Federal Democratic Republic of Ethiopia
Ministry of Health

Second Edition of National Neglected Tropical Diseases Master Plan

Addis Ababa, 2016

Federal Democratic Republic of Ethiopia
Ministry of Health

Second Edition of National Neglected Tropical Diseases Master Plan

2015/16 – 2019/20 (2008-2012 EFY)

Addis Ababa, 2016

Content

ACRONYMS AND ABBREVIATION

AAU	Addis Ababa University
AHRI	Armauer Hansen Research Institute
AIDS	Acquired Immunodeficiency Syndrome
ALB	Albendazole
ALIPB	Aklilu Lemma Institute of Pathobiology
BCC	Behaviour Change Communication
CB	Community Based
CBM	Christian Blind Mission
CDTI	Community –Directed Treatment with Ivermectin
CL	Cutaneous Leishmaniasis
CM	Case Management
DHS	Demographic and Health Survey
DNDi	Drug for Neglected Diseases initiative
EC	Ethiopian Calendar
EPI	Expanded Programme on Immunization
FTI	Fast Track Initiative
GDP	Gross Domestic Product
GTP	Growth and Transformation Plan
HC	Health Centre
HDA	Health Development Army
HEP	Health Extension Programme
HEW	Health Extension Worker
HMIS	Health Management Information System
HSTP	Health Sector Transformation Plan
ICT	Rapid Immunochromatographic Card Test
IEC	Information, Education, Communication
IMR	Infant Mortality Rate
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Bed Nets
IU	Implementation Unit
IVM	Integrated Vector Management
LF	Lymphatic Filariasis
LfW	Light for the World
LLITN	Long Lasting Insecticide Treated Nets
M&E	Monitoring and Evaluation
MBZ	Mebendazole
MCL	Mucocutaneous Leishmaniasis

MDA	Mass Drug Administration
MFTPA	Mossy Foot Treatment and Prevention Association
MMR	Maternal Mortality Ratio
MoE	Ministry of Education
MoFED	Ministry of Finance and Economic Development
MoWE	Ministry of Water and Energy
MSF	Médecins sans Frontieres
NA	Not Applicable
NGDO	Non-Governmental Development Organization
NTD	Neglected Tropical Diseases
PCT	Preventive Chemotherapy and Transmission Control
PFSA	Pharmaceutical Fund and Supply Agency
PHCU	Primary Health Care Unit
PZQ	Praziquantel
RBM	Roll Back Malaria
REMO	Rapid Epidemiological Mapping of Onchocerciasis
RHB	Regional Health Bureau(s)
RNI	Rate of National Increase
SAC	School Age Children
SAE	Serious Adverse Event(s)
SAFE	Surgery, Antibiotics, Face cleanliness and Environmental sanitation
SCH	Schistosomiasis
SNNPR	Southern Nations, Nationalities and Peoples Region
STH	Soil Transmitted helminths
TB	Tuberculosis
TEO	Tetracycline Eye Ointment
TF	Trachomatous Inflammation – Follicular
TI	Trachomatous Inflammation – Intense
TS	Trachomatous Conjunctival Scarring
TT	Trachomatous Trichiasis
UNICEF	United Nations Children's Fund
UoG	University of Gondar
USD	United States Dollar
VL	Visceral Leishmaniasis
WASH	Water, Sanitation and Hygiene
WHA	World Health Assembly
WHA/RC	World Health Assembly/Resolution Committee
WHO	World Health Organization
WHO/AFRO	World Health Organization/Africa Regional Office
WoHO	Woreda (District) Health Office
ZHD	Zone Health Department

ACKNOWLEDGMENT

The preparation and finalization of the National Master Plan of Neglected Tropical Diseases has been made possible through a series of consultative meetings and workshops. During this process, the valuable contributions of our NTD partners and programme stakeholders have been crucial. Therefore, the Federal Ministry of Health acknowledges all organizations listed below and individuals designated by them for their contributions in the preparation, fine-tuning and finalization of this second edition of the National Master Plan for Neglected Tropical Diseases, 2015/16- 2019/20.

Addis Ababa University (AAU)/College of Health Sciences

Africa Medical Research Foundation (AMREF)

Aklilu Lemma Institute of Pathobiology (ALIPB), AAU

All Regional Health Bureaus

Armauer Hansen Research Institute (AHRI)

Children's Investment Fund Foundation (CIFF)

Christian Blind Mission (CBM)

Department for International Development (DfID)/UK

Deworm the World Initiative (DtWI)/Evidence Action

DFAT/Australia

DNDi

Ethiopia Public Health Institute (EPHI)

Ethiopia's Food, Medicine and Health Care Administration and Control Authority (FMHACA)

Ethiopia's Pharmaceuticals Fund and Supply Agency (PFSA)

Filarial Programme Support Unit (FPSU)/Liverpool School of Tropical Medicine

Grarbet Tehadsso Mahber (GTM)

International Orthodox Christian Charities (IOCC)

International Trachoma Initiative/ Task Force for Global Health (ITI/TFGH)

Light for the World (LFW)

Malaria Consortium (MC)

Management Sciences for Health/ Strengthening Pharmaceutical Systems (MSH/SPS)

Médecins sans Frontiéres (MSF)
KalaCore
Menschen fur Menschen (MfM)
Ministry of Education
Ministry of Water and Energy
National Podoconiosis Action Network (NaPAN)
ORBIS International-Ethiopia
RTI/Envision
RTI/Morbidity Management and Disability Prevention
Schistosomiasis Control Initiative (SCI)
The Carter Center (TCC)
The END Fund
The Fred Hollows Foundation (FHF)
The Lions Clubs International Foundation
United Nations Children's Fund (UNICEF)
United States Agency for International Development (USAID)
Water Action
Water Aid
World Health Organization (WHO) - Ethiopia
World Health Organization/African Regional Office (WHO/AFRO)

FOREWORD

Neglected tropical diseases (NTDs) are known to debilitate, deform, blind and kill sizeable proportions of the Ethiopian population. The first national NTD master plan for the control, elimination and eradication of targeted NTDs in Ethiopia was launched in 2013.

