diagnosis and treatment of the disease.
2. Improving the scope for a community-based surveillance system
3. Strengthening of existing health system, through infrastructure development, training of health workers and improved methods of case recordings
4. Standardized case management, including case confirmation, use of antibiotics , prevention of disabilities and rehabilitation
5. Supervision, monitoring and evaluation of control activities social mobilization and advocacy
6. Operational research empowering the community.
7. Looking for strategic partnerships.

#### Strategic Intervention Need Areas

- Early detection and screening activities in endemic communities
- Enabling patients to complete daily injections and wound dressings with modern wound dressing materials
- Strengthen the surveillance system.
- Community Based Rehabilitation and prevention of disability
- Research interventions into mode of transmission and effective treatment
- Monitoring and evaluation

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#### 1.3.1.11: Guinea Worm

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Dracunculiasis or guinea worm disease is a painful and disabling disease caused by a nematode called *Dracunculus medinensis*. The disease is characterized by the emergence of the female *D. medinensis* from a blister, usually on the leg, of the infected person.

The Ghana Guinea Worm Eradication Programme was established in 1989 in response to the World Health Assembly's resolution of 1988 which called guinea worm endemic countries to eradicate it. In that year (1989), a case search which was conducted to ascertain the disease burden counted 179,556 cases. A total of 6,515 localities or communities reported guinea worm disease when the programme started in 1989.

There were sharp reductions in cases for the first four to five years which tapered off starting in 1994, when there were 8,432 cases. Between 1994 and 2004, the programme experienced stagnations and even periodic increases in cases. This stagnation was caused mainly by factors such as the Northern regional ethnic conflict of early 1994, inadequate financial support ( USAID financial support officially ended in 1995) and the lack of focus (financially and technical support) resulting from the Health Reforms embarked upon during the late 90s.

Between the year 2000 and 2004, the programme underwent a series of strategic re-organisation and micro planning including the formation of an inter-agency coordinating committee. These, together with renewed commitment by the government and the partners resulted in progressive reduction in cases from 2005 to 2010. Ghana has now gone through 35 months of zero cases since the 11<sup>th</sup> of May 2010 when the last case was reported.

While progress has been made Ghana has not yet met the surveillance standards for certification of guinea worm eradication. This strategic plan looks at the remaining challenges and the strategies and resources needed to address them. It describes how the country can adequately prepare for certification.

#### 1.3.1.12: Leprosy

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**Leprosy is a chronic mildly infectious disease of man caused by *Mycobacterium leprae* affecting mainly the skin and peripheral nerves.** It is associated with nerve damage, contractures of digits of the limbs as well as ocular complications. The National Leprosy Elimination Programme is fully integrated into the general health system. The WHO elimination target of less than one case for 10,000 populations was achieved over a decade ago at the national level and efforts have been put in to sustain that achievement. All 10 regions are non-endemic hence the attention is aimed at achieving elimination at the district level.

In 2011, five hundred and forty-seven (547) new cases were detected, giving a case detection rate of 2.3/100,000 population. The Volta Region recorded the highest number of new cases (76) and Greater Accra recorded the least number (27) of new cases. There were twenty eight (28) child cases among the 547 cases detected in the year giving a percentage of 5.1%. This was an increase in the number of child cases compared to the previous year, indicating active and recent transmission.

The main strategies employed by the programme include early case detection, disability prevention, increase public awareness and increasing the capacity in the management of

leprosy. identified cases are provided timely treatment and followed up to ensure full compliance by patients See Annex One for Table 4 which shows NTD CO-endemicity by district.

### 1.3.2: NTD PROGRAMME IMPLEMENTATION

#### Mapping of NTDs

Neglected Tropical Diseases control starts with mapping to identify and demarcate endemicity of various geographical locations and population groups. The five PCT diseases were mapped as per table 3, 4 (see annex), and 5.

Table 3. Mapping of PCT diseases and methods used

Disease	Proportion of districts endemic	Method	Year of Survey
Schistosomiasis	83%	Urine filtration and Katokatz method for stool	2008
Lymphatic filariasis	44%	Grid sampling method Antigen test	1999
Onchocerciasis	24%	Rapid epidemiological mapping of onchocerciasis (REMO)	2009
Soil-transmitted helminths	100%	Direct stool examination	2008
Trachoma	17%	Active case search	2000

Table 5. NTDs mapping/disease assessment/situation analysis

NTD	No. of districts suspected to be endemic	No. of districts mapped	Districts to be mapped
LF	74	170	0
Onchocerciasis	73	170	0
Schistosomiasis	170	170	0
Soil Transmitted Helminths	170	170	0
Trachoma	29	170	0
Buruli Ulcer	89	89	0
Yaws	170	170	0

Leprosy	9	9	0
CL	5	5	0
Rabies	170	170	0
Guinea Worm	170	170	0
HAT	14	14	0

Onchocerciasis control activities started with vector control in 1974 while preventive chemotherapy started in 1998 with the introduction of ivermectin. While the other NTDs have had individual programmes for various length of time, there has not been a well articulated health sector-based intervention programme for rabies. The date the various programmes started, the districts and population covered and the key partners are summarized in Table 6 below.

Table 6: Summary Information On Endemic NTDs, Target Population And Specific Control Strategies

NTD	Date programme started	Total No. of districts targeted	No. of districts covered *(Geographic coverage)	Total population in target district	No. of (percentage) Population covered	Key strategies used	Key partners
LF	2001	74	100%	12 million	12 million	MDA, Case Management	USAID, LSTM /CNTD, GOG
Onchocerciasis	1974	73	100%	4 million	8.8 million	MDA	APOC, GOG Sight Savers, USAID
Schistosomiasis	2008	170	170 (100%)	7 million	7 million	MDA	USAID, GOG
Trachoma	2001	29	29	2.6 million	2.6 million	Surveillance	ITI USAID, GOG Sight Savers
Buruli Ulcer	1999	89	42	17,7 million	8.4 million (47%)	Case detection & management	ANESVAD WVG, WHO, GOG
Yaws	2008	170	170	25 million	Data not available	Case detection & management	GOG
HAT	2008	14	14	1.1 million	Data not available	Case detection & management	GOG, WHO, PATTEC.
Leishmaniasis	2006	5	5	400,000	Data not available	Case detection & management	GOG
Leprosy	1980	9	9	720,000	N/A	Case detection & management	GOG
Rabies	1960s	170	170	25 million	N/A	Case detection & management	GOG
Soil Transmitted Helminthiasis	2007	170	170	6 million	6 million	MDA	GOG, Deworm the World, WHO, WVI, UNICEF
Guinea Worm	1989	170	170	25 million	25 million	Case detection, management &	GOG, WHO, USAID Sasakawa (Global

						containment	2000)
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### 1.3.3: GAPS AND PRIORITIES

A SWOT analysis on the current status of control of NTDs in the country was done. (See Annex Two for Table 7 SWOT analysis of NTD programme). Gaps identified from the SWOT analysis will be addressed from the planning stage through the implementation and monitoring and supervision stages as outlined below:

#### 1.3.3.1: Planning

The Master Plan for NTD programme in Ghana is a comprehensive strategic document that will serve as a guide for all stakeholders implementing NTD control /elimination /eradication activities. It has been jointly developed with partners under the leadership of the Ministry of Health. With the strong partner support, some advocacy, commitment of the programme staff, the existing political goodwill and the new global interest on NTDs, it is believed that there will be a strong NTDs financial base that will support successful programme implementation.

#### 1.3.3.2: Coordination and Management

The coordinator of the NTD programme has been appointed and this will help to move the programme forward to change the previous situation where implementation of NTDs has been uncoordinated with vertical programmes, which compete with each other.

The NTDs programme secretariat works closely with NTD steering committee and the NTD task force to ensure increasing harmonization of programme activities.

#### 1.3.3.3: Partnerships

There is a network of partners on NTD within the country. The partners work together in a coordinated manner through all stages of the programme in order to achieve the goal and vision of the NTD programme. The partners have contributing towards the development of this document apart from supporting some individual specific NTD programmes in the country. Partners are expected to buy into the NTD Master plan and support activities to address the identified gaps. The network in the Ministry of health enjoys the collaboration of other line Ministries such as the Ministries of Education and Agriculture.

#### 1.3.3.4: Implementation of Interventions

Implementation of NTD programme in Ghana requires sensitization of stakeholders to address the misconceptions and mobilize the communities, whose role is paramount to the success of the programme. CHPS as a promising strategy which has shown remarkable success in reducing maternal mortality rates, improving family planning acceptor rates, immunization and mass drug administration coverage in poor and underserved areas. If the CHPS concept is fully embraced nationwide as a strategy to bring health care closer to the communities it can serve as the vehicle for implementing most integrated public health interventions that include preventive chemotherapy and case search for the neglected tropical diseases.

IEC materials, advocacy packages, training manuals and monitoring tools will be developed and disseminated. Opportunities such as committed partners, free drugs for some of the NTDs, increasing global focus on NTDs will greatly reduce the cost of implementing activities and sustaining the gains.

#### 1.3.3.5: Surveillance, Monitoring And Evaluation

Monitoring and evaluation of some of the NTD is already being done within the national health management information system (HMIS). The NTD programme will therefore take urgent steps to ensure that all diseases are inbuilt into the HMIS of the Ministry of Health as a strategic priority. The newly introduced District Health Management Information System (DHMIS) provides the GHS a chance to standardize, collect and collate essential data at the district level. This will further strengthen the system making it more functional. NTDs will also be incorporated and monitored through the existing IDSR system, and also there will be programme self-monitoring.

## PART TWO: NTD STRATEGIC AGENDA

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### 2.1.: OVERALL NTD PROGRAMME MISSION AND GOALS

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**Mission:** “The mission is to contribute to socio-economic development and wealth creation by promoting health, vitality and ensuring access to quality health services for all people living in Ghana.

