The 2nd Kenya National Strategic Plan For control of NEGLECTED TROPICAL DISEASES 2016-2020

Revised Edition

FOREWORD

This Second Kenya National Strategic Plan for Control of Neglected Tropical Diseases 2016-2020 is a product of the end-term review of the National Multi – Year Strategic Plan for control of Neglected Tropical Diseases 2011-2015. It is aligned to the Kenya Health Sector Strategic and Investment Plan, July 2014–June 2018 (KHSSP III), Vision 2030, Kenya Constitution 2010, Sustainable Development Goals and World Health Organization Guidelines. The development process involved wide consultations with all stakeholders including the Counties and partners.

This document is a multi-year plan of action which outlines the operational framework through which control interventions will be implemented. It builds onto the achievements of the National Multi – Year Strategic Plan for control of Neglected Tropical Diseases 2011-2015, while appreciating the accompanying challenges and laying out strategies to address them. It takes into account the changes in governance of the health sector and the laws of Kenya.

This strategy maintains the vision, mission and goal of the National Multi –Year Strategic Plan for control of Neglected Tropical Diseases 2011-2015. It continues with the spirit of attaining universal access and coverage of NTD interventions. Key changes involve inclusion and magnification of the 'PHASE" approach, which in addition to preventive chemotherapy, involves provision of health education, access to safe water, sanitation & hygiene and environmental improvements. This revised strategy includes new stakeholders, articulates their roles and responsibilities while introducing a strong coordination mechanism for integrated NTD control activities.

We are positive that the strategies in this document will accelerate movement towards attainment of control, elimination and eradication of NTDs from Kenya. With multi-sectoral collaboration and engagement between stakeholders and partners at County and National levels, we anticipate that we shall be able to fulfil our vision. I therefore urge our partners to put all effort in the implementation of this strategy as we march towards control, elimination and eradication of NTDs.

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Cabinet Secretary,
Ministry of Health

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EXECUTIVE SUMMARY

The Ministry of Health launched the National Multi-Year Strategic Plan of Action for Control of Neglected Tropical Diseases (2011-2015) in November 2011. The strategic plan prioritized control of soil-transmitted helminthiasis (STH), Schistosomiasis, Lymphatic Filariasis (LF), Trachoma, Leishmaniasis and Cystic Echinococcosis. It addressed how these diseases can be controlled following the WHO recommended strategies for the prevention and control of NTDs. The interventions there in include: Preventive chemotherapy and transmission control and Innovative disease management.

Since 2012, the Ministry of Health and its partners through the Neglected Tropical Diseases (NTD) Unit have implemented the following control activities: In 2013, through the support of WHO, a major mapping exercise was conducted across 19 counties for STH and Schistosomiasis; In partnership with the Neonatal Child and Adolescent Health Unit (NCAHU) and through the National School Based Deworming Programme (NSBDP), a total of 5.9 million school-age children were de-wormed during the financial year 2012/2013. The number of school-age children dewormed rose to 6.4 million in 2013/2014. In 2014/2015, the number stood at 6.1 million. In the second half of 2015, mass treatment of LF was re-started in 17 out of the 23 endemic sub counties of the Kenyan coast. More than 2.3 million people were treated with Di-ethyl Carbamazine (DEC) and Albendazole during this landmark exercise.

So far, mapping for Trachoma has been completed in 12 Counties. This was followed by Mass Drug Administration (MDA) of Azithromycin and 1% Tetracycline Eye Ointment (TEO) in 8 out of the 12 counties. By 2014, a total of 11,083,382 out of the targeted 13,952,274 people had been treated in the MDA exercise. This represents a national coverage of 79.4%. Training of eye care workers and non-eye care Trachomatous Trichiasis (TT) surgeons has been carried out and will continue. With the support of the Water Sanitation and Hygiene (WASH) sector, various projects have been carried out in Trachoma endemic Counties.

Review of guidelines for diagnosis and management of Leishmaniasis has been concluded. The guidelines introduced the new, safer and more efficacious combination therapy for Visceral Leishmaniasis (VL) with Paromomycin and Sodium Stibogluconate (PSSG), to replace monotherapy with Sodium Stibogluconate (SSG) alone. To help implement the guidelines, over 85 health workers from Leishmaniasis endemic areas have been trained.

Promulgation of the current constitution of Kenya (2010) brought about devolution of health functions. Under this new arrangement, the National Ministry of Health is charged with the responsibility of formulation and implementation of health policy, capacity building and technical assistance to the counties, standards and regulation and management of national referral health facilities. County governments are responsible for implementation of primary healthcare services and management of county health facilities. This implies that implementation

of most NTD control activities will be done at the county level with the National NTD Programme providing policy direction; capacity building and technical assistance to the counties; monitoring and evaluation. In addition, there is a renewed global momentum towards eliminating and eradicating some of the NTDs within given timelines. This momentum is being supported by assurance that there will be a regular supply of quality-assured, cost-effective medicines and support from global partners. This commitment has provided more impetus for the country to re-assess the endemicity of all NTDs to ensure all at risk populations are targeted for intervention.

In 2013 the regional consultative meeting on NTDs in Brazzaville expressed the need to accelerate the elimination of NTDs in the region. In addition, African Ministers of Health, meeting at the African Union (AU) Conference of Ministers of Health, reviewed the AU Continental Framework on the control and elimination of NTDs and resolved to strengthen efforts to tackle NTDs. Similarly, in May, 2013, the 66th World Health Assembly (WHA) adopted the resolution to scale up control of NTDs.

With these developments there is a need to re-focus our goals towards control, elimination and eradication of selected NTDs by 2020 in line with the World Health Organization (WHO) Africa Regional goals. The main strategic approaches during this period will focus on the rapid scale-up of access to interventions, enhanced planning for results, resource mobilization and financial sustainability. Other strategic approaches will be strengthening of advocacy, coordination, national ownership, improved monitoring and evaluation, surveillance and research. The promised donation of sufficient quantities of quality medicines for MDA, availability of safer medicine and diagnostics, new technologies and tools presents new opportunities for accelerating the achievement of these goals by 2020.

These developments have supported the need to review the strategic plan in order to align it with accelerated or scaled up control, elimination and eradication of NTDs in the country. It is our committment that by 2020, we shall have controlled, eliminated and/or eradicated the targeted NTDs. People living in endemic areas will be relieved of the burden and suffering brought about by these diseases and that will eventually lead to economic productivity and improved health.

Dr. Jackson Kioko,
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Ministry of Health.

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ABBREVIATIONS AND ACRONYMS

AIA	Appropriations in Aid
AIDS	Acquired Immune Deficiency Syndrome
AMREF	African Medical and Research Foundation
AOP	Annual Operational Plan
ASAL	Arid and Semi-Arid Lands
AU	African Union
AWP	Annual Work Plan
BCC	Behaviour Change Communication
CBM	Christian Blind Mission
CBO	Community Based Organization
CE	Cystic Echinococcosis
CHA	Community Health Assistant
CHMT	County Health Management Team
CHSP	Community Health Services Personnel
CHU	Community Health Unit
CHV	Community Health Volunteer
CIFF	Children's Investment Fund Foundation
CLTS	Community Led Total Sanitation
CM-NTDs	Case Management (type of) Neglected Tropical Diseases
CS	Cabinet Secretary
CSO	Civil Society Organization
DANIDA	Danish International Development Agency
DDSR	Division of Disease Surveillance Epidemic Preparedness and Response
DEC	Di-Ethyl Carbamazine
DEH	Division of Environmental Health
DFID	Department for International Development
DMS	Director of Medical Services
DNDi	Drugs for Neglected Diseases initiative
DPC	Disease Prevention and Control (Officer)

DPPH	Department of Preventive and Promotive Health
DSPHP	Division of Strategic Public Health Programmes
EPI	Expanded Programme on Immunization
ESACIPAC	Eastern and Southern Africa Centre of International Parasite Control
EU	European Union
FBT	Food Borne Trematodiases
GDP	Gross Domestic Product
GoK	Government of Kenya
GPELF	Global Programme to Eliminate Lymphatic Filariasis
GWD	Guinea Worm Disease
HAT	Human African Trypanosomiasis
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information Systems
HPO	Health Promotion Officer
HPU	Health Promotion Unit
HSDP	Health Sector Development Programme
HSQAR	Health Standards, Quality Assurance and Regulatory Services
ICC	Inter-agency Coordinating Committee
IDM	Innovative and Intensified Disease Management
IDSRU	Integrated Disease Surveillance Epidemic Preparedness and Response Unit
IMCI	Integrated Management of Childhood Illnesses
IU	Implementation Unit
IVM	Integrated Vector Management
JICA	Japan International Corporation Agency
KDHS	Kenya Demographic Health Survey
KEMRI	Kenya Medical Research Institute
KEMSA	Kenya Medical Supplies Authority
KEPH	Kenya Essential Package for Health
KHSSP	Kenya Health Sector Strategic Plan
KNPET	Kenya National Plan to Eliminate Trachoma
KTEP	Kenya Trachoma Elimination Programme

LF	Lymphatic Filariasis
M&E	Monitoring and Evaluation
MALF	Ministry of Agriculture, Livestock and Fisheries
MCU	Malaria Control Unit
MDA	Mass Drug Administration
MENR	Ministry of Environment and Natural Resources
MMR	Maternal Mortality Rate
MNA	Member of the National Assembly
MoEST	Ministry of Education Science and Technology
MoH	Ministry of Health
MSF	Medecins sans Frontieres
MWI	Ministry of Water and Irrigation
NCAHU	National Child and Adolescent Health Unit
NESSP	National Education Sector Support Programme
NEU	North Eastern University
NGDO	Non-Governmental Development Organization
NGO	Non-Governmental Organization
NHSSP	National Health Sector Strategic Plan
NIND	National Integrated Neglected Tropical Diseases' Database
NPBWG	National Prevention of Blindness Working Group
NPELF	National Programme to Eliminate Lymphatic Filariasis
NPHLS	National Public Health Laboratories
NQCL	National Quality Control Laboratories
NSBDP	National School Based Deworming Programme
NTD	Neglected Tropical Disease
NTLDP	National Tuberculosis Leprosy and Lung Disease Programme
NUITM	Nagasaki University Institute of Tropical Medicine
NZD	Neglected Zoonotic Disease
OAU	Operation Eyesight Universal
ODF	Open Defecation Free
OSU	Ophthalmic Services Unit

PATTEC	Pan-African Tsetse and Trypanosomiasis Eradication Campaign
PC-NTDs	Preventive Chemotherapy (type of) Neglected Tropical Diseases
PCT	Preventive Chemotherapy and Transmission Control
PHASE	Preventive Chemotherapy; Health Education; Access to safe water; Sanitation and hygiene; Environmental improvements.
PHC	Primary Health Care
PHO	Public Health officer
PPB	Pharmacy and Poisons' Board
PS	Principal Secretary
PSSG	Paromomycin and Sodium Stibogluconate
QEDJTF	Queen Elizabeth Diamond Jubilee Trust Fund
RBM	Roll Back Malaria
RVF	Rift Valley Fever
SAE	Serious Adverse Event
SAFE	Surgery Antibiotics Facial Cleanliness and Environmental Improvements
SCMOH	Sub county Medical Officer of Health
SDG	Sustainable Development Goal
SHNM	School Health Nutrition and Meals
SIDA	Swedish International Development Agency
SOP	Standard Operating Procedure
SSG	Sodium Stibogluconate
SSI	Sight Savers International
SSK	Sight Savers Kenya
STH	Soil-Transmitted Helminthiasis
SWAp	Sector-Wide Approach
TAG	Technical Advisory Group
TAP	Trachoma Action Plan
TAS	Transmission Assessment Survey
TB	Tuberculosis
TECP	Turkana Eye Care Project
TEO	Tetracycline Eye Ointment

TT	Trachomatous Trichiasis
TWG	Technical Working Group
UIG	Ultimate Intervention Goal
UoN	University of Nairobi
UNFPA	United Nations Fund for Population Activities (United Nations Population Fund)
UNICEF	United Nations Children and Educational Fund
UNITID	University of Nairobi Institute of Tropical and Infectious Diseases
USAID	United States Agency for International Development
VBDCU	Vector Borne Disease Control Unit
VBV	Village Based Volunteer
VHC	Village Health Committee
VL	Visceral Leishmaniasis
WASH	Water Sanitation and Hygiene
WB	World Bank
WHA	World Health Assembly
WHO	World Health Organization

INTRODUCTION

Neglected tropical diseases (NTDs) are a diverse group of communicable diseases that prevail in tropical and subtropical conditions. They affect more a billion people worldwide, mainly populations living in poverty, without adequate sanitation and in close contact with infectious vectors and domestic animals and livestock. These diseases cost developing economies billions of dollars every year and although they have devastating effects on the affected communities, they do not normally draw much attention and effort towards their control.

In Kenya, the NTDs of public health importance include: Soil-Transmitted Helminthiasis (STH), Schistosomiasis, Lymphatic Filariasis (LF), Trachoma, Leishmaniasis, Dengue & Chikungunya, Rabies, Guinea Worm Disease (GWD), Leprosy, Cystic Echinococcosis (CE), Taeniasis, the Food Borne Trematodiases (FBT), Onchocerciasis and Human African Trypanosomiasis (HAT). Although most of the NTDs are not a direct cause of mortality, they are known to cause immense suffering and often life-long disabilities. The diseases are also known to impair growth and development in children. Their distribution is often clearly defined; Such that for example, LF is mainly endemic in the coastal region, Schistosomiasis is distributed in Coastal, Lower Eastern and Lake Victoria regions; while STH is more widely distributed in most parts of the country except the very dry (arid and semi-arid) areas. Trachoma and Leishmaniasis are mainly distributed in the arid and semi-arid regions of the country. Notable from the distribution is a definition of co-endemicity, where several NTDs occur together. In the humid coastal region LF, Schistosomiasis and STH are co-endemic in many places; elsewhere, Schistosomiasis and STHs occur together in parts of Lower Eastern and Lake Victoria region, while Trachoma and Leishmaniasis co-exist in many areas within the arid and semi-arid, nomadic sub-counties.

Although safe and cost-effective interventions for prevention and control of NTDs are available, the diseases have continued to afflict the rural poor due to neglect. Control/prevention of most NTDs is based on preventive chemotherapy using drugs of proven efficacy and safety. Various Mass Drug Administration (MDA) strategies utilising a number of distribution channels can effectively be used to control/eliminate NTDs in endemic communities. In communities where a number of NTDs are co-endemic, MDA activities can be integrated or co-implemented for cost-effective control of all endemic NTDs whose control is based on preventive chemotherapy. It is important to note that there is substantial activity going on in control of various NTDs in Kenya. These activities are often poorly coordinated, small scale, erratic and focused on specific individual diseases.

With support from the Queen Elizabeth Diamond Jubilee Trust Fund (QEDJTF) through Sight Savers Kenya (SSK), activities aimed at control of Trachoma have been implemented: the Surgery, Antibiotics, Facial cleanliness and Environmental improvements (SAFE) strategy has been rolled out in 39 Trachoma endemic implementation districts; With funding from the

Children Investment Fund Foundation (CIFF) and the END Fund through Deworm the World Initiative at Evidence Action, large scale deworming of school-age children in line with the national school health policy and guidelines has been conducted in 111 sub counties. Evidence has shown that populations in these sub counties are at risk of either STH or Schistosomiasis or both. With support from WHO, the NTD Unit has been able to re-start MDA for LF in 17 coastal sub counties. Funding from the END fund is expected to support sustainability of the Kenya National Programme to Eliminate Lymphatic Filariasis (NPELF) activities in the 17 sub counties as well as enable scale up to the remaining 6 sub counties where LF has also been found to be endemic.

Control activities on NTDs implemented vertically result in little, if any control impact. To achieve high impact, an integrated approach to control of NTDs is necessary while putting into consideration the epidemiological overlaps in distribution and similarities in interventions against the co-endemic NTDs. Integration is encouraged where possible to maximize on the scarce resources available to achieve maximum impact.

The primary goal of integrating implementation of NTDs is to prevent, control and reduce the burden of these diseases using cost-effective and synergistic strategies. This leads to the achievement of targets of the individual disease programmes concerned and improvement of wellbeing of targeted populations. In this context four strategic priorities have been outlined in the Strategic Plan to form the basis for future implementation. These strategic priorities are:

1. Strengthen government ownership, advocacy, coordination and partnership
2. Enhance planning for results, resource mobilization and financial sustainability of NTD programmes
3. Scale up access to interventions treatment and system capacity building
4. Enhance monitoring and evaluation (M&E) of NTD control activities, surveillance and operational research

Most programmes, Non-Governmental Organizations (NGOs) and partners interested in NTD control activities are governed by specific disease goals. Therefore, it is necessary to initially set an overall and more unifying national goal to foster integration. The overall goal as stated in this strategic plan is; ‘To reduce morbidity and disability due to NTDs in order to achieve the Sustainable Development Goals and improve the health and socio-economic status of the people of Kenya’. This goal is cognizant of the fact that control of some NTDs in a specific region, sub-county or area will have no impact if other uncontrolled NTDs continue afflicting individuals and communities in the same areas. Such an overriding goal in NTDs control can only be realized if all NTDs occurring in any specific area are all effectively controlled at the same time. This is definitely beyond the reach of any individual disease control programme but realistic in an integrated NTD control framework. Subscription to such a goal will mean that all parties interested in NTD control in any given area will positively come together and operate under the

prescribed NTD coordination structure, plan as a team, and mobilize the needed resources to take on all the endemic NTDs at the same time.

To provide oversight and effective management for the implementation of an integrated NTD control programme, the country has established structures such as the NTD Inter-agency Coordinating Committee (ICC), Technical Advisory Groups (TAG), Technical Working Groups (TWG), Steering Committees for individual programmes/projects, the national NTD forum and other relevant national and regional NTDs structures based on the national healthcare delivery system.

PART I: SITUATION ANALYSIS

Country Profile

1.1 Administrative, demographic and community structures

Kenya is a democratic republic with an elected president who is the head of state and head of the national government. The country is divided into 47 counties (Figure 1). These are further sub divided into a total of 290 sub units. Each of the sub units serve as legislative constituencies as well as provincial administration sub counties. Politically, counties are headed by elected governors, who are the heads of the respective county governments. The legislative constituencies are led by elected Members of the National Assembly (MNAs). Administratively, counties and sub counties are headed by presidential appointees, county commissioners and deputy county commissioners respectively.

The most recent census was conducted in the year 2009, after which a total population of 37,565,589 was declared. The annual population growth rate has been at an average of 2.9 % during the period after the census. The fertility rate stands at 4.6 children per woman. Age structure is typical of a developing country. Those aged 0-48 months are 15.9%, 5-14 years are 28%, and 15-64 years are 55.1% of the total population and only 2.6% are 65 years and over. Women of child bearing age makeup 24% of the population. The overall life expectancy at birth is 57.9 years, being slightly higher in females at 58.2 compared to 57.5 in males. Most of the population (78%) is rural, with only 22% living in urban areas. The population has a Male to Female ratio of 1:1 (Figure 2).

For programmatic interventions, the sub county is the ideal Implementation Unit (IU). This is an important shift from the past, where districts were used as the implementation units. Following the promulgation of the new constitution of Kenya (2010) the previously existing 158 districts were reorganized into the current 290 sub counties. The NTD programme is moving to align itself with the new administrative structures by redefining implementation units along the existing sub counties. Support will be needed to enable achievement of smooth realignment.

Primary school enrolment rate is 80% per annum. Total number of primary school children enrolled in 2013was estimated to be 8,401,706. Primary school enrolment rate and number of primary schools and health facilities per sub-county is shown in Annex1.

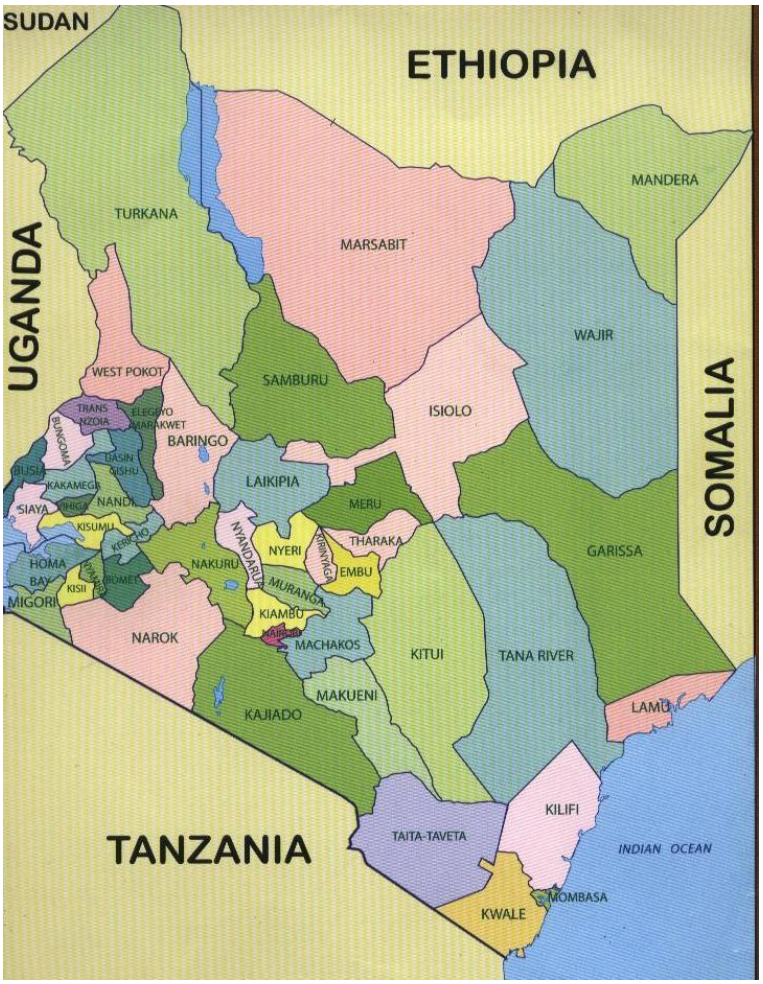


Figure 1: *Map of Kenya showing the administrative Units (Counties)*

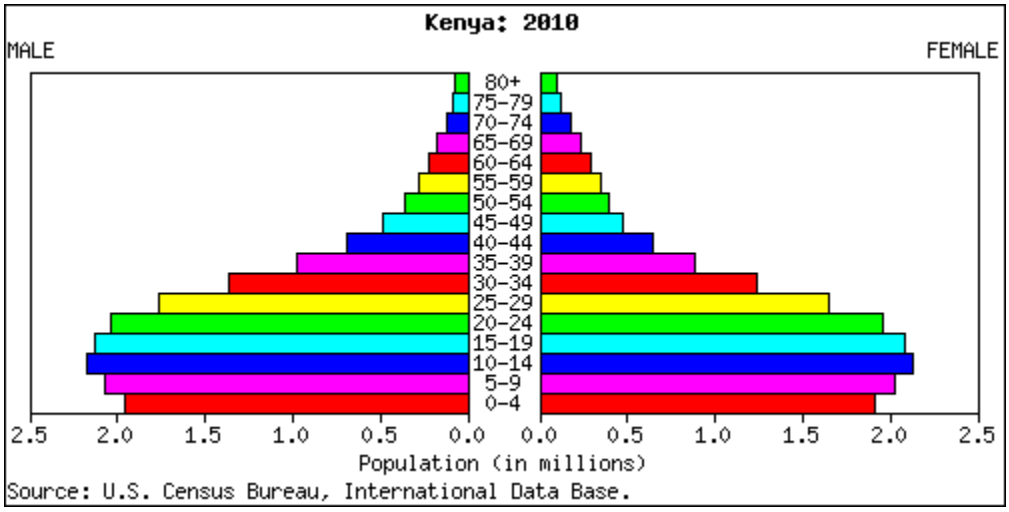


Figure 2: *Population structure*

2.1 Geographical characteristics

Kenya is located in the eastern part of Africa, lying between latitudes 5°N and 5°S; and longitudes 34°E and 42°E. The country has a total area of 582,650 km^2 and borders the Indian Ocean to the South East, Somalia to the East, Ethiopia to the North, South Sudan to the Northwest, Uganda to the West and Tanzania to the South (Figure 3).

***Figure 3**: Map of Kenya showing its geographical location*

The terrain is characterized by lowland plains towards the Indian Ocean Coast, rising gradually to the central highlands which are bisected by the Great Rift Valley into the Eastern and Western highlands. The lowest point is the Indian Ocean at 0 meters while the highest point is at the peak of Mt. Kenya at 5,199 meters above sea level.

The country has an altitude modulated tropical climate characterized by hot and humid conditions along the Coast, with daily temperatures ranging between 27 – 31^0C with average rainfall ranging between 500 – 1200mm. The inland has temperate climate at higher altitudes, and dry to very dry climate in the Northern and North-eastern regions. The highlands are cool and agriculturally rich. There are two rainy seasons; the long rains from April to June and short rains from October to December. Approximately 80% of the country is arid or semi-arid with only 20% being arable. Humidity ranges from an average of 77.6% in Mombasa to 61.0% in Lodwar.

In Kenya forest cover is 6.99% and is mainly distributed in Central and Western regions. This is considered to be below the 10% forest cover specified as a constitutional requirement. The drainage systems include lakes, rivers and man-made lakes and pools. Only a few rivers are all year round, the majority are seasonal.

3.1 Socio-economic status and indicators

Kenya's principal wealth lies in its diversified agriculture, which provides more than 60% of export income. Intensive agricultural activities occur in rural areas with heavy population densities. The resultant agricultural produce includes coffee, tea, sisal, wheat, maize, horticulture, floriculture and dairy products with extensive livestock breeding. The livestock consist of cattle, sheep, goats and camels. Rice production is practised in some parts of the country. However, rice farming in irrigation schemes and fishing are a risk factor for Schistosomiasis infections and access to portable water is limited, exacerbating the impact of water-borne diseases on the mostly rural populations. Poor sanitation and hygiene are associated with high prevalence of STH. Risk factors for spread of Trachoma include hot dry environment, scarcity of water, poor personal and environmental hygiene. For Leishmaniasis, risk factors include dry areas, type of housing, availability of breeding sites such as ant-hills and nomadism. For LF, risk factors include high humidity and presence of vectors. The risk factors already mentioned with respect to Trachoma and Leishmaniasis also apply for cystic echinococcosis (CE). Some cultural and behavioural practices like keeping of many dogs increase the risk of infection with and transmission of CE.

Water and sanitation

Water is the most important resource required for both domestic use and agriculture. It is noted that out of the total population, 61% have safe drinking water available to the household with reasonable access. However, there is a great disparity in access to safe water between the rural and urban populations as well as between regions. Distribution of households by sources of drinking water and poverty status is shown in Table 1 while distribution of safe drinking water by region and poverty status is shown in Table 2.

Considering statistics at the national level, 74% of poor households and 90% of non-poor households in urban settings have access to adequate sanitation. However, rural households have less access to adequate sanitation than their urban counterparts with 71% of poor and 87% of non-poor rural households using adequate waste disposal methods.

Table 1: Distribution of households by sources of drinking water and poverty status

	Rural poor	**Urban poor**	**Rural non-poor**	**Urban non-poor**
Piped into dwelling	1.1	3.2	5.7	24.5
Piped into plot	3.1	23.1	11.4	33.7
Public tap	8.0	35.9	6.2	19.4
Well/borehole with tap	7.4	2.2	7.8	1.7
Protected tap/dug well	7.9	5.6	8.5	3.1
Protected spring	13.1	3.2	9.7	1.1
Rain water collection	3.1	1.9	6.5	1.2
Unprotected dug well	18.9	3.0	14.0	0.7
Rivers/ponds/streams	31.1	6.0	22.9	1.2
Tankers/trucks/vendors	1.7	9.7	2.5	10.6
Bottled water	0	0	0	0.3
Other	4.2	4.6	4.4	2.1
Not stated	0.5	1.6	0.2	0.4

Table 2: Distribution of safe drinking water by region and poverty status

	Poor		**Non-poor**	
Urban Regions	**Safe source**	**Unsafe source**	**Safe source**	**Unsafe source**
National	46.3	53	59.8	39.9
Rural	40.6	58.9	49.5	50.2
Urban	73.2	25.2	83.9	15.7
Geographical Regions				
Central	37.3	62.1	50.2	49.6
Coast	52.1	47.1	55.3	44.7
Eastern	32.5	67.1	46.0	53.2
North Eastern	30.6	68.0	29.5	70.5
Nyanza	48.1	51.9	41.1	58.9
Rift Valley	32.0	67.1	51.2	48.8
Western	56.7	43.0	62.2	37.3

Socio economic indicators

Kenya's economy grew from relative stagnation in 2002 to a rate of 7.0 % in 2007, slipped in 2008 to 5.7 % and then to 5.3% in 2014. Industrial manufacturing contributed 9.7% of the country's Gross Domestic Product (GDP), while tourism contributed approximately 12%. Improved economic growth enabled an increase in recurrent and development funding for health services from 7% in 2003/04 to 7.9% in 2006/07.

The policies that the government has pursued over the years have had a direct impact on improving the health status of Kenyans. Despite a decline in economic performance, cumulative gains have been made in the health sector as evidenced by the improvement in the basic health indicators (Table 3). The National health indicators look impressive, in spite of significant geographical disparities which need to be addressed in order to achieve equity such as trends in under-five mortality rate by region.

Table 3: National Health Indicators

Birth rate/1000	31.93 (2012)
Death rate/1000	7.26 (2012)
Population growth rate	2.44% (2012)
Total fertility rate (children born per women)	3.98 (2012)
Infant mortality rate/1000 live births	43.61 (2012)
Infant mortality rate/1000	48.7 (2012)
Maternal mortality ratio/100,000 live births	360 (2012)
Population: % < Age 15	42.3% (2009)
Population: % Age 15 – 64	55.1% (2009)
Population: % Age 65>	2.6% (2009)
Life expectancy at birth male	59.31 (2012)
Life expectancy at birth female	62.95 (2012)
Stunting children	35% (2005)

4.1 Transportation and Communication Systems

Kenya is a regional hub for transport and communication. It has a well-developed international and domestic air transport infrastructure, a good National and International road network linking all major towns and also serving as a transit route to a number of landlocked countries in the region. The railway network stretches from the port city of Mombasa to Kampala in Uganda. At the county level, well maintained dry weather (murram) roads and in some cases tarmacked roads join the major towns. However, in remote and hard to reach areas with mainly nomadic communities, the road network is relatively underdeveloped, in poor condition and some communities can hardly be reached, especially during the wet season.

Telecommunication is very well developed, characterized by over 25 million mobile phone subscribers and an advanced internet service connectivity of 3G in most areas, while major urban areas are enjoying 4G internet service. This communication network has the potential of improving health information and data flow systems. The mobile network, however, is weak in some areas or even lacking. In addition, the majority of Kenyan households own radios and/or television sets which can be used to pass information on various disease prevention and control topics.

Health System Situation Analysis

5.1 Health system goals and priorities

The Kenya government aims to provide equitable and affordable health care to her citizens. This is in recognition of the fact that good health and nutrition boosts human capacity to produce thus enhancing economic growth, poverty reduction and realization of social goals.