Since the launch of the national master plan, significant achievements have been made in understanding the burden of the diseases and the planning and implementation of subsequent control interventions. In addition, NTDs have been given attention in the health sector transformation plan (HSTP) 2015/16-2019/20 which is the first phase of the "Envisioning Ethiopia's Path towards Universal Health Coverage through Strengthening Primary Health Care".

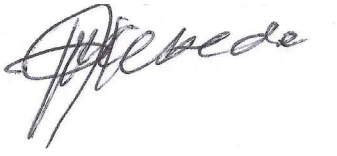
The current national NTD master plan, which will last from 2016 to 2020, builds on the structure of the first master plan in order to provide strategic direction for the implementation of the control, elimination and eradication of national priority NTDs: onchocerciasis, lymphatic filariasis, schistosomiasis, soil-transmitted helminthes, trachoma, dracunculiasis, podoconiosis and leishmaniasis.

This documents updates the estimates of the burden of NTDs based on the mapping data by the national programme and has been enriched by the contributions from experts in the field. It is a comprehensive and valuable document that will serve as a road map for NTD prevention, control, and elimination in Ethiopia.

Cognizant of the value of this document to assist programme design and implementation and thereby alleviate the impact of these diseases, it will be made available to all health professionals, programme managers working on NTDs, and development partners in Ethiopia.

To be successful in the endeavor of tackling NTDs requires broad community involvement with the Health Development Army at its core and a high level of coordination. The Health Extension Programme (HEP), the national flagship health programme, delivers cost-effective basic health services to all Ethiopians, mainly women and children who are those most highly affected by NTDs. The HEP is underpinned by the core principle of community ownership that empowers communities to manage health problems specific to their communities, thus enabling them to promote and protect their own health.

The FMoH appreciates the contribution of all partners involved in the revision of this master plan, which will be a valuable tool for the scaling-up of NTD interventions and reverse the impact of these diseases and therefore to attain the national goal of the NTD programme and ultimately make NTDs history in Ethiopia.



Kebede Worku (MD, MPH)

State Minister of Health (Programs)

INTRODUCTION

Ethiopia is the second largest country by population in sub-Saharan Africa. Projections from the 2007 population and housing census estimate the total population for the year 2016 to be 93.5 million of which over 75 million (83.6%) live in rural areas[1,2].

Decentralization of the health care delivery system is among the core strategies of the national health policy of Ethiopia. This policy helps promote preventive and curative components of health care; the assurance of accessibility of health care for all; and encourages the participation of private and nongovernment organizations (NGO) in the health sector.

In 2003/4, the sector introduced an innovative strategy - the health extension programme (HEP), which is the flagship programme for the country. The building blocks of the HEP are health extension workers (HEW), two of whom manage health services in a typical Kebele (smallest administrative unit) estimated to be inhabited by 5000 people. Since 2010/11, the HEP further instituted the health development army (HDA) platform so as to engage the community in the planning, implementation, and monitoring and evaluation of health interventions at the grassroots level. This enabled the mobilization of close to 3 million community volunteers that work alongside the HEW to support families and households in adopting health behaviors.

The major health problems of the country remain largely preventable communicable diseases and nutritional disorders. However, neglected tropical diseases (NTD) were not given the required attention at various levels until a couple of years ago. The Federal Ministry of Health of Ethiopia has identified eight priority NTDs[3]. Nonetheless, data on their burden and distribution was, until recently, incomplete, and not updated on a timely basis. Moreover, access to preventive, rehabilitative and curative services is inadequate and often fragmented when available. Thus, NTDs continued to debilitate, deform, blind and kill sizeable proportions of the population. Since NTDs are more skewed towards rural and disadvantaged people, they work to further deepen marginalization, stigmatization and social and economic burden. Globally NTDs received increased attention in the last few years as demonstrated by improved donor funding and the large-scale drug donation programmes by pharmaceutical companies[4].

Cognizant of the prevalent NTD burden on the health and development of its people, the government launched its ever-first national NTD Master Plan in June 2013[3]. Concurrently, it put in place a structure at the FMOH to coordinate the NTD control and elimination interventions and intensified country-wide disease mapping so as to enhance evidence-based programme management.

To this end, the current National Master Plan for Ethiopia on Neglected Tropical Diseases updates and strengthens the first master plan 2013-15; integrating new developments in policy and programing; and covers planned NTD interventions that will be implemented during the period 2016–2020 across the country. The list of NTDs prioritized for intervention is trachoma, onchocerciasis, schistosomiasis, soil transmitted helminthiasis, lymphatic filariasis, podoconiosis, leishmaniasis and dracunculiasis (Guinea-worm disease).