**Vision:** A Ghana free of neglected tropical diseases and its complications.

**Goal:** To prevent, control, eliminate or eradicate the Neglected Tropical Diseases from Ghana by the year 2020.

## .2.2 GUIDING PRINCIPLES AND STRATEGIC PRIORITIES

Table 8: Strategic Framework Summary

Strategic Priorities	Strategic Objectives	Activities
<p>1. Strengthen government ownership, advocacy, coordination, and partnerships</p>	<p>1. To ensure the capacity of the government of Ghana to effectively and efficiently scale up and deliver all NTDs interventions in Ghana.</p>	<ol style="list-style-type: none"> <li>1. Start to transition and enable NTDP ownership of the Strategic Social Partnership (SSP) functions. Build capacity of GHS HQ to develop competencies in SSP to support GHS programmes.</li> <li>2. Advocate for the institutionalization of strategic social partnership (SSP) at GHS HQ level</li> <li>3. Provide technical support to GHS to set up a small dedicated unit within GHS to develop SSP Strategy</li> <li>4. Sensitize and validate NTDP resource mobilization plan with ICCC and GHS leadership for buy-in.</li> <li>5. Implement annual NTDP plans to execute the SSP Strategy</li> <li>6. Develop and institutionalize a systematic methodology to track, analyze, and communicate NTDP resource allocation, spending, and performance.</li> </ol>
	<p>2. To ensure effective and efficient Inter-country coordinating mechanism for NTD programming, partnerships, and coordination</p>	<ol style="list-style-type: none"> <li>1. Refine the scope and functions of the ICCC and Taskforce sub-committee on Resource mobilization, with roles and responsibilities across the committee.</li> <li>2. Develop meeting schedules, structured agenda(s), reporting templates and communication channels for the ICCC-sub-committee meetings</li> <li>3. Improve coordination mechanism of NTD control at all levels of the health system.</li> </ol>

		Conduct national stakeholders and Taskforce meetings.
	3. To update and align the existing Communication & Advocacy Strategy with the NTDP Financial Sustainability plan	<ol style="list-style-type: none"> <li>1. Refine sustainability goals and update the Advocacy Strategy to align to the Sustainability Goals for the next implementation phase.</li> <li>2. Develop business case to the government, partners, policymakers, and funders (Ministry of Finance and Economic Planning (MoFEP) and Parliamentary Select Committee on Health to advocate for increasing the share of government expenditures for NTDs.</li> <li>3. Dialogue between NGOs, civil society, and policy makers to identify partnerships and possibly mobilize resources.</li> </ol>
2. Enhance planning for results, resource mobilization and financial sustainability of national NTD Programme.	1. Operationalize the NTD finance strategy	<ol style="list-style-type: none"> <li>1. The NTD Finance Task Force to oversee the implementation process and subsequent monitoring and evaluation of the Finance Strategy.</li> <li>2. Work to validate the Finance Strategy Performance Management Plan.</li> <li>3. Develop a quarterly review meeting with all partners (both resource and implementation) to assess the performance of the NTDP Finance Strategy and PMP.</li> <li>4. Use the outcome of the reviews to identify areas of the GHS/NTDP financial management system that require strengthening through refresher trainings.</li> </ol>
	2. To enhance resource mobilization approaches and strategies at national and regional levels for NTD interventions	<ol style="list-style-type: none"> <li>1. Strengthen NTDP capacity at both national and regional levels for sustainability planning &amp; resource mobilization, strategic budgeting and public financial management (PFM)</li> </ol>

		<p>reform</p> <ol style="list-style-type: none"> <li>2. Introduce sustainability and Strategic Social Partnership concepts and tools for sustained programming and impact</li> <li>3. Use 5YR Master Plan (YRMP) and Annual Work Plans (AWPs) in strategic and yearly budget formulation</li> <li>4. Identify resources for 5YRMP and annual work plan and perform financing gap analysis using TIPAC</li> <li>5. Routinely monitor allocation of funding to NTDs at all levels.</li> </ol>
	<ol style="list-style-type: none"> <li>3. Work with Finance Strategy Taskforce to build business cases/proposals to be submitted to identified resource partners.</li> </ol>	<ol style="list-style-type: none"> <li>1. Support partnership management and reporting capabilities to manage incoming resources and implementing partners</li> <li>2. With the potential for increased financial resources flowing into the NTDCPs' funding pool, efficient implementation and utilization of these resources will become even more important in building and maintaining the trust of potential funders. Therefore, the need for stronger internal controls, improved recording and reporting, and greater transparency and overall accountability and governance cannot be understated.</li> <li>3. We will provide an institutionalized process of learning lessons from the quarterly reviews a risk mitigation strategy to address vertical programming that hinders integration into overall NTDP.</li> </ol>
	<ol style="list-style-type: none"> <li>1. Scale up an integrated preventive chemotherapy, including access to LF, STH, onchocerciasis, schistosomiasis and trachoma interventions</li> </ol>	<ol style="list-style-type: none"> <li>1. Conduct MDA for PCT diseases (LF, oncho, trachoma, STH and schisto)</li> <li>2. Develop and print materials for MDA</li> <li>3. Transport medicines and logistics to endemic regions and</li> </ol>

3. Scale up access to interventions, treatment and system capacity building		districts
	2. Scale up integrated case management disease interventions (Yaws, Buruli Ulcer, Rabies, Cutaneous Leishmaniasis, HAT, trachoma) and LF morbidity control	<ol style="list-style-type: none"> <li>1. Train key health staff for effective management of NTD morbidity cases</li> <li>2. Perform hydrocoele and TT surgeries</li> <li>3. Manage active trachoma, BU, lymphoedema cases by health workers and communities</li> <li>4. Treat Yaws cases and contacts at facility and community /school levels</li> </ol>
	3. Strengthen integrated vector management and environmental measures for targeted NTDs	<ol style="list-style-type: none"> <li>1. Build capacity for entomological surveillance for Oncho ad HAT</li> <li>2. Build capacity for epidemiological surveillance for LF Schisto and STH</li> </ol>
	4. Strengthen capacity at national level for NTD programme management and implementation	<ol style="list-style-type: none"> <li>1. Train staff in planning and monitoring of integrated NTD control program</li> <li>2. Undertake study visit to other NTD projects in Africa to enhance programme reviews and learning</li> </ol>
4. Enhance NTD monitoring and evaluation, surveillance and operations research	1. Enhance monitoring of national NTD programme performance and outcome	<ol style="list-style-type: none"> <li>1. Supervise NTD activities</li> <li>2. Conduct review meetings</li> <li>3. Conduct support visits</li> </ol>
	2. Strengthen surveillance of NTDs and strengthen the response and control of epidemic prone NTDs	<ol style="list-style-type: none"> <li>1. Strengthen surveillance of PCT and case management NTDs</li> <li>2. Strengthen response and control of epidemic prone NTDs</li> </ol>

	<p>3.Support operational research, documentation and evidence to guide innovative approaches to NTD programme interventions</p>	<p>1. Identify and conduct operational research on NTDs for effective programme implementation</p>
	<p>4.Establish integrated data management system and support impact analyses for NTD as part of the global NTD data management system and plan</p>	<p>1. Establish integrated data management system 2. To use the DHIMS platform to capture NTD data</p>
	<p>5.4. Enhance NTD monitoring and evaluation, surveillance and operations research</p>	<p>1. Implement an LF exit plan 2. Conduct onchocerciasis epidemiological and entomological surveys 3. Conduct STH and schistosomiasis impact assessment studies. 3. Undertake trachoma surveillance</p>

## PART THREE: OPERATIONAL FRAMEWORK

### 3.1 NTD PROGRAMME FOCUS

Table 9.1 below summarizes the Programme Strategies for control of NTDs endemic in Ghana. The operational plan for control of NTDs in Ghana will be based on individual disease programme goals, specific objectives and control strategies but implementation will be integrated. Programme specific objectives will be drawn from the individual disease programme specific objectives as outlined below. Each individual disease programme will focus on its goals and objectives to ensure that their goals are achieved within the integrated NTDs control approach and hence contribute to the overall National goal.

Table 9.1: Summary of Strategies For Control Of Endemic NTDS

NTD Programme	Global Goals	National Goas	Objectives	Strategies	Target Populations	Key Indicators
Lymphatic Filariasis Elimination	Elimination of LF by 2020	To eliminate lymphatic filariasis from Ghana by 2020	<ul style="list-style-type: none"> <li>To interrupt transmission of LF by 2020</li> <li>To provide morbidity and disability for up to 60% of patents with LF morbidity 60%</li> <li>To ensure total awareness of prevention and control the country by 2018</li> <li>To undertake monitoring and evaluation of all activities</li> <li>To establish effective surveillance system in all districts</li> </ul>	<ul style="list-style-type: none"> <li>Community-Based Mass drug administration</li> <li>Conduct hydrocoele surgery</li> <li>Management of lymphoedema</li> <li>IVM in collaboration with MCP</li> <li>Health education</li> <li>Communication for change</li> <li>Improve documentation of LF treatment and surveillance activities</li> <li>Monitoring and evaluation</li> </ul>	14 million	<p>MDA therapeutic coverage of and geographic coverage</p> <p>mf prevalence in endemic prevalence</p> <p>LF antigen prevalence</p> <p>Percentage of hydrocoele cases operated</p> <p>Percentage of registered lymphoedema cases managed</p>
Onchocerciasis Elimination	Elimination of oncho by 2025	To eliminate onchocerciasis in?? 60% of endemic districts by 2020	<ul style="list-style-type: none"> <li>To interrupt transmission of oncho in 60% of endemic communities</li> <li>To create awareness of prevention</li> </ul>	<ul style="list-style-type: none"> <li>Mass drug administration</li> <li>Vector control</li> <li>Communication for change</li> </ul>	4.2 million	<p>Community microfilaria parasite load</p> <p>Reduce blackfly infectivity rate to less than 0.5 per 1000 flies</p>

NTD Programme	Global Goals	National Goals	Objectives	Strategies	Target Populations	Key Indicators
			<p>and control in the whole country</p> <ul style="list-style-type: none"> <li>To undertake monitoring and evaluation for onchocerciasis control</li> <li>To establish effective surveillance system in all districts</li> </ul>			<p>Programmatic coverage</p> <p>Epidemiologic coverage</p> <p>Geographic coverage of 85% and 100% respectively</p>
Schistosomiasis Control	Sustained control of schistosomiasis by 2020	Reduce schistosomiasis related morbidity to levels of no public health significance 2020	<ul style="list-style-type: none"> <li>To treat at 75% all school aged children and high risk populations in endemic areas</li> <li>To increase awareness of prevention and control of schistosomiasis</li> </ul>	<p>School-based mass drug administration and community-based among high risk population</p> <p>Communication for change</p> <p>Collaboration with WASH</p> <p>Monitoring and evaluation</p>	9 million	<p>Proportion of school-aged children treated</p> <p>Morbidity – haematuria or other morbidity</p> <p>SCH in prevalence</p> <p>Improvement in WASH indicators</p>
Soil transmitted helminths Control	<p>Ensure treatment coverage of 75% of all school-aged children by 2020 in 100% of endemic countries</p> <p>Reduce STH related morbidity to levels of no public health significance</p>	Reduce STH related morbidity to levels of no public health significance 2020	<p>To ensure that all school-aged children are treated at least once every year</p> <p>To increase awareness on STH transmission and control</p>	<p>School-based mass drug administration in endemic areas</p> <p>Health education</p> <p>Collaboration with WASH</p> <p>Monitoring and evaluation</p>	7.1 million	<p>Proportion of school-aged children treated</p> <p>Reduced morbidity</p> <p>Improvement in wash indicators</p>