The Kenya Health Policy Framework (1994) set out the policy agenda for the health sector up to the year 2010. This included strengthening of the central public policy role of the Ministry of Health, adoption of an explicit strategy to reduce the burden of disease, and definition of an essential cost effective health care package. To have this operational, the Health Policy Framework Paper and the first National Health Sector Strategic Plan (NHSSP) I, 1999-2004, were developed in 1994. The strategic plan emphasized the decentralization of health care delivery through redistribution of health services to rural areas. The plan was revised to give the second NHSSP II, 2005-2010, which placed emphasis on promotion of individual and community health. The plan ultimately emphasizes strong community involvement in healthcare. The Kenya Health Sector Strategic and Investment Plan (KHSSP) of 2012 –2017 aims at accelerating attainment of Health Goals.

Health Sector and Kenya 2010 Constitution:

The promulgation of the constitution of Kenya on the 27th of August, 2010 was a major milestone towards the improvement of health standards. The Constitution of Kenya (2010) provides that every citizen has a right to life and the highest attainable standards of health.

Strategic Plan for the Kenya Essential Package for Health (KEPH)

There are six strategies that set the KEPH agenda. These are to;

1. Eliminate communicable conditions
2. Halt, and reverse the rising burden of non- communicable conditions
3. Reduce the burden of violence and injuries
4. Minimize exposure to health risk factors
5. Provide essential health services
6. Strengthen collaboration with health related sectors

The NTDs are well captured in strategic objective 1 that is explained below.

Strategic Objective 1: Eliminate Communicable Conditions

Through this first strategic objective, the sector aims at reducing the burden of communicable diseases, to a level that they are not of major public health concern. In the medium term, the priority strategies include to;

- Increase access of the population to key interventions addressing communicable conditions causing the highest burden of ill health and death.
- Ensure communicable disease prevention interventions directly addressing marginalized and indigent populations
- Enhance comprehensive control of communicable diseases by designing and applying integrated health service provision tools, mechanisms and processes

Efforts at addressing communicable conditions will focus on three strategies: Eradication; elimination, or containment of the diseases.

- **Eradication efforts** will focus on diseases for which the country will work towards complete removal in Kenya during the KHSSP period.
- **Elimination efforts** will focus on diseases for which the sector will work towards reducing the burden to levels not of a public health concern. Malaria, Mother to Child HIV transmission, and Neglected Tropical Conditions (including infestations) will be targeted for elimination
- **Containment efforts** will focus on diseases for which the sector will work towards managing their burden to avoid unnecessary ill health and death. Current investments are not at a level to allow elimination / eradication – this will be the focus for these in subsequent strategic plans as investments, and / or strategies to allow this are attained. These include HIV, Tuberculosis, diarrheal diseases, measles and other immunizable conditions, respiratory diseases, and other diseases of public health concern.

6.1 Analysis of the overall health system

Health services delivery

Previously, the health system was organized into six levels. This is however progressively transforming into a four tier organization structure by the end of the Kenya health policy 2014-2030. To this end, periodic reviews will be conducted every 5 years in accordance with the norms and standards. (Kenya health policy, 2015) Table 4 below, presents a general picture of the transformation after completion.

Table 4: Organization of health system

Policy tiers of care	Corresponding levels of care at beginning of policy	Desired levels of care by end of policy
Tier 1: Community	Level 1: Community	Level 1: Community
Tier 2: Primary care	Level 2: Dispensary and clinics Level 3: Health centres	Level 2: Primary care facilities
Tier 3: Secondary referral	Level 4: Primary care hospitals Level 5: Secondary care hospitals	Level 3: County hospitals
Tier 4: Tertiary referral	Level 6: Tertiary care hospitals	Level 4: National referral hospitals

Tier 1 is aimed at operationalizing a robust community strategy through which effective Primary Health Care (PHC) interventions will be rolled out. Under this strategy, it is appreciated that the

lowest unit of community aggregation is the household. It is estimated that each household has an average of 5 members. 20 such households will be put under a Community Health Volunteer (CHV), who will in turn be supervised by a Community Health Assistant (CHA), such that 1 CHA has between 10-20 CHV under their supervision. The Community Health Units (CHUs) so formed will be linked to the Tier 2 (Primary care) facility within whose catchment area they fall, by the CHA who is a trained health worker. Where CHUs are not yet activated/functional, villages will be used as units of service delivery. Village Health Committees (VHCs) will be formed to serve the purpose of facilitating the process.

Health workforce

The fourth schedule of the constitution of Kenya (2010), details the distribution of devolved health functions between the national government and county governments. Under this arrangement, the national government is charged with national referral health facilities, health policy, capacity building and technical assistance to the counties. The county governments are charged with county health services including in particular; county health facilities and pharmacies, ambulance services, promotion of primary health care, licencing and control of undertakings that sell food to the public, veterinary services (excluding regulation of the profession), cemeteries, funeral parlours, crematoria, refuse removal refuse dumps and solid waste disposal. The human resources for delivery of these functions are managed by the level of government where they fall. There is a general shortage of health personnel but the general plan is that both the national and county governments will be able to employ more health workers in an effort to plug the existing gap.

Health Information

The Health Management Information System (HMIS) department in the MoH receives routine data on the causes of in-patient morbidity and mortality from government health facilities across the country. Data for STH, Schistosomiasis, GWD and Leprosy is captured at the peripheral facilities level. However, some of the NTDs including LF, Trachoma, Leishmaniasis, Dengue & Chikungunya, Rabies, CE, Taeniasis, FBT, Onchocerciasis and HAT are not incorporated in the health facility register and also in the HMIS. They are either lumped up with other similar conditions or categorised as “others”. There is a need to include all NTDs in the HMIS register in order to capture all cases reported in the country. These HMIS register need to be reviewed to include all NTDs in the country. In addition, the Integrated Disease Surveillance and Response Unit (IDSRU) implements Integrated Disease Surveillance. The Unit carries out surveillance on Diseases of public health importance affecting the Country including the emerging and re-emerging diseases. Efforts will be made to ensure that all relevant NTDs are notifiable on the IDSRU platform.

Medical products

In the context of NTD control, medical products include medicines and diagnostic test kits. Procurement is predominantly through donations and (to a lesser extent), purchase. The Kenya Medical Supplies Authority (KEMSA) is charged with the responsibility of managing all medical products intended for public use. The NTD Programme will work closely with KEMSA to ensure proper management of medical products intended for use in NTD control interventions. The NTD Unit will carry out periodic quantification to determine the quantities of medical products required by the country. Furthermore, the Unit will ensure timely placement of annual requests to the World Health Organization (WHO) for donation of medicines according prescribed WHO procedures. Other donated medicines shall be procured in accordance with the existing national guidelines on donation of medicines. Purchase of medical products shall be done at national and county level in accordance with the provisions of the Procurement and Disposal Act of 2005 and Regulations of 2006.

The NTD Programme shall work closely with WHO in ensuring that all documentation is received on time and used to secure import permits, authority for storage at KEMSA and tax waivers as may be necessary for donated medicines. All donated medicines shall be stored at KEMSA awaiting distribution to their point of use. As much as possible, distribution shall be conducted via KEMSA's distribution service. However, where exceptional circumstances demand for alternative distribution strategies, this shall be done but only where maintenance of high-quality of the medicines is assured. Such circumstances will be reviewed by the TWG on case management before express provisions are made and minuted for future reference. Upon arrival at their destination, County and Sub-county Pharmaceutical Facilitators will coordinate and ensure proper storage conditions for all distributed medicines as they await final distribution to their respective points of use.

All surplus medicines left over from MDA activities shall be handed over to the nearest health facility for continued utilization by communities within the catchment population. Strict inventory management shall be observed through maintenance of necessary records at each step of the product management pipeline.

Safety of medicines will be ensured at all times through collaborative efforts between the NTD programme, the Pharmacy and Poisons' Board (PPB) and the National Quality Control Laboratories (NQCL). This will involve monitoring and reporting of Serious Adverse Effects (SAEs) and poor quality medicines. The NTD pharmacist will coordinate all management activities for medical products for NTDs. He/she will convene and chair an NTD Drugs Working Group through which all in-country management for donation medicines shall be handled and submitted to the NTD case management TWG for ratification.

Health financing

Increasing demand for health care along with inadequate funding for existing needs support the need for continued increases in financing for health. The country spends approximately 5% of its

GDP on health (equivalent to 42.2 US$ per capita). Over the past 5 years the Government Health Expenditure has been between 4 to 7% of the GDP, which is under half of the Abuja declaration target of 15% and the Economic Recovery Strategy (ERS) target of 12% of total Government allocations. 63.3% of total health expenditure is funded publicly, including external (donor) support and health insurance, the latter being responsible for 11% of total health expenditure. The remaining 36.7% is funded privately, with out of pocket financing at the point of service being predominant. Private health insurance is limited.

Investment in the health sector has steadily increased over the years. Total health expenditure increased from US$33.5 per capita in 2001/02 to US$42.2 in 2009/10. However, these increases are characterized by the following:

- Almost flat (slightly declining) share of government health expenditure of the total health expenditure
- Increasing share of donors out of total health expenditure,
- Declining share of households out of pocket expenditure as a proportion of total health expenditure,

Kenya's health sector identifies several modes of financing health services:

- Government funding through taxation
- User fees, through out of pocket payments directly by clients
- External sources from bilateral, multilateral, or philanthropic sources
- Health insurance – either social or private insurance mechanisms.

Kenya has made several attempts to introduce healthcare financing reforms to eliminate chronic under-funding of the sector, minimize out of pocket expenditures and ensure universal access to quality healthcare and therefore achieve the Vision 2030 goals on health.

Health Sector funding/financing mechanisms as stipulated in the Health Sector Development Plan (HSDP III) includes three channels of financial resource management:

- Channel I: Pooled and managed by government or earmarked by agencies with direct disbursement
- Channel II: Donor held financing provided directly to sector units or decentralized regional offices to be directly used and accounted for by them
- Channel III: Direct donor programmed funds disbursed by Development Partners to finance specific contributions to HSDP usually through NGOs.

The total budget for the health sector in Kenya includes a substantial contribution from development partners in health. Appropriation in Aid (AIA) which is mainly in form of grants and loans make up to 15% of the total budget for the health sector.

Funding for health services come from a number of sources including households, MoH, donors and international NGOs and the private sector. In the 2006/07 financial year, the national health accounts showed that households contributed 29.1% of the health sector financing while MoH accounted for 35.4%, in the same year donors and international NGOs contributed 20.8% to the health sector resource envelope, while the private sector accounted for only 5.4%.

Disease control, specifically communicable and vector-borne diseases, is allocated up to 3% of the total funding to MoH. The funds allocated are mainly spent on surveillance and response/control of communicable and vector-borne disease; improving capacity to diagnose and treatment of communicable and vector-borne diseases.

Leadership and Governance

The Cabinet Secretary (CS) is the head of the Ministry of Health (MoH). He is responsible to the president for the exercise of the power and performance of ministerial functions. The Principal Secretary (PS) is responsible for the day to day operations of the ministry. The Director of Medical services (DMS) is the Head of Technical Services and Technical Advisor to the Cabinet Secretary (CS). The NTD Programme falls under the Division of Disease Surveillance and Epidemic Response (DDSER), which in turn falls under the Department of Preventive and Promotive Health (DPPH). The head, DPPH is in charge of all Divisions and programmes within the department. These include the Neonatal, Child and Adolescent Health Unit (NCAHU), Zoonotic Diseases Unit (ZDU), Integrated Disease Surveillance and Epidemic Response (IDSRU), National Tuberculosis, Leprosy and Lung Disease Programme (NTLDP) and Vector Borne Diseases Control Unit (VBDCU), all of which the NTD Programme works closely in order to achieve her goals and objectives.

The enactment of the current constitution (2010) brought with it changes emerging from the devolution of functions to the county level. Departments of Health at county and sub counties level make their own annual plans depending on their priorities. The system at this level is all-inclusive of the diseases that are priority in the counties and sub counties. The implementation of NTD activities fall within the existing organogram as shown in figures 4 and 5.

The national policy on control of NTDs is currently under development. The development process is at an advanced stage and all indication is that the policy will be launched early within the period of this strategic plan. However, the NTD Unit requires support to finalize development of this important document.

NTD activities have been included in the Health Sector Strategic Plan, with the government pledging to provide funding to carry out some activities. An institutional framework already exists with an Inter-agency coordinating committee (ICC) having been launched in June 2014. This committee is expected to play a major role in accelerating the implementation of NTD

control activities in the country including creation of a platform to engage partners and stakeholders in NTD control.

The NTD program faces challenges in implementing the strategy based on integration/co-implementation of NTDs. The currently supported WHO guide on control of STH and schistosomiasis is focused on school-age children. However, the goal of achieving elimination requires that more effort be put into reaching the rest of the high-risk members of the community who act as a reservoir for sustained transmission to treated school-age children.

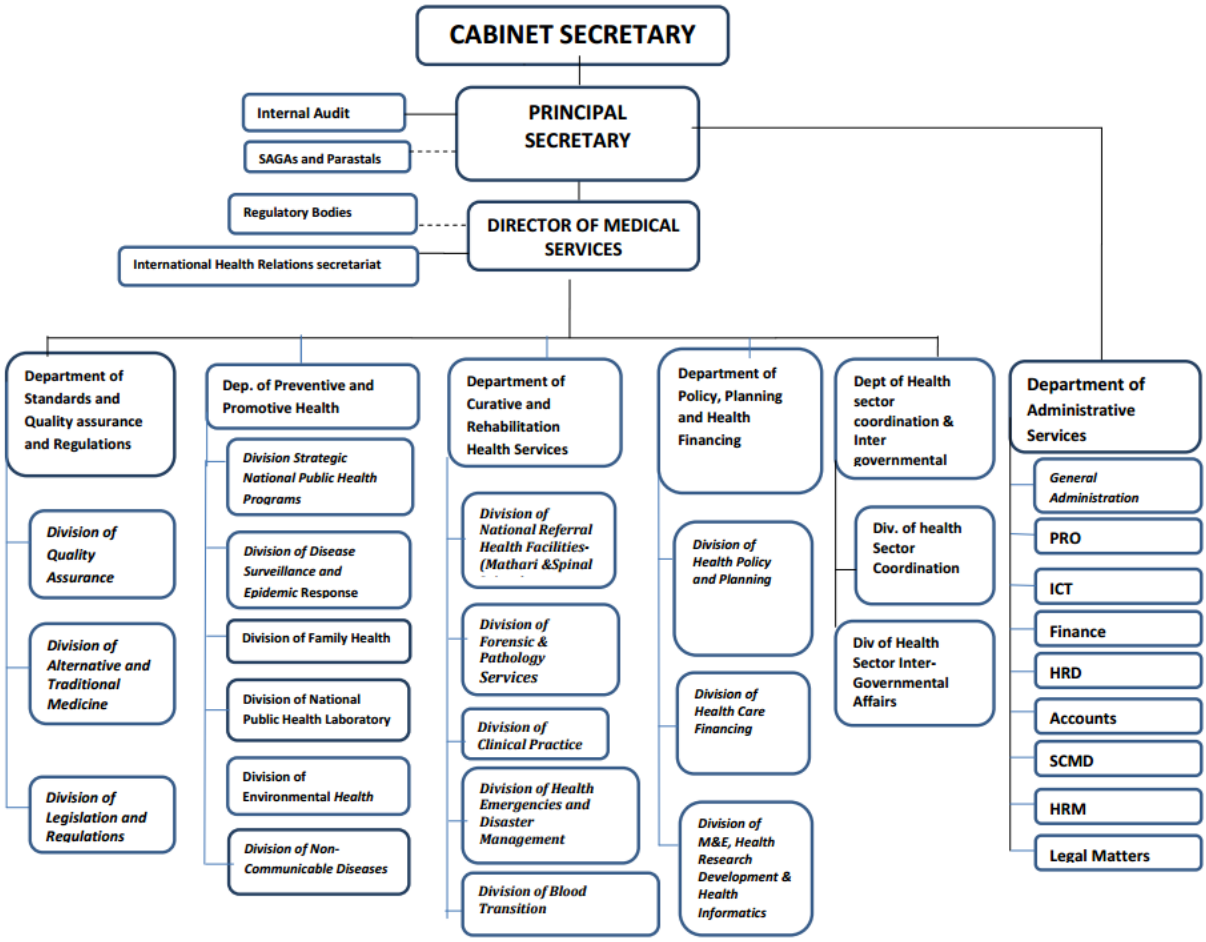


Figure 1: *Organogram of the Ministry of Health*

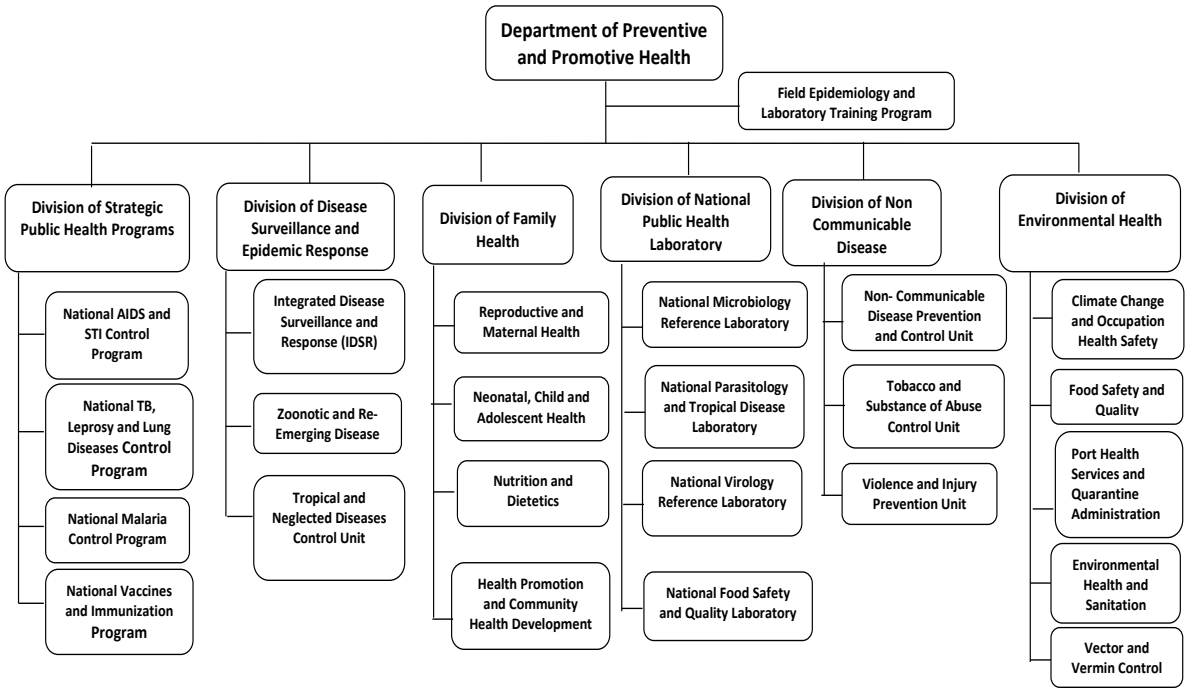


Figure 2: *Organogram of Department of Preventive and Promotive Health*

Inter-sectoral collaboration

In order to achieve the set targets, the NTD programme aims at coordinating and fostering integration of the implementation of NTD control activities across projects, programmes, units, divisions, departments, institutions and ministries participating in NTD control. This will promote collaboration which is expected to stimulate synergy towards achieving control goals and targets.

The NTD Programme will endeavour to work closely with the Dengue Project, National Programme to Eliminate Lymphatic Filariasis (NPELF), Kenya Trachoma Elimination Programme (KTEP), National School Based Deworming Programme (NSBDP), Kenya Field Epidemiology and Laboratory Training Programme (FELTP), National Tuberculosis, Leprosy and Lung Disease Programme (NTLDP), the Integrated Disease Surveillance and Response Unit (IDSRU), Zoonotic Diseases Unit (ZDU), Vector Borne Disease Control Unit (VBDCU), Malaria Control Unit (MCU), Neonatal Child and Adolescent Health Unit (NCAHU), Ophthalmic Services Unit (OSU), Health Promotion Unit (HPU), Community Health Unit (CHU), Division of National Public Health Laboratory Services (NPHLS), Division of Environmental Health (DEH), Division of Health Informatics Monitoring and Evaluation (HIME), the Kenya Medical Research Institute (KEMRI), Ministry of Education Science and Technology (MoEST), Ministry of Agriculture, Livestock and Fisheries (MALF), Ministry of Environment and Natural Resources (MENR) and the Ministry of Water and Irrigation (MWI).

Partnership

The NHSSP provides that partnership is the main vehicle through which the plan's targets can be achieved as it allows all health sector stakeholders to collaborate and coordinate their actions, recognizing each ones' specific responsibilities. This has been achieved through strengthening coordination and collaboration, as part of the sector-wide approach (SWAP) to the health sector reform agenda. The NTD Programme will work towards expanding the partnership base and bring more partners on board. The current principal donors and development partners in the health sector are shown in table 5.

Table 5: Principal donors and development partners in the health sector

	NTDs	Infectious disease control (TB & malaria)	HIV/AIDS	Health Sector reform and decentralization	Sub-counties health systems	Health financing
				Policy development		
WB				X	X	X
UNFPA			X		X	
WHO	X (LF)	X	X	X	X	X
UNAIDS			X			
EU	X (Trachoma)	X		X	X	
USAID		X	X	X	X	X
DFID		X	X	X	X	X
SIDA			X	X	X	
JICA		X	X		X	
IPPF			X			
NGDO*s	X (Trachoma)	X	X			
DANIDA				X	X	

Current list of NTD partner NGOs/NGDOs

STH and Schistosomiasis

Children's' Investment Fund Foundation (CIFF)
The END Fund
Effect Hope
Deworm the World initiative/Evidence Action
Porridge and Rice
Peepoople
Feed the Children
Medical Assistance Programmes (MAP) International

Lymphatic Filariasis

Helen Keller International (HKI)
Medical Assistance Programmes (MAP) International

The END Fund

Trachoma

The Queen Elizabeth Diamond Jubilee Trust Fund (QEDJTF)
Sight Savers Kenya
Fred Hollows Foundation
Operation Eyesight
Christian Blind Mission
African Medical and Research Foundation (AMREF)
Lions Clubs International Foundation
Turkana Eye Care Project (TECP)/Spanish doctors

Leishmaniasis

Drugs for Neglected Diseases initiative (DNDi)

Dengue & Chikungunya

Dengue Vaccine Initiative (DVI)

Neglected Tropical Diseases Situation Analysis

7.1 Epidemiology and burden of disease

Out of the 17 diseases currently listed as NTDs, 14 are either suspected or confirmed to be endemic to Kenya. These are soil-transmitted helminthiasis (STH), Schistosomiasis, Lymphatic Filariasis (LF), Trachoma, Leishmaniasis, Dengue & Chikungunya, Rabies, Guinea Worm Disease (GWD), Leprosy, Cystic Echinococcosis (CE), Taeniasis, the Food Borne Trematodiases (FBT), Onchocerciasis and Human African Trypanosomiasis (HAT). They may occur singly or in combination in certain individuals or communities living in geographical areas where more than 1 NTD is co-endemic. Additionally, 3 other neglected conditions are of interest to the national NTD Programme: These are Mycetoma, Tungiasis and Snake Bites. The programme will continue to support/house control activities for the 3 neglected conditions even as effort are made to establish a definitive platform(s) on which each of them will be comprehensively handled.

Soil-transmitted helminthiasis

Soil-transmitted helminthiasis (STH) is confirmed as endemic to Kenya. All three types (roundworms, whipworms and hookworms) are widely distributed across Kenya with more than 16.6 million people believed to be at risk of infection with 1 or more of the 3 types of worms. Figure 6 shows the known geographical distribution of STH in Kenya. The latest mapping information available to the NTD Programme is tabulated as shown in annex 2a.

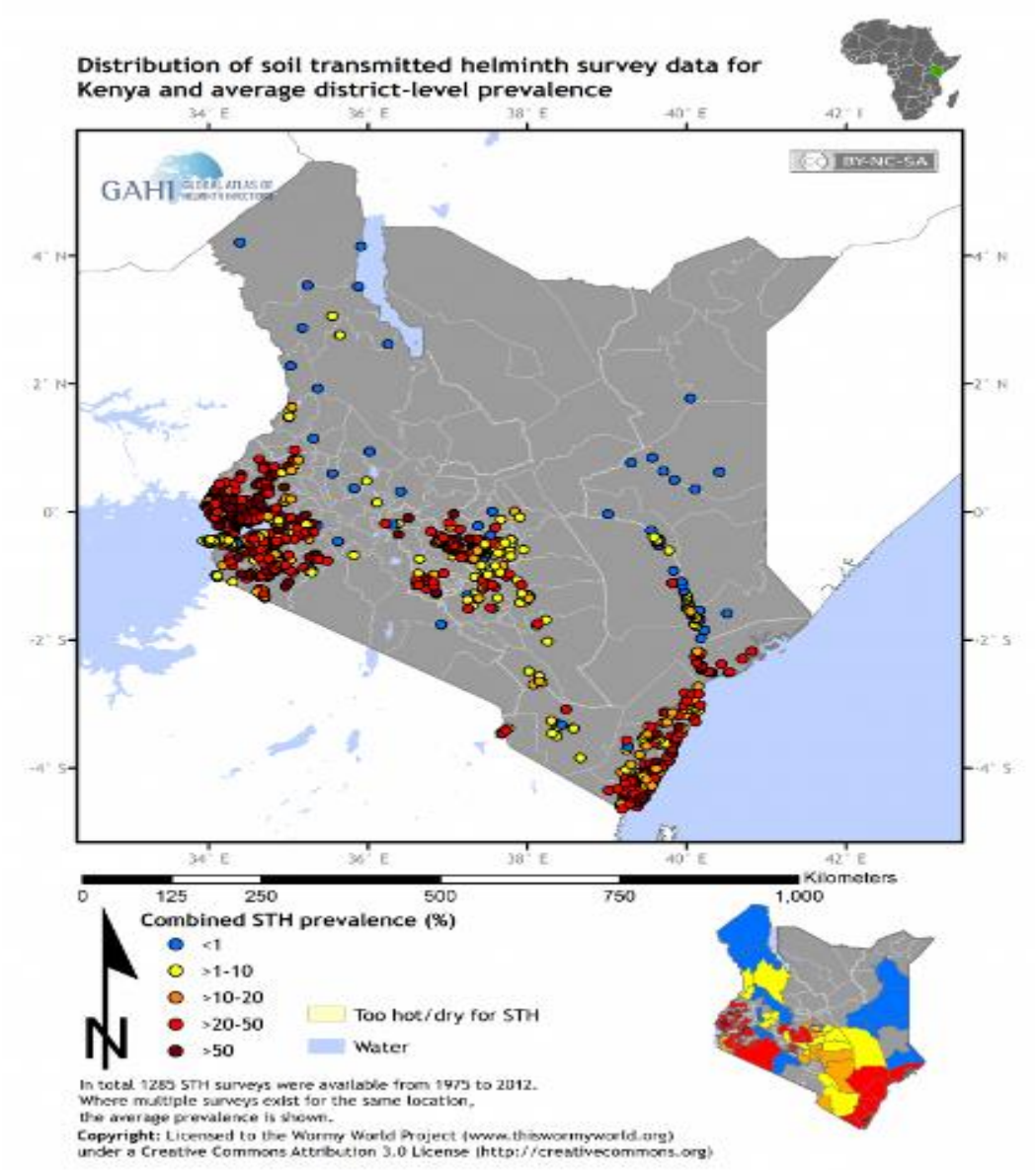


Figure 6: *Distribution of soil-transmitted helminthiasis (STH) in Kenya*

Schistosomiasis

Schistosomiasis is confirmed as endemic to Kenya. The pattern of occurrence involves some sub counties within the Lake Victoria region, parts of Central Kenya, Lower Eastern and the Coast regions. Approximately 6 million people are estimated to be at risk of infection with Schistosomiasis. The known geographical distribution of Schistosomiasis in Kenya is shown in figure 7. The latest mapping information available to the NTD Programme is tabulated as shown in annex 2b.

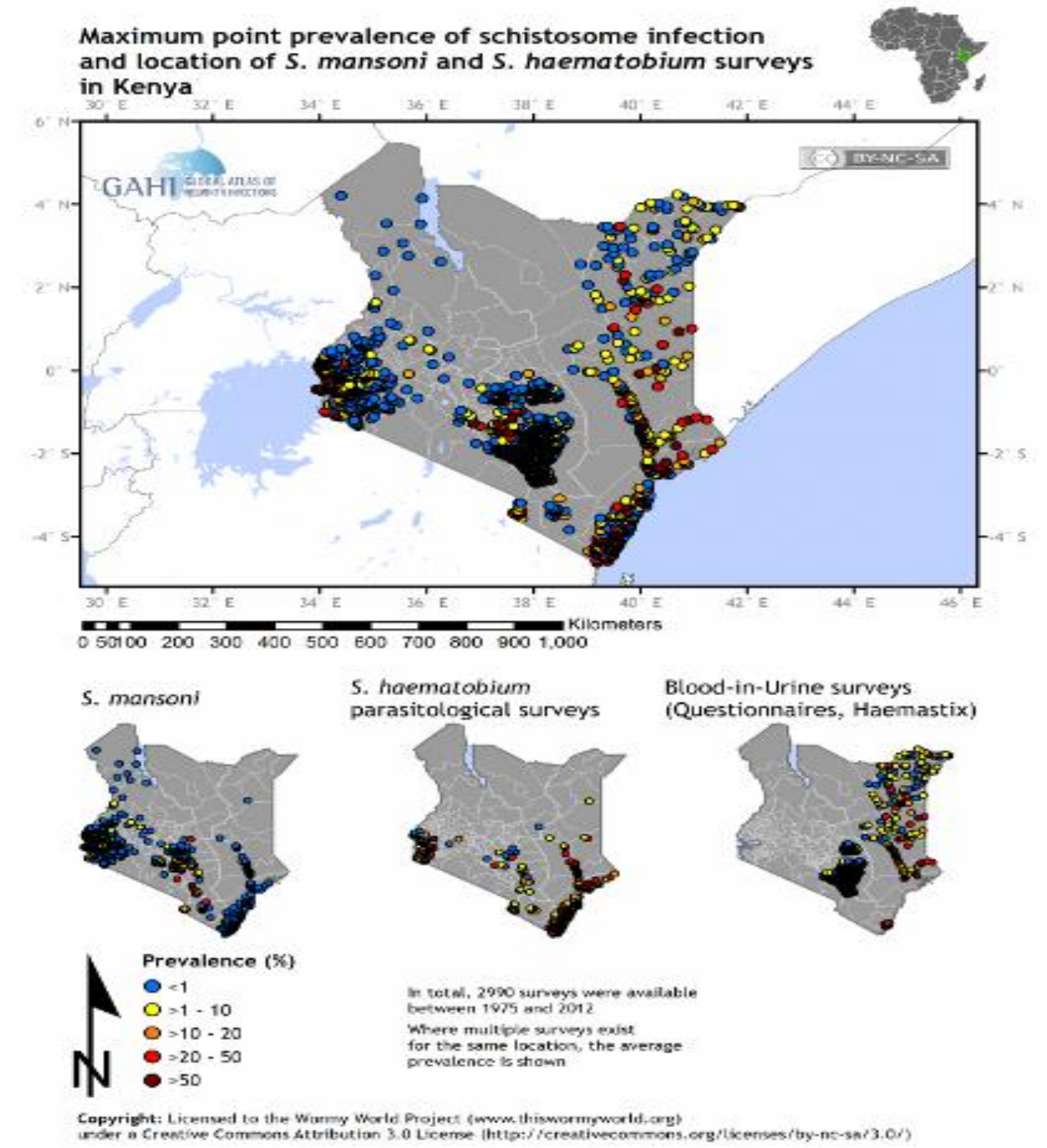


Figure 7: *Distribution of Schistosomiasis in Kenya*

Lymphatic Filariasis

Lymphatic Filariasis (LF) is confirmed as endemic to Kenya. It is believed to occur exclusively within some sub counties of the Coast Region. Approximately 3.7 million people are estimated to be at risk of infection with LF. Figure 8 shows the known geographical distribution of LF in

Kenya. The reported mapping information available to the NTD Programme is tabulated as shown in annex 2c.