This plan is developed with the overall goal of realizing a sustainable integrated national NTD prevention, control and elimination programme. This will enable the achievement of the national NTD targets by 2020 and provide a secure platform for future endeavors. Ultimately, this will contribute to the poverty alleviation efforts of the country[5,6]. Additionally, it will contribute to the attainments of the global NTD goals since the country shoulders a considerable disease burden in several of these diseases.

This national NTD Master Plan document is organized in four sections. The first section focuses on the national NTD situational analysis, the second section focuses on the NTD strategic agenda, the third section discusses the NTD strategic framework, and section four outlines the national NTD budget forecast for the five-year period.

This document is intended for government, donors, non-government development partners, health managers, health care providers, academia and researchers involved in NTD control and elimination efforts in Ethiopia.

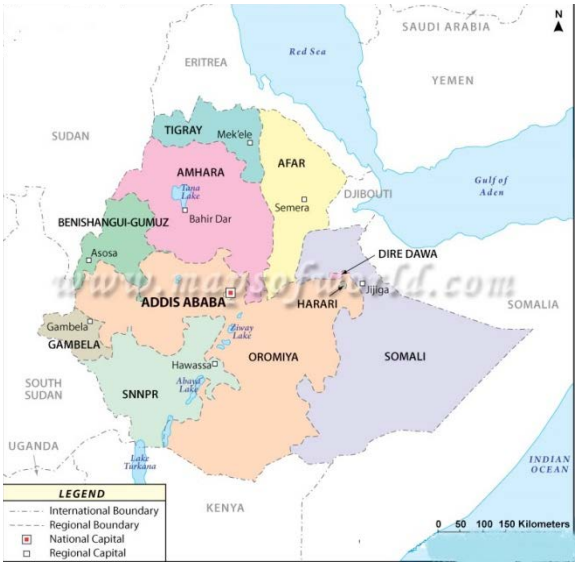
The activities contained within this NTD master plan are estimated to cost ETB 3.16 billion (USD150.4 million) over the five years between 2015/16 and 2019/20.

PART 1: SITUATION ANALYSIS

1.1. Country Profile

1.1.1. Administrative, community and demographic structures

Ethiopia is a Federal Democratic Republic and is composed of nine regional states: Afar, Amhara, Benishangul-Gumuz, Gambella, Harari, Oromia, Somali, Southern Nation Nationalities and Peoples (SNNP), and Tigray, and two city administration councils: Addis Ababa and Dire Dawa (Figure 1). The country operates a federal system of government with Executive, Judiciary and Legislative arms (the Council of Peoples' Representatives and the Council of the Federation). The head of the state is the President while the government is headed by the Prime Minister. Each regional state and city administration is headed by a president and mayor respectively; they are supported in turn by regional and city administration councils. Each region is constitutionally allowed self-determination while the federal government is responsible for the military and foreign affairs, international treaties, and other overarching issues of interest to the entire nation. Each tier of government prepares its own annual plan and budget.



The regional states and city administrations are further subdivided into 95 zones and 839 administrative woredas (districts). A woreda is the basic decentralized administrative unit. It has an average population of 100,000 people (ranging from 25,000 to 350,000).

The woredas are further divided into 16,253 kebeles, the smallest administrative unit. Each kebele comprises of a population of approximately 5,000 people. The kebeles are structured based on their geographic location with the objective of helping each other to address social, economic and political issues. Community leaders are elected by the local populations to manage all social, economic, and political aspects of the community. A kebele is managed by cabinet members called the Kebele Administration. The Health Development Army (HDA) is a typical community organization, which is vital for community mobilization and serves as potential resource for community based interventions.

Projections from the 2007 countrywide population and housing census estimate the total population for the year 2016 to be over 93.5 million (Table 1). Ethiopia is the home of a diversity of nations, nationalities and peoples with more than 80 different spoken languages. According to the 2007 census, 83.6% of the total population lives in rural areas, and 16.4% in urban areas[1].

Table 1. Demography, Ethiopia, 2016

Population	93,521,960
Population growth rate	2.6
Population under 1 year	2.4 %
Population under 5 years	14.4%
Population under 15 years	44.9%
School age children (5-14 years)	31.2%
Women in reproductive age (15-49 years)	23.4%
Total fertility rate	4.1 birth per woman
Maternal mortality rate	420 per 100,000 live births
Infant mortality rate	44 per 1000 live births
Average household size	4.7

Source: Ethiopian Demographic and Health Survey, 2014

1.1.2. Geographical characteristics

Ethiopia is the tenth largest country in Africa by area, covering 1,104,300 square kilometers (with 1.1 million square kilometers land area and 104,300 square kilometers of water). It is bordered to the north and northeast by Eritrea, to the east by Djibouti and Somalia, to the south by Kenya, and to the west by Sudan and southwest by South Sudan. Its geographical coordinates are approximately 8° N and 38° E and it is situated in the East Africa Time Zone.

Ethiopia is a country with great geographical and topograhical diversity. The altitude ranges from high peaks of 4,620 meters above sea level (Ras-Dashen mountain in the Amhara region) to a low depression of 148 meters below sea level (Dallol in the Afar region). More than half of the country lies above 1,500 meters (highland). The predominant climate type is tropical monsoon, with temperate climate on the plateau and hot in the lowlands. There are topographic-induced climatic variations broadly categorized into three: the '***Kolla***' or hot lowlands below approximately 1,500 meters, the '***Wayna Degas***' at 1,500-2,400 meters and the '***Dega***' or cool temperate highlands above 2,400 meters.