NTD Programme	Global Goals	National Goas	Objectives	Strategies	Target Populations	Key Indicators
Trachoma Program	Eliminate blinding trachoma by 2020	Ghana certified trachoma free by 2020	To maintain trachoma surveillance in endemic districts  To sustain awareness on trachoma transmission  To continue case search and TT surgery	Surveillance in endemic districts  Communication for change in all endemic districts C  TT surgeries  Collaboration with WASH	4 Million	Percentage of clean faces  Percentage of active trachoma (TF) in 1 – 9 yrs old  WASH indicators
Natonal Buruli Ulcer Control Programme	To Control BUD Control involving early detection and early treatment	To reduce BU morbidity to levels of no public health significance by 2020	To minimize morbidity and disability associated with the disease	Early case detection and management  Health systems strengthening  Advocacy for BU in context of NTD  Research and innovation  Increase surveillance  integrate BU case search into national population interventions in endemic districts	24 million	Ratio of nodule/ulcerst all cases  Proportion of early lesions detections (nodules and plaques)  Proportion of confirmed cases  Treatment completion rate
Natonal Yaws Eradication Programme	Yaws Eradication by 2020	To eliminate yaws by end of 2017	To ensure capacity building in case detection and treatment of all cases contacts at all levels.  To strengthen Yaws Surveillance at all levels.	Case and contact detection and treatment using MDA  Health education on personal and environmental hygiene, advocacy and social mobilization for	25 million	Total cases and contacts treated  Activity sites coverage  Contact: case ratio  Total treated  Proportion of children who take one bath a

NTD Programme	Global Goals	National Goals	Objectives	Strategies	Target Populations	Key Indicators
			<p>To create awareness on the new WHO Yaws eradication strategy.</p> <p>To ensure regular logistic supply for the management of cases and contacts.</p>	<p>Water provision</p> <p>Cross border collaboration</p>		<p>day</p> <p>Number of water sources</p>
HAT Elimination	Reduce morbidity and mortality due to HAT by 2020	Eliminate HAT by 2020	<p>To undertake HAT surveillance</p> <p>To undertake case detection and treatment</p> <p>To increase awareness of health staff on case detection</p> <p>To eradicate the tsetse fly vector</p>	<p>Sentinel surveillance</p> <p>Build capacity of health workers for case detection</p> <p>Effective vector control through inter-agency collaboration control</p>	1.1 million	<p>Case detection rate</p> <p>Case management rate</p> <p>Number of sentinel sites reporting</p>
Leishmaniasis	Reduce morbidity due to Cutaneous Leishmaniasis	Eliminate Cutaneous Leishmaniasis in endemic districts	<p>To undertake surveillance for Cutaneous Leishmaniasis</p> <p>To undertake case detection and treatment</p> <p>To increase awareness of health staff for case detection</p>	<p>Sentinel surveillance</p> <p>Building capacity of health workers for case detection</p> <p>increase public awareness in endemic areas</p> <p>Effective vector control through inter-agency collaboration</p>	0.5 million	<p>Case detection rate</p> <p>Number of health workers trained</p>
Leprosy	Elimination	Eliminate leprosy in	To undertake case detection	Case search in	0.7 million	case detection

NTD Programme	Global Goals	National Goas	Objectives	Strategies	Target Populations	Key Indicators
Elimination	by 2020	all districts	and treatment  To increase awareness of health staff and community members  Prevent and manage disability	endemic districts  Capacity building for health workers for case detection  To collaborate with partners for resource mobilization		rate  case management rate  Cure Rate  proportion  Proportion of cases with disability
Rabies		Reduce morbidity and mortality from rabies	To determine the burden of rabies in Ghana  To reduce the incidence of rabies  To strengthen inter-agency collaboration for rabies elimination	Advocacy for the control of rabies  Strengthen policy environment for the prevention and control of human rabies  Availability of pre and post exposure prophylaxis	28.7 million	Case management rate  Proportion of hospitals with post and pre-exposure prophylaxis
Guinea worm	Eradication by 2015	To consolidate certification status of Ghana as part of global eradication efforts	Investigate 100% of rumours within 24 hours  Ensure timely monthly reporting from, at least, 85% of villages under active surveillance  Ensure sufficient Financing, capacity building and technical Assistance  Maintain cash rewards for	Train health workers and CBSs, for case detection for case search  Conduct reviews meetings at regional and district levels  Operate 2 mobile phone hotlines for GW rumour reporting  Distribute abridged SOPs for Health facilities.	28.7 million	Proportion of suspected/Rumours cases investigated within 24 hours.  Proportion of districts reporting monthly  Proportion of annual mass campaigns integrated with GW

NTD Programme	Global Goals	National Goas	Objectives	Strategies	Target Populations	Key Indicators
			reporting hanging worm	Explore conducting joint meetings and field trip for GW NCC and Polio NCC.  Conduct half-yearly ICC advocacy meetings		

TABLE 9.2: PROGRAMME OBJECTIVES AND KEY INDICATORS OF PERFORMANCE

NTDP	OBJ	KEY IND.	BASE LINE	TARGET	MILESTONE				
					2016	2017	2018	2019	2020
Lymphatic Filariasis Elimination	To interrupt transmission and reduce morbidity and disability due to LF	Number of endemic districts with transmission interrupted	98	100%	76	85	92	98	98
Onchocerciasis Elimination	To ensure interruption of transmission of onchocerciasis in selected communities (?? What percentage)	Proportion of communities that have interrupted transmission	(0%)	100% geographic coverage	100%	100%	100%	100%	100%
Schistosomiasis Control	To treat all school aged children and high risk populations in endemic areas	Proportion of school aged children treated	216	100%	100% (D=86)	100% (D=126)	100% (D=141)	100% (D=23)	100% (D=141)
Soil Transmitted Helminths Control	To treat all school aged children at least once a year	Proportion of school aged children treated	170	100%	170 (100%)	170 (100%)	170 (100%)	170 (100%)	170 (100%)
Trachoma	To maintain trachoma surveillance in endemic districts and ensure	Achieve certification Active trachoma (TF) less 5% in all	2.8% (2008)	<5%	Documentation towards certification	Present certification dossier to WHO	achieved	certification of elimination achieved and ongoing	certification of elimination achieved and

NTDP	OBJ	KEY	BASE	TAR -	MILESTONE				
	certification of elimination	endemic districts						surveillance	ongoing surveillance
Buruli Ulcer	To Minimize Morbidity And Disability Associated With The Disease	Proportion of lesions detected (nodules/plaques)	40% (2011)	100%	40%	60%	80%	100%	100%
Yaws	Elimination By 2015	Yaws prevalence	0.7% (2008)	0%	0.6%	0.5%	0.35%	0.1%	0%
HAT	To maintain HAT surveillance	Number of sentinel sites reporting	6	80%	6	50%	60%	70%	80%
Leishmaniasis	To build health system capacity to detect cases	Number of districts where with capacity to detect cases	0	17	5	10	15	20	25
Rabies	Reduce morbidity and mortality from rabies	Proportion of hospitals with post and pre-exposure prophylaxis	50% (2009)	100%	60%	65%	70%	75%	80%
Leprosy	To undertake case detection and treatment	Proportion disability grade 2 cases	161 (2010)	216	162	163	164	165	0%
Guinea worm	To maintain post certification surveillance	Proportion of rumours reported and investigated in 24 hours	94% (2015)	100%	100%	100%	100%	100%	100%

### 3.2 STRENGTHENING GOVERNMENT OWNERSHIP, ADVOCACY, COORDINATION AND PARTNERSHIP

The key activities that will help achieve the strategic objective for strengthening government ownership, advocacy, coordination and partnerships are as described in Table 10 below.

Table 10: Activities For Strengthening Government Ownership, Advocacy, Coordination And Partnership

<b>Activity</b>	<b>Details (Sub-activity)</b>	<b>Timeframe</b>	<b>Resources needed</b>
<b><i>Strategic Objective 1: Enhance monitoring of national NTD programme performance and outcome.</i></b>			
Strengthening NTD Performance	Update M&E Strategic plan	Q1 2016	NTDP team and partners, Conference package Transport
	Development of M&E tools	2013	Stationery, Transport, Venue & refreshment
	Pre-testing of M&E Tools	2013	Data collectors, Drivers, Transport, Stationery
	Orientation of staff	2013	Transport, Venue & refreshment
Supervision of NTD activities	Monitoring drugs and logistics supply	2013 - 2017	Personnel, Drivers, District staff, Transport, Vehicle maintenance
	Monitoring training of CDDs and health workers	2013 - 2017	Personnel, Drivers, District staff, Transport, Vehicle maintenance
	Monitoring treatment processes and adverse events management	2013 - 2017	Personnel, Drivers, Regional staff, Transport, Vehicle maintenance
	Monitoring drug management & inventory	2013 - 2016	Personnel, Drivers, District staff, Transport, Vehicle maintenance
Review Meetings	National Half-year Reviews	2013 - 2017	National participants, Regional participants, Drivers, Transport, Venue & refreshment
	Regional Quarterly Reviews	2013 - 2017	Regional participants, District Participants, Drivers, Transport, Venue & refreshment
	District Quarterly Reviews	2013 - 2017	Transport, Venue & refreshment,
	Sub-district monthly reviews	2013 - 2017	Refreshment, Transport for CDDs,
Support visits for all NTDs	National Quarterly visits	2013 - 2017	Monitors, Drivers, Transport,
	Regional Quarterly Visits	2013 - 2017	Monitors, Drivers, Transport,
	District Quarterly Visits	2013 - 2017	Monitors, Drivers, Transport
<b><i>Strategic Objective 2: Strengthen the surveillance of NTDs and strengthen the response and control of epidemic-prone NTDs.</i></b>			

Strengthen surveillance of PCT and case management NTDs	Epidemiological & Morbidity Surveillance of Schisto, STH	2013 - 2017	Supervisors, Technicians, Nutritionist, Drivers, District staff, Transport, Vehicle maintenance, Logistics/materials
	Epidemiological & Morbidity Surveillance of Onchocerciasis	2013 - 2017	Supervisors, Technicians, Drivers, Regional Staff, District staff, Transport, Vehicle maintenance, Logistics/materials
	Epidemiological Surveillance of Lymphatic Filariasis	2013 - 2017	Supervisors, Technicians, Drivers, Regional staff, District staff, Transport, Vehicle maintenance, Logistics/materials
	Implement an exit plan for lymphatic filariasis (Treatment Assessment Surveys)	2013 - 2017	Supervisors, Technicians, Drivers, Regional staff, District staff, Transport, Vehicle maintenance, Logistics/materials
	Passive Surveillance of Lymphatic filariasis after stopping MDA	2013 - 2017	Personnel, Transport, logistics/Materials
	Yearly sentinel surveys for Yaws	2013 - 2017	Resource person, Drivers, Stationery, Transport
	Mid-term evaluation of Yaws	2014	Field teams, Consultants, Drivers, Stationery, Transport
	Final evaluation of Yaws	2017	Field teams, Consultants, Drivers, Stationery, Transport
	Training of health workers for trachoma surveillance	2013	Facilitators, Participants, Transport, Venue & refreshment
	Trachoma active case search	2013 - 2017	Health workers, Transport, Materials, Community health volunteers
	School surveys for trachoma	2013 - 2017	Health workers, Transport, Materials, Community health volunteers
	Rabies surveillance	2013 - 2017	Personnel, Transport, Materials
	Leprosy surveillance	2013 - 2017	Personnel, Transport, Materials
	Leishmaniasis surveillance	2013 - 2017	Personnel, Transport, Materials