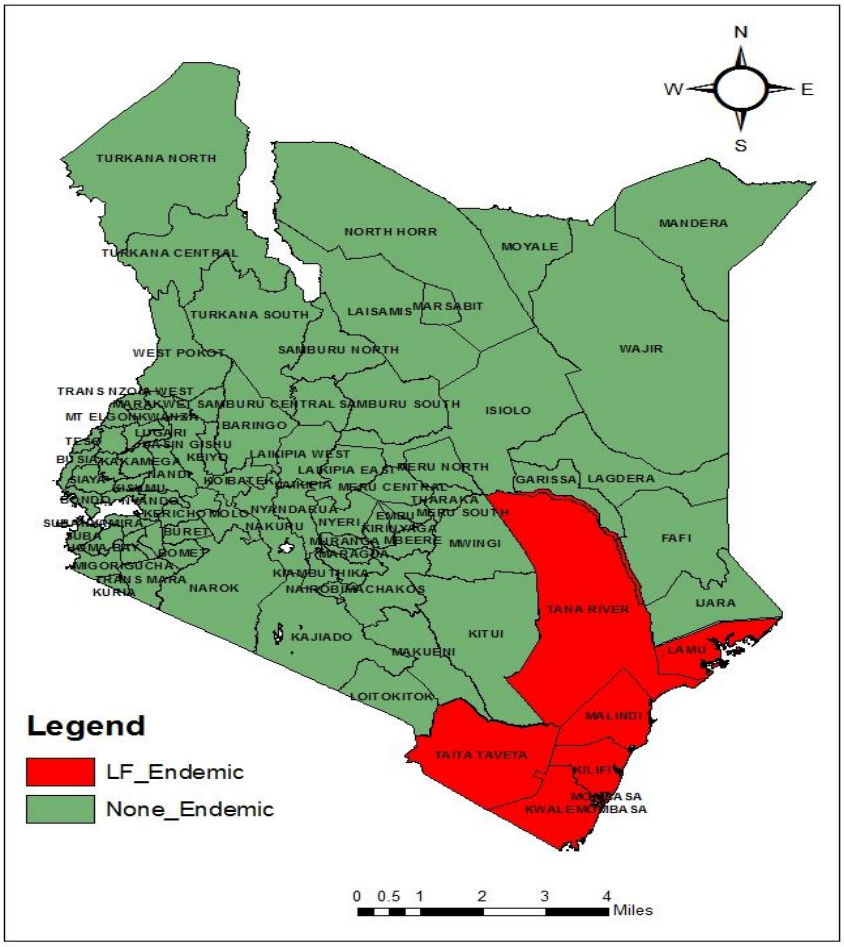


Figure 8: *Distribution of Lymphatic Filariasis (LF) in Kenya*

Trachoma

Endemicity of Trachoma is currently confirmed to 35 Implementation Units in the arid and semi-arid regions of the country. Approximately 7 million people living in these sub counties are at risk of infection with Trachoma. Figure 9 shows the known geographical distribution of Trachoma in Kenya. Mapping information available to the NTD Programme is shown in tabulated form in annex 2d.

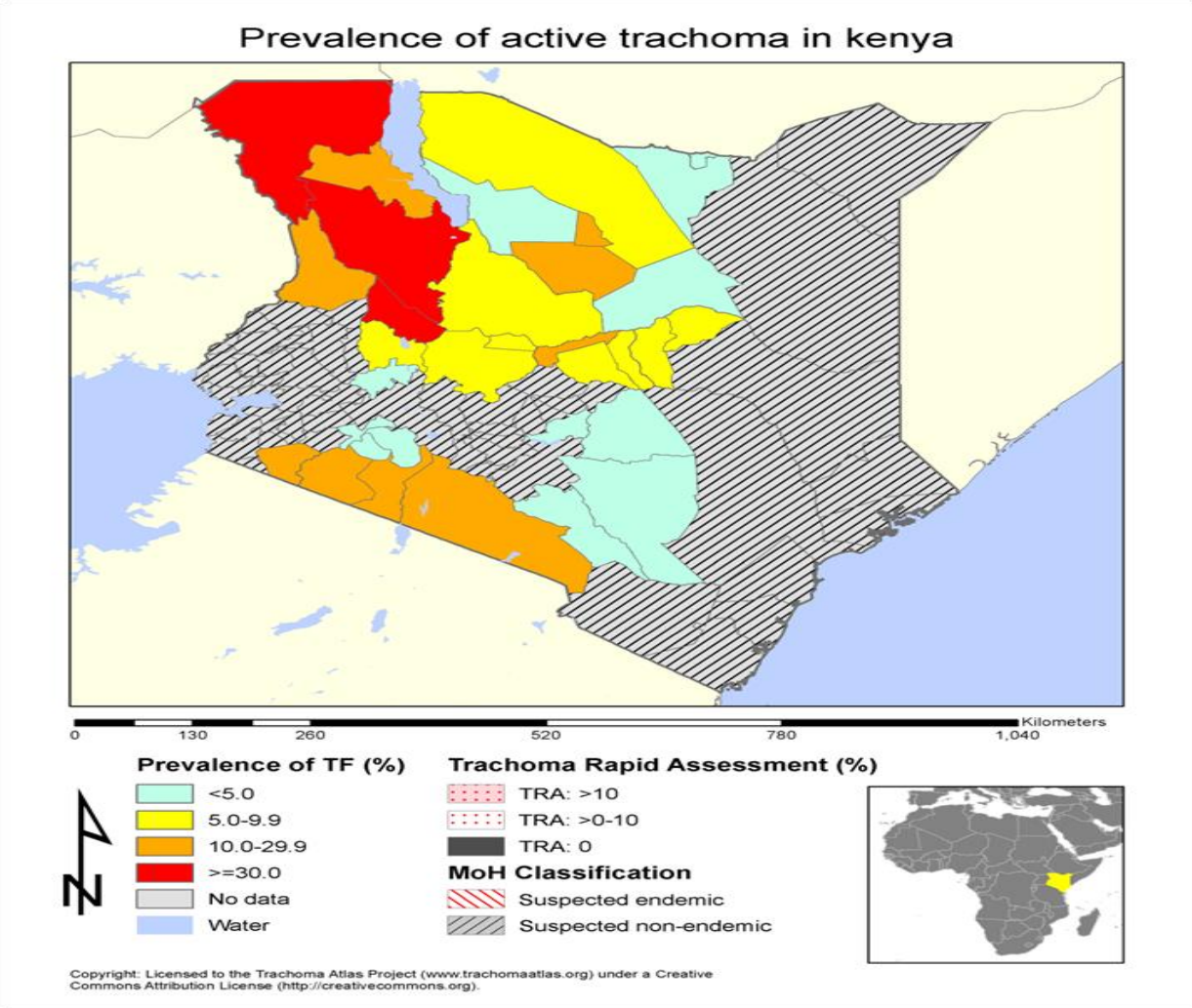


Figure 9: *Distribution of Trachoma in Kenya*

Other NTDs

Mapping for other NTDs is generally incomplete hence it is not clear the approximate number of people at risk of infection with the various diseases. Figure 10 shows the known geographical distribution of Leishmaniasis in Kenya. Figure 11 shows the known geographical distribution of the NTDs, including the co-endemicity picture in areas where more than 1 disease is known to co-exist. Annexes 2e, 2f, 2g and 2h show tabulated information currently reported to the NTD Programme on mapping of Leishmaniasis, Dengue, Cystic Echinococcosis (CE) and Onchocerciasis. So far, there is no mapping information available to the NTD Programme for the other NTDs. It is important to note however that case reports have been made for these NTDs. Furthermore, significant amounts of information do exist as a result of work done by individual researchers, private institutions and other government departments, institutes and ministries. These include Rabies, Guinea Worm Disease (GWD), Leprosy, Taeniasis, the Food Borne Trematodiases (FBT) and Human African Trypanosomiasis (HAT).

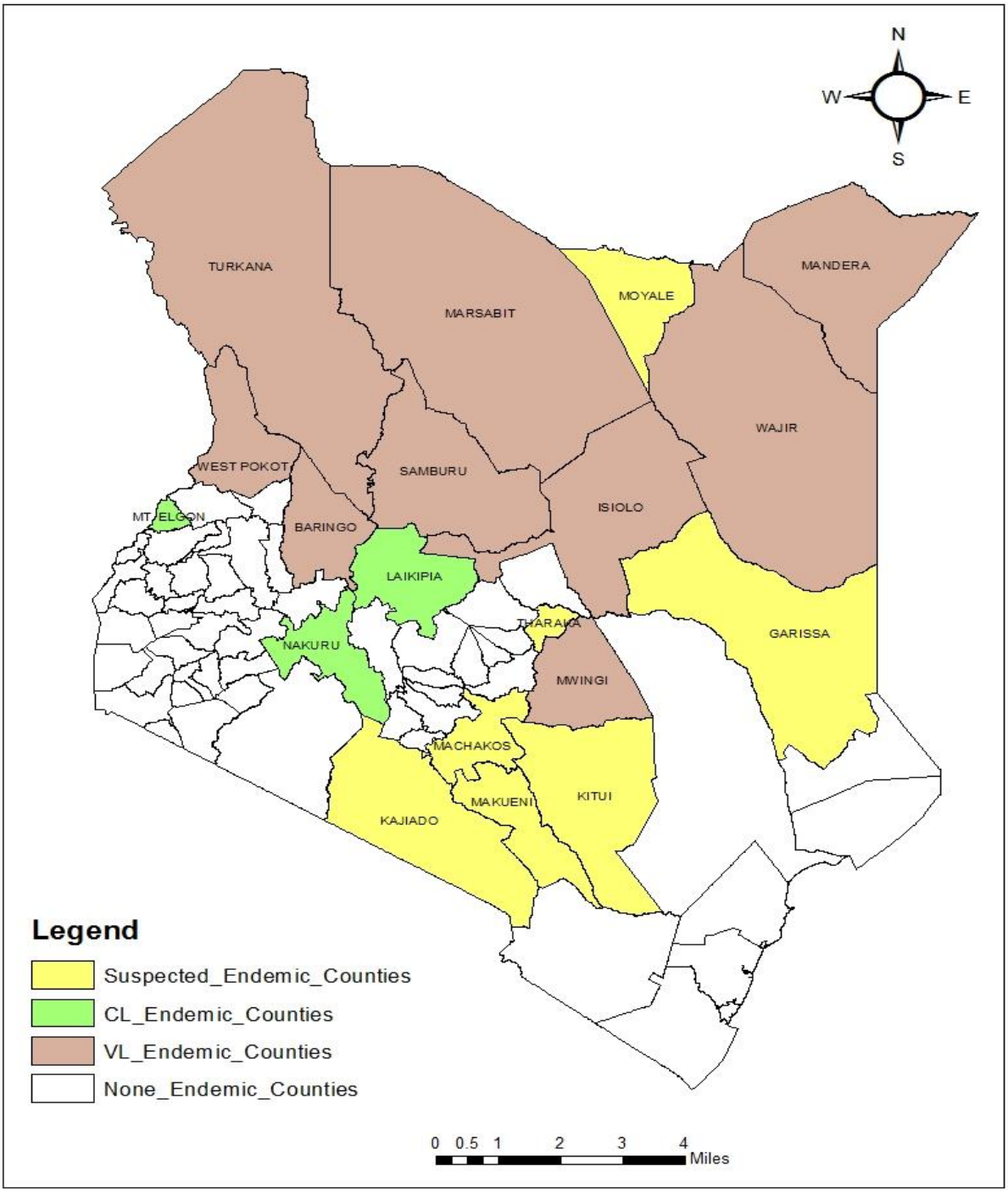


Figure 10: *Distribution of Leishmaniasis in Kenya*

The same applies to Mycetoma, Tungiasis and Snake Bites. There is an urgent need to consolidate existing data into a structured NTD database as well as conduct mapping for NTDs where the same is required to determine their distribution.

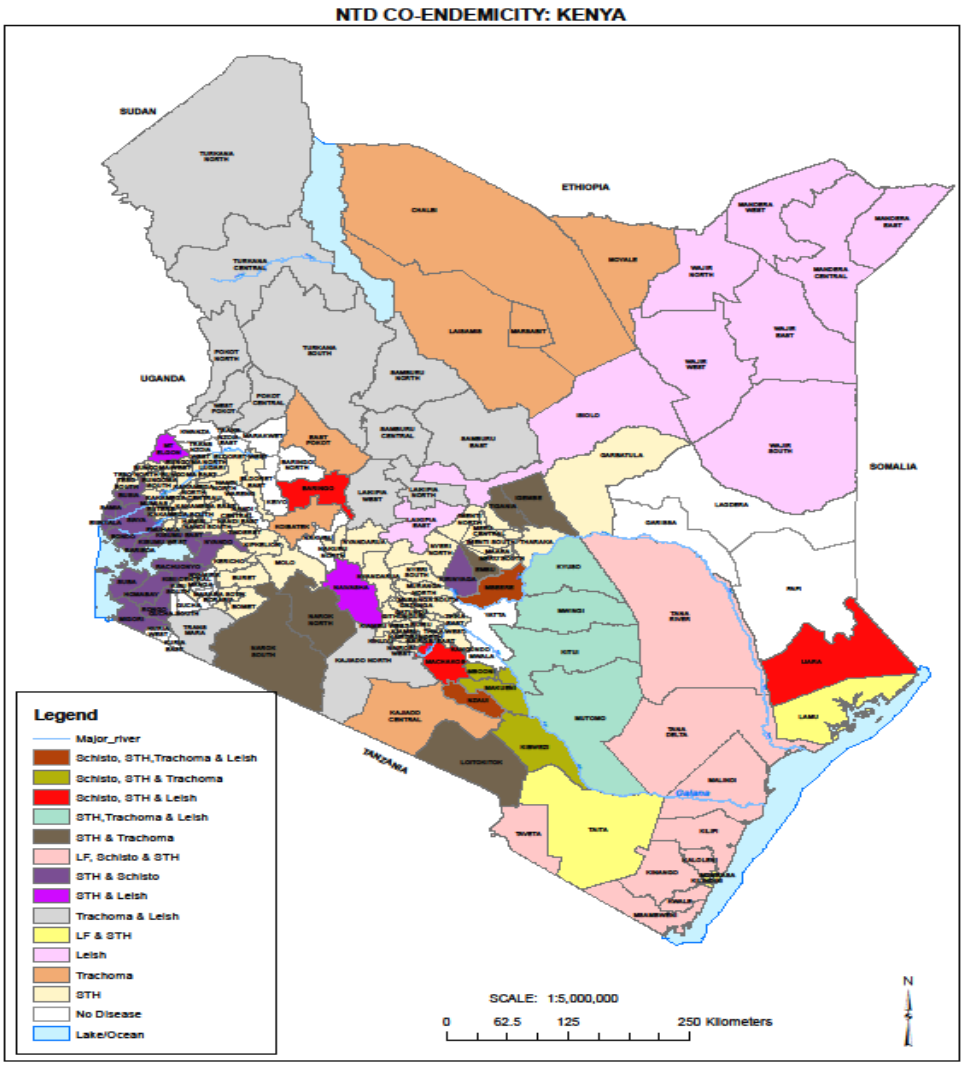


Figure 11: *Co-endemicity map of the Neglected Tropical Diseases (NTDs) in Kenya*

NTD Mapping Status

Mapping diseases distribution in a country is important in guiding decision making for their control. Countrywide mapping has been done for STH, Schistosomiasis, LF and Trachoma (Table 6). Leishmaniasis, Dengue and CE (Table 7) are either partially mapped or not mapped at all. The mapping activities were conducted when the number of administrative units was still 158 districts. These have since increased to 290 sub counties. The programme has embarked on, and will continue to align information based on the older districts to the new sub counties.

Table 6: NTD mapping status for PCT diseases

Name of endemic NTDs	Total number of sub-counties	No of sub-counties suspected to be endemic	No of sub-counties mapped or known endemicity status	No of sub-counties remaining to be mapped
STHs	158	158	158	0*
Schistosomiasis	158	158	158	0*
LF	158	100	100	0*
Trachoma	158	43	39	4

Table 7: Needs for mapping completion for case management diseases

Name of endemic NTDS	No of sub-counties suspected to be endemic (at risk)	No of sub-counties assessed or known endemicity status	No of sub-counties remaining to be assessed
LF	13	13	0*
TT	43	39	0
Leishmaniasis	30	0	30*
Dengue	158	158	158
Guinea worm	9	9	0
CE	158	3	155

*There is need to validate the current mapping status/needs shown

8.1 Neglected Tropical Diseases Programme implementation

Interventions have been ongoing for the control of some of the NTDs in Kenya. These may be broadly categorized into the Preventive Chemotherapy (PCT) and Case Management (CM) interventions.

Preventive Chemotherapy (PCT) interventions

Several disease specific control programmes have been established to implement various PCT control interventions.

The National Programme to Eliminate Lymphatic Filariasis (NPELF) was established in 2001 to implement control of LF and STH within LF endemic sub counties in the Coast region. Under this programme, mapping was conducted across the whole country, which confirmed endemicity of the disease to the Coast region. Mass Drug Administration (MDA) was instituted in 2002 as shown in table 8. The MDA activities have been inconsistent and ineffective. Implementation is still ongoing as at 2016.

The Kenya National School Based Deworming Programme (NSBDP) was established in 2009 to conduct MDA activities against STH and Schistosomiasis. The programme brings together departments within the Ministry of Health (MoH) and the Ministry of Education (MoEST). It stalled shortly after establishment to be re-launched in 2012 as a 5 year programme. The re-

launched programme is supported by the Children's Investment Fund Foundation (CIFF) and the END Fund through facilitation of Deworm the World initiative/Evidence Action. Table 8 shows the achievements of the programme which is currently in its fourth year of implementation.

The Kenya National Plan for the Elimination of Trachoma (KNPET) 2008-2015 was launched in 2009. This was reviewed in 2010 leading to development of the Trachoma Action Plan (TAP) 2011-2020 which is reviewed annually. There exists a Trachoma Task Force which is a sub-committee of the National Prevention of Blindness Working Group (NPBWG). The task force currently advises the coordination of Trachoma activities in the country. MDA activities have been implemented since 2007 as shown in table 8.

Research activities have been contributing to intervention albeit at a much smaller scale. The Schistosomiasis Consortium for Operational Research and Evaluation (SCORE) Project in the Lake Victoria region, Tuangamize Minyoo Kenya Imarisha Afya (TUMIKIA) Project in Kwale, Take-Up Project in Western Kenya are just but a few examples of such projects. As much as possible, the NTD programme has tried to engage research projects with the goal of ensuring coordinated implementation of the interventional aspects of the projects. Efforts will be made to continuously improve coordination of research activities for NTDs.

Case Management (CM) interventions

In 2010, the NPELF conducted 154 hydrocele surgeries with support from the Medical Assistance Programmes (MAP) International. Table 9 shows a summary of existing information on these interventions.

The Trachomatous Trichiasis (TT) surgery backlog was 41,787 by January 2014. A total of 7,075 surgeries were conducted by October 2014. Kenya currently has 42 certified non-eye care TT surgeons with 22 eye care workers performing TT surgery. The programme plans to increase the number of outreach teams from the current 20 to 28 in a bid to conduct at least 8,303 surgeries per year. This will make it possible for the remaining backlog to be cleared by early 2019. Figure 12 shows the distribution of TT in Kenya while figure 13 shows the number of TT surgeries conducted between 2004 and 2013 in Kenya. Also showing a summary of information available for these interventions is table 9.

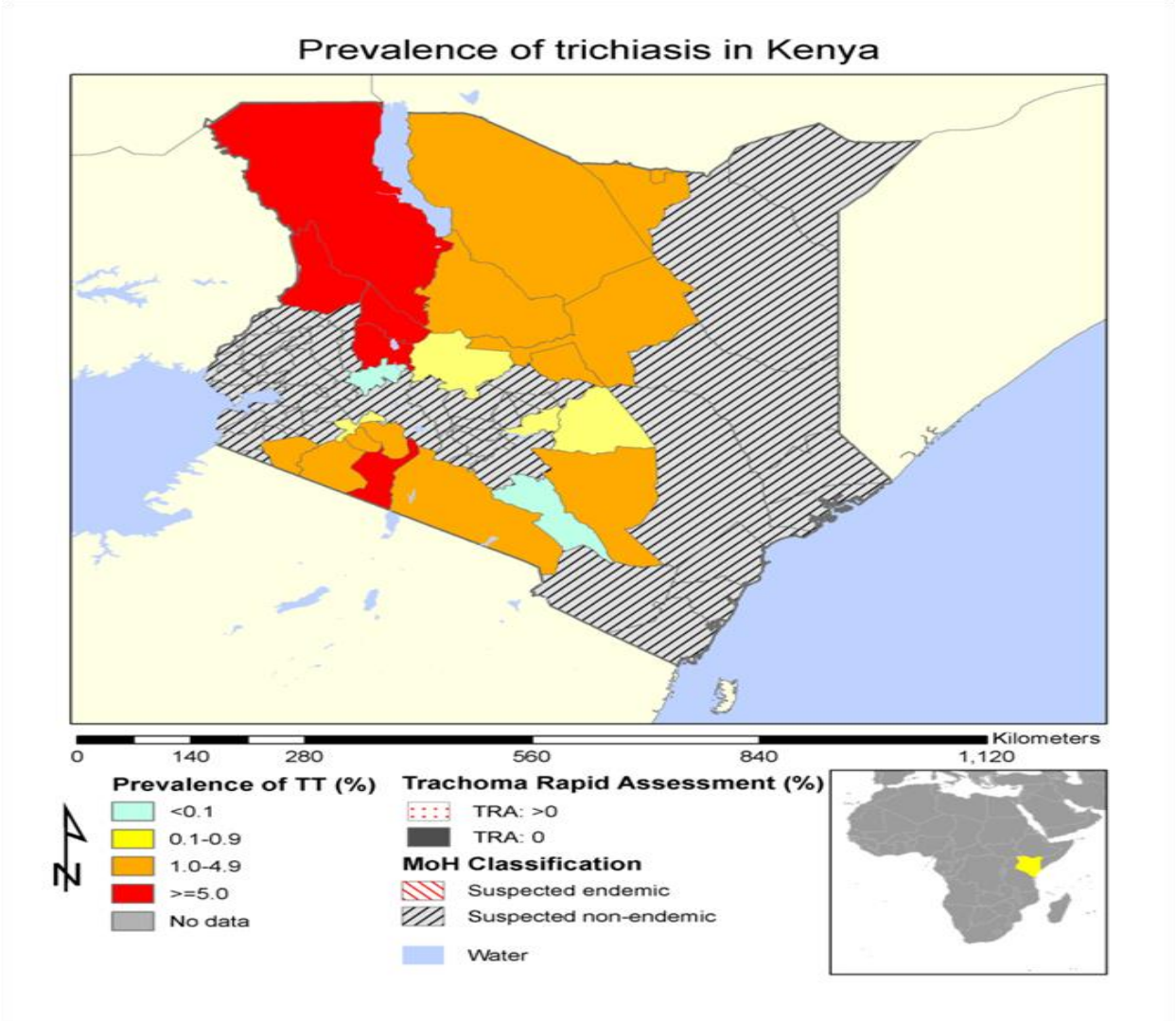


Figure 12: *Distribution of TT in Kenya*

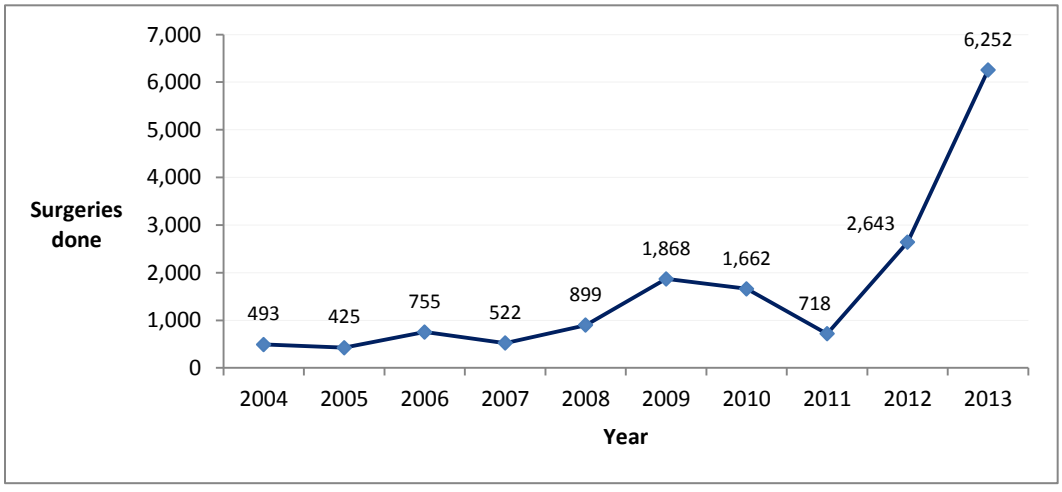


Figure 13: *Number of TT surgeries conducted between 2004 and 2013 in Kenya*

There is no clear information on the number of cases managed for Leishmaniasis. However, National Leishmaniasis Control Programme (NLCP) has conducted several activities nationally and within known endemic areas to boost access to effective treatment. This has mainly been supported by DNDi and Medecins Sans Frontieres (MSF). Advocacy has been conducted at all levels with special reference being on the World Health Day of 7th April 2014 during which Kenya's focus was on Visceral Leishmaniasis. In addition, awareness creation campaigns have been conducted within target communities in Isiolo, Wajir, West Pokot, Baringo and Turkana. In addition to establishment of two Visceral Leishmaniasis referral health facilities in Baringo (Kimalel) and West Pokot (Kacheliba), the programme has in collaboration with partners continued to build capacity through training frontline health workers within endemic areas on diagnosis and treatment of Leishmaniasis. The programme has completed review of guidelines on diagnosis and treatment of Visceral Leishmaniasis. These new guidelines introduce the safer and more efficacious combination therapy with Paromomycin and Sodium Stibogluconate (PSSG), which replaces the previously used monotherapy with Sodium Stibogluconate (SSG) alone.

Guinea worm disease (Dracunculiasis) is virtually eliminated in Kenya. However, in two countries bordering Kenya, the disease is still endemic and a major public health concern. These countries are Ethiopia situated to the North of Kenya and South Sudan to the North West of Kenya. Therefore, to be certain that the disease does not get reintroduced into the country; intensive surveillance has to be carried out on the Kenyan border with these two countries. Among the important areas for enhanced surveillance include Turkana, West Pokot and Trans-Nzoia counties.

Guinea worm disease is at eradication stage in Kenya. Twenty-five years ago, there were an estimated 3.5 million cases in 20 countries. The number of cases has been reduced by more than 99% to about 1,800 cases in 4 countries by 2010 namely; Sudan (1,698), Mali (57), Ethiopia (20), Chad (10) and Ghana (8). The last reported indigenous case of Guinea worm in Kenya was in 1994. However, due to its proximity to endemic countries of South Sudan and Ethiopia, the Kenya Guinea worm eradication programme has set up surveillance and coordination systems in the counties neighbouring the two countries to make sure that any rumour or suspected case is reported to the nearest health facility for investigation within 24 hours. The information is then disseminated to the counties and the National office. In Turkana, County Health Management Teams (CHMTs), health care workers, Teachers, CHAs and Village Based Volunteers (VBVs), have been trained on case detection, prevention and control. IEC Materials have been produced and disseminated in these areas. A reward of about Kes 100,000 (US$ 1,000) has been offered for any positive case reported.

9.1 Gaps and Priorities

There is a lot of information on NTD control activities which is not readily available to the NTD Programme. This information needs to be collected from its current location(s). The NTD

Programme has embarked on a data mining exercise which will enable collection of such available information and entry into a National Integrated NTD Database (NIND). The programme will also step up coordination through activating of regular ICC and TWG/TAG meetings. The methods used to map the country for STH, Schistosomiasis and LF were very useful in providing information with which treatment decisions were made. These methods which included desk reviews of individual work, blood in urine tests for Schistosomiasis and informed individual assessments by experienced officers may not have provided accurate maps. Some of the counties/sub counties/districts which were declared ineligible for interventions (Migori and Tana River for Schistosomiasis) have been found to have a very high burden of disease.

Similarly, some of the districts which had been declared free of STH are now being found to have transmission. These have been included in the PCT databank with the effect of inflating the denominator for target interventions in Kenya. The result is a consistently low coverage due to an expanded denominator. Questions have been raised about the distribution of LF especially towards the Western border of the country with Uganda. Uganda maps show a distribution up to its border with Kenya yet a dramatic absence occurs immediately on crossing over to the Kenya side. Such observations have raised doubt over authenticity of the available mapping information hence the need for a carefully executed validation exercise.

The changes in administrative units, following the promulgation of the current constitution of Kenya (2010) have created a new challenge in data for monitoring. An increase from 158 districts to 290 sub counties has made it difficult to align mapping activities to present day interventions. Some of the information used during the desk reviews was very old and out-dated. This could have led to some of the observed inaccuracies.

The programme intends to expand the segments of the population currently reached by ongoing interventions. Women of child bearing age and other at risk populations such as fishermen will be included in routine MDA activities against Schistosomiasis. Plans are also underway to engage the county government with the goal of expanding reach of both STH and Schistosomiasis MDA activities to adults and pre School-Age Children (Pre SACs).

Coordination of various stakeholders implementing vertical NTD control activities has continued to pose a big challenge to integration. The programme will move to step up efforts to enforce integration of NTD control activities. Existing programmes will be strengthened with the view of improving contribution to the over-arching goal of NTD control. Where programmes are not yet in existence, efforts will be made to establish disease specific programmes which are anchored to the NTD Programme. Special attention will be paid to coordination of research activities.

In order to certify Kenya as Guinea worm free country, the following has to be accomplished:

a) Strengthen and supervise surveillance and data flow from at risk sub-counties to report weekly and monthly

b) Have zero reporting from non-endemic sub-counties in IDSR/HMIS
c) Social mobilization and advocacy of the disease in non-endemic sub-counties
d) Produce and disseminate IEC materials to non-endemic sub-counties.
e) Launch Guinea Worm National certification committee

Most of the above conditions have been achieved with the latest being the gazettement and launch of the national Guinea Worm eradication certification committee.

The NTD Programme will continue to pursue closer working arrangements with the ZDU (Schistosomiasis, Rabies, Taeniasis, CE, FBT and HAT), NTLDP (Leprosy), VBDCU (LF, Dengue, Guinea Worm, Onchocerciasis and HAT), NCAHU (STH and Schistosomiasis), OSU (Trachoma), MCU (LF, Leishmaniasis and Dengue), NPHLS, KEMRI, MoEST, MALF, MWI, MENR and all other government agencies to ensure that proper coordination of all NTD control activities is achieved, with proper reporting and data sharing for inclusion into the National Integrated NTD Database (NIND).