1.1.3. Socio-economic status and indicators

Ethiopia is an agrarian country and agriculture accounts for 39 percent of the gross domestic product or GDP[7]. Coffee has long been one of the main export items of the country; however, other agricultural products are currently being introduced on the international market. Between 1974 and 1991 the country operated a central command economy but has since moved toward a market-oriented economy. Annual economic growth has averaged 10.9 percent 2003/4 and 2013/14[8].

Economic growth has been effective in accelerating social development and reducing poverty. The 2004/05 Household Income Consumption and Expenditure Survey (HICES) showed that 38.7 percent of the population was living in poverty. This figure declined to 29.6 percent by 2010/11[9] and this is estimated to be 22% by the end of 2015[8] indicating that the rapid economic growth is pro-poor[9]. This rapid growth is the result of diversification and commercialization of small-scale agriculture, expansion of non-agricultural production in services and industry, capacity-building and good governance, off-farm employment especially through small enterprises, and investment in infrastructure[9].

The Growth and Transformation Plan (GTP) has been developed for the next five years, and is designed to maintain rapid and broad-based economic growth and eventually to reduce poverty [5]. The primary objectives of the GTP are aimed at maintaining the average real GDP growth rate of 11 percent and meeting the SDGs; expanding and ensuring education and health services, thereby achieving the SDGs in the social sectors; establishing favourable conditions for sustainable state-building through the creation of a stable democratic and developmental state; and ensuring sustainability of growth by realizing the above objectives within a stable macroeconomic framework.

1.2. Health System Situation Analysis

1.2.1. Health policy, visioning 2035 and health sector transformation plan

Since 1993, the National Health Policy and consecutive health sector development plans (HSDP I to IV) have made significant progress in empowering communities through the health extension programme, the massive expansion of health facilities, and the strengthening of the frontline and mid-level health workforce. As a result, Ethiopia registered laudable achievements in the conventional health parameters of morbidity and mortality. However, a lot of work remains to ensure the optimal health status of the people so as to enjoy healthy life and contribute to the country's socioeconomic development.

As an evaluation of the successes and failures of 20 years of HSDP implementation, a robust examination of the nature, magnitude and root causes of the prevailing health problems in the country is being conducted. Cognizant of this and the emerging and reemerging health problems, the country has revised its health policy so as to safeguard the desired health of the nation.

The health policy envisages '***To see healthy, productive, and prosperous Ethiopians***' with a mission '***To promote the health and wellbeing of the Ethiopian people through provision and regulation of a comprehensive package of promotive, preventive, curative, palliative and rehabilitative health services via a federal and democratic health system and empowered community***'.

In light of the new National Health Policy, the Federal Ministry of Health (FMOH) of Ethiopia conducted a 20-year health visioning exercise in accordance with the Government development plan to advance towards a low-middle income by 2025 and average-middle income by 2035. In view of this, it further prepared the first 5-year Health Sector Transformation Plan that spans 2016 to 2020.

In the health visioning strategy Universal Health Coverage (UHC) is set as the direction for Ethiopia's health sector development and it places Primary Health Care as a means to achieve UHC. The vision towards UHC through primary health care indicates that Ethiopia's first priority is for all Ethiopians to be able to receive a complete package of priority health services through an effective, equitable, and efficient health care system with primary health care approach.

1.2.2. Health care delivery system

The Ethiopian health service is restructured into a three tier system- primary, secondary and tertiary level health care.

The ***primary health care unit*** (PHCU) is composed of Health Centre and 5 satellite Health Posts and provides services to at an estimated 25,000 populations. There is one health post per kebele alongside two health extension workers (HEWs). The HEWs spend less than 20 percent of their time in health posts, and more than 80 percent of their time on community outreach programme visits to households. HEWs play a major role during MDA as coordinators and supervisors at the kebele level. The health extension programme (HEP) is supported by the health development army to improve the access and utilization of key health interventions. The HDA initiative involves all households in the specific village and broadly all residents in every kebele. It is the main mechanism for reaching every household and thereby the whole community and creates wider public movement to address key issues like mass drug distribution and disease surveillance. A ***health center*** provides both preventive and curative services. It serves as a referral center and practical training site for HEWs. It coordinates and supervises all health activities, including NTD programmes in the health posts within its catchment area.

The ***secondary health care*** consists of Primary Hospital and General Hospital. A Primary Hospital provides inpatient and ambulatory services to an average population of 100,000. It provides an emergency surgery service including Cesarean Section and blood transfusion. It also handles Trachomatous Trichiasis (TT) surgery and hydrocele surgery. A primary hospital is a referral center for health centers under its catchment area, and a practical training center for nurses and other paramedical health professionals. ***A General Hospital*** provides inpatient and ambulatory services to an average of 1,000,000 people. Moreover, it is a referral center for primary hospitals and a training center for health officers, nurses and emergency surgeons.

The ***tertiary health care*** is comprised of a ***specialized hospital*** that covers a population of approximately five million. It also serves as a referral center for general hospitals.