	Entomological Surveillance of Onchocerciasis	June - November 2013 - 2017	Sites assessment & Training of vector collectors, Supervisors, Technicians, Drivers, Regional staff, District staff, Village supervisor, Vector collectors, Transport, Vehicle maintenance, Logistics/materials
	Conduct national epidemiological and entomological assessment for BU	2013 - 2017	Personnel, Transport, Materials,
	Intensify Guinea Worm disease surveillance performance monitoring and report on GWEP	2013 - 2017	Personnel, Transport, Materials
	Evaluation and review of GWD at national and sub-national levels		Local independent GWEP evaluation, External GWEP evaluation, Annual mid-year reviews
	Conducting treatment coverage reliability surveys	2013 - 2017	Training data collectors, Stationery, Supervisors, Data collectors, Transport, Vehicle maintenance
Strengthen response and control of epidemic-prone NTDs	Increase awareness through health education	2012 - 2017	
	Provision of drugs & treatment of cases	2012 - 2017	
<i>Strategic Objective 3: Support operational research, documentation and evidence to guide innovative approaches to NTD programme interventions.</i>			
Identify and conduct operational research on NTDs for effective programme implementation	Capacity building of staff on operational research	Q4, 2013	Facilitators, Participants, Drivers, Venue & refreshment
	Development of proposals	2013 - 2017	Participants, Drivers, Venue & refreshment
	Conducting operational research	2013 - 2017	Personnel, Transport, Equipment/materials
	Dissemination of research findings	2015 - 2017	Facilitators, Participants, Venue & refreshment
<i>Strategic Objective 4: Establish integrated data management systems and support impact analysis for NTD as</i>			

<i>part of the global NTD data management system and Global NTD Plan.</i>			
Establishment of integrated data management system	Development of data management tools (hard and software)	Q4, 2013	Facilitators, Participants, Venue & refreshment, Materials
	National TOT on data management	Q1, 2013	Facilitators, Participants, Drivers, Venue & refreshment
	Regional TOT on data management	Q1, 2014	Facilitators, Participants, Venue & refreshment
	District training of staff on data management	Q1, 2013	Facilitators, Participants, Venue & refreshment
	Data processing (entry, analysis and use)	2013 - 2017	Personnel, Equipment/materials

### 3.3: ENHANCE PLANNING FOR RESULTS, RESOURCE MOBILIZATION AND FINANCIAL SUSTAINABILITY

A number of activities will be carried out to mobilize resources and achieve financial sustainability for successful NTD programme. These activities are described in table 11.

Table 11: Activities to enhance planning for results, resource mobilization and financial sustainability of national NTD programmes

<i>Strategic Objective 1: To develop integrated multi-year strategic plans and develop gender-sensitive annual operational plans for the control, elimination and eradication of targeted NTDs.</i>			
Activity	Details (Sub-activities)	Timeframe	Resources needed
Facilitate the development of gender sensitive multi-	Conduct planning and budget workshop at regional level	Q2, 2013	Personnel, Transport, Equipment/materials

year NTD plans at regional and district levels	Conduct planning and budget workshop at district level	Q2, 2013	
Formulate and implement GWE final Push Strategic Plan at national and regional levels	Production and dissemination of Final Push GWE Strategic Plan	2013 - 2017	
	Implementation of Push Strategic Plan		
<i>Strategic Objective 2: Enhance resource mobilization approaches and strategies at national and sub-national levels for NTD interventions.</i>			
Conduct in-country fund raising for the control and elimination of NTDs	Advocate support for NTDs from telecommunication companies	January - December	Personnel Transport Communication
	Develop proposals for sourcing in-country funds	Q2, 2014	
	Develop documentaries	Q4, 2013	
	Mount photo exhibitions for awareness campaigns on NTDs	January - December	
Improve international partnership for NTD support in Ghana	Advocate for improved support for NTDs at international conferences, seminars, etc.	January - December	
<i>Strategic Objective 3: Strengthen the integration and linkages of NTD programme and financial plans into sector-wide and national budgetary and financing mechanisms.</i>			
Ensure availability of budget lines for NTD control and elimination at national, regional and district level plans	Ensure availability of budget lines at national, regional and district levels through advocacy meetings, seminars, workshops, etc	January - December	Personnel Transport Equipment/materials
Develop integrated plans and budgets for all the NTDs in Ghana	Conduct National Task Force meetings	Q2 & Q4	
<i>Strategic Objective 4: Support countries to develop and update national NTD policies and elaborate guidelines and tools to guide effective policy and programme implementation.</i>			
Develop and print integrated NTD protocols and guidelines for the control of NTDs in Ghana	Conduct 5-day meeting to develop integrated NTD tools	Q3, 2013	Personnel Transport Equipment/materials
	Print integrated NTD protocols and guidelines	Q3, 2013	Funds
Conduct training meetings for health workers in the use of NTD tools and guidelines	National, regional, district	Q2, 2013	Personnel Transport Equipment/materials
Disseminate NTD tools and guidelines at all health facilities	Conduct dissemination meetings	Q3, 2013	Personnel Transport Equipment/materials

### 3.4: SCALING UP ACCESS TO NTD INTERVENTIONS, TREATMENT AND SERVICE DELIVERY CAPACITIES

This section addresses the following interventions;

- Preventive Chemotherapy
- Case Management
- Transmission Control which includes vector and reservoir control as well as improvement in sanitation and water quality and supply

#### 3.4.1: Preventive Chemotherapy Interventions

##### 3.4.1.1 Disease Mapping

Mapping of the PCT diseases (LF, Onchocerciasis, Trachoma, Schistosomiasis and Soil transmitted Helminthiasis) has been completed and forms the basis of all interventions undertaken in the regions and districts. LF intervenes in 74 districts while Onchocerciasis is endemic in 73 districts. The case management diseases have all been mapped. Activities mainly undertaken include case search and passive case management, even though the Yaws programme periodically undertake mass treatment in selected schools and communities.

Table 12: Estimation of Needs for Completion of Mapping of PCT Diseases

NTD	No. of endemic districts	No. of districts mapped
LF	74	170
Onchocerciasis	73	170
Schistosomiasis	170	170
Soil Transmitted Helminths	170	170
Trachoma	29	170

##### 3.4.1.2 Mass Drug Administration

Table 13: Populations At-risk Targeted by PCT Interventions

NTD	No. of endemic districts	Total No. of Implementation Units	Total population at-risk	Adults 15 years and above	School-aged Children 5-14 years	No. in special targeted age category
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		(IUs)				
LF	74	170	12,265,335	6,463,832	3,348,436	NA
Onchocerciasis	73	170	8,181,704	4,311,758	2,233,605	NA
Schistosomiasis	170	170	7,003,757	3,690,980	1,912,026	NA
Soil Transmitted Helminths	170	170	7,003,757	3,690,980	1,912,026	NA
Trachoma	29	170	3,058,880	1,612,030	835,074	NA

Table 14: Packages of Mass Drug Administration

Intervention Package No.	Target Disease Combination	MDA Types	Delivery Channels	Timing of delivery	No. of districts (list of names in footnote)	Requirements	Other mass disease control interventions in the district
I	Lymphatic Filariasis	MDA 1	Community-based/campaigns/CDTI	Month 1 Week 3	Annex 1	Training of health personnel	EPI Campaigns ITN distribution
	Onchocerciasis	MDA 4	Community-based	Month 1 Week 1		Training of teachers and community volunteers	
II	Trachoma						
	Onchocerciasis	MDA 3	Community-based campaigns/CDTI	Month 6		Social mobilisation	
	Schistosomiasis (high prevalence)					Production of tools	
	Schistosomiasis (low prevalence)					Logistics for drug distribution and management	
	STH (high prevalence)						
	STH (low prevalence)						

Table 15: Activities for PCT Interventions

Activity	Details (Sub-activity)	Timeframe	Resources needed
<i>Strategic Objective 1: Scale up an integrated preventive chemotherapy, including access to LF, STH, Onchocerciasis, Schistosomiasis and trachoma interventions.</i>			
Conduct mass drug administration (MDAs) for PCT diseases (LF, ONCHO, Trachoma, STH, and Shisto).	Conduct Training of Trainers at Regional and Districts	Q2 and Q4	Personnel Transport Training materials
	Training of CDDs & Teachers	Q2 and Q4	Personnel
	Conduct Social Mobilization of Communities	Q2,Q3 and Q4	Personnel Transport
	Conduct MDA to Schools and Communities	Q2,Q3 and Q4	Teachers CDDs
	Conduct Monitoring and Supervision at all levels	Q2,Q3 and Q4	Personnel Fuel and transport
	Report writing and Dissemination	Q2,Q3 and Q4	Personnel, Transport Equipment/materials
Development and Printing of Materials for MDA	Register Books, Measuring poles /Strips, Flip charts, Flyers, and leaflets, Parent Notification slips, Cue cards, ID cards	Q1	Funds
Transportation of Medicines and Logistics to endemic regions and districts	Drug & Logistics delivery to regions		Personnel, Transport Equipment/materials
	Drug & Logistics delivery to districts		Personnel, Transport Equipment/materials

Table 16: Lymphatic Filariasis Annual Needs for Scaling Up and Scaling Down (drugs and supplies)

NTD Prog.	Activity	Units	Annual Requirements / Number of Units / Populations					Totals
			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
LF	LF MDA	No. of	70	60	30	17	8	70

Elimination	Districts							
	No. of Pop at risk targeted	11,680,174	9,001,611	6,630,163	5,201,332	3,164,736	35,678,016	
	Ivermectin	28,032,418	21,603,866	15,912,391	12,483,197	7,595,366	85,627,238	
	Albendazole	9,344,139	7,201,289	5,304,130	4,161,066	2,531,789	28,542,413	
	Baseline Survey	No. districts	-	-	-	-	-	
	Transmission Assessment Surveys	No. of districts	4	7	6	4	4	
		ICT cards (1,000 per IU or EU)	4000	7000	6000	4000	4000	25000
	Post-MDA Surveillance	No. Districts	4	14	36	43	26	4

Table 17: Schistosomiasis Annual Needs for Scaling Up and Scaling Down (drugs and supplies)

NTD Prog.	Activity	Units	Annual Requirements / Number of Units / Populations					Totals
			Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	
Schistosomiasis	MDA	No. of districts	125	58	125	58	125	491
		At risk pop targeted	4,823,368	2,869,525	4,934,305	2,935,524	5,047,794	20,610,517
		Praziquantel needs	12,058,420	7,173,813	12,335,764	7,338,810	12,619,486	51,526,293
	Baseline Survey	No. of districts	0	0	0	0	0	0
	Impact evaluation surveys	No. of districts	25	25	25	25	25	125
	Surveillance	No. of districts	0	0	0	0	0	0

### 3.4.2 Case management and chronic care interventions

#### 3.4.2.1 Disease Assessment

Table 18: Assessment of the Situation (Identifying the endemic foci) of case management NTDs (Buruli Ulcer, Yaws, Leprosy, HAT, CL, Rabies)