Table 8: Summary of intervention information on existing PCT programmes

NTDs	Date programme or intervention started	Total number of sub-counties targeted	Number of sub-counties covered (geographic coverage)	Total population in target sub-counties	No. (%) population covered	Key strategy used	Key partners
STH	2009	94	94	5,700,000	6,405,645 (112%)	MDA	WHO MOEST, MOH CIFF & END Fund, Deworm the World Initiative at Evidence Action
Schistosomiasis	2012	41	41	600,000	890,459 (148%)	MDA	WHO, MoEST, MoH CIFF & END Fund, Deworm the World Initiative at Innovations of Poverty Action
LF	2002	13	9	2,300,000	3,700,000 (62%)	MDA	Liverpool Centre for LF support, WHO
Trachoma	2007	39	8	7,000,000	3,198,956 (45.7%)	MDA	WHO, EU, SSI, AMREF, CBM, OEU

Table 9: Summary of Information on existing case management programmes

NTDs	Date programme or intervention started	Total number of sub-counties targeted	Number of sub-counties covered (geographic coverage)	(%) covered	Key strategy used	Key partners
LF	2002	13	2	15.4 %	Surgery, lymphoedema management	Liverpool Centre for LF support, WHO
Trachoma	2004	39	39	100%	TT Surgery	WHO, EU, SSI, AMREF, CBM, OEU, FHEA, LIONS clubs
Leishmaniasis	N/A	30	0	0.0%	Active and passive case detection and treatment	DNDi, KEMRI, UoN
Dengue	2008	2	2	100%	Active case finding and health facility treatment	KEMRI, Nagasaki University
CE	1983	1	1	100%	Active case finding	AMREF

A SWOT analysis carried out on the current status of control of NTDs in the country is presented in Table 10.

Table 10: SWOT counteracting table

No.	Weakness	Strengths Counteracting Weaknesses	Opportunities Counteracting Weaknesses
1	Lack of policy on NTDs	Availability of reviewed National NTDs Strategic plan	Development of National Policy for NTD
2	Limited resources for implementation of NTD activities	National and global political commitment for NTD	MOH allocation for NTD programme
3	Inadequate staff in NTD program	Devolution of the Health sector	Deployment of requisite number of staff
4	Limited support for some NTDs	Existence of ICC to support NTD coordination Existence of WASH partners within endemic counties	NTD programme to take lead in promoting coordination and integration of NTD interventions while leveraging on the global and local momentum to support NTDs
5	Inadequate structures at county level for NTD interventions	The existence of County Trachoma Task Forces to oversee implementation within Counties Inclusion of Trachoma in Country Health strategic plans and annual work plans are examples of useful structures at County level	Other NTDs to establish structures at Counties
6	NTD not previously prioritized	NTDs are now included in the HSSP	MoH to establish a budgetary line for NTD
7	Inadequate drugs and supplies and diagnostic kits for CM-NTDs	Existence of KEMSA to coordinate procurement of commodities and supplies and Partner commitment for drug donations for NTD elimination	Inclusion of drugs and diagnostic kits into the essential drug list
8	Case identification challenges for Trachomatous Trichiasis patients	Existence of Community Health services structures	Train CHVs to identify TT patients at household level and make appropriate referrals
9	Socio-cultural factors hinder uptake of SAFE interventions	The existence of Health Promotion and Community Health services structures in the Counties	Collaboration with Health promotion and Community strategy units to achieve BCC in NTD interventions
10	Challenges with regard to clearance for donated drugs (Handling and storage charges, Clearance fee, transport to warehouse)	The existence of MOH procurement Unit to guide planning and procurements	Advocacy for Waiver on levies e.g. of Kenya Railway Levy (KRL) on imported drugs

11	Lack of an elaborate M&E framework for monitoring SAFE interventions	Existence of MOH M&E framework that can be customized for Trachoma elimination	Development of an M&E framework specific for trachoma/ NTD
12	Limited support for PHASE interventions	Existence of the NTD Strategic plan and Trachoma Action Plan for resource mobilization and collaboration with WASH players including Ministry of Environment, Water and Natural Resources (MEWNR), Ministry of Education (MoE), Ministry of Agriculture, Livestock and Fisheries Development and relevant MOH departments	Resource mobilization with the WASH sector to up-scale and coordinate PHASE interventions
No.	**Threats**	**Strengths counteracting threats**	**Opportunities counteracting threats**
1	Inadequate skills for resource mobilization, financial management and planning	Existence of technical staff for programme coordination and implementation	Capacity building for the technical staff with funding from GoK and partners
2	Sustaining the impact of NTD interventions after end of donor funding	Devolution of Health to Counties with attendant budgetary allocation	Entrenchment into the County Health strategies and plans and prioritization of NTDs by Counties Governments
3	Insecurity within endemic counties interfere with implementation of planned activities	Existence of the Ministry of Interior and coordination of National Government	Collaboration with the Ministry of Interior and coordination of National Government for security of staff during interventions
4	Adverse effects from administered drugs	Existence of Health workers and CHAs	Health education & Community mobilization to address community concerns
5	Hard to reach areas/populations	Existence of alternative means of transport e.g. donkeys and camels	Employ alternative means to reach all populations
6	Poor communication networks within the endemic counties	Existence of alternative means of communication e.g. radio calls, chiefs Barazas	Employ alternative means of communication available
7	Insecurity within endemic counties interfere with implementation of planned activities	Existence of local health workers who can be relied upon	Operationalization of devolved county government to improve security
8	Inadequate operational research to inform operationalization of NTD interventions	Existence of HR, Academic and Research institutions	Coordination of existing institutions to maximize outputs in NTD Research and coordination of existing institutions to maximize outputs in NTD Research
9	Inadequate utilization of data and information for planning	Existence of HRthat can be trained to analyse data, Academic and Research institutionsthat can be consulted	Utilization of operational research findings to inform policy and actions on scaling up interventions
10	Limited M&E activities on NTD programme	Established NTD M&E system and	Operationalization of NTD M&E system

		Availability of trained personnel in M&E	

PART 2: NEGLECTED TROPICAL DISEASES STRATEGIC AGENDA

Overall NTD Programme mission and goals

Mission: To provide effective leadership and participate in the prevention, control, elimination and eradication of NTDs in the country.

Vision: A healthy and productive nation free from NTDs

Strategic Goal: To accelerate the reduction of the disease burden through control, elimination and eradication of targeted NTDs and contribute to poverty alleviation increased productivity and better quality of life of the affected people in the Country.

Guiding Principles and Strategic Priorities

To ensure success, the following guiding principles will underpin the implementation of the Strategic Plan:

Strategic Priority 1: Strengthen government ownership, advocacy, coordination and partnerships:

Efforts have been made to enhance country ownership and leadership of national NTD programmes. This will require the political commitment and financial support of governments.

Strategic Priority 2: Enhance planning for results, resource mobilization and financial sustainability

Strategic Priority 3: Scale up access to interventions, treatment and system capacity (service delivery) building

Strategic Priority 4: Enhance NTD monitoring and evaluation, surveillance and operations research.

The programmes strategic framework summary and strategic objectives are outlined in Table 11 below:

Table 11: Strategic Framework Summary

STRATEGIC PRIORITIES	STRATEGIC OBJECTIVES
1. Strengthen government ownership, advocacy, coordination and partnership	1. Strengthen coordination mechanisms for NTDs control programme at the national and county level. 2. Strengthen and foster partnerships for the control, elimination and eradication of targeted NTDs at the national and county level. 3. Enhance high level reviews of NTDs programme performance and the use of lessons learnt to enhance advocacy awareness and effective implementation of targeted interventions. 4. Strengthen advocacy, visibility and profile of NTDs control, elimination and eradication interventions at the national and county level.
2. Enhance planning for results, resource mobilization and financial sustainability of NTDs programme	1. Review integrated multi-year strategic plan and develop annual operational plans for control, elimination and eradication of the all NTDs in the country. 2. Enhance resource mobilization approaches and strategies at the national and county level for NTDs interventions. 3. Strengthen the integration and linkages of NTDs programme and financial plans into sector-wide, national and county budgetary and financial mechanism. 4. Develop and update national NTDs policy and elaborate guidelines and tools to guide effective policy and programme implementation. 5. Carry out mapping of case management diseases (leishmaniasis and cystic echinococcosis (hydatidosis) to generate data for planning control activities 6. Conduct transmission assessment surveys for onchocerciasis

3. Scale up access to interventions, treatment, system capacity and service delivery building	1. Scale-up an integrated preventive chemotherapy, including access to LF, schistosomiasis, STHs and Trachoma interventions. 2. Scale-up integrated case-management based disease interventions (Leishmaniasis, LF, Trachoma and cystic echinococcosis (hydatidosis). 3. Strengthen integrated vector management and PHASE strategy for targeted NTDs. 4. Strengthen capacity at national and county level for NTDs programme management and implementation.
4. Enhance NTDS monitoring and evaluation, surveillance and operational research	1. Enhance monitoring and evaluation of national NTDs programme performance and outcome. 2. Strengthen the surveillance, response and control of epidemic prone NTDs. 3. Support operational research, documentation and evidence to guide innovative approaches to NTDs programme interventions. 4. Establish integrated data management systems and support impact assessment for NTDs in the country.

National NTD Programme Goals, Objectives, Strategies and Targets

The NTD programme brings together a number of diseases. These include LF, schistosomiasis, STH, trachoma, leishmaniasis, cystic echinococcosis, guinea worm, dengue and onchocerciasis. It is essential to maintain the disease-specific goals, objectives and strategies within the context of the overall NTD programme. Integration is promoted as a cost-effective approach that maximizes use of limited resources. These specific goals and objective are as outlined in Table 12.

Table 12: Summary of NTD diseases specific Goals and Objectives

Global goal	National goals	Objectives	Strategies	Delivery channel
Soil Transmitted Helminths (STHs) Control ***Global target:*** Control morbidity by 2020	Reduction of morbidity due to STH to levels where they are no longer a public health problem by 2020	***Kenya STHSs targets***: • To implement 100% MDA coverage in the community by year 2020 • To achieve 100% therapeutic coverage by 2020 • To eliminate high intensity (morbidity) of STH in endemic communities by 2020 • To reduce the prevalence of STH to less than 10% by 2020 • To increase access to sanitation in communities living in endemic areas	• Annual MDA of Albendazole in endemic counties • PHASE strategy •	• School based MDAs • Community based MDAs • Mass media • Public meetings (baraza) • School based mobilization • IEC materials
Schistosomiasis control ***Global target:*** To eliminate morbidity due to schistosomiasis by 2020	Elimination of morbidity due to schistosomiasis by 2020	***Kenya Schistosomiasis targets***: • To implement MDA to 100% coverage in all endemic communities by 2020 • To achieve 100% therapeutic coverage by 2020 • To eliminate morbidity due to schistosomiasis in endemic communities by 2020. • To increase access to sanitation in communities living in endemic areas • To interrupt transmission of schistosomiasis by 2020	• Annual MDA of praziquantel in endemic counties • PHASE strategy • Snail vector control	• School based MDAs • Community-based MDA • Mass media • Public meetings (baraza) • School based mobilization • IEC materials
LF Elimination ***Global target*** To eliminate LF as public health problem by 2020	Elimination of LF as public health problem by 2020	***Kenyan PELF target*** • To interrupt transmission of LF by 2020 • To reduce the morbidity and disability due to LF by 100% by 2020 • To achieve >90% therapeutic coverage during the annual MDA.	• Annual MDA of DEC and albendazole to endemic counties. • Vector control • Hygiene management of lymphedema • Hydrocoele surgery • Health promotion and behaviour change communication.	• Community directed treatment approach/ campaigns based CDDs • National malaria control intervention(LLITNs)
Trachoma Control ***Global target:*** To eliminate blinding trachoma as a public health problem by 2020.	Elimination of blinding trachoma as a public health problem by 2020	***Kenya Trachoma targets***: • To reduce the prevalence of Trachoma Trichiasis (TT) to less than 1/1000 by 2020. • To reduce the prevalence of TF to less than 5% at community level by 2020. • To increase access to safe water in community within endemic counties • Increase proportion of clean faces	Comprehensive SAFE with: • **S**: Surgery of trichiasis cases • **A**: MDA with Azithromycin of entire at risk identified communities. • **F**: Improved water supply for personal hygiene/face washing • **E**: Health education and promotion of behavioural	• TT outreach camps • Community based MDAs • Mass media • IEC • Public barazas • Health facility based

Global goal	National goals	Objectives	Strategies	Delivery channel
		among children of 1-9 years to at least 80% • To increase access to sanitation by at least 70% of communities within endemic areas	change	
Leishmaniasis ***Global goal:*** To control morbidity due to leishmaniasis	Reduction of morbidity due to leishmaniasis in endemic areas to a level where it is no longer a public health problem	• To improve case detection, treatment and management. • To build capacity of health care workers • To strengthen surveillance systems • Health promotion, advocacy and community mobilization • To reduce sand fly vectors	• Early diagnosis and case management • Training of healthcare workers • Effective disease surveillance • Social mobilization and strengthening partnerships • Vector control	• Hospital based • LLITNs • Indoor residual spraying • IEC materials • Public barazas • Integrated vector management (IVM) •
Dengue	Reduction of morbidity due to dengue in endemic areas to a level where is no longer a public health problem by 2020	• To strengthen surveillance system • To improve case detection, management and control • Health promotion, advocacy and community mobilization • Capacity building of health care staff.	• Mapping distribution • Health promotion • Management and control of dengue	• Mass screening • CHVs, CHEWs and Health facility • Schools • Veterinary personnel • Community • County government • Partners
Guinea Worm(GW) Eradicate GW by 2020	Sustenance of surveillance awaiting certification for eradication.	• To strengthen and sustain surveillance	• Health promotion and community mobilization • Rumours investigations • COMBI-Strategy • Cash rewards	• Mass media • Meetings with stakeholders • IEC materials • Community based control
Cystic Echinococcosis(CE) ***Global target*** To control morbidity due to CE	Reduction of morbidity due to CE in endemic areas to a level where it is no longer a public health problem by 2020	• To strengthen surveillance system • To improve case detection, treatment and management • Dog population control • Improve slaughter hygiene and destruction of cyst materials • Health promotion advocacy and community mobilization.	• Mapping distribution • Health promotion • Dog population management • Treatment (surgery and chemotherapy)	• Mass screening • CHVs, CHEWs and health facility • Schools veterinary personnel • Community • County government • Partners

National Milestones

The NTD programme has set targets to be accomplished during the 2015-2020 period for each disease. LF and TT are targeted for elimination by 2020 through scaling up of MDAs and the PHASE strategy. Schistosomiasis and STH are targeted for morbidity elimination by 2020 through scaling up of MDAs and the PHASE strategy. Visceral leishmaniasis is targeted for morbidity control through active and passive case finding. These milestones are presented in Tables13-18

Table 13: Elimination milestones for STH 2015 - 2020

	Indicators	2015	2016	2017	2018	2019	2020
1	Completed mapping of STH and determined areas above intervention threshold and the endemic population	158 (100%)					
2	Begun implementation of school-based/community-based treatments in endemic sub-counties	41 (100%)					
3	Achieved100% geographical coverage in STH endemic sub-counties	94 (100%)	94(100%)				
4	Conducted 3-5 years of consecutive treatments in all endemic sub-counties with Sub-county coverage more than 75%	94 (100%)	94 (100%)	94 (100%)	94 (100%)		
5	Conducted first impact assessment activities in at least 50% of STH endemic sub-counties after at least 3 years of consecutive treatments	0 (0%)	94 (100%)				
6	Endemic sub-counties achieving moderate morbidity control	41 (30%)	53 (70%)	94 (100%)	94 (100%)	94 (100%)	
7	Endemic sub-counties achieving advanced morbidity control	0 (0%)	0 (0%)	(0%)	94 (100%)	94 (100%)	

Table 14: Elimination milestones for Schistosomiasis 2015 - 2020

	Indicators	2015	2016	2017	2018	2019	2020
1	Completed mapping of schistosomiasis and determined areas above intervention threshold and the endemic populations	158 (100%)					
2	Begun implementation of school-based/community-based treatments in endemic sub-counties	41(100%)	41(100.0%)				
3	Achieved100% geographical coverage in schistosomiasis endemic sub-counties	10 (16%)	41(100%)				
4	Conducted 3-5 years of consecutive treatments in all Endemic sub-counties with sub-counties coverage more than 75%	10 (16%)	41(100%)	41(100%)	41(100%)		
5	Conducted first impact assessment activities in at least 50% of schistosomiasis endemic sub-counties after at least 3 years of consecutive treatments	0 (0%)	10 (16%)	41(100%)	41(100%)		
6	Endemic sub-counties achieving moderate morbidity control	10(16%)	10 (16%)	41(100%)	41(100%)	41(100%)	
7	Endemic sub-counties achieving advanced morbidity control	0 (%)	10 (16%)	41(100%)	41(100%)	41(100%)	
8	Endemic sub-counties achieving elimination of transmission	0 (0%)	0 (0%)	0 (0%)	10(16%)	41(100%)	41(100%)

Table 15: Elimination milestones for lymphatic filariasis 2015-2020

Indicators	**2015**	**2016**	**2017**	**2018**	**2019**
Completed mapping of LF and determined LF endemic areas and the population at risk (epidemiological survey in the previously mapped sub county)	**10**				
Began implementation of LF MDA in sub county requiring LF MDA.	10 (100%)				
Achieved 100% geographical coverage in LF endemic sub counties	10(100%)	10 (100%)	10(100%)		
Major urban areas with evidence of LF transmission under adequate MDA (sub county coverage more than 65%)	5(100%)	5(100%)	5(100%)		
Conducted more than five rounds of MDA in all endemic IUs with sub county coverage more than 65% and stopped MDA in at least 50% of LF endemic IUs and WHO criteria	10(100%)	10(100%)	10(100%)	10(100%)	10(100%)
Conducted first TAS activity in at least 50% of LF endemic IUs after at least 5 rounds of MDA	0(0%)	0(0%)	0(0%)	0(0%)	10(100%)
Conducted and passed at least 2 TAS activities in 75% of IUs	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Started passive surveillance and vector control activities in at least 75% of IUs	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Present the “dossier” for in-country verification of absence of LF transmission	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)

Proportion and number of IUs where there is fully coverage of morbidity-management services and access to basic care	0(0%)	5(50%)	8(80%)	10(100%)	10(100%)
Proportion and number of IUs where 75% of hydrocele cases benefited from appropriate surgery	0(0%)	5(50%)	8(80%)	10(100%)	10(100%)

Table 16: Elimination milestones for Trachoma 2015 - 2020

Indicators	2015	2016	2017	2018	2019	2020
1. Completed mapping of trachoma and determined areas above intervention threshold and the target population	43 (100%)					
2. Begun implementation of community-based treatments in target sub-counties	34 (100%)					
3. Achieved 100% geographical coverage in trachoma target sub-counties	34 (100%)					
4. Conducted 3-5 rounds of treatments in all target sub-counties with coverage of more than 75%	19 (100%)					
5. Conducted first impact assessment activities in at least 50% of trachoma target sub-counties after at least 3 rounds of treatments	14 (73.6%)	19 (100%)				

6. Started passive surveillance in at least 75% of IUs.	3 (8.82%)	4(11.76%)	8(23.53%)	14(41.18%)	34(100%)	0(0%)
7. Proportion and number of target sub-counties where there is full coverage of case-management services	34 (100%)	34 (100)	34(100%)	34(100%)	0(0%)	
8. Target sub-counties achieved elimination of blinding trachoma	3 (8.82%)	4(11.76%)	8(23.53%)	14(41.18%)	34(100%)	34(100%)

Table 17: Elimination milestones for visceral leishmaniasis 2015-2020

Indicators	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1. Active case detection in 100% of visceral leishmaniasis highly endemic sub-counties	10 (33.3%)	20 (66.7%)	30 (100%)			
2. Passive case detection in 100% of other visceral leishmaniasis endemic sub-counties	10 (33.3%)	20 (66.7%)	30 (100%)			
3. Manage all patients in peripheral health facilities	10 (33%)	15 (50%)	30 (100%)			
4. Refer severe and complicated cases for management at County hospitals and reference centres	30 (100%)	30 (100%)	30 (100%)			
5. Achieved 100% treatment coverage of identified visceral leishmaniasis cases	30 (100%)	30 (100%)	30 (100%)	30 (100%)		

6. Support vector control through integrated vector management (IVM) activities	0(0%)	0(0%)	0(0%)	10 (33.3%)	15 (50%)	
7. Started passive surveillance in at least 50% of target sub-counties that are implementing IVM activities	0(0%)	0(0%)	0(0%)	10 (33%)	15 (50%)	
8. Started sentinel site surveillance in at least 50% of target sub-counties for vectors control activities	0(0%)	0(0%)	0(0%)	0(0%)	15 (50%)	

Table 18: Elimination milestones for onchocerciasis 2015-2020

	INDICATORS	2015	2016	2017	2018	2019
1	Completed mapping/delineation of onchocerciasis and determined onchocerciasis	0(0%)				
2	Begun implementation of onchocerciasis MDA in sub counties requiring MDA including loiasis co-endemic areas	0(0%)				
3	Achieved 100% geographical coverage in onchocerciasis endemic sub counties	0(0%)	0(0%)			
4	Conducted more than 10 rounds of MDA in all endemic IUs with sub county coverage more than 65%	0(0%)	0(0%)	0(0%)	0(0%)	
5	Conduct phase 1A epidemiological evaluation activities in at least 50% of onchocerciasis endemic IUs after at least 10 rounds of MDA	0(0%)	0(0%)	0(0%)	0(0%)	
6	Conducted and passed epidemiological and entomological assessment in 50% of IUs	0(0%)	17(100%)	17(100%)		
7	Present the "dossier" for in-country verification of absence of onchocerciasis transmission				1(100%)	
8	Proportion and number of IUs where treatment has been stopped	N/A	N/A	N/A	N/A	N/A

PART 3: OPERATIONAL FRAMEWORK

This section deals with the operational plan for control of NTDs in Kenya. The operational plan is based on individual disease programme goals, targets/specific objectives and individual disease control strategies. To achieve these programme's objectives, specific disease objectives and strategies are shown in Table 19 and are implemented in an integrated way. Programme specific

objectives are drawn from the individual disease programme targets/specific objectives as outlined below. It should be noted that each individual disease programme shall remain focused on its goals and objectives in order to ensure that they are achieved within the integrated NTDs control approach and thus contribute to the overall National goal.

Scaling up access to NTD interventions and treatment and service delivery capacity

The key activities for scaling up access to NTD interventions, treatment and service delivery capabilities are shown in Table 19.

Table 19: Activities for Strategic Priorities

Activity	Details (Sub-activities)	Time frame	Resources needed
Strategic Objective 1: Scale up integrated preventive chemotherapy, including access to LF, STH, schistosomiasis, onchocerciasis and trachoma interventions.			
Trachoma			
Mapping of Trachoma	Mapping of trachoma	2015	Transport and fuel, stationery, allowances
Conduct MDA for control of Trachoma	Procurement of drugs and commodities	2015-2020	Drugs (Azithromycin Tablets and Paediatric Oral Suspension, Tetracycline Eye Ointment)
	Distribute drugs and consumables	2015-2020	Transport, fuel, allowances
	Training of Health workers & volunteers	2015-2020	Conference facilities, allowances, transport, stationery,
	Development of IEC material	2015-2020	Conference facilities, printing, allowances
	Community mobilization	2015-2020	Transport and fuel, allowances
	Mass drug distribution & supervision	2015-2020	MDA registers, distribution costs (transport, fuel and allowances)
	Mop up of drug balances	2015-2020	Allowances, transport and fuel, stationery

	Report writing	2015-2019	Allowance, conference facilities and stationery
	Procurement and storage of drugs & IEC materials	2015-2020	Funds for storage costs, Transport and travel allowances
Schistosomiasis & STH			
Conduct MDA campaigns for schistosomiasis & STHS	Social mobilization	2015-2020	Transportation, mass media costs, allowances
	Production of training, monitoring and IEC materials and tablet poles	2015-2020	Conference facilities, printing costs, production costs
	Distribution of programme materials	2015 -2020	Transport, allowances
	Distribution of drugs (donated to MOH through WHO)	2015 – 2020	Vehicles, fuel and allowances
	Training of County-Based Master Trainers	2015-2020	Conference facilities, stationery, transport, allowances
	Training of sub-counties health and Ministry of Education personnel	2015-2020	Conference facilities, stationery, transport, allowances
	Training of teachers	2015-2020	Conference facilities, stationery, transport, allowances
	Conduct community Health Assistants meetings	2015-2020	Meeting hall, stationery, transport, allowances
	Supervision of MDA	2015-2020	Transport, allowances
	Pre- and post-deworming prevalence surveys	2015 – 2016/17	Lab consumables, transport, allowance
	Report writing	2015-2020	Allowance, conference facility and stationery

	Dissemination of treatment and prevalence survey results	2015 – 2020	Conference facilities, allowances, transport, stationery
	Procurement and storage of drugs & IEC materials	2015-2020	Funds for storage costs, Transport and travel allowances
LF			
Conduct MDA for LF	Advocacy/social mobilization	2015-2020	Transport, allowances, IEC materials
	Procurement and storage of drugs & IEC materials	2015-2020	Funds for storage costs, Transport and travel allowances
	Training of CDD trainers	2015-2020	Allowances, Stationery, Transport, Conference facility, Training materials
	Training of CDDs	2015-2020	Allowances, Stationery, Transport, Conference facility, Training materials
	Training of peripheral health care workers	2015-2020	Conference facilities, Allowances, Transport, transport, training materials
	Procure registers	2015-2020	Funds
	Distribution of drugs & IEC materials to Sub-counties	2015-2020	Allowances, Transport, storage
	CDD register update and drug distribution	2015-2020	Allowances, Stationery, transport
	MDA campaigns	2015-2020	Allowances, Transport
	MDA & Supervision of MDA	2015-2020	Allowances, Transport, stationery, drugs
	Monitoring and management of adverse	2015-2020	Drugs, allowances, Stationery

	side effects		
	Post MDA assessment of reported coverage	2015-2020	Allowances, transport and fuel, stationery
Conduct epidemiological assessment of effects of inconsistent MDAs on interruption of LF transmission	Epidemiological survey in 13 MDA IUs	2015-2018	Lab consumables, allowances, transport and fuel, stationery
Pre-TAS	Conduct a pre Transmission Assessment Survey (TAS) after 3 rounds of MDA in IUs with inconsistent/un consecutive MDAs	2018-2019	Lab consumables, allowances, transport, fuel, stationery
	Report writing	2015-2020	Allowances, transport, fuel, stationery
Strategic Objective 2: Scale up integrated case-management-based diseases interventions			
LF			
Hydrocoele surgery	Follow-up clinics to confirm hydroceles	2015-2020	Drugs, consumables, allowances, Transport, stationery
	Training in hydrocele surgery	2015-2020	Allowances, Transport, Stationery
	Support hydrocele surgery	2015-2020	Surgical kits, Consumables, Allowances, drugs
	Hydrocoele surgery	2015-2020	
Lymphodema management	Follow-up clinics to recruit cases	2015-2020	Consumables, Transport, Allowances
	Training of support groups	2015-2020	Conference facilities, Consumables, Allowances, Transport

	Lymphodema management in support groups	2015-2020	Equipment, Consumables
Trachoma			
Scale up TT surgeries for control	Procure and distribute surgery equipment, sterilization kits and consumables	2015-2020	Funds, Allowances, Transport
	Training and certifying TT surgeons	2015-2020	Surgical consumables, Stationery, Allowances, Transport, health facility
	Training of TT case finders in identification, referral and counselling skills	2015-2020	Allowances, Transport, Stationery, training materials
	Conduct TT surgery camps	2015-2020	Surgical consumables, Stationery, Allowances, Transport, drugs
	Conduct follow up of operated cases	2015-2020	Consumables, Stationery, Allowances, Transport
Leishmaniasis			
Treatment of leishmaniasis	Dissemination of treatment guidelines for visceral leishmaniasis	2015-2018	Allowance, Transport, Stationery
	Procurement, storage and distribution of drugs and test kits	2015-20120	Funding, Transport, storage facilities, allowances
Mapping of leishmaniasis distribution	Mapping prevalence survey, magnitude and geographical distribution of leishmaniasis	2015-2017	Allowances, Equipment, lab consumables, transport, Stationery
Capacity buildingfor	Capacity building of health	2015-2018	Conference, Allowance, Transport, Stationery

leishmaniasis	personnel in diagnosis and management		
	Training of community health workers in case detection and referral	2015-2020	Conference, Allowance, Transport, Stationery
Health education, advocacy and social mobilization for control of leishmaniasis	Developing information, education and communication (IEC) materials	2015-2020	Conference, transport, allowance, stationery
	Community social mobilization for Leishmaniasis	2015-2020	Transport, stationery, allowance, conference facilities
Cystic echinococcosis			
Mapping of CE	Determine geographical distribution (prevalence surveys)	2015-2018	Lab. consumables, Transport, stationery, allowance, equipment,
Training	Training of health workers on prevention, diagnosis and control	2015- 2017	Conference facilities, allowance, Transport, Stationery, training materials
Health promotion, advocacy and social mobilization	Development and dissemination of IEC materials	2015-2020	Conference facilities, allowance, Transport, Stationery
Scale up CE surgeries	Conducting surgeries	2015-2020	Surgical consumables, equipment, materials, allowances, transport, drugs

Strategic Objective 3: Strengthening integrated vector management and environmental measures for targeted NTDs			
Improve access to water and basic sanitation for NTDS control in the community	Advocating for increasing coverage of safe water supply and sanitation	2015-2020	Conference facilities, stationery, allowances, transport
	Strengthen inter-sectoral collaboration for water supply and sanitation	2015-2020	Conference facilities, stationery, allowances, transport
Integrated vector management (IVM)	Community training on integrated vector management	2015-2020	Insecticides, ITNs, equipment, conference facilities, allowance, Transport, Stationery
	Mobilizing and supporting community members to undertake IVM measures	2015-2020	Insecticides, ITNs, equipment, conference facilities, allowance, transport, stationery
Strategic Objective 4: Strengthen capacity at national level for NTD programme management and implementation			
Capacity building	Identification of training needs on NTDs control among health care workers	2015-2020	Funds, allowances, transport, stationery
	Capacity building of health personnel in NTDs	2015-2020	Funds, allowance, transport, stationery
	Conduct refresher trainings for health care personnel in case management of NTDs and related disabilities	2015–2020	Funds, allowance, transport, stationery
	Training health personnel in management, data management	2015-2020	Funds, allowance, transport, stationery

	and monitoring and evaluation		
	Increasing the numbers and diversity of human resources in NTD programme	2015-2020	Funds, office space and equipment
To build capacity	To acquire appropriate office space	2015-2016	Funds, furniture, computers, office equipment
To strengthen infrastructure	Acquisition of vehicles	2015-2020	Funds
	Acquisition of appropriate IT software and hardware	2015-2020	Funds
To enhance/ coordination implementation	To enhance coordination of implementation activities	2015-2020	Funds

10.1 Scaling up preventive chemotherapy interventions

The strategies that are being implemented in the integrated (Preventive Chemotherapy Neglected Tropical Diseases PC-NTDs) control and elimination programme include:

(i) Integrated mass drug administration (MDA)

(ii) Transmission control through effective and comprehensive vector control

(iii) The PHASE strategy

(iv) Strengthening morbidity management interventions

The preventive chemotherapy package targets LF, schistosomiasis, STH and trachoma through the use of MDAs. The delivery channel may either be school or community based. In addition, some PC NTD conditions like hydrocoeles, lymphoedema and trachoma trichiasis will require to be managed under case management package. Transmission control as well as PHASE strategy will also be applied in order to accelerate reduction of disease burden. The various activities for PC NTDs interventions are outlined in Table 20.