1.2.3. Human resources for health

An effective health system is a function of multiple factors. Of which ensuring adequate and appropriate skills mix of the health workforce remains the backbone at all levels. Improving the health workforce has been among the priorities during the last twenty years of the HSDP which is currently in its final year. During these years many achievements were recorded that include the expansion of medical education volume in terms of training capacity, the increase in the number of medical schools, and an increase in the annual intake of health professionals by universities. Among the most notable achievements are also the introduction of the flagship community health platform called the Health Extension Programme (HEP), the expansion of health posts and health centers, and the massive production of lower and mid-level health workers. The HEW in particular are the cornerstone for NTD programmes and specifically for those Preventive Chemotherapy-applicable NTDs, as well as contributing to morbidity management and disability prevention programmes.

The health workforce in Ethiopia has increased from 0.84 to 2.2 per 1000 population between 2009 and 2015 indicating an improvement in the supply and availability of health workers. However, the doctor, health officer, nurse and midwife to population ratio is 0.7 per 1000 population, far behind the minimum threshold of 2.3 per1000 population ratio required to ensure high coverage with essential health interventions [10,11]. Nevertheless, the HEP has over 38,000 HEWs working in more than 16,000 health posts thereby reaching households with essential health packages.

Ethiopia's HEP is a community-based strategy to deliver health promotion, disease prevention and selected curative health services at the community level. It is a mechanism to provide health services in an equitable manner to all segments of the population in the country. The HEP has 16 health packages categorized into four major components: promotion of hygiene and environmental sanitation; prevention and control of major communicable diseases; promotion and provision of family health service; and health education and communication [12,13].

Although the control of NTDs was implicitly included under the prevention and control of major communicable diseases, it was not explicitly identified as a package. Therefore, the focus given and the skills HEWs had was not proportional to the programme requirement. Currently, there is a strong (and growing) interest to include NTDs as a specific package and an NTD package implementation guide is under preparation. The FMoH is working to improve the skills and competency of HEWs through integrated refresher in-service training and the upgrading of HEWs into level 4 (diploma equivalent).

The HEWs play a pivotal role in the process of establishing community ownership, improving the utilization of health services, and increasing participation of the community in Mass Drug Administrations (MDA) by linking the community and health facility and decreasing community misperception. HEWs are also supported by the creation of a systematic and organized popular mobilization called the Health Development Army (HDA) with the spirit of solidarity to producing healthy and productive communities.

Despite huge achievements in the development of a strong health workforce, human resource for health (HRH) management remains a challenge thereby contributing to the overall health system and health problems of the country. The major challenges include shortage, urban/rural and regional disparities, and poor motivation, retention and performance. There are also major gaps in performance management and accountability. The human resources information system (HRIS) has not yet been fully instituted so as to support HR planning and development, performance monitoring and improvement. In-service training needs are not systematically reviewed to link with individuals/teams and organizational performance and there is little or no in-service training opportunities to develop HRH leadership and management skills. It has also been recognized that there are critical missing elements in the regulatory landscape.

1.2.4. Health management information system

The health information system involves the management of the health information through a combination of the health management information system (HMIS), research and development (R&D) and knowledge management (KM). The Health Sector Transformation Plan (HSTP) [14] developed this strategic objective to support improved evidence-based decision-making through enhanced partnerships, harmonization and alignment, including the integration of projects and programmes at the point of health service delivery. It comprehensively addresses the identification of health system bottlenecks, research, the use of the HMIS, performance monitoring, quality improvement, surveillance, and use of information for policy formulation, planning, and resource allocation.

With regards to NTD programmes, HMIS and R&D have achieved significant progress including:

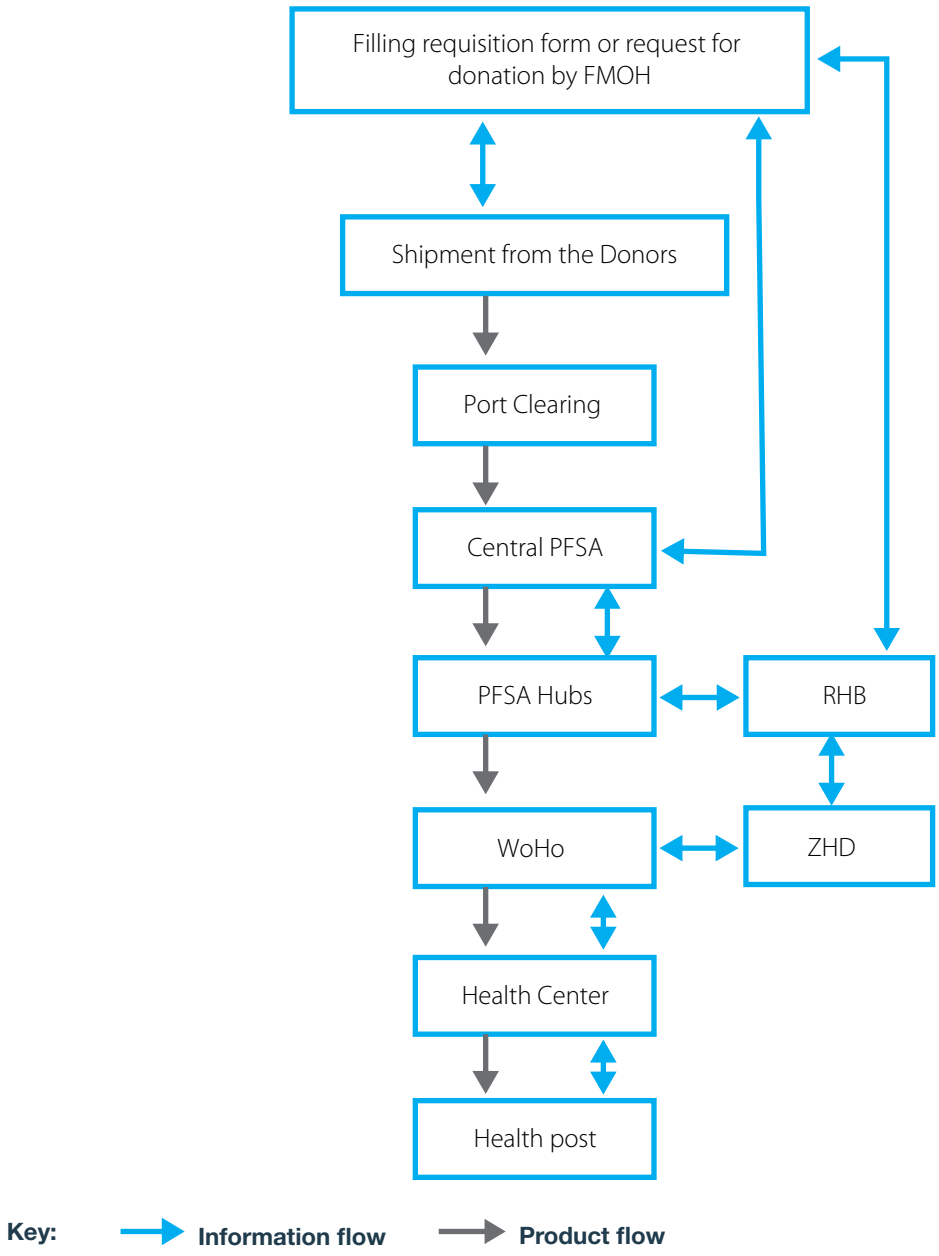
- The inclusion of NTD basic indicators in HMIS for programme monitoring; Health professionals working in health facilities gather information on health and health-related issues and these are passed through the regional health bureau (RHB) to FMOH for policy and programme decision-making. After analysis feedback is disseminated to the RHB and down to the health facilities.
- Disease mapping has been completed for lymphatic filariasis and almost completed for trachoma, soil transmitted helminthiasis, schistosomiasis, and onchocerciasis. Some districts remain unmapped for onchocerciasis in hypo-endemic areas. The mapping results have been used for planning, budgeting, and the prioritizing of endemic areas, scaling-up interventions and for resource mobilization and building partnership.
- Research activities are conducted by several research institutions, partners and FMOH. Research and development has, however, been hampered by uncoordinated priority setting of the research agenda, inadequate funding, a shortage of human resource and inadequate logistics. Other challenges include the lack of a national research database which impedes communication and partnership, and the limited translation of research findings into policy. In addition, there is little collaboration between research institutions.
- Of particular research interest to NTD programmes are post-MDA surveys and impact assessments. These assessments and surveillance surveys are key not only for evidence-based decisions to continue or stop MDA but also to identify what is working and not working in a given district or community.
- Knowledge management involves the dissemination of programmatic findings, publication in the scientific literature and sharing of lessons as widely as possible. A lack of a coherent and functioning knowledge management system impedes collaboration and hinders the ability to implement high impact interventions. Although with room for further strengthening, in general, knowledge management is well instituted in the health sector.

1.2.5. Medical products and pharmacovigilance

The procurement, storage and distribution of drugs, supplies and medical equipment are undertaken by the Pharmaceuticals Fund and Supplies Agency (PFSA) based on the demand of the regional states. The supply chain for NTD products is managed differently from others as illustrated in Figure 2 below. The NTD drugs are: praziquantel, ivermectin, albendazole, mebendazole, azithromycin, SSG, paramomycin and ambisome.

The Ethiopian Food, Medicine and Health Care Administration and Control Authority (FMHACA) is responsible for protecting the health of consumers by ensuring food safety and quality; safety, efficacy, quality and proper use of medicines; competence and ethics of health professionals, medical practitioners and pharmacy professionals; the standard of health institutions; and the hygiene and environmental health protection suitability for individual and community health.

Figure 1. Pharmaceutical medical supplies management chain for NTD



1.2.6. Health sector financing

Ethiopia's health sector receives financing from multiple sources. Thes include:

- Government Treasury (federal, regional, and woreda levels)
- Bilateral and multilateral donors
- Household out-of-pocket expenditures
- International and local nongovernmental organizations (NGOs)
- Private and parastatal employers
- Insurance companies.

Cognizant of the under funding of health care in Ethiopia – evidenced by per capita health spending of US$20.77 in 2010/11[15] which increased to US$27 by 2014 (WHO)[16]- and by problems with the quality, equity, and sustainability in health care delivery – the Ethiopian Council of Ministers approved a health care financing strategy in 1998. The strategy aimed at increasing the availability of health care resources in a way that would improve equity and sustainability and lead to improved quality of care.

Reforms in the financing strategy include: user-fee revision; revenue retention and utilization to improve quality; rules for rationalizing and systematizing fee waivers; health facilities governance; establishment of private wings in public hospitals; and the outsourcing of nonclinical health services. These reforms are being implemented in the majority of the regions (covering more more than 80% of health facilities) to increase health resources and use them more effectively, protect the poor, and introduce equitable financing mechanisms. The strategy also identifies health insurance as a mechanism to generate additional sources of revenue, and a means to increase the country's low level of health service utilization. In light of this, the government has embarked on implementing two types of health insurance schemes, social health insurance (SHI) for the formal sector and community-based health insurance (CBHI) for the informal sector.