<b>Name of endemic NTD</b>	<b>No. of districts suspected to be endemic or at-risk</b>	<b>No. of districts assessed or known endemicity status</b>	<b>No. of districts remaining to be assessed</b>	<b>Requirements (eg. Diagnostic kits, supplies, reagents)</b>
Buruli Ulcer	89	42	47	Wound swab and fine needle aspiration kits, reagents
Yaws	170	170	0	Laminated picture charts
Leprosy	9	9	0	Diagnostic kits
CL	5	5	0	Rk 39 Kits and supplies
Rabies	170	170	0	NA
Guinea Worm	170	170	0	Picture charts
HAT	17	17	0	CATT kits, reagents

#### 3.4.2.2 Interventions for individual disease

Table 19: Populations at-risk targeted by case management

Name of endemic NTD	No. of districts suspected to be endemic or at-risk	No. of endemic districts selected for intervention	Estimated population at risk	Types of intervention to be delivered and requirements (needs)
Buruli Ulcer	89	89	17.7 million	Early detection, case management, surgery, rehabilitation, surveillance, skin graft machine, knives, mesh graft
Yaws	170	170	25 million	Case detection and management and contact treatment, school screening, syringes and needles, antibiotics
Leprosy	9	9	720,000	Case detection and management, orthopedic appliances, clutch, drugs
CL	5	5	400,000	Case detection and management
Rabies	170	170	25 million	Surveillance, vaccines for pre and post exposure prophylaxis
Guinea Worm	170	170	25 million	Surveillance and rumour investigation
HAT	14	14	1.1 million	Case detection and management

### 3.4.2.2 Intervention packages for groups of diseases

Table 20: Intervention packages for group of case management diseases and chronic care

Intervention package	NTDs targeted	Method of intervention delivery	Requirement	Other non-NTD opportunities for integration
Surgery	LF hydrocele, TT, Buruli ulcer category II and III	Hospital based Elective surgery Surgical outreach services	Training of medical doctors and nurses Surgical kits, dermatomes and mesh graft for skin grafting hospitals with good surgical facilities	Capacity building for basic surgery at the district level
Rehabilitation	Buruli ulcer	Physiotherapy	Training of physiotherapy assistants, nurses and family members follow up visits	

Table 21: Activities for case management interventions

Strategic Objective 2: Scale up integrated case-management-based diseases interventions (Yaws, BUD, Rabies, HAT, Leishmaniasis etc) including LF morbidity control

Activity	Details (Sub-activities)	Time frame / frequency	Resources needed
Train key health staff for effective management of NTD morbidity cases	Train doctors to perform hydrocele surgeries		Personnel, Transport Equipment/materials
	Train other health workers on lymphoedema management	Q3, 2013	Personnel, Transport Equipment/materials
	Train community health agents on lymphodema management	Q3, 2013	Personnel, Transport Equipment/materials
	Build capacity at national, regional and district institutional levels in BU case management		Human Resource Development Drugs & Logistics
Perform hydrocele surgeries	Conduct Hydrocele surgeries	Q1-Q4 2013-2017	Personnel, Transport Medicine and Supplies
Perform TT surgeries	Conduct TT surgeries	Q1-Q4 2013-2017	Personnel, Transport Medicine and Supplies
Manage Active Trachoma, BUD, leprosy and lymphodema cases by HW and communities	Including rehabilitation of severely affected BU patients	Q1-Q4 8 2013-2017	Surgical supplies & instruments, wound dressing materials, drugs
Training of HW on Case and Contacts treatment of Yaws at all levels	Trainer of Trainers at National Level	Q4, 2013	Trainers, Facilitators Participant from regions Transport, Drivers, Venue & Refreshments, Stationery & Supplies
Scale up training of HW for Yaws case and contact treatment		2013-2017	Trainers/Facilitators Participant from Districts Transport Fuel per gallons Drivers, Venue and Refreshments Stationery and Supplies
Treatment of Yaws cases and contacts at facilities and communities/schools (Sub District Level)	planned weekly treatments surveys to schools and communities by Health workers	1,Day/week for 40 weeks per year	Fuel, Transport and Allowance for Health workers, Supplies (Benzathine, Needles, etc)

### 3.4.3 Transmission Control Interventions

Table 22: Intervention Control for Transmission Control

Intervention packages	Targeted NTDs	Methods of intervention delivery	Requirements	Other NTD opportunities for integration
Vector control	LF, Leishmaniasis, Malaria	Insecticide treated nets, indoor	ITN, DDT, plastering of walls	Malaria vector control, Integrated

		residual spraying, environmental management		vector management
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Table 23: Activities for transmission control

<i>Strategic Objective 3: Strengthening integrated vector management and environmental measures for targeted NTDs.</i>			
Activity	Details (Sub-activity)	Time frame / frequency	Resources needed
Build capacity for entomological surveillance of Onchocerciasis and HAT	Build capacity of regional and district level staff	May, 2013	Personnel, Transport Equipment/materials
Build capacity for epidemiological surveillance of Lymphatic filariasis, schistosomiasis and STH	Build capacity of regional team for LF surveillance	November, 2013	Personnel, Transport Equipment/materials
	Build capacity of regional team for schisto/STH surveillance	April, 2014	Personnel, Transport Equipment/materials

#### 3.4.4 Strengthen Capacity At National Level For Ntd Programme Management And Implementation

Table 24: Activities for strengthening capacity at national level and programme management

<i>Strategic Objective 4: Strengthen capacity at national level for NTD programme management and implementation.</i>			
Activity	Details (Sub-activity)	Time frame / frequency	Resources needed
Train staff in planning and monitoring of integrated NTD control program	Train staff in statistical tools for effective data management skills		Personnel, Transport Equipment/materials
	Train staff in mapping		Personnel, Transport Equipment/materials
	Sponsor staff to undertake strategic management course		Personnel, Transport Equipment/materials
Undertake study visits to other NTD projects in Africa to enhance programme reviews and learning			Personnel Transport Equipment/materials

### 3.5. ENHANCE MONITORING EVALUATION SURVEILLANCE AND OPERATIONAL RESEARCH

### 3.5.1 Monitoring and evaluation

Integrated monitoring of all the programme's activities will be undertaken for all the NTDs with the objective of strengthening performance of these programmes. This will take the form of supervisory visits, review meetings and support visits. Planned evaluation of the programme will be done according to recommended schedules of specific programme guidelines or as planned by the integrated programme. These activities depending on the nature will be done quarterly, half-yearly or annually. Others will be done at mid-term or end of term of this 5-year strategic plan. The results obtained from these evaluations will be used to inform the programme direction.

Supervision across all levels of the GHS, from the national level to the regional, district, sub-district and community levels, will contribute to staff commitment and accountability for programme success. The indicators to be monitored and evaluated include the therapeutic and geographic coverage of the interventions among others.

Disease specific epidemiological assessments will be conducted for programmes. However where possible an integrated epidemiological assessment will be used. These activities will contribute to strengthening surveillance, operational research and also help with integrated data management.

Table 25: Activities to enhance NTD monitoring and evaluation, surveillance and operational research

Activity	Details (Sub-activity)	Timeframe	Resources needed
<i>Strategic Objective 1: Enhance monitoring of national NTD programme performance and outcome.</i>			
Strengthening NTD Performance	Develop an M&E Strategic plan	Q4, 2013	Facilitators, Participants, Drivers Transport, Venue & refreshment
	Development of M&E tools	Q4, 2012	Stationery, Transport, Venue & refreshment
	Pre-testing of M&E Tools	Q1, 2014	Data collectors, Drivers, Transport Stationery
	Orientation of staff	Q1, 2014	Transport, Venue & refreshment
Supervision of NTD activities	Monitoring drugs and logistics supply	2013-2017	Personnel, Drivers, District staff Transport, Vehicle maintenance
	Monitoring training of CDDs and health workers	2013-2017	
	Monitoring treatment processes and adverse events management	2013-2017	
	Monitoring drug management & inventory	2013-2017	
Review Meetings	National Half-year Reviews	2013-2017	National & Regional participants Drivers, Transport, Venue & refreshment

	Regional Quarterly Reviews	2013-2017	Regional & District participants Drivers, Transport, Venue & refreshment
	District Quarterly Reviews	2013-2017	Transport, Venue & refreshment
	Sub-district monthly reviews	2013-2017	Refreshment, Transport for CDDs
Support visits for all NTDs	National, Regional, District Quarterly visits	2013-2017	Monitors, Drivers, Transport
<i>Strategic Objective 2: Strengthen the surveillance of NTDs and strengthen the response and control of epidemic-prone NTDs.</i>			
Strengthen surveillance of PCT and case management NTDs	Epidemiological & Morbidity Surveillance of Schisto, STH	2013-2017	Supervisors, Technicians, Nutritionist Drivers, District staff, Transport Vehicle maintenance, Logistics/materials
	Epidemiological & Morbidity Surveillance of Onchocerciasis	2013-2017	Supervisors, Technicians, Nutritionist Drivers, District staff, Transport Vehicle maintenance, Logistics/materials
	Implement an exit plan for lymphatic filariasis (Treatment Assessment Surveys)	2013-2017	Supervisors, Technicians, Nutritionist Drivers, District staff, Transport Vehicle maintenance, Logistics/materials
	Passive Surveillance of Lymphatic filariasis after stopping MDA	2013-2017	Personnel, Transport, Materials
	Yearly sentinel surveys for Yaws	2013-2017	Resource person, Drivers, Stationery Transport
	Mid-term evaluation of Yaws	2014	Field teams, Consultants, Drivers Stationery, Transport
	Final evaluation of Yaws	2017	Field teams, Consultants, Drivers Stationery, Transport
	Training of health workers for trachoma surveillance	2013	Facilitators, Participants Transport, Venue & refreshment
	Trachoma active case search	2013-2017	Health workers, Transport, Materials Community health volunteers
	School surveys for trachoma	2013-2017	Health workers, Transport, Materials Community health volunteers
	Rabies surveillance	2013-2017	Personnel, Transport, Materials
	Leprosy surveillance	2013-2017	Personnel, Transport, Materials
	Leishmaniasis surveillance	2013-2017	Personnel, Transport, Materials
Entomological Surveillance of Onchocerciasis	June - November 2013-2017	Sites assessment & Training of vector collectors, Supervisors, Technicians Drivers, Regional & District staff, Village supervisor, Vector collectors, Transport Vehicle maintenance, Logistics	