The implementation of MDA is guided by the diseases combination in a particular implementation unit resulting in different types of MDAs. The different types of MDAs also influence the timing for administering different drug combinations. These MDA types and drug timing periods are outlined in Table 21.

Table 20: Activities for scaling up PC NTDs interventions

Activity	Details (Sub-activities)	Time Frame	Resources needed
Strategic Objective 1: Scale up of integrated preventive chemotherapy, including access to LF, STHS, and Schistosomiasis and Trachoma interventions.			
Conduct MDA for Trachoma elimination	Procurement of drugs and commodities	2015-2020	Drugs (Zithromax Tabs and POS, TEO), customs clearance, handling, storage ,taxes
	Distribute drugs and consumables	2015-2020	Allowances, Transport, storage
	Training of Health workers and volunteers	2015-2020	Allowances, Transport, Stationery, Conference facilities
	Production of IEC materials, tools	2015-2020	Development, printing, transport
	Community mobilization	2015-2020	Mass media, Public address, own transport, allowances
	Actual MDA events	2015-2020	Allowances, Transport owned/hired, airtime
	Supervision of MDA	2015-2020	Transport, allowances, airtime
	Report writing and dissemination	2015-2020	Stationary, airtime, allowances
	Baseline survey for newly suspected sub-Counties		Planning meetings, Conference facilities, community mobilization, Allowances, Consumables, drugs, transport, Stationery
	Conduct Impact Assessment surveys	2015-2020	Planning meetings, Conference facilities, community mobilization, Allowances, Consumables, drugs, transport, Stationery
Schistosomiasis and STH	Training in transmission assessment techniques and other skills (new methods for monitoring)	2015-2016	Allowances, Transport, Stationery, conference facilities
	Operational research on emerging tools	2015-2018	Allowances, Transport, Stationery, conference facilities
	Research on breaking the transmission of STH	2015 - 2020	
Conduct MDA campaigns for Schistosomiasis & STH	Social mobilization	2015-2020	Allowances and transport
	Production of IEC materials	2015-2020	Funds
	Training of Master Trainers	2015-2018	Allowances, stationery, transport, conference facilities
	Training of sub-counties health and Ministry of basic education workers	Q3, Q4 2015-2018	Allowances, stationery, transport, conference facilities
	Training of teachers	Q4 2015-2017	Allowances, stationery, transport, conference facilities
	Training of community volunteers	2015-2020	Allowances, stationery, transport, conference facilities
	Procure registers	2015-2020	Funds

	Servicing of vehicles and transport drugs	2015-2020	Funds, Allowances, Transport
	Transportation of IEC materials to Sub-counties	2015-2020	Allowances, Transport
	Transportation of IEC materials to Sub-counties	2015-2020	Allowances, Stationery
	Supervision of MDA	2015-2020	Allowances, Transport,
	Initial social mobilization	2015-2020	Allowances, Transport
	Other advocacy/social mobilization	2015-2020	Allowances, Transport,
	Procurement of IEC materials	2015-2020	Funds
	Training of CDD trainers	2015-2020	Allowances, Stationery, Transport, Conference facility
	Training of CDDs	2015-2020	Allowances, Stationery, Transport
	Training of peripheral health care workers	2015-2020	Conference facilities, Allowances, Transport
	Procure registers	2015-2020	Funds
	Servicing of vehicles and transport drugs	2015-2020	Funds, Allowances, Transport
	Transportation of IEC materials to Sub-counties	2015-2020	Allowances, Transport
	CDD register update and drug distribution	2015-2020	Allowances, Stationery
	Supervision of MDA	2015-2020	Allowances, Transport,
		2015-1020	Drugs, allowances, Stationery

Table 21: Type of Mass Drugs Administrations

Cross cutting MDA Types	Delivery Channels	Timing of Treatment	Disease combination	Target sub-counties	Requirements	Other mass disease control interventions in the sub-counties
MDA 2	Community based/school based	Month 1	LF, Schistosomiasis, STHs (high prevalence)	7	-Training of Health Care Personnel -Training of teachers & community volunteers. -Social Mobilization -Supervision -Production of tools -Logistics for drug distribution and management	School Deworming Programme -Immunization campaigns -Feeding programmes
T1	School based	Month 6				
MDA 2	Community based	Month 1	LF, Schistosomiasis, STHs (low prevalence)	5		
T2	School based/community based	Month 6				
MDA 4	Community based	Month 1	Trachoma, Schistosomiasis & STHs (low prevalence)	9	Training of Health Care Personnel -Training of teachers & community volunteers -Social Mobilization -Supervision. -Production of tools -Logistics for drug distribution and management Training CHV Logistic for drugs	School Deworming Programme -Immunization campaigns -Feeding programmes
T1	School based	Month 1 week 3				
MDA 4	Community based	Month 1	Trachoma & STHs (low prevalence)	20		
T3	School based	Month 1, week 3				
T1	School based	Month 1	Schistosomiasis, STHs (low prev)	28		
T2	School based	Month 1	Schistosomiasis alone	2		
MDA4,	Community-based Facility based School-based House to house	Annual	Trachoma only	Endemic sub-counties		

Legend

MDA1 = Ivermectin + Albendazole
MDA2 = DEC+ Albendazole
T3 = Albendazole or mebendazole only
MDA4 = Azithromycin only
T1 = Praziquantel + Albendazole or Praziquantel + mebendazole
T2 = Praziquantel only

Scaling up/Scaling down plan

Since implementation of NTD control activities in early 2010, success has been noted in reduction of diseases burden especially in PC-NTDs. However, in other areas, this improvement in disease reduction has not been realized. This implies that we need to scale up implementation units that had poor coverage so as to reach our goal of elimination by 2020; while we scale down in areas we had 100% coverage. In case management diseases and conditions, control activities were not well implemented due to constraints in funding. This means we have to scale up all activities in case management diseases. The number of counties and total population to be treated to enable us scale up and scale down implementation activities are shown in Table 22.

Table 22: Scaling up/Scaling down plan

NTD	Total No. Sub-Counties requiring MDA	Total at risk population	2015 No. Sub-Counties and Total population to be treated	2016 No. Sub-Counties and Total population to be treated	2017 No. Sub-Counties and Total population to be treated	2018 No. Sub-Counties and Total population to be treated	2019 No. Sub-Counties and Total population to be treated	2020 No. Sub-Counties and Total population to be treated
PCT IMPLEMENTATION (MDA)								
STH	94	94 6m	94 6m	94 6m	94 6m	94 6m	94 6m	94 6m
Schistosomiasis	41	41 600,000 (4m sac & community)	41 890,459	41 890,459	41 890,459	41 890,459	41 890,459	41 890,459
L F	13	3.7m	13(3.7m)	13(3.7m)	13(3.7m)	7(1.95m)	7(1.95m)	0(0.0)
Trachoma	19	**3.3 m**	**14 (2,847,197)**	**12 (2,615,901)**	**12 (2,694,378)**	**4 (1,289,882)**	**1 (178,995)**	**1 (184,365)**
Onchocerciasis*	0	**1.34 m**	**17(0)**	**17(0)**	**17(0))**	**17(0)**	**17(0)**	**17(0)**
IDM IMPLEMENTATION								
LF[§]	13	**3.7**	**13(257604)**	**13(257,604)**	**13(257,604)**	**13(257,604)**	**13(257,604)**	**13(257,604)**
Trachoma	34	**7.0m**	**34 (8,303)**	**34 (8,303)**	**34 (8,303)**	**34 (8,303)**	**34 (1,500)**	**0 (0)**
LEISH	30	**3.0**	**30(2500)**	**30(2500)**	**30(2500)**	**13(257,604)30 (2500)**	**30(1000)**	**30(1000)**
Dengue [§]								
CE[§]								

*Onchocerciasis * TAS*
Trachoma - Population growth rate of 3% p.a taken into account.

[§]*To be determined when figures are available (after mapping)*

11.1 Scaling up NTD case management interventions

In the same way that treatments for more than one disease are given in MDA, common interventions in the case management of Trachoma Trichiasis (TT), Leishmaniasis, LF disabilities, CE and dengue should be coordinated in areas where they co-exist. However, due to partners' interest and funding constrains, this package has not been utilised fully. As interventions of these diseases are scaled, some of these challenges will be overcome. The intervention packages for case management disease are outlined in Tables 23 and 24.

Table 23: Activities for case management interventions

Activity	Details (Sub-activities)	Timeframe	Resources needed
Strategic Objective 2: Scale up integrated case-management-based diseases interventions.			
Hydrocoele surgery	Update skills (Training) of clinicians on hydrocelectomy	2015-2020	Surgical kits, allowances, conference facilities, stationery
Elephantiasis/lymphoedema disability	Training of first-line health/community workers, patients and family members	2015-2020	-Washing kits (bucket, towel, soap, clean water) -Antibiotics/Vaseline creams -Allowances, transport, conference facilities, stationery
Trichiasis surgery	Training of TT surgeons	2015-2020	Surgery kits and sets, consumables Allowances, transport, conference facilities, stationery
	TT surgical camps in 34 sub-counties	2015-2020	Allowances, Fuel, Lid rotation kits, transport, drugs and disposable supplies
	Support supervision by the programme during surgical camps	2015-2020	Allowance, fuel, stationery, transport
Leishmaniasis treatment	Training of clinician, laboratory technicians and nurses on leishmaniasis case detection and management	2015-2020	Training modules, conference facilities, transport, allowances and stationery
Equipping laboratories for case detection	Procurement of laboratory equipment and reagents	2015-2020	Funds for purchasing Rk39 Kits, Microscopes, lab reagents and other supplies
Provision of drugs	-Procurement, storage and distribution of drugs, reagents and kits	2015-2020	Funds for procurement, clearance and storage fees, fuel, transport and allowance

Mapping disease distribution	Carrying out surveys	2015-2020	Lab consumables (Rk39 Kits), GPS, Survey maps, transport, allowance, fuel, stationery
Advocacy	Sensitization meetings with community members and county leaders	2015-2018	Funds, conference facility, allowances, transport, IEC materials, fuel
Community social mobilization	Development and dissemination of IEC materials	2015-2020	IEC materials, fuel, conference facilities, allowances, transport fuel, funds for mass media messages and communication allowance
Surveillance of GW	Train surveillance officers Develop surveillance tools and systems Cross border surveillance meetings Facilitation of GW reward system IEC materials Establish GW certification committee	2015-2020	Funds, reporting tools, fuel, conference facilities, allowances, transport, fuel, funds for mass media messages and communication allowance, IEC materials, training materials
Support supervision	Develop a support supervision tool Facilitate supervision	2015-2020	Allowances, fuel and vehicles/motorcycles maintenance, supervision tools
Health promotion	Develop and disseminate IEC materials Conduct community outreaches/road shows Develop and disseminate mass media messages (local languages)	2015-2020	Allowances, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
Monitoring and evaluation	Develop monitoring and evaluation tools Train CHVs on data collection, management and dissemination Conduct mid-term and end-term evaluations	2015-2020	Allowances, fuel, Training module, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
Integrated vector management (IVM)	Carry out community sensitization Training communities on adoption of IVM measures	2015-2020	Allowances, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
CE			
Mapping of CE	Determine the geographical distribution of CE (prevalence) Sensitization of the community Orientation of veterinary personnel	2015/16 2015/16 2015/16	Allowances, Equipment, Transport, Lab consumables, transport and stationery
Health promotion	Development, production and dissemination of IEC materials	2015	Allowances, fuel and vehicles/motorcycles maintenance,

			funds, IEC materials, air time, fuel, allowances
Dog population management	Dog registration Treatment Elimination of stray dogs	2015/16 2015/16 2015/16	Allowances, identification tags, transport, Stationery Drugs (praziquintel) Allowances, transport, consumables Drugs (Stryknin), consumables, allowances, transport, stationery
Training	Training of TOTs Training of health cadres (CHVs, CHEWs, Health facility staff) Orientation of local surgeons on CE surgery	2015 2015, 2016 2015-2020 (runs concurrently with the surgical activity)	 Consultancy, allowances, transport and stationery Consultancy, allowances, transport and stationery Consultancy, allowances, transport
Updating government HIS	Incorporate CE in health facility reporting and HIS (CE to become a notifiable disease)	2015.2020	 Stationery (production of new health facility registers)
Scaling up of CE treatment	Chemotherapy Surgery Follow up examination for determining the disease progress	2015-2020 2015-2020 2015-2020	Drugs (albendazole), transport, allowances Flight costs, consultancy, allowances, transport, consumables, lab consumables Consultancy, allowances, consumables
Dengue			
Mapping of Dengue	Determine the geographical distribution of CE (prevalence) Sensitization of the community Orientation of veterinary personnel	2015/16 2015/16 2015/16	 Allowances, Equipment, Transport, Lab consumables, transport and stationery
Health promotion	Development, production and dissemination of IEC materials	2015	Allowances, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
Vector control	Indoor residual spraying Provision of LLITNs (malaria control unit)	2015-2020 2015, 2017, 2019	Chemicals, spraying machine, PPE, allowances, transport Nets, transport, allowances, mosquito repellants

Training	Training of TOTs Training of health cadres (CHVs, CHEWs, Health facility staff) Orientation of local surgeons on CE surgery	2015 2015, 2016 2015-2020	 Consultancy, allowances, transport and stationery Consultancy, allowances, transport and stationery Consultancy, allowances, transport
Updating government HIS	Incorporate dengue in HIS (dengue to become a notifiable disease) Incorporate dengue in the health facility reporting system	2015-2020 2015-2020	Stationery (production of new health facility registers) Stationery (production of new health facility registers)
Scaling up of dengue treatment	Provision of drugs to health facilities	2015-2020	 Drugs, transport, allowances, fuel,
Support supervision	Develop a support supervision tool Facilitate supervision	2015-2020	Allowances, fuel and vehicles/motorcycles maintenance, supervision tools
Health promotion	Develop and disseminate IEC materials Conduct community outreaches/road shows Develop and disseminate mass media messages (local languages)	2015-2020	 Allowances, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
Monitoring and evaluation	Develop monitoring and evaluation tools Train CHVs on data collection, management and dissemination Conduct mid-term and end-term evaluations	2015-2020	Allowances, fuel, Training modules, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
Integrated vector management (IVM)	Carry out community sensitization Training communities on adoption of IVM measures	2015-2020	Allowances, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
CE			
Mapping of CE	Determine the geographical distribution of CE (prevalence) Sensitization of the community Orientation of veterinary personnel	2015/16 2015/16 2015/16	Allowances, Equipment, Transport, Lab consumables, transport and stationery
Health promotion	Development, production and dissemination of IEC materials	2015	Allowances, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
Dog population management	Dog registration	2015/16	Allowances, identification tags, transport,

	Treatment Elimination of stray dogs	2015/16 2015/16	Stationery Drugs (praziquintel) Allowances, transport, consumables Drugs (Stryknin), consumables, allowances, transport, stationery
Training	Training of TOTs Training of health cadres (CHVs, CHEWs, Health facility staff) Orientation of local surgeons on CE surgery	2015 2015, 2016 2015-2020 (runs concurrently with the surgical activity)	Consultancy, allowances, transport and stationery Consultancy, allowances, transport and stationery Consultancy, allowances, transport
Updating government HIS	Incorporate CE in health facility reporting and HIS (CE to become a notifiable disease)	2015.2020	Stationery (production of new health facility registers)
Scaling up of CE treatment	Chemotherapy Surgery Follow up examination for determining the disease progress	2015-2020 2015-2020 2015-2020	Drugs (albendazole), transport, allowances Flight costs, consultancy, allowances, transport, consumables, lab consumables Consultancy, allowances, consumables
Dengue			
Mapping of Dengue	Determine the geographical distribution of CE (prevalence) Sensitization of the community Orientation of veterinary personnel	2015/16 2015/16 2015/16	Allowances, Equipment, Transport, Lab consumables, transport and stationery
Health promotion	Development, production and dissemination of IEC materials	2015	Allowances, fuel and vehicles/motorcycles maintenance, funds, IEC materials, air time, fuel, allowances
Vector control	Indoor residual spraying Provision of LLITNs (malaria control unit)	2015-2020 2015, 2017, 2019	Chemicals, spraying machine, PPE, allowances, transport Nets, transport, allowances, mosquitorepellants

Training	Training of TOTs Training of health cadres (CHVs, CHEWs, Health facility staff) Orientation of local surgeons on CE surgery	2015 2015, 2016 2015-2020	Consultancy, allowances, transport and stationery Consultancy, allowances, transport and stationery Consultancy, allowances, transport
Updating government HIS	Incorporate dengue in HIS (dengue to become a notifiable disease) Incorporate dengue in the health facility reporting system	2015-2020 2015-2020	Stationery (production of new health facility registers) Stationery (production of new health facility registers)
Scaling up of dengue treatment	Provision of drugs to health facilities	2015-2020	Drugs, transport, allowances, fuel,

Table 24: Case management and chronic care

CROSS-CUTTING INTERVENTION	NTDS TARGETED	METHOD OF INTERVENTIONS DELIVERY	REQUIREMENTS	OTHER NON-NTDS OPPORTUNITIES FOR INTEGRATION
Surgery	LF (Hydrocoele)	Hydrocele surgery (hydrocoelectomies)	-Training of Medical Doctors, clinical officers and nurses -hospitals facilities or appropriate basic facilities with good surgical facilities -Follow up/supervision	Philanthropic groups e.g. Lions & Rotary clubs on surgical activities
	LF (Lymphoedema)	Daily hygienic washing of affected limbs. Exercise of affected limbs Application of antibiotic creams to affected limbs Skin care	-Washing kits (bucket, towel, soap, clean water) -Antibiotics/Vaseline creams -Training of first-line health/community workers, patients and family members -Social support clubs/groups -Follow up/ Supervision	HIV/AIDS social support groups. Diabetes support groups Malaria home management, global hygiene and sanitation days etc.
Surgery	Trachoma	Trichiasis surgery	Training of clinical officers and nurses, health facilities -Follow up/supervision	Philanthropic groups e.g. Lions & Rotary clubs on surgical activities
Case detection and management (active case finding and treatment in highly endemic areas). Passive case finding &treatment in low or suspected areas)	Leishmaniasis	Hospitalized treatment Continuous surveillance	-Specific drugs (SSG+Paromomycin,SSG, ambisone) -Hospitalization facilities -Close monitoring during treatment -Training of medical staff -Follow up/ supervisions -Monitoring tools	Malaria and HIV/AIDS home based care Women's associations
Case search and containment	Guinea worm	Active surveillance	-Training of health care workers, Teachers, community health workers and village based volunteers -Improve regular and accurate documentation and reporting system in non-endemic sub-counties Follow up/Supervision	-Polio immunization campaign -HIV/AIDS social support groups
	Echinococcocosis	Active surveillance	Training of health care workers, Teachers, community health workers and village based volunteers -Improve regular and accurate documentation and reporting system in non-endemic sub-counties Follow up/ Supervision	-Polio immunisation campaign -HIV/AIDS social support groups

12.1 Scaling up NTD transmission control interventions

In essence, transmission control interventions are complementary to preventive chemotherapy and case management hence will be conducted in all NTD endemic areas. Most of the targeted NTDs are vector-borne. Thus, control strategies against one vector may also have impact on other vectors. A good example is the mosquito vector for LF that also transmits malaria. Moreover, provision of clean water supply and sanitation can also contribute greatly in the reduction of some of the NTDs such as trachoma, schistosomiasis and STH. This has been strengthened by the introduction of the PHASE strategy that will be implemented together with MDAs.

The PHASE Strategy

In addition to preventive chemotherapy, other operational interventions to eliminate PC-NTDs constitute the PHASE approach, which necessitates multi-sectoral collaboration. PHASE stands for:

P - Preventive chemotherapy
H - Health education
A - Access to clean water
S - Sanitation
E - Environmental improvement

These interventions are also essential for transmission control and the control of case management NTDs. NTD programme will ensure an integrated implementation of the PHASE package of interventions. Morbidity management is also essential for elimination of LF, schistosomiasis, STH and blinding trachoma. Attention to these important components will play a great role towards elimination of these diseases. Implementation of the PHASE strategy is outlined below:

Preventive Chemotherapy

PC activities are ongoing and discussed in the section for 'Scaling up preventive chemotherapy interventions'.

Health Education

Health education is part of health promotion. The mandate of health promotion is under the Health Promotion Unit, which carries out health promotion in all the Counties. To achieve this goal, the Ministry has posted Health Promotion officers (HPO) in all the Counties. The NTD programme will liaise with them at the implementation levels to ensure they include health education on NTDs in their plan of actions. In addition, the NTD programme will involve the HPOs during the campaigns for MDAs. This will ensure continuity after the MDAs are over.

Access to Clean Water

Provision of clean water to the people and communities is the mandate of Ministry of Water and Irrigation. However, this is one sector where the Government needs assistance form partners and NGDOs as provision of water requires huge resources which the government may not have. Thus, supply of clean water to communities will require a concerted, multi-sectorial approach by all partners. MoH will advocate to the National and County governments, line Ministries, partners and NGDOs to scale up provision of clean water especially to communities that have been under privileged for a long time. This will interrupt transmission of waterborne and other diseases including the NTDs and by so doing uplift the living standard of communities.

Sanitation

Improvement of personal hygiene and good sanitation in the community is one major method of reducing disease transmission and occurrence. Educating communities to have latrines in their compounds and to wash hands regularly to remove disease-causing microorganisms will contribute enormously in the reduction of the disease infections. The Department of Environmental Health within MoH is mandated to ensure there is proper sanitation and hygiene in all communities in Kenya. The department has posted Public Health Officers (PHOs) in all Counties to ensure that proper sanitation and hygiene is achieved. The NTD programme will continue to plan together with the Environmental Department and the PHOs at all levels of implementations to ensure that proper sanitation and hygiene is achieved in all communities.

Environmental improvement

Environmental improvement leads to the reduction of diseases transmission through disruption of breeding sites for diseases vectors. The Ministry of Works and other construction agencies have not been keen in re-filling sites where they scoop building materials. This has contributed to creations of vector breeding sites resulting in an increase in diseases transmission. MoH will advocate to the National and County governments, line Ministries and Environmental agencies to ensure that all construction companies and their agencies are requested and enforced to fill-up quarries, man-holes and trenches they create as they do their work in order to minimize vector breeding sites and hence contribute to the reduction of disease vectors.

Integration of intervention strategies for some of the NTD diseases are shown in Table 25 while the activities are shown in Table 26.

Table 25: Intervention Package for Transmission Control

CROSS-CUTTING INTERVENTION	NTDs TARGETED	METHOD OF INTERVENTIONS DELIVERY	REQUIREMENTS	OTHER NON-NTDS OPPORTUNITIES FOR INTEGRATION
Vector control	• Schistosomiasis • LF • Leishmaniasis • Dengue fever	• Environment management • Snail control-molluscicding • Insecticide treated nets • Indoor residual spraying • Larviciding	• LLIN/ITNs • Insecticides (pyrethroids) • Molluscides	• Malaria vector control • Integrated vector management • Community participation
Clean water supply and sanitation	• Soil transmitted helminths • Schistosomiasis, • Trachoma • Guinea worm	• Improved sanitations facilities • Improved access and quality of water supply. • Environmental management • Health promotion	• Advocacy for access to safe water • I.E.C materials, • Health Promotion	• School health and nutrition programmes • Development programmes by line ministry (e.g. water & sanitation) •
Sanitation Access to clean water Health promotion Proper meat inspection Dog population management	CE	• Clean water • Proper use of latrines • Hand washing & general hygiene • Training of CHVs, Veterinary, meat inspectors and local administrators • IEC Materials	• Bore holes • water tanks • Latrines • IEC materials	• Public and private sector partnerships • Collaboration with NGOs and CBOs
Health promotion Active case detection and treatment Surveillance	Onchocerciasis	Capacity build staff	Training	• NGOs • Community participation • CBOs

Table 26: Activities for disease transmission control

Activity	Details (Sub-activities)	Time frame	Resources needed
Strategic Objective 3: Strengthening transmission control including integrated vector management and environment measures			
Vector control	• LLITNs • IRS • Larviciding • Training spray personnel • Socio-mobilization and health education • Spraying supervision and monitoring • Training community members to adapt IVM measures • Monitoring the impact of LLINs/IRS measures • Snail control • Environmental manipulation	2015-2020	LLIN/ ITNS, insecticides (pyrethroids), spraying pumps, protection gear (under malaria control) training manuals, iec materials, allowances, vehicles and fuel
Clean water supply and sanitation (PHASE strategy)	Conduct health promotion for behavioural change **Advocacy to government and line ministries for:** • Sinking bore-holes • Quality water supply • Environmental improvement (Management of dams and canals) • Sanitation improvement (building latrines)	2015-2020	Funds for advocacy and health promotion, transport, conference facilities, allowances, IEC materials, fuel

Cross-cutting Interventions in NTDs Programme

Implementation of NTD activities are mainly integrated where possible. Some of the main cross-cutting activities include community sensitization, advocacy, training, health promotion, drug distribution, surveillance, monitoring and evaluation. The programme will continue to harmonize and streamline these activities to increase efficiency and to avoid fragmentation. These are explained in Table 27.

Table 27: Cross cutting interventions in the programme

Activity		**Schistosomiasis**	**STH**	**Leishmaniasis**	**Trachoma**	**LF**	**Hydatid**	**Guinea worm**
Community sensitization & Social mobilization		X	X	X	X	x	X	x
Training		X	X		X		X	x
Mapping		X	X	X	X		X	
Health facility based case management				X	X	x	X	
Health Promotion	Hand & face washing	X	X		X		X	
	Building of latrines	X	X		X		X	
	Proper use of latrines	X	X		X			
	Behaviour change communication (hygiene & treatment seeking behaviour)	X	X	X	X	x	X	
Drug distribution	Community health worker involvement	X	X		X	x		
	School based	X	X					
	Community based	X	X		X	x		
	Mother and Child Health week	X	X	X	X	x	X	
	School feeding	X	X					
Disability prevention & and management				X	X	x	X	
Partnership for safe water supply and sanitation improvement		X	X		X		X	
Monitoring and Evaluation		X	X	X	X		X	
Surveillance		X	X	X	X	X	X	x
Integrated Vector Management/Animal Reservoir control				X			X	
Operational research		X	X	X	X	x	X	

Pharmacovigilance in NTD control activities

The NTD Programme will work in collaboration with the Pharmacy and Poisons Board (PPB) and the National Quality Control Laboratories (NQCL) to ensure safety of all medical products used in programme interventions. The NTD pharmacist will coordinate pharmacovigilance activities. A national policy will be developed, to guide roll out of pharmacovigilance activities of NTDs. National guide line of serious adverse events (SAE) will be developed in conformity with WHO guidelines on management of SAEs. Special emphasis will be put on events following MDA interventions for the control of NTDs. The guideline will also conform to existing national guideline on pharmacovigilance.

The main areas of pharmacovigilance in NTD control activities shall be as stated below:

- Enforcement of Good Manufacturing Practices (GMP) requirements
- Registration of medical products
- Enforcement of guidelines on donation of pharmaceutical products
- Management and disposal of pharmaceutical waste
- Post marketing surveillance
- Monitoring and reporting of poor quality medicinal products
- Prevention, effective management, monitoring and reporting of serious adverse events
- Policy and guidelines development/dissemination for pharmacovigilance in NTD interventions.

There already exists a human resource pool of more than 500 hospital based health personnel who have received specific training on pharmacovigilance. Additionally, more than 5,000 health care professionals have been sensitized on pharmacovigilance across the country. These already existing personnel shall be enlisted in carrying out NTD specific pharmacovigilance activities. The NTD programme will also endeavor to build capacity via increasing the numbers of trained personnel and also updating already trained personnel on pharmacovigilance. The PPB already has developed pharmacovigilance tools, including: The Suspected Adverse Drug Reaction reporting form (Yellow form) the Poor Quality Medicinal Products (Pink form) and the Patient Alert Card. These shall be improved for use during pharmacovigilance for NTD control activities. The activities for strengthening pharmacovigilance NTDs Programmes are shown in Table 28.

Table 28: Activities for strengthening pharmacovigilance for NTDs Programmes

Activity	Details (sub-activities)	Time frame	Resources needed
Strategic Objective 1: To establish and strengthen coordinated pharmacovigilance in NTD control activities			
To develop and disseminate pharmacovigilance policy	Development of policy and guidelines on pharmacovigilance in NTD control activities	2015	Hall hire, fuel, stationery, snacks and refreshments
To establish and strengthen coordinated pharmacovigilance in NTD control activities	Registration and licensing of donated medicine imports	2015 – 2020	Airtime, stationery and fuel
	Conduct desk reviews for previous pharmacovigilance activities	2015	Hall hire, fuel, snacks and refreshments
To roll out pharmacovigilance interventions	Conduct post marketing surveillance	2015 – 2020	Mini labs, hall hire, fuel, vehicle maintenance, trained personnel, allowances.
	Training for personnel on preventing, managing, monitoring and reporting suspected severe adverse events	2015 – 2020	Hall hire, allowance, fuel, stationery and vehicle maintenance
	Sensitization of personnel on monitoring, detection and reporting of poor quality medicinal products	2015 – 2020	Hall hire, allowance, fuel, stationery and vehicle maintenance

Strengthening capacity at national level for NTDs programme management and implementation

For NTD Programme to function effectively and efficiently, it will require to be supported in human capacity development both at the national and county levels, capital equipments including office furniture, ICT equipments and softwares, vehicles and general office needs. The activities that will strengthen and support the management of the NTD programme are outlined in Table 29.

Organizational Setup for NTD Programme

The NTD Programme is under the Division of Disease Surveillance and Epidemic Response of the MoH. Its mandate, among others, is to advocate to the higher level Government officials and other partners for resources for NTDs control as well as to guide the implementation of the various control activities. An ICC was launched in June 2014 which is chaired by the Director of Medical Services. In addition, there are existing TWGs with clear terms of reference.

The NTD Programme meets monthly for planning and review of progress during implementation of activities. NTD Programme comprises of the following positions and personnel: Head, NTD Programme, one Pharmacist, four Scientists, one M&E officer, one laboratory technologist, one HPO, accountant cum administrator and support staff.

The Head, NTD Programme oversees the running and management of the day to day activities of the programme, provides guidance to the office of the Division of Disease Surveillance and Epidemic Response concerning NTDs planning and management. The head also provides a link between MOH, donors, partners and NGDOs.

Planning of Activities

On the basis of the outlined activities, an Annual Operational Plan (AOP), extracted from the activities earmarked in the strategic plan 2016-2020, is prepared. The AOP covers the financial year which runs from July to June of the following year.

Financing

Budgets, based on the activities outlined in the strategic plan, are made on an annual basis with a quarterly breakdown. These budgets show required funds for programme implementation and also the source of funding (government and partners). The budget is prepared by the NTD programme staff in consultation with partners and donors.