In addition, the government is working with health sector partners on securing more resources for the sector, and on harmonizing interventions with the broader HSTP framework and with annual operational plans at different levels. The Ethiopian health sector partners established the SDG Performance Pool Fund, with a range of funders committing funds in the basket.

1.2.7. Leadership and governance

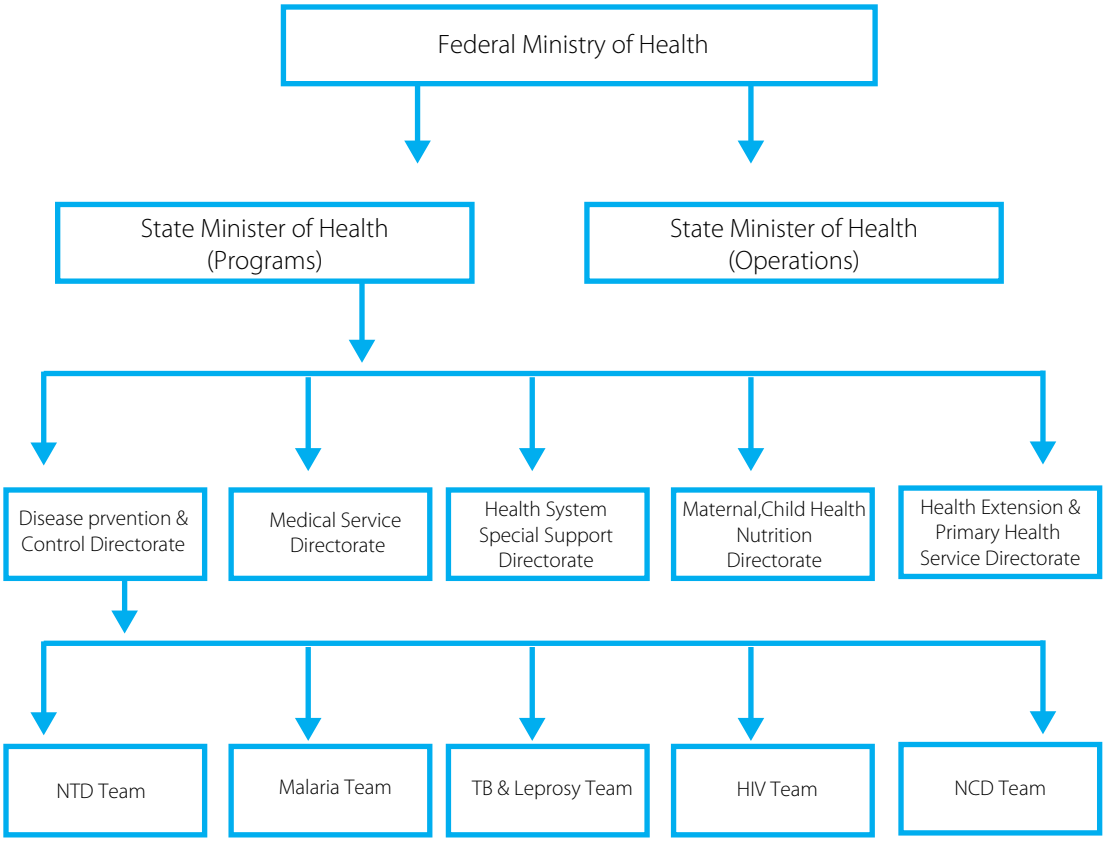
The Federal Ministry of Health (FMOH) is composed of agencies, institutions, specialized hospitals and the health programme and operation ministry and directorates. The health programmes are led by the State Minister for health programmes and consist of five directorates, namely:

- Disease Prevention and Control
- Maternal, Child Health and Nutrition
- Health Extension and Primary Health Service
- Health System Special Support
- Medical Services.

The national team for neglected tropical disease prevention, control and elimination is organized under the Diseases Prevention and Control Directorate (Figure 3).

Regional states and city administrations assign coordinators and focal persons for NTDs based on the endemicity of the diseases in their regions. Most of the regions are coordinating the programme with other tropical diseases, like malaria, while others assign standalone focal persons at regional and zonal levels.

Figure 2. Organizational structure of FMOH



1.2.8. Cross-border issues

The southwestern, west and northwestern parts of the country are known to be co-endemic for NTDs and share international borders with Sudan, South Sudan and Kenya. This is a situation that needs cross-border collaboration for the control and elimination of NTDs. Dracunculiasis (Guinea worm disease), onchocerciasis, lymphatic filariasis and leishmaniasis are some of those NTDs that require international collaboration with neighboring countries in planning, information, surveillance, monitoring and evaluation.