			/materials
	Conduct national epidemiological and entomological assessment for BU	2013-2017	Personnel, Transport, Materials
	Intensify Guinea Worm disease surveillance performance monitoring and report on GWEP	2013-2017	Personnel, Transport, Materials
	Evaluation and review of GWD at national and sub-national levels		Local independent GWEP evaluation External GWEP evaluation Annual mid-year reviews
	Conducting treatment coverage reliability surveys	2013-2017	Training data collectors, Stationery Supervisors, Data collectors Transport, Vehicle maintenance
Strengthen response and control of epidemic-prone NTDs	Increase awareness through health education	2013-2017	
	Provision of drugs & treatment of cases	2013-2017	
<i>Strategic Objective 3: Support operational research, documentation and evidence to guide innovative approaches to NTD programme interventions.</i>			
Identify and conduct operational research on NTDs for effective programme implementation	Capacity building of staff on operational research	Q4, 2013	Facilitators, Participants Drivers, Venue & refreshment
	Development of proposals	2013-2017	Participants, Drivers Venue & refreshment
	Conducting operational research	2013-2017	Personnel, Transport Equipment/materials
	Dissemination of research findings	2015 - 2016	Facilitators, Participants Venue & refreshment
<i>Strategic Objective 4: Establish integrated data management systems and support impact analysis for NTD as part of the global NTD data management system and Global NTD Plan.</i>			
Establishment of integrated data management system	Development of data management tools (hard and software)	Q4, 2013	Facilitators, Participants Venue & refreshment, Materials
	National & Regional TOT on data management	Q1, 2014	Facilitators, Participants Drivers, Venue & refreshment
	District training of staff on data management	Q1, 2014	Facilitators, Participants Venue & refreshment
	Data processing (entry, analysis and use)	2013-2017	Personnel, Equipment/materials

### 3.5.2 PHARMACOVIGILANCE IN NTD CONTROL

There is Pharmacovigilance unit within the Ministry of Health which is located in the **Institutional Care Unit of the Ghana Health Service** and the Pharmacovigilance Unit of the

Food and Drugs Board. These units work closely with all disease control activities under the Public Health Division and Hospitals at all levels of the Ghana Health Service to ensure the safety and efficacy of all pharmaceutical products used in the programme. All beneficiaries of the programme are to report any serious adverse effect they experience through the established channel. Trainings will be conducted for the health staff on management of serious adverse events. A focal person will be identified on the NTD programme to coordinate and liaise with these pharmacovigilance units.

Pharmacovigilance Units of the Food and Drugs Authority and the **Institutional Care Division of the Ghana Health Service** undertake pharmacovigilance monitoring in Ghana. Both are based at the national level with forms distributed to all levels of the Ghana Health Service for adverse events monitoring and ensure the safety and efficacy of all pharmaceutical products. Clear channels of communication are available for reporting and recording adverse events experienced during the treatment period. Programme coordinators are available at all levels of the programme to coordinate and liaise with the pharmacovigilance units through the national programme. For effective monitoring, training and effective coordination of these activities will be reinforced.

Table 26: Activities for strengthening pharmaco-vigilance in NTD programme

<i>Strategic Objective 1: Strengthening monitoring of national NTD programme performance and outcome</i>			
Activity	Details (Sub-activity)	Time frame / frequency	Resources needed
Sensitization of health workers on the importance of pharmaco-vigilance	Sensitization workshops for health workers	2013-2017	Personnel, per diem, stationery, transport, communication, venue
	Radio talk shows	2013-2017	Funds
	Train health workers to use pharmaco-vigilance tools	2013-2017	Personnel, per diem, stationery, transport, communication, venue
Monitoring pharmaco-vigilance activities	Monitoring drug/ insecticide supply and use	2013-2017	Personnel, per diem, stationery, transport, communication, venue
	Monitoring adverse events and management following treatment	2013-2017	Personnel, per diem, stationery, transport, communication, venue
	Monitoring quality of drugs / insecticides on Ghana market	2013-2017	Personnel, per diem, stationery, transport, communication, venue

### 3.5.3 Post Intervention Surveillance And Integration Within Primary Health Care (PHC)

Health care delivery in Ghana is based on the Primary Health Care system (PHC). The NTD multi-year plan of action will be implemented within the existing health system. However, not all parts of the country are adequately covered and in almost all the regions there are areas, which are inaccessible at certain times of the year. NGOs, Mission facilities, Private and Development Partners partner with Government in providing access to primary health care. It is noteworthy that they have helped in various health programmes such as Expanded Programme of Immunization (EPI), Guinea Worm Eradication, Onchocerciasis control, elimination of Lymphatic Filariasis, elimination of Trachoma,

Soil Transmitted Helminths and other child survival programmes. These health intervention programmes have been successfully integrated into the PHC in Ghana.

Structures already exist from the national to the community level that will support implementation of the NTD programme. For example, a community strategy, the Community Health Planning Services (CHPS), is a concept developed to bridge the gap of health delivery between accessible and inaccessible areas. It is already in place and is currently being implemented in some parts of the country.

All communities living in NTD endemic areas will be the targets and the frontline health workers will be the primary focal persons. Information will flow from the communities through the primary health care centers to the sub district, district, regional to the national level.

Based on the Primary Health Care approach this strategic framework aims at improving the performance of the health sector through a combination of interventions to be carried out at individual, household and community supported by outreach and health facilities services. It seeks to scale up the coverage of promotive, preventive, treatment and rehabilitative services proven to have significant impact on mortality, morbidity and disability reduction.

Table 27: Activities for surveillance and sustainability

<i>Strategic Objective: Strengthening monitoring of national NTD programme performance and outcome</i>			
Activity	Details (Sub-activity)	Time frame / frequency	Resources needed
Strengthen surveillance during and post interventions of NTDs within PHC	Establishment of sentinel sites	2013	Personnel, allowances, consumables
	Meeting to develop surveillance tools	2013	Personnel, per diem, stationery, transport, communication, venue
	Identify and train surveillance focal persons	2013-2017	Personnel, per diem, stationery, transport, communication, venue
	Post intervention surveillance	2013-2017	Personnel, per diem, transport

## **4.0: BUDGET**

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### 4.1 BUDGET JUSTIFICATION AND ESTIMATES

The multi-year strategic plan of action addresses the following strategic priorities namely: strengthen government ownership, advocacy, coordination and partnership, enhancing planning for results, resource mobilization and financial sustainability of NTD programmes; scale up access to interventions, treatment and system capacity building; enhance NTD monitoring and evaluation, surveillance and operational research. There are specific objectives under each of these four priorities with corresponding activities.

#### **Strategic Priority 1: Strengthen government ownership, advocacy, coordination and partnership**

Government leads the process in disease control activities and harnesses the contribution of partners to control, reduce their prevalence or eliminate them completely. Coordinating mechanism therefore have to be put in place to facilitate implementation of activities. These include enhanced human resource capacity, strengthened advocacy for NTD, develop efficient communication system, infrastructural development and equipment and improving access to health care. There is a need to set up technical working group that will ensure effective policy implementation of NTD strategic plans at all levels of health service delivery.

#### **Strategic Priority 2: Enhance planning for results, resource mobilization and financial sustainability of NTD programmes**

Sustained funding is necessary for successful control of NTDs in the country. There is a need to galvanize other government agencies' and corporate bodies' interest in controlling NTDs. Regular planning and review meetings to involve partners will be carried to ensure stakeholder participation. These meetings will also be for a for dissemination of progress being made and lessons learnt.

#### **Strategic Priority 3: Scale up access to interventions, treatment and system capacity building**

Implementation of control intervention will be carried out based on the master plan using a coordinated and integrated approach. For example, during mass drug administration, there will also be case search for the NTDs that manifest with skin condition. Training of health personnel in the management of NTDs will be integrated and this will be rolled out to the community level.

#### **Strategic Priority 4: Enhance NTD monitoring and evaluation, surveillance and operational research.**

A system of integrated monitoring and evaluation will be put in place to keep track of activities and ensure milestones are being achieved. This will involve field activities, improving surveillance, pharmaco-vigilance monitoring and operational research to identify innovations that will support implementation of activities. Resources needed for the M & E activities will include personnel, transport, monitoring tools, capacity building. Dissemination of findings to improve NTD control activities will be carried out.

### 4.2 SUMMARY BUDGET





	2,012		2,013		2,014		2,015		2,016	
	Total	Gap	Total	Gap	Total	Gap	Total	Gap	Total	
Capital cost + Annual compensation	121,760	121,760	453,860	453,860	475,500	475,500	105,400	105,400	100,000	
Drug donation (expressed as number of tablets)										
Drug	2,012		2,013		2,014		2,015		2,016	
	Total	Gap	Total	Gap	Total	Gap	Total	Gap	Total	
Ivermectin (3mg tablets)	41,360,508	41,360,508	42,311,800	42,311,800	43,284,971	43,284,971	44,280,525	44,280,525	45,298,971	
DEC (100mg tablets)	-	-	-	-	-	-	-	-	-	
Praziquantel (600mg tablets)	10,284,431	10,284,431	10,451,529	10,451,529	9,520,621	9,520,621	16,560,008	16,560,008	9,963,600	
Albendazole (400mg tab) for LF	9,513,067	9,513,067	9,731,867	9,731,867	9,955,700	9,955,700	10,184,681	10,184,681	10,418,971	
Albendazole (400mg tab)/Mebendazole (500mg tab) for STH	9,162,342	9,162,342	9,373,075	9,373,075	9,588,656	9,588,656	9,809,195	9,809,195	10,034,800	



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## 6.0: ANNEXES

### 6.1: ANNEX ONE:

**TABLE 4 NTD CO-ENDEMICITY (BACKGROUND INFORMATION)**

No.	Administrative Unit	Administrative Unit	Population (Census, year)	5 ≤ 14 years (27.3% of Total Population)	Disease Specific Data										
					LF	Oncho	SCH	STH	Trachoma	Buruli Ulcer	Yaws	HAT	Leprosy	Leish.	Rabies
1	Ashanti	Adansi North	151787	41,438	1	1	1	1	0	0	1	0	0	0	0
2	Ashanti	Adansi South	147675	40,315	0	1	1	1	0	1	1	0	0	0	0
3	Ashanti	Sekyere South	109967	30,021	0	0	1	1	0	0	1	0	0	0	0
4	Ashanti	Afigya Kwabre	50939	13,906	0	0	1	1	0	0	1	0	0	0	0
5	Ashanti	Ahafo Ano North	97214	26,539	0	0	1	1	0	1	1	0	0	0	0
6	Ashanti	Ahafo Ano South	180549	49,290	0	0	1	1	0	1	1	0	0	0	0
7	Ashanti	Amansie Central	88081	24,046	0	1	1	1	0	1	1	0	0	0	0
8	Ashanti	Amansie East	216333	59,059	0	0	1	1	0	1	1	0	1	0	0