Table 29: Specific activities that are undertaken by the NTD programme

Activity	Details (Sub-activities)	Frequency or Timing	Resources needed
Strategic Objective 1: Strengthen coordination mechanism for the NTDS control programme at national and county levels.			
Establish programme management and coordination structure	Provide office equipment and operational support for national and county levels	**2015**	Telephone communication, 4x4 vehicles, vehicle insurance, vehicle maintenance, internet connectivity, allowances, postage, fuel and stationery
	Meeting with ICC, secretariat & TWGs for NTDs	**2015-2020**	Communication allowance, postage, stationery, allowance, refreshments and hall hire
	Office equipment and supplies for the programme at national level	**2015-2017**	Computers, printers, tonners, stationery, furniture, cabinets
	Programme support costs	**2015-2020**	Fuel, maintenance of office equipment, postage, transport and logistics (fuel, maintenance and car hire
Capacity building (infrastructure development) for programme implementation	Improve inpatient services to accommodate leishmaniasis, LF patients in endemic areas	**2015-2020**	Wards, drugs and beds
	Equip laboratories & other treatment points with modern diagnostic equipment	**2015-2020**	Microscopes, lab consumables, ultrasound,
	Distribution of laboratory equipment and supplies	**2015-2020**	Vehicles, fuel and allowances
	Improve storage capacity for drugs and supportive supplies	**2015-2020**	Storage space, storage equipment, warehousing fees
Strategic Objective 2: Strengthen and foster partnerships for the control, elimination and eradication of targeted NTDs at national, sub-counties and community levels			
Establish and strengthen Partnerships	Identification of new partners who can support and fund various control activities	2015-2020	Communication allowance, fuel, vehicles, allowance and stationery
	Engaging partners in international advocacy and goodwill ambassador support	2015-2020	Good will ambassador, Air tickets, allowance, transport, fuel
Capacity building	Developing training manual for CHVs	2015	Training materials, conference facilities, allowances, transport, fuel
	Review of training manual by TWGs	2015-2016	Training manuals, communication allowance, conference facilities, allowances, transport, fuel and stationery
	Training community health workers on disease prevention and control	2015-2018	Training materials, fuel and maintenance, Stationery, allowance, airtime, transport
	Training and supporting community health volunteers on disease prevention, control identification referral and management of NTDS disabilities	2015- 2020	Training materials, fuel and maintenance, Stationery, allowance, airtime, transport
	Development, production and dissemination of IEC materials	2015-2020	Conference facilities, printing, Training materials, fuel and maintenance, Stationery, allowance, airtime, transport
	Training communities to adopt IVM strategies	2015- 2020	Conference facilities, printing, Training materials, fuel and maintenance, Stationery, allowance, airtime, transport
Strategic Objective 3: Enhance high level reviews of NTDS programme performance and the use of lessons learnt to enhance advocacy, awareness and effective implementation.			

Build and sustain partnership and collaboration for integrated NTDS control	National NTDS steering committee meetings	2015-2020	Conference facilities, air tickets, allowance, stationery
	National annual review meetings	2015-2020	Conference facilities, allowances, stationery, Transport
Strategic Objective 4: Strengthen advocacy, visibility and profile of NTDS control, elimination and eradication interventions at all levels.			
Advocacy communication and social mobilization	Advocate for government commitment in resource allocation for NTDS control programme	2015-2020	Funds
	Carry out high level advocacy	2015-2020	Funds
	Carry out targeted advocacy for resource mobilization at county level	2015-2020	Funds
	Strengthen collaboration with other community based health programmes like RBM, EPI, school feeding programme	2015-2020	Funds
	Create awareness among the health care workers on disease recognition, prevention and management	2015-2020	Conference facilities, printing, Training materials, fuel and maintenance, Stationery, allowance, airtime, transport, IEC materials
	Development, production and distribution of IEC materials	2015-2020	Conference facilities, printing, Training materials, fuel and maintenance, Stationery, allowance, airtime, transport
	Community mobilization on disease recognition and control	2015-2020	Conference facilities, printing, Training materials, fuel and maintenance, Stationery, allowance, airtime, transport, IEC materials
	Media communication - message airing, documentaries, road shows and drama	2015-2020	Funds
	Holding special NTDs day	2015-2020	Conference facilities, printing, Training materials, fuel and maintenance, Stationery, allowance, airtime, transport, IEC materials
	Good will ambassador to advocate for control of NTDs	2015-2020	Funds
Quality control of donated NTD medicines	Conduct pharmacovigilance	2015-2020	Funds, lab consumables, allowances, transport, fuel

Enhancing planning for results, resource mobilization and financial sustainability

The key activities the programme plans to implement in order to enhance planning for results, resource mobilization and financial sustainability are shown in Table 30.

Table 30: Activities for implementing Priority 2.

Activity	Details (Sub-activities)	Time frame	Resources needed
Strategic Objective 1: Develop integrated multi-year strategic plans and develop gender-sensitive annual operational plans for the control, elimination and eradication of targeted NTDs.			
Develop Annual Work plan for 2015	Holding a retreat	2015-2020	conference facilities, fuel, transport, stationery, allowances
Develop NTDSs policy and guidelines	Drafting NTDSs Policy and guidelines	2015-2020	conference facilities, fuel, transport, stationery, allowances
	Review of Policy and guidelines by stake holders	2015-2020	conference facilities, fuel, transport, stationery, allowances
	Dissemination of Policy and guidelines	2015-2020	conference facilities, fuel, transport, stationery, allowances
Development of advocacy materials	Development, printing and dissemination	2015-2020	conference facilities, fuel, transport, stationery, allowances,
Participate in review of County AWPs for incorporation of NTDs	Hold review meetings	2015-2020	conference facilities, fuel, transport, stationery, allowances,
Hold quarterly NTDS Planning Meetings	Hold meetings	2015-2020	conference facilities, fuel, transport, stationery, allowances
Review guidelines for NTDs implementation	Hold review meetings	2015-2020	conference facilities, fuel, transport, stationery, allowances
Macro and micro planning for NTDS activities at county level	Hold planning meetings	2015-2020	conference facilities, fuel, transport, stationery, allowances
Strategic Objective 2: Enhance resource mobilization approaches and strategies at national and sub-county levels for NTDS interventions			
Resource mobilization for NTDSs	Utilise the revised National NTDS Strategic Plan and annual work-plans for resource mobilization	2015-2020	conference facilities, transport, stationery, allowances, fuel
Conduct advocacy, social mobilization and sensitization for NTD programme implementation	Conduct advocacy, social mobilization and sensitization for NTD programme implementation	2015-2020	Conference facilities, fuel, transport, stationery, allowances
	Planning and holding NTDs action days	2015-2020	conference facilities, fuel, transport, stationery, allowances, IEC materials, Mass media
Integration of preventive chemotherapy intervention packages for disease control/elimination	Development, production & dissemination of guidelines for mass drug administration for use at community level for LF, STH and schistosomiasis trachoma and leishmaniasis	2015-2020	conference facilities, fuel, transport, stationery, allowances, IEC materials, Mass media
	Development, production & dissemination of an integrated community register for MDA	2015-2020	Conference facilities, fuel, transport, stationery, allowances, IEC materials, Mass media
Strategic Objective 3: Strengthen the integration and linkages of NTD programme and financial plans into sector-wide and national budgetary and financing mechanisms			
Revise national NTDS Strategic Plan and align it to 2015-2020	Planning and hold a retreat	2015	Conference facilities, fuel, transport, stationery, allowances
Strategic Objective 4: Develop and update national NTD policy and elaborate guidelines and tools to guide effective policy and programme implementation			
Development, production & dissemination of NTD policy and guidelines	Development, production & dissemination of NTDS policy and guidelines	2015-2020	Conference facilities, fuel, transport, stationery, allowances
Review, produce & disseminate NTD guidelines for health workers	Review of the guidelines by the TWGs, production & dissemination	2015-2020	Conference facilities, fuel, transport, stationery, allowances

Strengthening government ownership, advocacy, coordination and partnership

The key activities the programme is implementing in order to achieve the strategic objective for strengthening government ownership, advocacy, coordination and partnerships are shown in the Table 31.

Table 31: Activities for implementing strategic priority 1.

Activity	Details (Sub-activities)	Time frame	Resources needed
Strategic Objective 1: Strengthen coordination mechanism for the NTDs control programme at national and County levels.			
Establish programme management and coordination structure	Provide office equipment and operational support for national and county level	2015-2020	Communication allowance, vehicles, office equipment, Stationery
	Set up national task force, ICC, secretariat & TWGs for NTDs at county level	2015	Stationery, Communication allowance, vehicles, office equipment
	Programme support costs	2015-2020	Fuel, maintenance of office equipment, postage, transport and logistics, and car hire
Capacity building for programme implementation	Improve inpatient services to accommodate leishmaniasis, LF patients in endemic counties	2015-2020	Personnel, laboratory equipment and supplies, drugs, bed capacity
	Equip laboratories & other treatment points with modern diagnostic equipment	2015-2020	Microscopes, lab consumables, ultrasound, fridges
Strategic Objective 2: Strengthen and foster partnerships for the control, elimination and eradication of targeted NTDs at national, sub-counties and community levels			
Establish and strengthen Partnerships	Identification of new and potential partners who can support and fund various control activities	2015-2020	Conference facilities, fuel, transport, stationery, allowances
	Engaging partners in international advocacy and goodwill ambassador support	2015-2020	Good will ambassador, Air tickets, Per diem, Conference facilities, fuel, transport, stationery, allowances
	Creating fora to engage partners	2015-2020	Conference facilities, fuel, transport, stationery, allowances
Capacity building	Development, production& dissemination of training manual for community health workers	2015-2020	Conference facilities, fuel, transport, stationery, allowances
	Training community health workers on disease prevention and control using the existing MOH community strategy	2015-2020	Conference facilities, fuel, transport, stationery, allowances

Monitoring and evaluation

The Monitoring and Evaluation (M&E) Unit and the Health Management Information Systems (HMIS) Unit fall under the Division of M&E and Health Research Development. The HMIS Unit is responsible for collection of data and information about all health activities in the country. Another Unit, the Integrated Disease Surveillance and Epidemic Response (IDSR) Unit, collects a wide range of data on a broad spectrum of health programmes. This unit falls under the Division of Disease Surveillance and Epidemic Response. The M&E Unit is responsible for monitoring processes and performance of the activities as well as evaluating their outcomes and impacts. Suitable indicators are selected to measure certain aspects of health programmes, projects and activities.

The NTD Unit will work closely with the M&E Unit to ensure that a representative number and range of indicators are selected for effective inclusion of NTDs in the overall M&E of health programmes. The NTD Unit will also work with the HMIS and IDSR Units to utilize their existing data collection and reporting system to collect and report NTD data. This data will be reported monthly from the peripheral to national level. Additionally, the NTD Unit shall set up and maintain a National Integrated NTD Database (NIND) for all NTD control activities. This tool will allow the NTD programme to maintain a comprehensive database with the capacity to collect, store and use a much wider range of NTD data and information than that collected through the HMIS and IDSR system. The NTD M&E Manager will be responsible for setting up and updating this database. All other departments, stakeholders and partners engaging in NTD control activities will be required to report the accompanying data for inclusion into the (NIND).

The NTD Unit will develop, produce and disseminate forms/data collection tools to be used in a standardised collection of source data for the NIND. The data so collected will be reported to the national NTD office immediately after completion of activities in the peripheral sites. The NTD M&E Manager will also set up and operationalize other data/information management platforms to be used in complementing the role of the NIND. These will include the Tool for Integrated Planning and Costing (TIPAC), the Geographical Information Systems (GIS) for NTDs among others.

The NTD Unit will develop standard indicators to be used in monitoring and evaluating NTD control activities. These will be used to conduct baseline assessments, mid-term evaluation of outcomes and impact assessment of particular control activities depending on the type of disease to be evaluated. A national guideline on monitoring and evaluation of NTD control will be developed to guide the M&E process for all NTDs.

Key activities that will enable the programme achieve the set indicators are as outlined in table 32.

Table 32: Strategic Priority 4.

Activity	Details (sub-activities)	Time frame	Resources needed
Strategic Objective 1: To develop and promote an integrated NTD M&E framework and improve monitoring of NTDs within the context of National health information systems			
To develop an integrated NTD M&E framework	Identify and obtain all existing individual M&E frameworks for all NTD activities	2015 – 2020	Fuel, airtime and courier services
	Develop a draft for integrated NTD M&E framework	2015 – 2020	Stationery, airtime, transport
	Invite stakeholders to a 'integrated NTD M&E framework development' meeting	2015 – 2020	Stationery, airtime and courier services
	Hold 'integrated NTD M&E framework development' meetings	2015 – 2020	Hall hire, allowance, fuel and vehicle maintenance
	Document, produce and disseminate final integrated NTD M&E framework	2015 – 2020	Computer software, airtime and stationery
To promote an integrated NTD M&E framework	Coordinate and encourage application of final integrated NTD M&E framework	2015 – 2020	Airtime, vehicles maintenance, fuel and allowances
	Coordinate development of harmonized and standardized tools for use in application of the integrated NTD M&E framework	2015 – 2020	Hall hire, allowance, fuel and vehicle maintenance
	Convene and hold progress review meetings on application of integrated NTD M&E framework	2015 – 2020	Hall hire, allowance, fuel and vehicle maintenance
	Establish and operationalize a feedback mechanism and action protocol on suitability of the integrated NTD M&E framework	2015 – 2020	Hall hire, allowance, stationery, fuel and vehicle maintenance
To improve monitoring of NTDs through the HMIS and IDSR Units	Inclusion of more NTD indicators in the HMIS	2015 – 2020	Airtime, fuel and allowances
	Sensitize Health records and information officers (HRIOs) and data managers at all levels of the health care delivery system on NTD data management	2015 – 2020	Hall hire, allowance, stationery, airtime, fuel and vehicle maintenance
	Establish and strengthen a robust data/information sharing relationship between the NTD Programme and the HMIS and IDSR Units	2015 - 2020	Stationery, airtime, computer software, allowances
Strategic Objective 2: To establish integrated data management systems and support impact analysis for NTD in the NTD plan			
To establish an integrated data management system	Set up and operationalize a National Integrated NTD Database	2015	Stationery, airtime and computer software
	Sensitize and capacity build implementing partners and other stakeholders on the National Integrated NTD Database	2015 – 2016	Allowance, fuel and vehicle maintenance
	Coordinate production of integrated data collection and reporting tools	2015 – 2020	Hall hire, allowance, fuel and vehicle maintenance
	Coordinate and support data reporting from all implementing stakeholders and partners	2015 – 2020	Airtime, stationery vehicle maintenance, fuel and allowances
	Prepare, produce and distribute periodic briefs on reporting status of implementing partners	2015 – 2020	Stationery, airtime and computer software
To support impact analysis for NTDs	Establish consistent periodic dissemination of NTD impact analysis reports to all stakeholders	2015 -2020	Stationery, airtime and computer software
	Design robust tools and processes for collection and reporting of impact data and information during impact surveys	2015 -2020	Airtime, allowance,
	Establish an efficient impact data management system	2015 - 2020	Computers, software, hardware and accessories
	Train personnel in general data management and specifically, analysis	2015 - 2020	Hall hire, allowance, stationery, fuel and vehicle maintenance
Strategic Objective 3: To strengthen surveillance of NTDs and strengthen response and control of epidemic prone NTDs, in particular Dengue and Leishmaniasis			
To strengthen surveillance of NTDs	Establish sentinel sites for disease monitoring and evaluation	2015 – 2017	Allowances, airtime, Laboratory equipment and reagents fuel and vehicle maintenance
	Conduct supervision for implementation of early warning systems in epidemic sub-counties	2015 – 2018	Allowances, personnel, checklist, fuel and vehicle maintenance
	Carry out overall programme evaluation	2019	Laboratory equipment and reagents, allowances, fuel and vehicle maintenance
Cross-border activities	Carry out cross-border advocacy	2015 – 2020	Allowances, venue, IEC materials and fuel

	Identify joint sentinel sites for disease surveillance and monitoring	2015 – 2016	Hall hire, allowances, fuel and vehicle maintenance
	Conduct joint community training and sensitization	2016 – 2019	Allowances, venue, airtime, stationery and fuel.
	Conduct joint workshops for information sharing and dissemination	2015 – 2020	Hall hire, airtime, air tickets, allowance, fuel and vehicle maintenance
	Initiate joint control activities during epidemic periods	2015 – 2020	Allowances, Laboratory equipment and reagents, drugs, stationery, fuel and vehicle maintenance
	Support laboratory network for joint parasite and vector species identification	2015 – 2017	Laboratory equipment and reagents, venue, allowances, fuel and vehicle maintenance
Cross-border surveillance	Develop joint sentinel sites for disease surveillance and monitoring	2016	Hall hire, Laboratory equipment and reagents, air tickets, allowances, fuel and vehicle maintenance
	Support cross-border surveillance	2015 - 2020	Allowances, Laboratory equipment and reagents, stationery, fuel and vehicle maintenance
Strategic Objective 4: To support operational research, documentation and evidence to guide innovative approaches to NTD programme interventions			
To support operational research	Conduct epidemiological surveys for NTDs distribution and burden	2015 – 2019	Laboratory equipment and reagents, allowances, stationery, fuel and vehicle maintenance
	Study the composition, infectivity and distribution of Leishmaniasis vectors	2015 – 2019	Laboratory equipment and reagents, allowances, stationery, fuel and vehicle maintenance
	Assess impact of community directed treatment of Schistosomiasis and STH on morbidity	2017 – 2019	Laboratory equipment and reagents, allowances, stationery, fuel and vehicle maintenance
	Assess effectiveness and acceptability of existing preventive measures	2017 – 2018	Allowances, Laboratory equipment and reagents, stationery, fuel and vehicle maintenance
	Conduct KAP studies on NTDs	2015 – 2018	Allowances, stationery, fuel and vehicle maintenance
	Assess environmental and behavioural risk factors that predispose to Leishmaniasis infections	2015 – 2020	Allowances, stationery, fuel and vehicle maintenance
	Assess environmental and behavioural risk factors that predispose to Hydatid disease infections	2015 – 2019	Allowances, stationery, fuel and vehicle maintenance
	Conduct survey on vectors' dynamics and incrimination on reservoirs and their distribution	2015 – 2019	Laboratory equipment and reagents, allowances, stationery, fuel and vehicle maintenance

Post intervention surveillance and intergration within primary health care

The *NTD Strategic Plan of Action (2016-2020)* will continue being implemented within the existing health system. At all levels, NTD indicators are monitored and reported using the existing HMIS. NTD programme works closely with all relevant divisions within MoH to ensure successful implementation of the programme. Department of Primary Health Services and Department of Technical Planning and Performance Monitoring exist within MoH and are key in post intervention surveillance. Structures exist up to community level that support implementation of this programme. A community strategy is in place and is currently being implemented in most of the counties.

The Counties and sub-counties health facilities are responsible for providing services and support as well as supervision of the levels that are under their direct responsibility. The Counties Health Management Team (CHMT) plan and co-ordinate the various disease control activities in the

sub-counties. All NTD control activities are implemented at this level and coordinated by the National level. The communities living in NTD endemic areas are the targets and therefore the CHEWs are the primary focal persons. Information flows from the CHAs through the CHEWs to the sub-county and county level.

At all levels, NTDs indicators are monitored and reported using the existing health management information system. NTD programme works closely with all relevant Divisions and Units within the Ministry to ensure successful implementation of the various activities. The main activities that will be carried out to strengthen surveillance and its sustainability are outlined in Table 33.

Table 33: Activities for surveillance and sustainability

Activity	Details (Sub-activities)	Time frame	Resources needed
Strategic Objective: *Strengthen the surveillance of NTDs and strengthen the response and control of epidemic-prone NTDs.*			
Capacity building	Train surveillance officers	2015-2020	Conference facilities, fuel, transport, stationery, allowances
	Develop, produce and disseminate surveillance tools and systems	2015-2016	Conference facilities, fuel, transport, stationery, allowances
Strategic Objective: Establish integrated data management systems and support impact analysis for NTDS as part of the global NTDS data management system and Global NTDs Plan.			
Conduct supportive supervision, monitoring and evaluation of NTDs control programme implementation	Develop, produce and disseminate monitoring and evaluation tools	2015-2020	Conference facilities, fuel, transport, stationery, allowances
	Train CHAs on data collection, management and dissemination	2015-2020	Conference facilities, fuel, transport, stationery, allowances
	Develop, produce and disseminate integrated tools for reporting NTDS through HMIS	2015-2020	Conference facilities, fuel, transport, stationery, allowances
	Integrated supportive supervision of activities' implementation at the county level	2015-2020	Conference facilities, fuel, transport, stationery, allowances

BUDGET JUSTIFICATION AND ESTIMATES

The NTD Strategic Plan of Action 2015-2020 is based on four strategic priorities:

1. Strengthen government ownership, advocacy, coordination and partnership
2. Enhance planning for results, resource mobilization and financial sustainability of NTD programme
3. Scale up access to interventions, treatment and system capacity building
4. Enhance NTDs monitoring and evaluation, surveillance and operational research.

The budget for this plan is based on these four priority areas. Each priority area has four objectives to address specific activities.

Table 34: Five-year cost projections for NTDs control

Five-year cost projections						
Activity	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**TOTAL**
Total	**452,335,000**	**464,564,446**	**499,406,780**	**536,862,288**	**577,126,960**	**2,530,295,474**
Strategic planning	4,875,000	4,930,316	5,300,089	5,697,596	6,124,916	26,927,917
Advocacy	6,000,000	5,984,536	6,433,376	6,915,880	7,434,570	32,768,362
Mapping	6,000,000	3,794,118	4,078,676	4,384,577	4,713,420	22,970,792
Monitoring and evaluation	85,000,000	83,407,353	89,662,904	96,387,622	103,616,694	458,074,574
Drug logistics	22,000,000	23,650,000	25,423,750	27,330,531	29,380,321	127,784,602
Social mobilization	27,500,000	27,429,124	29,486,308	31,697,781	34,075,115	150,188,327
Training	94,000,000	95,967,824	103,165,410	110,902,816	119,220,527	523,256,577
MDA registration	125,000,000	134,375,000	144,453,125	155,287,109	166,933,643	726,048,877
MDA drug distribution	75,000,000	80,625,000	86,671,875	93,172,266	100,160,186	435,629,326
Morbidity control and surgery	6,960,000	4,401,176	4,731,265	5,086,110	5,467,568	26,646,119
Kenya FY 2015 | TIPAC generated: 11/12/2014 06:55:56 Inflation rate 7.5% Category: Implementation costs Operational costs						

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

Government ownership is important in disease control activities and NTDs are some of the diseases that the government is concerned about in reducing their prevalence or eliminating them all together. For the programme to succeed, mechanisms should be put in place to facilitate implementation of activities. These include improved human resource capacity, intensified advocacy for NTDs, efficient communication systems, modern equipment and supplies and formation of functional TWGs.

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

Sustained funding is necessary for the success of control, elimination and eradication of NTDs in the country. For this reason, advocacy at all levels should be sustained throughout the period of implementation. Participation of partners at all levels is highly encouraged. Planning and review meetings involving partners will be conducted periodically. Dissemination of results and lessons learnt will continue to take place both locally and at international fora.

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

Implementation of control interventions are coordinated to allow for integration of activities where feasible and co-implementation for others. For example, MDA for STH and schistosomiasis take place six months after MDA for LF in areas with high prevalence of STH and schistosomiasis. MDA for trachoma has been synchronized to take place two weeks after the MDA for schistosomiasis and STH.

A common planning platform, advocacy and social mobilization structure will continue to be strengthened. Training of health care personnel in control of NTDs will continue to be integrated. These trainings will be cascaded to community level and will necessitate the development of training manuals and monitoring tools that take all NTDs into account.

Strategic Priority 4: Enhance NTDs monitoring and evaluation, surveillance and operational research

A system to monitor implementation of activities has been put in place; these include field activities as well as financial inputs. For the programme to be functional, the unit requires personnel, office furniture, ICT software, hardware and consumables and other office supplies based on assessment that was conducted on existing inventory.

Pharmacovigilance systems will be strengthened and disease surveillance, including cross border surveillance for diseases such as Trachoma, Leishmaniasis and guinea worm, has been improved.

Operational research is being conducted by various research institutions and universities in collaboration with the NTD programme to support implementation of control activities.

ANNEXES

ANNEX 1: DEMOGRAPHIC DISTRIBUTION

Counties	Sub-counties	Villages	Total Population	Pre-school age children (under 5s)	School age children (5-14)	No of Primary Schools	Hospitals	Health Centres	Dispensaries
Baringo	Baringo	400	193,856	32,955	81,419	248	1	9	53
Baringo	Baringo North	191	111,989	19,038	47,035	157	1	0	44
Baringo	East Pokot	84	159,035	27,036	66,795	105	1	3	41
Baringo	Koibatek	443	198,490	33,743	83,366	265	1	9	50
Bomet	Bomet	947	474,163	80,608	199,148	574	2	8	53
Bomet	Sotik	309	224,444	38,155	94,266	233	1	3	33
Bungoma	Bungoma East	56	274,934	46,739	115,472	147	2	2	15
Bungoma	Bungoma North	859	382,455	65,017	160,631	211	2	4	24
Bungoma	Bungoma South	594	487,887	82,941	204,913	258	2	4	20
Bungoma	Bungoma West	570	290,794	49,435	122,133	194	2	4	19
Bungoma	Mt. Elgon	243	205,827	34,991	86,447	227	1	4	18
Busia	Bunyala	110	79,671	13,544	33,462	48	1	1	6
Busia	Busia	527	391,472	66,550	164,418	213	2	7	20
Busia	Samia	252	111,644	18,979	46,890	69	1	1	11
Busia	Teso North	185	140,835	23,942	59,151	110	1	2	9
Busia	Teso South	246	164,688	27,997	69,169	89	1	3	8
Elgeyo Marakwet	Keiyo	597	218,362	37,122	91,712	215	3	8	39
Elgeyo Marakwet	Marakwet	411	223,435	37,984	93,843	194	2	14	51
Embu	Embu	594	354,624	60,286	148,942	218	2	8	50
Embu	Mbeere	488	261,760	44,499	109,939	275	1	5	41
Garissa	Fafi	94	113,688	19,327	47,749	43	1	5	6
Garissa	Garissa	175	226,944	38,580	95,316	98	3	7	19
Garissa	Ijara	101	110,644	18,810	46,471	56	2	4	10
Garissa	Lagdera	121	292,690	49,757	122,930	79	2	6	16
Homabay	Homabay	1,302	437,763	74,420	183,861	377	3	12	47
Homabay	Rachuonyo	1,089	456,977	77,686	191,930	439	6	17	45

Homabay	Suba	645	256,080	43,534	107,554	242	4	19	31
Isiolo	Garbatula	73	51,485	8,752	21,624	28	1	4	17
Isiolo	Isiolo	190	119,615	20,335	50,238	84	0	2	25
Kajiado	Kajiado Central	432	193,768	32,941	81,383	203	1	11	33
Kajiado	Kajiado North	241	462,741	78,666	194,351	309	1	6	33
Kajiado	Loitokitok	198	164,177	27,910	68,955	108	1	8	16
Kakamega	Butere	588	289,456	49,208	121,572	90	2	17	11
Kakamega	Kakamega Central	357	355,104	60,368	149,144	161	3	2	30
Kakamega	Kakamega East	280	190,421	32,372	79,977	206	0	6	13
Kakamega	Kakamega North	187	244,979	41,646	102,891	127	1	4	12
Kakamega	Kakamega South	143	124,980	21,247	52,492	86	1	6	8
Kakamega	Lugari	583	348,844	59,303	146,514	207	3	3	21
Kakamega	Mumias	650	429,120	72,950	180,230	175	0	5	10
Kericho	Buret	520	366,291	62,269	153,842	240	3	7	51
Kericho	Kericho	633	458,635	77,968	192,627	228	1	4	32
Kericho	Kipkelion	529	246,679	41,935	103,605	208	1	3	24
Kiambu	Gatundu	329	256,472	43,600	107,718	170	0	6	27
Kiambu	Githunguri	208	176,437	29,994	74,103	98	0	6	15
Kiambu	Kiambu East-Kiambaa	118	302,992	51,509	127,257	118	1	4	15
Kiambu	Kiambu West	57	156,578	26,618	65,763	62	0	6	8
Kiambu	Kikuyu	159	317,414	53,960	133,314	140	1	7	18
Kiambu	Lari	156	147,937	25,149	62,134	93	0	3	17
Kiambu	Ruiru	32	287,775	48,922	120,865	161	1	4	20
Kiambu	Thika East	40	92,029	15,645	38,652	61	0	3	10
Kiambu	Thika West	61	260,953	44,362	109,600	91	1	4	15
Kilifi	Kaloleni	359	302,004	51,341	126,842	153	1	2	19
Kilifi	Kilifi	1,018	544,842	92,623	228,834	131	1	7	33
Kilifi	Malindi	627	478,235	81,300	200,859	252	1	7	49
Kirinyaga	Kirinyaga	327	630,524	107,189	264,820	414	2	25	64
Kisii	Gucha	593	466,639	79,329	195,988	66	2	3	12
Kisii	Gucha South	335	189,913	32,285	79,763	148	2	5	11

Kisii	Kisii Central	404	436,719	74,242	183,422	201	2	5	21
Kisii	Kisii South	223	136,856	23,266	57,480	103	1	2	11
Kisii	Masaba	301	278,629	47,367	117,024	291	1	1	11
Kisumu	Kisumu East	257	565,562	96,145	237,536	124	3	9	33
Kisumu	Kisumu West	437	173,027	29,415	72,671	250	3	3	22
Kisumu	Nyando	679	418,340	71,118	175,703	412	2	18	39
Kitui	Kitui	1,889	534,473	90,860	224,479	613	4	6	139
Kitui	Kyuso	531	167,128	28,412	70,194	162	2	8	18
Kitui	Mutomo	840	215,106	36,568	90,345	287	1	7	30
Kitui	Mwingi	994	292,520	49,728	122,858	368	3	12	76
Kwale	Kinango	382	250,226	42,538	105,095	155	1	1	23
Kwale	Kwale	238	181,470	30,850	76,217	105	1	4	16
Kwale	Msambweni	418	344,356	58,541	144,630	193	1	4	28
Laikipia	Laikipia East	131	169,596	28,831	71,230	132	1	3	27
Laikipia	Laikipia North	61	39,120	6,650	16,430	27	1	0	10
Laikipia	Laikipia West	110	267,982	45,557	112,553	217	2	6	29
Lamu	Lamu	241	121,243	20,611	50,922	131	1	5	23
Machakos	Kangundo	571	261,620	44,475	109,881	179	1	9	23
Machakos	Machakos	796	528,882	89,910	222,130	315	2	4	46
Machakos	Mwala	513	194,669	33,094	81,761	198	1	7	26
Machakos	Yatta	483	326,596	55,521	137,170	295	2	8	52
Makueni	Kibwezi	649	296,966	50,484	124,726	256	2	7	30
Makueni	Makueni	659	302,473	51,420	127,038	258	2	12	39
Makueni	Mbooni	327	212,341	36,098	89,183	208	2	2	31
Makueni	Nzaui	428	244,393	41,547	102,645	224	2	5	42
Mandera	Mandera Central	39	498,271	84,706	209,274	41	0	5	8
Mandera	Mandera East	71	344,707	58,600	144,777	65	2	7	12
Mandera	Mandera West	85	381,828	64,911	160,368	62	1	7	5
Marsabit	Chalbi	34	89,788	15,264	37,711	18	0	3	5
Marsabit	Laisamis	169	78,412	13,330	32,933	45	0	4	5
Marsabit	Marsabit	131	55,526	9,439	23,321	57	1	5	21
Marsabit	Moyale	249	123,941	21,070	52,055	85	1	6	22
Meru	Igembe	697	576,436	97,994	242,103	261	1	7	32
Meru	Imenti North	255	309,196	52,563	129,862	203	1	4	39

Meru	Imenti South	191	214,457	36,458	90,072	171	0	5	30
Meru	Meru Central	302	169,278	28,777	71,097	126	1	5	12
Meru	Tigania	623	350,127	59,522	147,053	225	2	7	29
Migori	Kuria East	203	97,713	16,611	41,039	60	1	5	10
Migori	Kuria West	454	208,067	35,371	87,388	122	1	9	14
Migori	Migori	928	401,050	68,178	168,441	292	2	4	52
Migori	Rongo	803	388,319	66,014	163,094	295	3	7	36
Mombasa	Kilindini	79	496,949	84,481	208,719	223	1	2	1
Mombasa	Mombasa	330	624,708	106,200	262,377	154	1	5	28
Muranga	Gatanga	352	135,040	22,957	56,717	85	1	1	17
Muranga	Muranga North	846	413,480	70,292	173,662	277	1	7	32
Muranga	Muranga South	691	516,668	87,833	217,000	288	2	7	72
Nairobi	Nairobi East	67	1,366,493	232,304	573,927	37	1	31	29
Nairobi	Nairobi North	107	1,268,186	215,592	532,638	38	1	27	78
Nairobi	Nairobi West	101	817,645	139,000	343,411	175	1	23	64
Nairobi	Westlands	42	295,441	50,225	124,085	42	0	11	19
Nakuru	Molo	354	647,299	110,041	271,866	536	1		67
Nakuru	Naivasha	202	449,254	76,373	188,687	206	1	9	31
Nakuru	Nakuru	163	565,131	96,072	237,355	237	1	10	59
Nakuru	Nakuru North	242	252,770	42,971	106,163	167	1	12	12
Nandi	Nandi Central	428	275,891	46,901	115,874	275	1	4	38
Nandi	Nandi East	457	146,222	24,858	61,413	113	1	1	38
Nandi	Nandi North	242	196,338	33,377	82,462	219	1	6	22
Nandi	Nandi South	381	188,621	32,066	79,221	183	1	6	35
Nandi	Tinderet	242	92,008	15,641	38,643	126	1	2	11
Narok	Narok North	533	308,715	52,482	129,660	214	0	6	29
Narok	Narok South	290	379,522	64,519	159,399	253	1	6	35
Narok	Trans Mara	703	327,806	55,727	137,678	228	2	7	44
Nyamira	Borabu	66	87,674	14,905	36,823	87	1	9	20
Nyamira	Manga	210	104,908	17,834	44,061	99	2	6	6
Nyamira	Nyamira	776	388,891	66,111	163,334	359	4	27	31
Nyandarua	Nyandarua North	501	368,426	62,632	154,739	117	0	7	12
Nyandarua	Nyandarua South	217	343,549	58,403	144,291	166	0	8	12

Nyeri	Nyeri North	224	387,660	65,902	162,817	297	3	29	144
Nyeri	Nyeri South	710	440,485	74,882	185,004	280	3	20	102
Pokot	Pokot Central	697	209,695	35,648	88,072	220	1	1	32
Pokot	Pokot North	354	186,285	31,668	78,240	128	1	2	21
Pokot	West Pokot	470	216,199	36,754	90,803	206	1	4	38
Samburu	Samburu Central	256	125,438	21,324	52,684	88	2	1	55
Samburu	Samburu East	127	70,561	11,995	29,636	42	0	2	
Samburu	Samburu South	100	71,406	12,139	29,990	34	0	2	
Siaya	Bondo	315	188,090	31,975	78,998	146	2	3	25
Siaya	Rarieda	330	160,669	27,314	67,481	127	1	11	14
Siaya	Siaya	1,337	656,996	111,689	275,938	428	3	25	60
Taita Taveta	Taita	308	259,100	44,047	108,822	194	2	7	22
Taita Taveta	Taveta	42	80,796	13,735	33,934	69	1	2	10
Tana River	Tana Delta	168	115,422	19,622	48,477	120	1	3	23
Tana River	Tana River	409	171,240	29,111	71,921	69	0	3	15
Tharaka Nithi	Maara	374	127,913	21,745	53,723	124	1	6	25
Tharaka Nithi	Meru South	524	152,966	26,004	64,246	181	1	3	27
Tharaka Nithi	Tharaka	459	155,344	26,408	65,244	187	1	4	17
Trans Nzoia	Kwanza	399	282,057	47,950	118,464	218	1	1	17
Trans Nzoia	Trans Nzoia East	418	233,047	39,618	97,880	157	1	3	11
Trans Nzoia	Trans Nzoia West	491	462,535	78,631	194,265	179	2	5	28
Turkana	Turkana Central	646	304,013	51,682	127,685	125	1	5	42
Turkana	Turkana North	437	447,070	76,002	187,769	163	3	6	46
Turkana	Turkana South	140	270,308	45,952	113,530	86	1	3	19
Uasin Gishu	Eldoret East	315	288,305	49,012	121,088	182	1	8	30
Uasin Gishu	Eldoret West	307	467,657	79,502	196,416	270	2	11	43
Uasin	Wareng	372	311,735	52,995	130,929	157	0	7	29

Gishu									
Vihiga	Emuhaya	405	220,982	37,567	92,812	107	1	5	9
Vihiga	Hamisi	252	177,029	30,095	74,352	117	1	6	9
Vihiga	Vihiga	417	264,237	44,920	110,979	88	1	9	10
Wajir	Wajir East	30	267,967	45,554	112,546	39	2	5	5
Wajir	Wajir North	46	161,800	27,506	67,956	23	1	5	5
Wajir	Wajir South	15	155,310	26,403	65,230	39	1	5	3
Wajir	Wajir West	36	205,315	34,904	86,232	62	1	6	21

ANNEX 2a: KNOWN DISTRIBUTION OF STH IN THE COUNTRY

County	**Sub county**	**Prevalence of STH**	**Study method**	**Reference**
Nairobi	Nairobi West	11.90%	Kato Katz	Mwanthi et al, 2008
Nairobi	Nairobi East	31..0%	Kato Katz	Davis et al, 2014
Nairobi	Nairobi North	1.70%	Kato Katz	Mwanthi et al, 2008
Nairobi	Westlands	16.30%	Kato Katz	Mwanthi et al, 2008
Central	Nyandarua North	0.20%, 18%	Kato Katz	KEMRI, 2013 (unpublished), End
Central	Nyandarua South	8%	Kato Katz	END FUND Data
Central	Nyeri North	0.80%	Kato Katz	MOH, 2013 (Unpublished)
Central	Nyeri South	6.80%	Kato Katz	MOH, 2013 (Unpublished)
Central	Kirinyanga	10%	Kato Katz	Kihara et al 2008
Central	Muranga North	7.60%	Kato Katz	MOH, 2013 (Unpublished)
Central	Muranga South	5.00%	Kato Katz	MOH, 2013 (Unpublished)
Central	Kiambu	5.3%	Kato Katz	MOH, 2013 (Unpublished)
Central	Kikuyu	3.8	Kato Katz	MOH Unpublished data 2013
Central	Kiambu West	3.80%	Kato Katz	MOH, 2013 (Unpublished)
Central	Lari	5%	Kato Katz	MOH 2013, unpublished
Central	Githunguri	5.3%	Kato Katz	MOH 2013, unpublished
Central	Thika East	3.8%	Kato Katz	Brooker et al, 2013
Central	Thika West	0.9	Kato Katz	Brooker et al, 2013
Central	Ruiru	0.9%	Kato Katz	Brooker et al, 2013

Central	Gatanga	0.9%	Kato Katz	Brooker et al, 2013
Central	Gatundu	3.50%	Kato Katz	MOH, 2013 (Unpublished)
Coast	Mombasa	29.8	Riches Conc.	Mwaniki et al, 1999
Coast	Kilindini	23.50%	Kato Katz	Mwandawiro et al, 2013
Coast	Kwale	27.70%	Kato Katz	Mwandawiro et al, 2013
Coast	Kinango	22.00%	Kato Katz	Brooker et al, 2012
Coast	Msambweni	27.70%	Kato Katz	Mwandawiro et al, 2013
Coast	Kilifi	37.10%	Kato Katz	KEMRI, 2008
Coast	Kaloleni	35.00%	Direct smear	Ashford et al, 1993
Coast	Malindi	15.20%	Kato Katz	Mwandawiro et al, 2013
Coast	Tana River	17.90%	Kato Katz	MOH, 2013 (Unpublished)
Coast	Tana Delta	80.00%	Kato Katz	Njaanake et al, 2014
Coast	Lamu	3%	Kato-Katz	Brooker et al, 2012
Coast	Taita	1.70%	Kato Katz	Mwandawiro et al, 2013
Coast	Taveta	2.00%	Kato Katz	Brooker et al, 2012
Eastern	Marsabit	0.2	Kato Katz	MOH, 2013 (Unpublished)
Eastern	Chalbi	0.00%	Kato Katz	MOH, 2013 (Unpublished)
Eastern	Laisamis	0	Kato Katz	MOH, 2013 (Unpublished)
Eastern	Moyale	2.9%	Kato Katz	MOH, 2013 (Unpublished)
Eastern	Isiolo	2.6	Kato Katz	MOH, 2013 (Unpublished)
Eastern	Garbatulla	0	Kato Katz	MOH, 2013 (Unpublished)
Eastern	Meru Central	4.50%	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Imenti North	4.5	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Imenti South	4.5	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Meru South	4.5	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Maara	4.5	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Igembe	4.5	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Tigania	4.5	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Tharaka	4.5	Kato Katz	KEMRI, 2014 (Unpublished)

Eastern	Embu	0.90%	Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Mbeere	20%	Kato Katz	DVBD Upublished data
Eastern	Kitui	15.10%	Kato Katz	MOH,1999(unpublished)
Eastern	Mutomo	2.30%	Kato Katz	KEMRI 2014 (unpublished)
Eastern	Mwingi	12.90%	Kato Katz	MOH,1999(unpublished)
Eastern	Kyuso	3.70%	Ritches	MOH,1999(unpublished)
Eastern	Machakos	7.60%	Ritches	Ouma 1978
Eastern	Mwala	10%	Kato-Katz	DVBD Unpublished data
Eastern	Yatta	38.60%	Kato Katz	Phoebe,Ng'ang'a&Mutai 2014
Eastern	Kangundo	30.00%	Concentration	Kloos et al 1993
Eastern	Makueni	10.00%	Kato Katz	Nguhiu et al 2009
Eastern	Mbooni	5.20%	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Kibwezi	1.50%	Kato Katz	KEMRI, 2014 (Unpublished)
Eastern	Nzaui	2.80%	Kato Katz	KEMRI, 2014 (Unpublished)
North Eastern	Garissa	1%	Kato Katz	WFP data,2008 Unpublished
North Eastern	Lagdera	0	Kato Katz	WFP data,2008 Unpublished
North Eastern	Fafi	0	Kato Katz	WFP data,2008 Unpublished
North Eastern	Ijara	0.4%	Kato Katz	WFP Data 2008, unpublished
North Eastern	Wajir South	0.0%	Kato Katz	WFP Data 2008, unpublished
North Eastern	Wajir North	0.0%	Kato Katz	WFP Data 2008, unpublished
North Eastern	Wajir East	0.00%	Kato Katz	WFP Data 2008, unpublished
North Eastern	Wajir West	0.1	Kato Katz	WFP Data 2008, unpublished
North Eastern	Mandera Central	0	Kato Katz	WFP Data 2008, unpublished
North Eastern	Mandera East	0	Kato Katz	WFP Data 2008, unpublished
North Eastern	Mandera West	0	Kato Katz	WFP Data 2008, unpublished
Nyanza	Siaya	17.70%	Kato Katz	Brooker et al, 2012
Nyanza	Bondo	36.80%	Kato Katz	Thiongo,Luoba&Ouma 2001
Nyanza	Rarieda	70.30%	Kato Katz	Handzel et al, 2003
Nyanza	Kisumu East	11.30%	Kato Katz	Mwandawiro et al, 2013

Nyanza	Kisumu West	5%	Kato-Katz	DVBD Unpublished data
Nyanza	Nyando	53.40%	Kato Katz	Mwaniki et al 1999
Nyanza	Homa Bay	23.20%	Kato Katz	Mwandawiro et al, 2013
Nyanza	Suba	15.70%	Kato Katz	Odiere et al 2012
Nyanza	Rachuonyo	23.10%	Kato Katz	Mwandawiro et al, 2013
Nyanza	Migori	18.50%	Kato Katz	MoH 2014 (unpublished)
Nyanza	Rongo	47.10%	Kato Katz	MoH 2014 (unpublished)
Nyanza	Kuria West	20.3	Kato Katz	MoH 2014 (unpublished)
Nyanza	Kuria East	20.30%	Kato Katz	Mwandawiro et al, 2013
Nyanza	Kisii Central	23.80%	Kato Katz	Sang et al 2014
Nyanza	Kisii South	11.70%	Kato Katz	Sang et al 2014
Nyanza	Masaba	30.40%	Kato Katz	Mwandawiro et al, 2013
Nyanza	Gucha	39.60%	Kato Katz	Mwandawiro et al, 2013
Nyanza	Gucha South	39.60%	Kato Katz	Mwandawiro et al, 2013
Nyanza	Nyamira	39.60%	Kato Katz	Mwandawiro et al, 2013
Nyanza	Manga	39.60%	Kato Katz	Mwandawiro et al, 2013
Nyanza	Borabu	39.60%	Kato Katz	Mwandawiro et al, 2013
Rift Valley	Turkana Central	0	Kato Katz	Brooker 2008
Rift Valley	Turkana North	0	Kato Katz	Brooker 2008
Rift Valley	Turkana South	0	Kato Katz	Brooker 2008
Rift Valley	West Pokot	1.30%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Pokot North	0	Kato Katz	Brooker 2008
Rift Valley	Pokot Central	0.00%	Kato Katz	Brooker 2008
Rift Valley	Samburu Central	0.40%	Kato Katz	Brooker 2008
Rift Valley	Samburu East	0.00%	Kato Katz	Brooker 2008
Rift Valley	Samburu North	0.00%	Kato Katz	Brooker 2008
Rift Valley	Trans Nzoia West	6.70%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Trans Nzoia East	3.30%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Kwanza	3.30%	Kato Katz	MoH 2013 (unpublished)

Rift Valley	Baringo Central	0.30%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Baringo North	0.30%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	East Pokot	0.30%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Koibatek	2.8%	Kato Katz	Ng'endalel
Rift Valley	Eldoret West	0.00%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Eldoret East	0.80%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Wareng	0.80%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Marakwet	0.80%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Keiyo	0.80%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Nandi North	28.9	Kato Katz	Clarke, 2012
Rift Valley	Nandi Central	4.30%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Nandi East	17.40%	Kato Katz	Brooker et al, 2012
Rift Valley	Nandi South	17.40%,8.9&	Kato Katz	Brooker et al, 2012, Clark et al 2004
Rift Valley	Tinderet	0	Kato Katz	Brooker et al, 2009
Rift Valley	Laikipia North	0	Kato Katz	Brooker et al, 2009
Rift Valley	Laikipia East	0	Kato Katz	Brooker et al, 2009
Rift Valley	Laikipia West	0	Kato Katz	Brooker et al, 2009
Rift Valley	Nakuru	1.60%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Nakuru North	2.50%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Naivasha	0.5	Kato Katz	DVBD Unpublished 2008
Rift Valley	Molo	5.40%	Kato Katz	MoH 2013 (unpublished)
Rift Valley	Narok North	2.90%	Kato Katz	Brooker et al, 2012
Rift Valley	Narok South	2.90%	Kato Katz	Brooker et al, 2012
Rift Valley	Trans Mara	29.00%	Kato Katz	Mwandawiro et al, 2013
Rift Valley	Kajiado Central	0	Kato Katz	Mwandawiro et al, 2013
Rift Valley	Loitoktok	24.5	Kato Katz	Mwandawiro et al, 2013
Rift Valley	Kericho	24.50%	Kato Katz	Mwandawiro et al, 2013
Rift Valley	Kipkelion	24.5	Kato Katz	Mwandawiro et al, 2013
Rift Valley	Buret	24.5	Kato Katz	Mwandawiro et al, 2013

Rift Valley	Sotik	24.5	Kato Katz	Mwandawiro et al, 2013
Rift Valley	Bomet	27.90%	Kato Katz	Mwandawiro et al, 2013
Rift Valley	Kajiado north	0%	Kato Katz	Brooker 2012
Western	Kakamega Central	30.13%	Kato Katz	Mwandawiro et al, 2013
Western	Kakamega South	10	Kato Katz	DVBD Unpublished data
Western	Kakamega North	12	Kato Katz	DVBD Unpublished data
Western	Kakamega East	9	Kato Katz	DVBD Unpublished data
Western	Lugari	22.74	Kato Katz	Mwandawiro et al, 2013
Western	Vihiga	23	Kato Katz	DVBD Unpublished data
Western	Emuhaya	43.93%	Kato Katz	Mwandawiro et al, 2013
Western	Hamisi	25	Kato Katz	DVBD Unpublished data
Western	Mumias	15	Kato Katz	DVBD Unpublished data
Western	Butere	17	Kato Katz	DVBD Unpublished data
Western	Bungoma South	19	Kato Katz	DVBD Unpublished data
Western	Bungoma North	10	Kato Katz	DVBD Unpublished data
Western	Bungoma East	43.68%	Kato Katz	Mwandawiro et al, 2013
Western	Bungoma West	12	Kato Katz	DVBD Unpublished data
Western	Mt. Elgon	17	Kato Katz	DVBD Unpublished data
Western	Busia	29.30%	Kato Katz	Mwandawiro et al, 2013
Western	Teso North	29.30%	Kato Katz	Mwandawiro et al, 2013
Western	Samia	29.30%	Kato Katz	Mwandawiro et al, 2014
Western	Bunyala	18.30%	Kato Katz	Mwandawiro et al, 2014
Western	Teso South	29.30%	Kato Katz	Mwandawiro et al, 2014

ANNEX 2b: KNOWN DISTRIBUTION OF SCHISTOSOMIASIS IN THE COUNTRY

Region	**Sub- county**	**Prevalence of S. mansoni**	**Prevalence of S. haematobioum**	**Study method**	**Reference**
Nairobi	Nairobi West	5.50%		Kato Katz	Ministry of Health, 2013 (unpublished)
Nairobi	Nairobi East	0.60%		Kato Katz	Ministry of Health, 2013 (unpublished)
Nairobi	Nairobi North	0.00%		Kato Katz	Ministry of Health, 2013 (unpublished)
Nairobi	Westlands	5.5		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Nyandarua North	0		Kato Katz	END FUND Data
Central	Nyandarua South	0		Kato Katz	END FUND Data
Central	Nyeri North	0		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Nyeri South	0.		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Kirinyanga	50.0%		Kato Katz	Kihara et al 2004
Central	Muranga North	0.40%		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Muranga South	0.00%		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Kiambu	0.0%		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Kikuyu	0		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Kiambu West	0.5%		Kato Katz	Ministry of Health, 2013

					(unpublished)
Central	Lari	0		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Githunguri	0		Kato Katz	Ministry of Health, 2013 (unpublished)
Central	Thika East	0			Brooker et al, 2013
Central	Thika West	0			Brooker et al, 2013
Central	Ruiru	0			Brooker et al, 2013
Central	Gatanga	0			Brooker et al, 2013
Central	Gatundu	0			Brooker et al, 2013
Coast	Mombasa	0		Urine filtration	Brooker et al, 2013
Coast	Kilindini	0		Urine filtration	Brooker et al, 2013
Coast	Kwale		24.80%, 10.8%	Urine filtration	KEMRI, 2013, Mwandawiro et al 2013
Coast	Kinango		24.80%	Urine filtration	Brooker et al, 2013
Coast	Msambweni		10.80%	Urine filtration	Mwandawiro et al, 2013
Coast	Kilifi		9.45%	Urine filtration	Mwandawiro et al, 2013
Coast	Kaloleni		15.00%	Urine sedimentation	Ashford, 1993
Coast	Malindi		9.50%	Urine filtration	Mwandawiro et al, 2013
Coast	Tana River		17.00%	Urine filtration	Brooker et al, 2009
Coast	Tana Delta		94.30%	Urine filtration	Njaanake et al, 2014
Coast	Lamu		10%	Urine filtration	Unpublished DVBD data
Coast	Taita		0		Mwandawiro et al, 2013
Coast	Taveta		10%	Urine filtration	Doenoff et al, 1993

Eastern	Marsabit	0	0	Urine filtration	DVBD Unpublished data 2013
Eastern	Chalbi	0		Urine filtration	DVBD Unpublished data 2013
Eastern	Laisamis	0		Urine filtration	DVBD Unpublished data 2013
Eastern	Moyale	0		Urine filtration	DVBD Unpublished data 2013
Eastern	Isiolo	0		Urine filtration	DVBD Unpublished data 2013
Eastern	Garbatulla	0		Urine filtration	DVBD Unpublished data 2013
Eastern	Meru Central	0,0%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Imenti North	0		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Imenti South	0		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Meru South	0,0%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Maara	0		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Igembe	0		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Tigania	0		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Tharaka	0		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Embu	0.00%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Mbeere	4%			Unpublished data (2006)
Eastern	Kitui	3.80%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Mutomo	0.00%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Mwingi	3.8		Kato Katz	KEMRI 2014 (unpublished)
Eastern	Kyuso	0.00%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Machakos	6.00%	14.40%	Kato Katz,Urine sedimentation	KEMRI, 2013(unpublished); Ouma et al, 1978
Eastern	Mwala	4.40%		Kato Katz	KEMRI, 2014 (unpublished)

Eastern	Yatta	0.50%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Kangundo	7.00%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Makueni	2.80%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Mbooni	10.80%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Kibwezi	5.90%		Kato Katz	KEMRI, 2014 (unpublished)
Eastern	Nzaui	12.00%		Kato Katz	KEMRI, 2014 (unpublished)
North Eastern	Garissa		5.0	Urine filtration	WFP MOH Data unpublished
North Eastern	Lagdera		0	Urine filtration	WFP MOH Data unpublished
North Eastern	Fafi		0	Urine filtration	WFP MOH Data unpublished
North Eastern	Ijara		24.20%	Urine filtration	WFP & MOH unpublished
North Eastern	Wajir South		5.90%	Urine filtration	WFP & MOH 2008 unpublished
North Eastern	Wajir North		10%	Urine filtration	WFP & MOH 2008 unpublished
North Eastern	Wajir East		5.00%	Urine Fitration	WFP & MOH 2008 unpublished
North Eastern	Wajir West		0	Urine Fitration	WFP & MOH 2008 unpublished
North Eastern	Mandera Central		0	Urine Fitration	WFP & MOH 2008 unpublished
North Eastern	Mandera East		0	Urine Fitration	WFP & MOH 2008 unpublished
North Eastern	Mandera West		0	Urine Fitration	WFP & MOH 2008 unpublished
Nyanza	Siaya	2.70%		Kato Katz	Brooker et al, 2012
Nyanza	Bondo	31.60%		Kato Katz	Thiongo, Luoba&Ouma, 2001
Nyanza	Rarieda	17.40%		Kato Katz	Mwinzi et al, 2012
Nyanza	Kisumu East	5.70%		Kato Katz	Mwandawiro et al, 2013
Nyanza	Kisumu West	5%		Kato-Katz	DVBD Unpublished data
Nyanza	Nyando	10%		Kato Katz	DVBD Unpublished data

Nyanza	Homa Bay	1.20%	5.70%	Urine filtration; Kato Katz	Sang et al, 2014
Nyanza	Suba	19.40%	0.60%	Urine filtration; Kato Katz	Sang et al, 2014
Nyanza	Rachuonyo	6.10%	22.40%	Urine filtration; Kato Katz	Sang et al, 2015
Nyanza	Migori	30.90%	14.90%	Urine filtration; Kato Katz	MOH, 2014 (Unpublished)
Nyanza	Rongo	18.00%	3.40%	Urine filtration; Kato Katz	MOH, 2014 (Unpublished)
Nyanza	Kuria West	20.23		Kato-Katz	Mwandawiro, 2013
Nyanza	Kuria East	20.23		Kato-Katz	Mwandawiro, 2013
Nyanza	Kisii Central	2.40%	0.00%	Urine filtration; Kato Katz	Sang et al, 2014
Nyanza	Kisii South	0.2		Kato Katz	Mwandawiro et al, 2013
Nyanza	Masaba	0.20%		Kato Katz	Mwandawiro et al, 2013
Nyanza	Gucha	1.50%		Kato Katz	Mwandawiro et al, 2014
Nyanza	Gucha South	0.30%	0.00%	Urine filtration; Kato Katz	Sang et al, 2014
Nyanza	Nyamira	0.3		Urine filtration; Kato Katz	Sang et al, 2014
Nyanza	Manga	0.3		Urine filtration; Kato Katz	Sang et al, 2014
Nyanza	Borabu	3.70%	0.00%	Urine filtration; Kato Katz	Sang et al, 2014
Rift Valley	Turkana Central	0		Kato Katz	Brooker et al 2012

Rift Valley	Turkana North	0		Kato Katz	Brooker et al 2012
Rift Valley	Turkana South	0		Kato Katz	Brooker et al 2012
Rift Valley	West Pokot	0.30%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Pokot North	0		Kato Katz	Brooker 2008
Rift Valley	Pokot Central	0.00%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Samburu Central	0		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Samburu East	0		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Samburu North	0		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Trans Nzoia West	0.00%	0.00%	Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Trans Nzoia East	0.00%	0.00%	Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Kwanza	0		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Baringo Central	3.30%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Baringo North	1.40%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	East Pokot	0.00%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Koibatek	0		Kato Katz	Brooker et al, 2012
Rift Valley	Eldoret West	0.00%		Kato Katz	KEMRI, 2014 (unpublished)
Rift Valley	Eldoret East	0.20%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Wareng	0		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Marakwet	0.00%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Keiyo	0.00%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Nandi North	0,0		Kato Katz	Clarke et al 2004, NTD mapping data unpublished
Rift Valley	Nandi Central	0,0		Kato Katz	Clarke et al 2004, NTD U mapping data 2013 unpublished

Rift Valley	Nandi East	0,0		Kato Katz	Clarke et al 2004, NTDU mapping data unpublished
Rift Valley	Nandi South	0		Kato Katz	Brooker et al, 2009
Rift Valley	Tinderet	0		Kato Katz	Brooker et al, 2009
Rift Valley	Laikipia North	0		Kato Katz	Brooker et al, 2009
Rift Valley	Laikipia East	0		Kato Katz	Brooker et al, 2009
Rift Valley	Laikipia West	0		Kato Katz	Brooker et al, 2009
Rift Valley	Nakuru	0.00%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Nakuru North	0.00%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Naivasha	5.6%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Molo	0.00%		Kato Katz	MOH, 2013 (Unpublished)
Rift Valley	Narok North	0		Kato Katz	MOH 2013 unpublished
Rift Valley	Narok South	0		Kato Katz	MOH 2013 unpublished
Rift Valley	Trans Mara	1.20%		Kato Katz	Mwandawiro et al, 2013
Rift Valley	Kajiado Central	0		Kato Katz	MOH 2013 unpublished
Rift Valley	Loitoktok	0		Kato Katz	MOH 2013 unpublished
Rift Valley	Kericho	0			Mwandawiro et al, 2013
Rift Valley	Kipkelion	0			Mwandawiro et al
Rift Valley	Buret	0			Mwandawiro et al
Rift Valley	Sotik	0			Mwandawiro et al
Rift Valley	Bomet	0			Mwandawiro et al, 2013
Rift Valley	Kajiado north	0.10%		Kato Katz	MOH, 2013 (Unpublished)
Western	Kakamega Central	0			Mwandawiro et al, 2013

Western	Kakamega South	0			Desk Review
Western	Kakamega North	0			Desk Review
Western	Kakamega East	0			Desk Review
Western	Lugari	0.01			Mwandawiro et al, 2013
Western	Vihiga	0			Desk Review
Western	Emuhaya	0			Mwandawiro et al, 2013
Western	Hamisi	0			Desk review
Western	Mumias	0			Desk review
Western	Butere	0			Desk review
Western	Bungoma South	0			Desk review
Western	Bungoma North	0			Desk review
Western	Bungoma East	0%			Mwandawiro et al, 2013
Western	Bungoma West	0%			Desk review & DVBD unpublished data
Western	Mt. Elgon	0			Desk review & DVBD unpublished data 2009
Western	Busia	0.65		Kato-Katz	Mwandawiro et al, 2013
Western	Teso North	5%		Kato-Katz	Mwandawiro et al, 2013
Western	Samia	10%		Kato-Katz	DVBD Unpublished data
Western	Bunyala	29.51%		Kato-Katz	Mwandawiro et al 2013
Western	Teso South	10.0%		Kato-Katz	Mwandawiro et al 2013

ANNEX 2c: KNOWN DISTRIBUTION OF LYMPHATIC FILARIASIS IN THE COUNTRY

Region	**County**	**Sub – County**	**Prevalence (numbers/ rate/proportion)**	**Study method**	**Year of survey and references**
COAST	Kilifi	Kilifi	3.0	Parasitological	2008, NPEL
		Malindi	3.0	Parasitological	2008, NPELF
		Kaloleni	2.0	Parasitological	2008, NPELF
	Kwale	Kwale	1.0	Parasitological	2008, NPELF
		Msambweni	1.0	Parasitological	2008, NPELF
		Kinango	1.0	Parasitological	2008, NPELF
	Lamu	Lamu(Ndau)	11.6	Parasitological	2011, NPELF
		Lamu(Mkunumbi)	0.9	parasitological	2011, NPELF
	Tana River	T/R(Wenje)	0	Parasitological	2011, NPELF
		T/R(Kipini)	1.8	Parasitological	2011, NPELF
	Mombasa	MSA(Bamburi)	2.9	ICT	2011, KEMRI
		MSA(Kisauni)	4.2	ICT	2011, KEMRI
		Kilindini(Likoni	4.1	ICT	2011, KEMRI
		Kilindini(Majengo	3.0	ICT	2011, KEMRI
		Kilindini(Miritini	2.0	ICT	2011, KEMRI
	Taita Taveta	Taita	2.0	ICT	2005, NPELF
		Taveta	2.0	ICT	2005NPELF