9	Ashanti	Amansie West	146899	40,103	0	0	1	1	0	1	1	0	0	0	0
10	Ashanti	Asante Akim North	170882	46,651	0	0	1	1	0	1	1	0	0	0	0
11	Ashanti	Asante Akim South	130878	35,730	0	1	1	1	0	1	1	0	1	0	0
12	Ashanti	Atwima Mponua	123160	33,623	0	0	1	1	0	0	1	0	0	0	0
13	Ashanti	Atwima Nwabiagya	197873	54,019	0	0	1	1	0	0	1	0	0	0	0
14	Ashanti	Bosomtwe	69256	18,907	0	0	1	1	0	0	1	0	0	0	0
15	Ashanti	Bosome Freho	55633	15,188	0	1	1	1	0	0	1	0	0	0	0
16	Ashanti	Atwima Kwanwoma	72409	19,768	0	0	1	1	0	0	1	0	0	0	0
17	Ashanti	Ejisu Juaben	167773	45,802	0	0	1	1	0	1	1	0	0	0	0
18	Ashanti	Ejura Sekyedumase	109594	29,919	0	0	1	1	0	0	1	1	0	0	0
19	Ashanti	Kumasi Metropolitan	1581142	431,652	0	0	1	1	0	0	1	0	0	0	0
20	Ashanti	Kwabre	222482	60,738	0	0	1	1	0	1	1	0	0	0	0
21	Ashanti	Obuasi Municipal	197398	53,890	0	0	1	1	0	1	1	0	0	0	0
22	Ashanti	Offinso	107025	29,218	0	1	1	1	0	0	1	0	0	0	0

23	Ashanti	Offinso North	80339	21,933	0	1	1	1	0	0	1	0	0	0	0
24	Ashanti	Sekyere East	87555	23,903	0	0	1	1	0	1	1	0	0	0	0
25	Ashanti	Sekyere West	125101	34,153	0	0	1	1	0	0	1	0	0	0	0
26	Ashanti	Mampong Municipal	99671	27,210	0	0	1	1	0	0	1	1	0	0	0
27	Ashanti	Sekyere Central	93813	25,611	0	0	1	1	0	0	1	1	0	0	0
28	Brong Ahafo	Asunafo North	123282	33,656	0	0	1	1	0	1	1	0	0	0	0
29	Brong Ahafo	Asunafo South	94053	25,676	0	0	1	1	0	1	1	0	0	0	0
30	Brong Ahafo	Asutifi	105510	28,804	0	0	1	1	0	1	1	0	0	0	0
31	Brong Ahafo	Atebubu - Amanteng	103215	28,178	0	1	1	1	0	0	1	0	1	0	0
32	Brong Ahafo	Berekum	116438	31,788	0	0	1	1	0	0	1	0	0	0	0
33	Brong Ahafo	Dormaa	134811	36,803	0	0	1	1	0	0	1	0	0	0	0
34	Brong Ahafo	Dormaa East	52892	14,440	0	0	1	1	0	0	1	0	0	0	0
35	Brong Ahafo	Jaman North	87062	23,768	0	0	1	1	0	0	1	0	0	0	0
36	Brong Ahafo	Jaman South	98178	26,803	0	0	1	1	0	0	1	0	0	0	0
37	Brong Ahafo	Kintampo North	106845	29,169	0	1	1	1	0	0	1	0	0	0	0
38	Brong Ahafo	Kintampo South	76451	20,871	0	1	1	1	0	0	1	0	0	0	0

39	Brong Ahafo	Nkoranza South	102614	28,014	0	1	1	1	0	1	1	0	0	0	0
40	Brong Ahafo	Nkoranza North	58265	15,906	0	1	1	1	0	1	1	0	0	0	0
41	Brong Ahafo	Pru	100762	27,508	0	1	1	1	0	0	1	0	0	0	0
42	Brong Ahafo	Sene	102614	28,014	0	0	1	1	0	0	1	0	1	0	0
43	Brong Ahafo	Sunyani Municipal	110884	30,271	1	0	1	1	0	1	1	0	0	0	0
44	Brong Ahafo	Sunyani West	112869	30,813	1	0	1	1	0	1	1	0	0	0	0
45	Brong Ahafo	Tain	106140	28,976	0	1	1	1	0	0	1	0	0	0	0
46	Brong Ahafo	Tano North	78573	21,450	0	0	1	1	0	1	1	0	0	0	0
47	Brong Ahafo	Tano South	75542	20,623	0	1	1	1	0	1	1	0	0	0	0
48	Brong Ahafo	Techiman Municipal	218051	59,528	1	0	1	1	0	0	1	0	0	0	0
49	Brong Ahafo	Wenchi East	101971	27,838	0	0	1	1	0	0	1	0	0	0	0
50	Central	Abura-Asebu-Kwaman	108623	29,654	1	0	1	1	0	0	1	0	0	0	1
51	Central	Agona East	77484	21,153	1	0	1	1	0	0	1	0	0	0	1
52	Central	Agona West	114165	31,167	1	0	1	1	0	0	1	0	0	0	1
53	Central	Ajumako-Enyan-Essian	110880	30,270	1	0	1	1	0	1	1	0	0	0	1

54	Central	Asikuma - Odoben-Brakwa	107782	29,424	1	0	1	1	0	0	1	0	0	0	1
55	Central	Assin North	129454	35,341	1	1	1	1	0	1	1	0	0	0	1
56	Central	Assin South	107410	29,323	1	1	1	1	0	1	1	0	0	0	1
57	Central	Efutu	53329	14,559	1	0	1	1	0	0	1	0	0	0	1
58	Central	Awutu Senya	151603	41,388	1	0	1	1	0	0	1	0	0	0	1
59	Central	Cape Coast	142398	38,875	1	0	1	1	0	0	1	0	0	0	1
60	Central	Gomoa East	127773	34,882	1	0	1	1	0	1	1	0	0	0	1
61	Central	Gomoa West	107084	29,234	1	0	1	1	0	0	1	0	0	0	1
62	Central	Komenda-Edina-Eguafo-Abirem	135563	37,009	1	0	1	1	0	0	1	0	0	0	1
63	Central	Mfantiman	184294	50,312	1	0	1	1	0	0	1	0	0	0	1
64	Central	Twifo-Heman-Lower Denkyira	133049	36,322	1	1	1	1	0	0	1	0	0	0	1
65	Central	Upper Denkyira East	78018	21,299	0	1	1	1	0	1	1	0	1	0	1
66	Central	Upper Denkyira West	52731	14,396	0	1	1	1	0	1	1	0	0	0	1

67	Eastern	Kwahu North (?Afram Plains)	154046	42,055	0	1	1	1	0	0	1	0	0	0	0
68	Eastern	Akwapi m North	118716	32,409	0	0	1	1	0	1	1	0	0	0	0
69	Eastern	Akwapi m South	131852	35,996	1	0	1	1	0	1	1	0	0	0	0
70	Eastern	Asuogyaman	86039	23,489	0	0	1	1	0	1	1	0	0	0	0
71	Eastern	Atiwa	102468	27,974	0	0	1	1	0	1	1	0	0	0	0
72	Eastern	Birim North	82809	22,607	0	1	1	1	0	1	1	0	0	0	0
73	Eastern	Akyemansa	57109	15,591	0	1	1	1	0	1	1	0	1	0	0
74	Eastern	Birim Central	134147	36,622	0	1	1	1	0	0	1	0	0	0	0
75	Eastern	Birim South	69107	18,866	0	1	1	1	0	0	1	0	0	0	0
76	Eastern	East Akim	113251	30,918	0	1	1	1	0	0	1	0	0	0	0
77	Eastern	Fanteakwa	97638	26,655	0	0	1	1	0	1	1	0	0	0	0
78	Eastern	Kwaebibirem	203096	55,445	0	1	1	1	0	0	1	0	0	0	0
79	Eastern	Kwahu South	87350	23,847	0	0	1	1	0	0	1	0	0	0	0
80	Eastern	Kwahu East	76965	21,011	0	0	1	1	0	0	1	0	0	0	0
81	Eastern	Kwahu West	68423	18,679	0	0	1	1	0	0	1	0	1	0	0
82	Eastern	Upper Manya	90951	24,830	0	0	1	1	0	0	1	0	0	0	0
83	Eastern	Lower Manya	83916	22,909	0	0	1	1	0	0	1	0	0	0	0

84	Eastern	New Juaben Municipal	154999	42,315	0	1	1	1	0	0	1	0	0	0	0
85	Eastern	Suhum Kraboa Coaltar	188661	51,504	1	0	1	1	0	1	1	0	0	0	0
86	Eastern	West Akim	174709	47,696	1	0	1	1	0	1	1	0	0	0	0
87	Eastern	Yilo Krobo	97512	26,621	0	0	1	1	0	1	1	0	0	0	0
88	Greater Accra	Accra Metropolis	2107192	575,263	1	0	1	1	0	0	1	0	0	0	0
89	Greater Accra	Ledzokuku Krowo	336995	92,000	1	0	1	1	0	0	1	0	0	0	0
90	Greater Accra	Dangbe East	137186	37,452	0	0	1	1	0	0	1	0	0	0	0
91	Greater Accra	Dangbe West	142633	38,939	0	0	1	1	0	0	1	0	0	0	0
92	Greater Accra	Ga East	307062	83,828	1	0	1	1	0	1	1	0	0	0	0
93	Greater Accra	Ga West	206728	56,437	1	0	1	1	0	1	1	0	0	0	0
94	Greater Accra	Ga South	297239	81,146	1	0	1	1	0	1	1	0	0	0	0
95	Greater Accra	Tema	403935	110,274	0	0	1	1	0	0	1	0	0	0	0
96	Greater Accra	Ashiaman	201072	54,893	0	0	1	1	0	0	1	0	0	0	0
97	Greater Accra	Adenta	141095	38,519	0	0	1	1	0	0	1	0	0	0	0
98	Northern	Bole	68469	18,692	1	1	1	1	0	0	1	0	1	0	0

99	Northern	Bunkpurugu Yunyoo	109858	29,991	1	0	1	1	0	0	1	0	0	0	0
100	Northern	Central Gonja	92892	25,360	1	0	1	1	0	0	1	0	0	0	0
101	Northern	Kpandai	101716	27,768	1	1	1	1	0	0	1	0	1	0	0
102	Northern	East Gonja	122491	33,440	1	1	1	1	0	0	1	0	0	0	0
103	Northern	East Mamprusi	114343	31,216	1	0	1	1	0	0	1	0	0	0	0
104	Northern	Gushiegu	104532	28,537	1	0	1	1	0	0	1	0	0	0	0
105	Northern	Karaga	56287	15,366	1	0	1	1	0	0	1	0	0	0	0
106	Northern	Nanumba North	119572	32,643	1	1	1	1	0	0	1	0	0	0	0
107	Northern	Nanumba South	65414	17,858	1	0	1	1	0	0	1	0	1	0	0
108	Northern	Saboba	63952	17,459	1	0	1	1	0	0	1	0	0	0	0
109	Northern	Chereponi	56374	15,390	1	0	1	1	0	0	1	0	0	0	0
110	Northern	Savelugu-Nanton	115352	31,491	1	1	1	1	0	0	1	0	0	0	0
111	Northern	Sawla-Tuna-Kalba	94552	25,813	1	0	1	1	0	0	1	0	1	0	0
112	Northern	Tamale Metropolis	376799	102,866	1	0	1	1	0	0	1	0	0	0	0
113	Northern	Tolon-Kumbungu	170312	46,495	1	0	1	1	0	0	1	0	0	0	0

114	Northern	West Gonja	85747	23,409	1	0	1	1	1	0	1	0	1	0	0
115	Northern	West Mamprusi	147479	40,262	1	0	1	1	0	0	1	0	0	0	0
116	Northern	Yendi	167325	45,680	1	0	1	1	0	0	1	0	0	0	0
117	Northern	Zabzugu-Tatale	101547	27,722	1	0	1	1	0	0	1	0	0	0	0
118	Upper East	Bawku Municipal	212555	58,028	1	0	1	1	0	0	1	0	0	0	1
119	Upper East	Bawku West	88946	24,282	1	1	1	1	0	0	1	0	0	0	1
120	Upper East	Bolgatanga Municipal	152658	41,676	1	0	1	1	0	0	1	0	1	0	1
121	Upper East	Bongo	85944	23,463	1	0	1	1	0	0	1	0	1	0	1
122	Upper East	Builsa	83174	22,707	1	0	1	1	0	0	1	0	1	0	1
123	Upper East	Garu-Tempane	127220	34,731	1	0	1	1	0	0	1	0	0	0	1
124	Upper East	Kassena-Nankana	80258	21,910	1	0	1	1	0	0	1	0	0	0	1
125	Upper East	Kassena-Nankana West	84701	23,123	1	0	1	1	0	0	1	0	0	0	1
126	Upper East	Talensi-Nabdam	99832	27,254	1	0	1	1	0	0	1	0	0	0	1
127	Upper West	Jirapa	63550	17,349	1	0	1	1	0	0	1	1	0	0	1
128	Upper West	Lambussie	49148	13,417	1	0	1	1	0	0	1	1	0	0	1

129	Upper West	Lawra	101864	27,809	1	0	1	1	0	0	1	1	0	0	1
130	Upper West	Nadowli	96267	26,281	1	0	1	1	1	0	1	1	0	0	1
131	Upper West	Sissala East	52662	14,377	1	0	1	1	0	0	1	1	0	0	1
132	Upper West	Sissala West	46778	12,770	1	0	1	1	0	0	1	1	1	0	1
133	Upper West	Wa East	80900	22,086	1	1	1	1	0	0	1	1	0	0	1
134	Upper West	Wa Municipal	116229	31,731	1	0	1	1	0	0	1	1	1	0	1
135	Upper West	Wa West	63645	17,375	1	0	1	1	0	0	1	1	1	0	1
136	Volta	Adaklu-Anyigbe	108955	29,745	0	0	1	1	0	0	1	0	0	1	0
137	Volta	Akatsi	110732	30,230	0	0	1	1	0	0	1	0	0	0	0
138	Volta	Ho	169815	46,359	0	1	1	1	0	0	1	0	0	1	0
139	Volta	Hohoe	181298	49,494	0	0	1	1	0	0	1	0	0	1	0
140	Volta	Jasikan	59595	16,269	0	0	1	1	0	0	1	0	0	0	0
141	Volta	Biakoye	72232	19,719	0	0	1	1	0	0	1	0	0	0	0
142	Volta	Kadjebi	61596	16,816	0	0	1	1	0	0	1	0	0	0	0
143	Volta	Keta	158333	43,225	0	0	1	1	0	0	1	0	0	0	0
144	Volta	Ketu	100730	27,499	0	0	1	1	0	0	1	0	0	0	0
145	Volta	Ketu North	180327	49,229	0	0	1	1	0	0	1	0	0	0	0

146	Volta	Kpando	75155	20,517	0	0	1	1	0	0	1	0	0	1	0
147	Volta	Krachi East	89506	24,435	0	0	1	1	0	0	1	0	0	0	0
148	Volta	Krachi West	99939	27,283	0	1	1	1	0	0	1	0	0	0	0
149	Volta	Nkwanta South	91903	25,090	0	1	1	1	0	0	1	0	0	0	0
150	Volta	Nkwanta North	87298	23,832	0	1	1	1	0	0	1	0	0	0	0
151	Volta	North Tongu	154456	42,166	0	0	1	1	0	0	1	0	0	0	0
152	Volta	South Dayi	58657	16,013	0	0	1	1	0	0	1	0	0	1	0
153	Volta	South Tongu	76774	20,959	0	0	1	1	0	0	1	0	0	0	0
154	Western	Ahanta West	126322	34,486	1	0	1	1	0	1	1	0	0	0	0
155	Western	Aowin-Suaman	158179	43,183	1	0	1	1	0	0	1	1	0	0	0
156	Western	Bia	146674	40,042	0	1	1	1	0	1	1	1	0	0	0
157	Western	Bibiani-Anhwia-Bekwai	137098	37,428	0	0	1	1	0	0	1	1	0	0	0
158	Western	Jomoro	147843	40,361	1	0	1	1	0	0	1	1	0	0	0
159	Western	Juabeso	178671	48,777	0	1	1	1	0	1	1	1	0	0	0
160	Western	Mpohor-Wassa East	162776	44,438	1	0	1	1	0	0	1	1	0	0	0
161	Western	Axim Municipal	81572	22,269	1	0	1	1	0	0	1	0	0	0	0

162	Western	Ellembelle	108127	29,519	1	0	1	1	0	0	1	0	0	0	0
163	Western	Sefwi Wiawso	106795	29,155	0	0	1	1	0	1	1	0	0	0	0
164	Western	Sefwi Akontombrabra	90974	24,836	0	0	1	1	0	0	1	0	0	0	0
165	Western	Shama	127442	34,792	1	0	1	1	0	1	1	0	0	0	0
166	Western	Sekondi Takoradi	362719	99,022	1	0	1	1	0	0	1	0	0	0	0
167	Western	Wassa-Amenfi East	116999	31,941	0	0	1	1	0	1	1	1	0	0	0
168	Western	Wassa-Amenfi West	194205	53,018	0	0	1	1	0	1	1	1	0	0	0
169	Western	Tarwa Nsueam	142125	38,800	1	0	1	1	0	0	1	0	0	0	0
170	Western	Prestea Huni Valley	166842	45,548	1	0	1	1	0	0	1	0	0	0	0
			24,238,999	6,617,247	74	41	170	170	0	47	170	20	9	5	35

6.2 ANNEX 2 TABLE 7 SWOT ANALYSIS FOR NTDS

Elements	Strengths	Weaknesses	Opportunities	Threats
Capacity – mgt, human and logistic resources, delivery systems and structures	<ul style="list-style-type: none"> <li>• Existing senior managerial capacity with vision for integration at the highest level</li> <li>• Availability of a cadre of health workers and trained volunteers</li> <li>• Already existing integrated PCT diseases and case management programmes</li> <li>• In-kind Government contribution in terms of staff and resources</li> </ul>	<ul style="list-style-type: none"> <li>• Human resource constraints</li> <li>• Inadequate transport to carry out MDA activities</li> <li>• Poor understanding of NTDS by health workers and communities</li> </ul>	<ul style="list-style-type: none"> <li>• Improved funding for NTDS which will foster integration among all NTDS</li> </ul>	<ul style="list-style-type: none"> <li>• Present resource constraints makes programme unattractive</li> <li>• Micromanagement by some partners</li> <li>• Lack of donor drugs for some NTDS</li> </ul>
Implementation or programme delivery	<ul style="list-style-type: none"> <li>○ A committed and well structured decentralised health system and community structures for programme delivery</li> <li>1. Existing training units with experts to handle training at all regional and district levels of the Ghana Health Service</li> <li>○ Availability of clear strategies and tools (protocols, guidelines) for programme delivery</li> <li>2. Availability of technical and logistic support from experienced NGOs and partners</li> </ul>	<ul style="list-style-type: none"> <li>3. Competing health activities</li> <li>○ Vertical structures and systems may result in staff of NTD’s resisting change associated with integration</li> <li>○ Poor knowledge and inadequate staff for case detection and in the management of cases of NTD morbidity among health workers</li> </ul>	<ul style="list-style-type: none"> <li>○ Strong collaboration of other MDAs(MOE, MOWAC, MLGRD and others)</li> <li>4. Some activities of NTDS could be incorporated into other public health interventions for leverage in funding</li> <li>○ Availability of committed health workers in districts and community based volunteers in all endemic communities</li> <li>5. Commitment by central government, district assemblies, NGOs and communities</li> </ul>	<ul style="list-style-type: none"> <li>○ Negative propaganda about the safety of integrated drug distribution and experiences of side reactions associated with treatment</li> <li>○ Insecurity (e.g. ethnic strife) and natural disasters</li> <li>○ Poor transportation and road networks</li> <li>○ Inability of government to sustain the programme after cessation of donor support</li> </ul>
Advocacy, communication, IEC and	<ul style="list-style-type: none"> <li>6. Programme promotes and strengthens PHC</li> <li>7. Available advocacy strategy for</li> </ul>	<ul style="list-style-type: none"> <li>12. Misconceptions about NTDS and its management</li> <li>13. Poor attitude of some</li> </ul>	<ul style="list-style-type: none"> <li>○ Increased profile of the NTD programme at the international level</li> </ul>	<ul style="list-style-type: none"> <li>○ Apathy of political leaders, general public and community leaders</li> </ul>

supporting policies	<p>implementation</p> <p>8. Availability of some mass media and IEC materials</p> <p>9. Established clear access channels of communication for political leaders and clear community entry techniques</p> <p>10. Complete mapping of all PCT NTDs and some case management conditions</p> <p>11. Partner support</p>	<p>communities</p> <p>14. Political bottlenecks and passive attitude of some district assemblies</p> <p>15. Improper timing of health promotion and advocacy events</p> <ul style="list-style-type: none"> <li>○ NTDs not seen as diseases of priority by some health staff</li> </ul>	<ul style="list-style-type: none"> <li>○ GPRS II, MDGs, GHP, NEPAD Health Strategy, AU Health Strategy, Ghana Health Sector Strategic Plan back NTD Programme implementation</li> <li>16. Committed partners (e.g. GHS, GES, central and local government, Drug companies, multilaterals, Support Centres, Communities, NGOs)</li> <li>○ Availability of parliamentary select committee for health and gender and children</li> </ul>	<ul style="list-style-type: none"> <li>○ Inadequate funds and resources to implement advocacy strategy</li> <li>○ Challenge of managing complications of NTDs and recurrence of some surgically managed cases</li> <li>○ Operational research issues such as recrudescence of onchocerciasis, high prevalence of LF in certain districts inspite of several years of MDAs, efficacy of available case management treatment</li> </ul>
Incentives and motivation	<ul style="list-style-type: none"> <li>○ Availability of effective and well tolerated donated drugs with minimal side effects for preventive chemotherapy and case management</li> </ul>	<p>17. Competing health activities and incentives between programmes</p> <ul style="list-style-type: none"> <li>○ Demand for incentives by community drug distributors</li> </ul>	<ul style="list-style-type: none"> <li>○ Increasing number of partners showing interest in supplying drugs and other resources</li> <li>○ More economy and efficiency of human and other resources of NTD's</li> <li>18. Committed community members and integration with other disease programmes</li> </ul>	<ul style="list-style-type: none"> <li>○ De-motivation of volunteers by other NGO activities</li> <li>○ Micro-management of programme by some partners</li> <li>○ Possibility of government's inability to sustain the programme after cessation of donor support</li> </ul>