ANNEX 2d: KNOWN DISTRIBUTION OF TRACHOMA IN THE COUNTRY

Region	County	Sub - County	TF Prevalence (%)	Study method	Year of survey and reference	TT Prevalence (%)	Study method	Year of survey and reference
Eastern	Marsabit	Marsabit				0.68	Survey in adults 40 years and above	2011
		Laisamis	14.1	Survey in children 1-9 years	2011			
		Moyale		Survey in children 1-9 years		1.84	Survey in adults 40 years and above	2011
		Chalbi	4.6		2011			
	Isiolo	Isiolo		Survey in children 1-9 years		0.6	Survey in adults 40 years and above	2011
		Garbatulla	8.9		2011			
		Igembe		Survey in children 1-9 years		1.0	Survey in adults 15 years and above	2004
		Tigania	8.1		2004			
		Tharaka						
	Embu	Embu						
		Mbeere	0.1	Survey in children 1-9 years	2012	0.4	Survey in adults 40 years and above	2012
	Kitui	Kitui		Survey in children 1-9 years		1.2	Survey in adults 40 years and above	2012
		Mutomo	0.6		2012			
		Mwingi		Survey in children 1-9 years		0.3	Survey in adults 40 years and above	2012
		Kyuso	1.9		2012			
		Makueni	N/A	TRA	2011	N/A	TRA	2012
		Mbooni	N/A	TRA	2011	N/A	TRA	2012
		Kibwezi	N/A	TRA	2011	N/A	TRA	2012

		Nzaui	N/A	TRA	2011	N/A	TRA	2012
Rift Valley	Turkana	Turkana Central		Survey in children 1-9 years		3.6	Survey in adults 40 years and above	2010
		Turkana North						
		Turkana South	42.3		2010			
	Pokot	West Pokot		Survey in children 1-9 years		5.6	Survey in adults 15 years and above	2004
		Pokot North						
		Pokot Central	26.6		2004			
	Samburu	Samburu Central		Survey in children 1-9		3.1	Survey in adults 15 years and above	2011
		Samburu East						
		Samburu North	7.4		2011			
	Baringo	Baringo Central		Survey in children 1-9 years		5.8	Survey in adults 15 years and above	2004
		Baringo North						
		East Pokot	6.4		2004			
		East Pokot	34.3	Survey in children 1-9 years	2011	7.6	Survey in adults 40 years and above	2011
		Koibatek	N/A	TRA	2011	N/A	TRA	2011
	Laikipia	Laikipia North		Survey in children 1-9 years		0.9	Survey in adults 15 years and above	2011
		Laikipia East						
		Laikipia West	1.45		2011			
	Narok	Narok North	4.8	Survey in children 1-9 years	2010	2.0	Survey in adults 40 years and above	2010
		Narok South	21.4	Survey in children 1-9 years	2014	5.9	Survey in adults 40 years and above	2014
		Trans Mara	10.6	Survey in children 1-9 years	2011	0.9	Survey in adults 40 years and above	2011
	Kajiado	Kajiado North	17.4	Survey in children 1-9	2011	3.5	Survey in adults 15	2011

		Kajiado Central Loitoktok		years			years and above	

ANNEX 2e: SUSPECTED DISTRIBUTION OF LEISHMANIASIS IN THE COUNTRY

County		**Sub-county**	**Location/site**	**Form of Disease**	**Prevalence (numbers/rate/ proportion)**	**Method used**	**Year of survey & reference**
Machakos		Machakos	Masinga/Kivaa	Visceral	374 (7.2%) cases	Epidemiological survey	Ho. M, et al 1982, Wijers et al 1984
Kitui		Mwingi	Tseikuru/Voo	Visceral		Epidemiological survey	Southgate, 1962, 1964, Onyido, 1995
Kitui		Kitui	Nuu, Mwimbani	Visceral		Epidemiological survey	Southgate, 1964
Makueni		Makueni	Kalawa, Katangi, Nzaoi, Kathozoeni, Kitise	Visceral		Epidemiological survey	Ngoka J.M and Mutinga M.J 1989
		Tharaka	Malimanti, Kathangazini, Gatunga	Visceral	1500 cases, 1 case (2006)	Case study	Michela Pelizzi, et al 2006
Isiolo		Isiolo	Sericho, Merti	Visceral	Epidemic	Epidemiological/ Entomological survey	Hererro et al 2008 (WHO report), Ngumbi et al 2010
West pokot		West Pokot	Kapenguria/Kacheriba	Visceral	Active	Epidemiological/ socio-economical survey rK39 antigen	Kolaczinski jan H et al 2008
Turkana		Turkana	Kakuma, Lokichogio, Lodwar	Visceral	Active	Hospital reports	
		Kerio Valley	Tabashi	Visceral	Case report	Case report	Mbui et al 2003
Baringo		Baringo	Marigat/Kimarel	Visceral and cutaneous	78/2,934 (2.7%) (Schaefer et al 1995), 154/489 (31.5%)	Epidemiological survey	Perkins et al 1999, Muigai et al 1987, Schaefer et al 1995, Ryan. J. et al 2006
Samburu		Samburu	Baragui	Cutaneous		Entomological survey	Sang et al 1993
Nakuru		Nakuru	Gilgil/Utut	Cutaneous		Entomological survey	Sang et al 1994

Laikipia		Laikipia	Muruku	Cutaneous	6 cases	Epidemiological survey	Mebrahtu et al 1992, Johnson, R. N. (1999)
Madera		Mandera East		Visceral	Epidemic	Hospital cases and survey	Marlet et al 2003
		Wajir West		Visceral	904 cases (epidemic)	Hospital cases and survey	Marlet et al 2003, Hererro et al 2008 (WHO report)
Busia		Mt Elgon	Mt.Elgon,	Cutaneous		Entomological survey	Sang et al, 1993; Mutinga, MJ. 1975
Kajianfo		Kajiando	Kekonyoikie	Visceral	3/409 (0.007%)	Epidemiological survey	Johnson et al 1993
Narok		Narok	Transmara	Cutaneous	1 case	survey	Olufemi, A. W . et al , 1991

ANNEX 2f: SUSPECTED DISTRIBUTION OF DENGUE IN THE COUNTRY

Region	**District/Region/ State**	**Location/ Site/**	**Prevalence (numbers/ rate/proportion)**	**Study method**	**Year of survey and reference**
Coastal	Mombasa	Mombasa	10% - 25%	Serology (ELISA, PRNT)	2011-2014 Matilu personal communication (unpublished)
Rift Valley	Trans Nzoia	Kwanza	>5%	Serology (ELISA, PRNT)	2008-2014 Matilu personal communication (unpublished)

ANNEX 2g: SUSPECTED DISTRIBUTION OF CE IN THE COUNTRY (HYDATID)

Region	**District/Region/ State**	**Location/ Site/**	**Prevalence (numbers/**	**Study method**	**Year of survey and reference**

			rate/proportion)		
Rift Valley	Turkana	Kibish	3.2%*	Ultra sound survey	2012 AMREF. Data available from AMREF final report of CE disease control project
		Turkana North	3.2%	Ultra sound survey	2012 AMREF. Data available from AMREF final report of CE disease control project
		Turkana West	3.2%	Ultra sound survey	2012 AMREF. Data available from AMREF final report of CE disease control project
		Loima	3.2%	Ultra sound survey	2012 AMREF. Data available from AMREF final report of CE disease control project
		Turkana East	3.2%	Ultra sound survey	2012 AMREF. Data available from AMREF final report of CE disease control project
Rift Valley	Narok	Narok South	1.9%	Ultra sound survey	2014 survey report (Unpublished)
		Transmara	1.9%	Ultra sound survey	

*This prevalence was for Turkana North before it was split in many sub-counties

ANNEX 2h: SUSPECTED DISTRIBUTION OF ONCHOCERCIASIS IN THE COUNTRY

Region	**County**	**Sub-county**	**Proportion**	**Study Method**	**Year of survey**
WESTERN	Vihiga	Hamisi		Parasitological	1955,DVBD
NYANZA	Homa Bay	Rachuonyo	100.0	Parasitological	1955,DVBD
	Kisii	Kisii South		Parasitological	1955,DVBD

RIFT VALLEY	Kericho	Kericho south		Parasitological	1955,DVBD

ANNEX 3: NTD CO-ENDEMICITY

NTDS Co-endemicity											
Region	**County**	**Sub-counties**	**Diseases**								
			LF	**Leishmaniasis**	**Schistosomiasis**	**Soil Transmitted Helminthiasis**	**Trachoma**	**Guinea Worm**	**Cystic echinococcosis**	**Dengue Fever**	**Onchocerciasis**
	Nairobi	Nairobi West	-	-	+	+	-		N/A	N/A	N/A
	Nairobi	Nairobi East	-	-	+	+	-	-	N/A	N/A	N/A
	Nairobi	Nairobi North	-	-	-	+	-	-	N/A	N/A	N/A
	Nairobi	Westlands	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Nyandarua North	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Nyandarua South	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Nyeri North	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Nyeri South	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Kirinyanga	-	-	+	+	-	-	N/A	N/A	N/A
	Central	Muranga North	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Muranga South	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Kiambu	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Kikuyu	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Kiambu West	-	-	+	+	-	-	N/A	N/A	N/A
	Central	Lari	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Githunguri	-	-	-	+	-	-	N/A	N/A	N/A

	Central	Thika East	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Thika West	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Ruiru	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Gatanga	-	-	-	+	-	-	N/A	N/A	N/A
	Central	Gatundu	-	-	-	+	-	-	N/A	N/A	N/A
	Coast	Mombasa	+	-	-	+	-	-	N/A	N/A	N/A
	Coast	Kilindini	+	-	-	+	-	-	N/A	N/A	N/A
	Coast	Kwale	+	-	+	+	-	-	N/A	N/A	N/A
	Coast	Kinango	+	-	+	+	-	-	N/A	N/A	N/A
	Coast	Msambweni	+	-	+	+	-	-	N/A	N/A	N/A
	CCoast	Kilifi	+		+	+	-	-	N/A	N/A	N/A
	Coast	Kaloleni	+	-	+	+	-	-	N/A	N/A	N/A
	Coast	Malindi	+	-	+	+	-	-	N/A	N/A	N/A
	Coast	Tana River	+	-	+	+	-	-	N/A	N/A	N/A
	Coast	Tana Delta	+	-	+	+	-	-	N/A	N/A	N/A
	Coast	Lamu	+	-	+	+	-	-	N/A	N/A	N/A
	Coast	Taita	+	-	-	+	-	-	N/A	N/A	N/A
	Coast	Taveta	+	-	+	+	-	-	N/A	N/A	N/A
	Eastern	Marsabit	-	+	-	+	+	-	N/A	N/A	N/A
	Eastern	Chalbi	-	-	-	-	+	-	N/A	N/A	N/A
	Eastern	Laisamis	-	-	-	-	+	-	N/A	N/A	N/A
	Eastern	Moyale	-	+	-	+	+	-	N/A	N/A	N/A
	Eastern	Isiolo	-	+	-	+	+	-	N/A	N/A	N/A
	Eastern	Garbatulla	-	+	-	-	+	-	N/A	N/A	N/A
	Eastern	Meru Central	-	-	-	+	-	-	N/A	N/A	N/A
	Eastern	Imenti North	-	-	-	+	-	-	N/A	N/A	N/A

	Eastern	Imenti South	-	-	-	+	-	-	N/A	N/A	N/A
	Eastern	Meru South	-	-	-	+	-	-	N/A	N/A	N/A
	Eastern	Maara	-	-	-	+	-	-	N/A	N/A	N/A
	Eastern	Igembe	-	-	-	+	=	-	N/A	N/A	N/A
	Eastern	Tigania	-	-	-	+	+	-	N/A	N/A	N/A
	Eastern	Tharaka	-	+	-	+	-	-	N/A	N/A	N/A
	Eastern	Embu	-	-	-	+	-	-	N/A	N/A	N/A
	Eastern	Mbeere	-	-	+	+	+	-	N/A	N/A	N/A
	Eastern	Kitui	-	+	+	+	+	-	N/A	N/A	N/A
	Eastern	Mutomo	-	+	-	+	+	-	N/A	N/A	N/A
	Eastern	Mwingi	-	+	+	+	+	-	N/A	N/A	N/A
	Eastern	Kyuso	-	+	-	+	+	-	N/A	N/A	N/A
	Eastern	Machakos	-	+	+	+	-	-	N/A	N/A	N/A
	Eastern	Mwala	-	-	+	+	-	-	N/A	N/A	N/A
	Eastern	Yatta	-	-	-	+	-	-	N/A	N/A	N/A
	Eastern	Kangundo	-	-	+	+	-	-	N/A	N/A	N/A
	Eastern	Makueni	-	+	+	+	-	-	N/A	N/A	N/A
	Eastern	Mbooni	-	-	+	+	-	-	N/A	N/A	N/A
	Eastern	Kibwezi	-	-	+	+	-	-	N/A	N/A	N/A
	Eastern	Nzaui	-	+	+	+	-	-	N/A	N/A	N/A
	North Eastern	Garissa	-	+	+	+	N/A	-	N/A	N/A	N/A
	North Eastern	Lagdera	-	+	-	-	N/A	-	N/A	N/A	N/A
	North Eastern	Fafi	-	-	-	-	N/A	-	N/A	N/A	N/A

	North Eastern	Ijara	-	+	+	+	N/A	-	N/A	N/A	N/A
	North Eastern	Wajir South	-	+	+	-	-	-	N/A	N/A	N/A
	North Eastern	Wajir North	-	+	+	-	-	-	N/A	N/A	N/A
	North Eastern	Wajir East	-	_	+	-	-	-	N/A	N/A	N/A
	North Eastern	Wajir West	-	+	-	+	-	-	N/A	N/A	N/A
	North Eastern	Mandera Central	-	+	-	-	-	-	N/A	N/A	N/A
	North Eastern	Mandera East	-	_	-	-	-	-	N/A	N/A	N/A
	North Eastern	Mandera West	-	+	-	-	-	-	N/A	N/A	N/A
	Nyanza	Siaya	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Bondo	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Rarieda	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Kisumu East	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Kisumu West	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Nyando	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	HomaBay	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Suba	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Rachuonyo	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Migori	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Rongo	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Kuria West	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Kuria East	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Kisii Central	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Kisii South	-	-	+	+	-	-	N/A	N/A	N/A

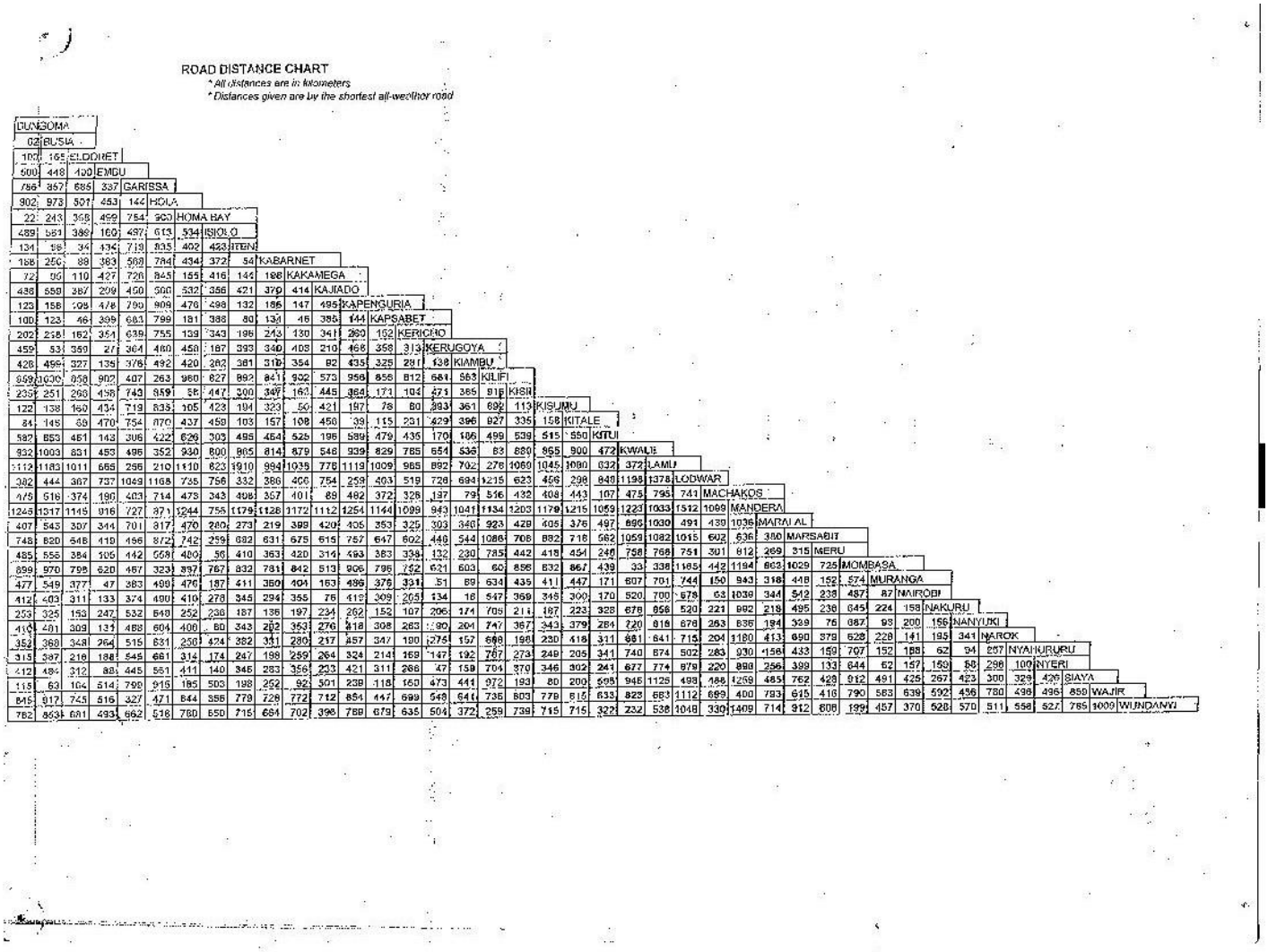
	Nyanza	Masaba	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Gucha	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Gucha South	-	-	+	+	-	-	N/A	N/A	N/A
	Nyanza	Nyamira	-	-	-	+	-	-	N/A	N/A	N/A
	Nyanza	Manga	-	-	-	+	-	-	N/A	N/A	N/A
	Nyanza	Borabu	-	-	+	+	-	-	N/A	N/A	N/A
	Rift Valley	Turkana Central	-	+	-	-	+	-	N/A	N/A	N/A
	Rift Valley	Turkana North	-	+	-	-	+	-	+	N/A	N/A
	Rift Valley	Turkana South	-	+	-	-	+	-	N/A	N/A	N/A
	Rift Valley	West Pokot	-	+	+	+	+	-	N/A	N/A	N/A
	Rift Valley	Pokot North	-	+	-	-	+	-	N/A	N/A	N/A
	Rift Valley	Pokot Central	-	+	-	-	+	+	N/A	N/A	N/A
	Rift Valley	Samburu Central	-	+	-	+	+	-	N/A	N/A	N/A
	Rift Valley	Samburu East	-	_	-	-	+	-	N/A	N/A	N/A
	Rift Valley	Samburu North	-	_	-	-	+	-	N/A	N/A	N/A
	Rift Valley	Trans Nzoia West	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Trans Nzoia East	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Kwanza	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Baringo Central	-	+	+	+	+	-	N/A	N/A	N/A
	Rift Valley	Baringo North	-	-	+`	+	-	-	N/A	N/A	N/A
	Rift Valley	East Pokot	-	+	-	+	+	-	N/A	N/A	N/A
	Rift Valley	Koibatek	-	-	-	+	-	-	N/A	N/A	N/A

	Rift Valley	Eldoret West	-	-	-	-	-	-	N/A	N/A	N/A
	Rift Valley	Eldoret East	-	-	+	+	-	-	N/A	N/A	N/A
	Rift Valley	Wareng	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Marakwet	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Keiyo	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Nandi North	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Nandi Central	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Nandi East	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Nandi South	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Tinderet	-	-	-	-	-	-	N/A	N/A	N/A
	Rift Valley	Laikipia North	-	-	-	-	+	-	N/A	N/A	N/A
	Rift Valley	Laikipia East	-	+	-	-	+	-	N/A	N/A	N/A
	Rift Valley	Laikipia West	-	+	-	-	+	-	N/A	N/A	N/A
	Rift Valley	Nakuru	-	+	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Nakuru North	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Naivasha	-	–	+	+	-	-	N/A	N/A	N/A
	Rift Valley	Molo	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Narok North	-	-	-	+	+	-	N/A	N/A	N/A
	Rift Valley	Narok South	-	-	-	+	+	-	+	N/A	N/A
	Rift Valley	Trans Mara	-	–	+	+	+	-	+	N/A	N/A
	Rift Valley	Kajiado Central	-	-	-	-	+	-	N/A	N/A	N/A
	Rift Valley	Loitoktok	-	-	-	+	+	-	N/A	N/A	N/A

	Rift Valley	Kericho	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Kipkelion	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Buret	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Sotik	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Bomet	-	-	-	+	-	-	N/A	N/A	N/A
	Rift Valley	Kajiado northh	-	_	+	-	+	-	N/A	N/A	N/A
	Western	Kakamega Central	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Kakamega South	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Kakamega North	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Kakamega East	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Lugari	-	-	+	+	-	-	N/A	N/A	N/A
	Western	Vihiga	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Emuhaya	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Hamisi	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Mumias	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Butere	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Bungoma South	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Bungoma North	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Bungoma East	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Bungoma West	-	-	-	+	-	-	N/A	N/A	N/A
	Western	Mt.Elgon	-	+	-	+	-	-	N/A	N/A	N/A
	Western	Busia	-	-	+	+	-	-	N/A	N/A	N/A

	Western	Teso North	-	-	+	+	-	-	N/A	N/A	N/A
	Western	Samia	-	-	+	+	-	-	N/A	N/A	N/A
	Western	Bunyala	-	-	+	+	-	-	N/A	N/A	N/A
158	Western	Teso South	-	-	+	+	-	-	N/A	N/A	N/A

ANNEX 4: MAJOR CITIES AND JOINING DISTANCES

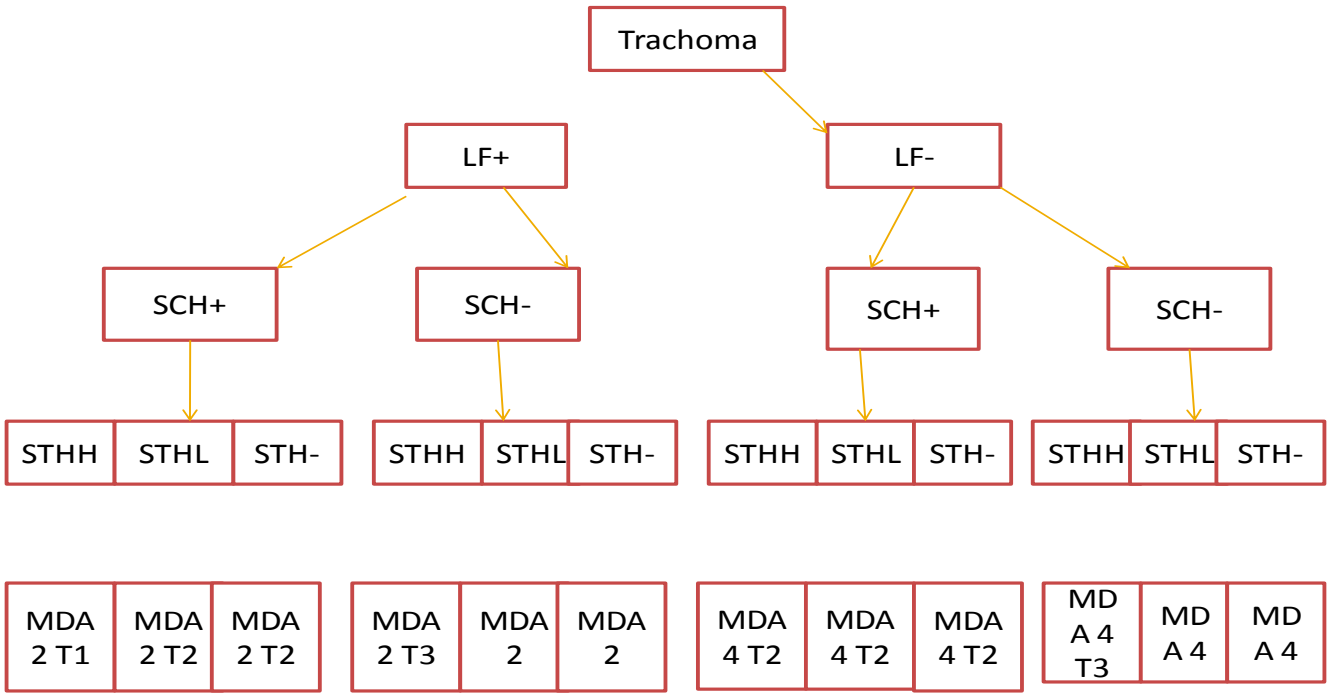


ROAD DISTANCE CHART

* All distances are in kilometers
* Distances given are by the shortest all-weather road

	BUNGOMA	BUSIA	ELDORET	EMBU	GARISSA	HOLA	HOMA BAY	ISIOLO	ITEN	KABARNET	KAKAMEGA	KAJIADO	KAPENGURIA	KAPSABET	KERICHO	KERUGOYA	KIAMBU	KILIFI	KISII	KISUMU	KITALE	KITUI	KWALE	LAMU	LODWAR	MACHAKOS	MANDERA	MARALAL	MARSABIT	MERU	MOMBASA	MURANGA	NAKURU	NANYUKI	NAROK	NYAHURURU	NYERI	SIAYA	WAJIR	WUNDANYI
BUNGOMA																																								
BUSIA	62																																							
ELDORET	100	165																																						
EMBU	500	448	400																																					
GARISSA	786	857	686	337																																				
HOLA	902	973	801	453	142																																			
HOMA BAY	22	243	368	499	754	903																																		
ISIOLO	489	561	388	160	497	613	534																																	
ITEN	134	98	34	436	719	835	402	423																																
KABARNET	188	250	88	383	568	784	434	372	54																															
KAKAMEGA	72	06	110	427	728	845	155	416	142	198																														
KAJIADO	436	559	387	209	450	900	532	356	421	379	414																													
KAPENGURIA	123	158	108	478	790	909	476	498	132	186	147	495																												
KAPSABET	100	123	46	399	683	799	181	388	80	134	46	385	144																											
KERICHO	202	238	162	351	639	755	139	343	196	243	130	341	260	152																										
KERUGOYA	459	53	359	27	364	480	458	187	393	340	409	210	468	358	313																									
KIAMBU	428	499	327	135	376	492	420	282	361	310	354	82	435	325	281	538																								
KILIFI	858	1030	858	902	407	263	960	627	892	841	902	573	958	856	812	681	563																							
KISII	235	251	268	458	743	859	58	447	300	347	163	445	364	171	104	471	385	918																						
KISUMU	122	138	160	434	719	835	105	423	194	323	50	421	197	78	80	393	361	692	113																					
KITALE	84	145	68	470	754	870	437	458	103	157	108	456	39	115	231	429	396	827	335	158																				
KITUI	582	653	481	143	306	422	626	303	495	454	525	195	589	479	435	170	186	499	539	515	550																			
KWALE	932	1003	831	453	496	352	930	800	865	814	879	546	939	829	785	654	536	83	880	955	900	472																		
LAMU	1112	1183	1011	665	296	210	1110	823	1010	994	1035	776	1119	1009	965	892	702	276	1060	1045	1080	632	372																
LODWAR	382	444	367	737	1049	1168	735	756	332	386	406	754	259	403	519	726	694	1215	623	456	296	848	1198	1378															
MACHAKOS	475	516	374	190	403	714	473	343	498	357	401	89	482	372	328	137	79	516	432	408	443	107	475	795	741														
MANDERA	1248	1317	1145	916	727	871	1244	756	1179	1128	1172	1112	1254	1144	1099	943	1041	1134	1203	1179	1215	1059	1223	1033	1512	1069												
MARALAL	407	545	307	344	701	817	470	280	273	219	389	420	405	353	325	303	340	923	428	405	376	497	696	1030	491	439	1036												
MARSABIT	748	820	648	419	456	872	742	259	692	631	675	615	757	647	602	448	544	1086	708	682	718	562	1059	1082	1015	602	636	380											
MERU	485	556	384	105	442	658	480	56	410	363	420	314	493	383	338	132	230	785	442	418	454	246	758	768	751	301	812	269	315										
MOMBASA	899	970	798	620	457	323	897	767	832	781	842	513	906	795	752	521	603	60	856	832	867	439	33	338	1165	442	1194	863	1029	725									
MURANGA	477	549	377	47	383	499	476	187	411	360	404	163	486	376	331	51	89	634	435	411	447	171	607	701	744	150	943	318	448	152	574								
NAKURU	412	403	311	133	374	490	410	278	345	294	355	76	418	309	265	134	16	547	369	348	390	170	520	700	678	63	1039	344	542	238	487	87							
NANYUKI	253	325	153	247	532	648	252	238	187	136	197	234	262	152	107	206	174	705	211	187	223	328	678	956	520	221	992	218	495	238	645	224	158						
NAROK	410	481	309	131	488	604	406	80	343	292	353	276	418	308	263	90	204	747	367	343	379	284	720	818	678	263	836	194	339	76	687	93	200	155					
NYAHURURU	352	368	348	264	515	631	250	424	382	331	280	217	457	347	190	275	157	668	198	230	418	311	661	841	715	204	1180	413	690	378	628	228	141	195	341				
NYERI	315	387	216	188	545	661	314	174	247	198	259	264	324	214	169	147	192	767	273	249	285	341	740	874	502	283	930	156	433	159	707	152	188	62	94	257	NYAHURURU		
SIAYA	412	484	312	83	445	561	411	140	345	283	356	233	421	311	268	47	159	704	370	346	382	241	677	774	679	220	899	256	399	133	644	62	157	159	58	298	100	NYERI	
WAJIR	118	63	164	514	799	915	185	503	198	252	92	501	238	118	150	473	441	972	193	80	200	595	946	1125	498	186	1259	485	752	428	912	491	425	267	423	300	329	426	SIAYA
WUNDANYI	845	917	745	516	327	471	844	556	778	728	772	712	854	747	699	548	644	736	603	778	815	633	823	683	1112	689	400	783	615	416	790	583	639	592	456	780	498	496	859	WAJIR
	782	853	681	493	662	516	780	650	715	664	702	396	788	679	635	504	372	259	739	715	715	322	232	538	1048	330	1409	714	912	608	199	457	370	528	570	511	558	527	785	1009	WUNDANYI

ANNEX 5: TYPES OF MASS DRUG ADMINISTRATION



Legend : MDA2 = DEC + Albendazole,MDA4 = Azthromycin, T = targeted treatment, T1 = ALB + PQZ or MBD + PZQ , T2 = PZQ, T3 = ALB or MBD; STHH = STH High; STHL = STH Low; STH- = STH absent

ANNEX 6: DRUG ESTIMATES AND LOGISTICS

NTDs Programme	**Name of Drug**	**Source Drug**	**Status of procurement (donated/purchased)**	**Minimum lead time before delivery**	**In-country Consignee**
Schistosomiasis	Praziquantel	Merck/WHO	Donated	6 months	MoH/KEMSA
Soil transmitted helminths	Albendazole/ Mebendazole	GSK/WHO	Donated	6 months	MoH/KEMSA
LF	DEC	WHO	Donated	6 months	MoH/KEMSA
Leishmaniasis	SSG, Paramomycin, Amphotericin B	GSK/WHO	Donated	6 months	MoH/KEMSA
Trachoma	Zithromycin	PFIZER INT.	Donated	6 months	MoH/KEMSA
Hydatid disease		N/A			