1.3. NTD Situation - Epidemiology, Burden of Disease and Interventions

1.3.1. Trachoma

***Epidemiology and burden of disease*:** Ethiopia has the highest burden and prevalence of active trachoma globally (30% of the sub-Saharan trachoma burden is estimated to occur in Ethiopia). The disease remains a major health problems and a leading cause of infectious blindness in the country. Trachoma mapping surveys were conducted under the auspices of the Global Trachoma Mapping Project (GTMP) in 2013/2014. These data, combined with impact surveys following trachoma control interventions in Amhara region revealed that 657 woredas are endemic for trachoma as defined as a prevalence of trachomatous follicular (TF) ≥5% among children 1-9 years of age. An estimated 74,995,468 people are at risk of infection[17]. The national average prevalence of active trachoma (TF) is 25.4%, ranging from 0.2% to 73.4%. Likewise, the prevalence of blinding trachoma - trachomatous trichiasis (TT), stands at 4% nationally, and varies from 0.2% to 12% among people aged 15 years and over (Figures 4) across the country. The findings indicate that the country prevalence for both indicators is much higher than the WHO thresholds for treatment (TF<5% and TT<1 per 1000 population, respectively).

Figure 3. Prevalence map of trachoma, GTMP 2014

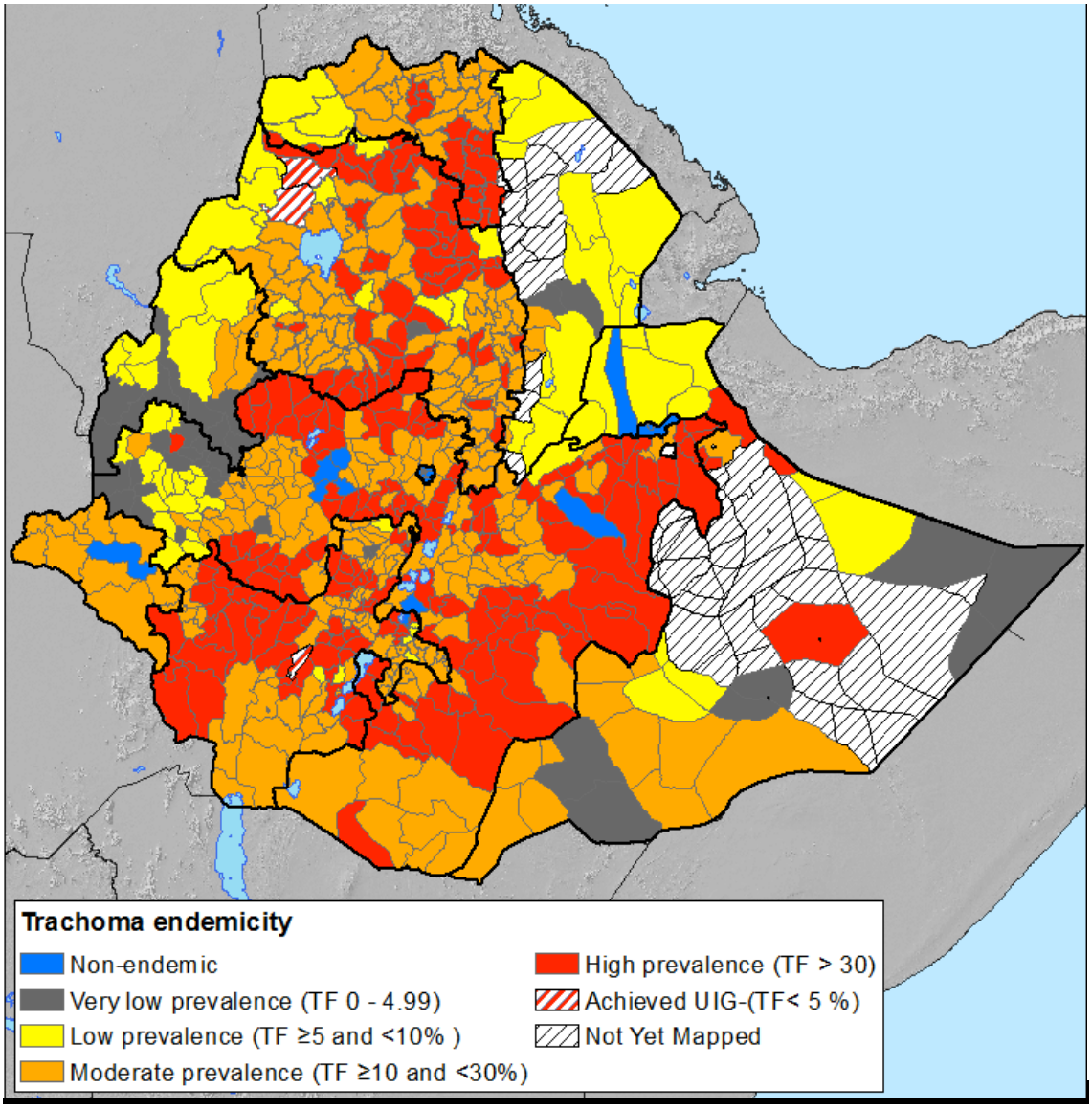


Table 2. Prevalence of Trachoma, Global Trachoma Mapping Project (GTMP) 2015

Prevalence category	Region								
	Afar	Amhara	Benishangul	Gambella	Oromia	SNNPR	Somalia	Tigray	Total
Districts with TT ≥ 0.1%	26	150	20	13	261	135	44	40	689
Districts with TF1-9 ≥ 30%	0	60	0	0	117	59	4	18	258
Districts with TF1-9 10-29.9%	3	66	4	13	110	66	18	19	299
Districts with TF1-9 5-9.9%	19	17	7	0	25	7	22	3	100
Districts with TF1-9 <5% (Baseline)	6	0	9	0	13	3	6	0	37
Districts with TF1-9 <5% (Impact)	0	9	0	0	0	0	0	0	9
Districts with TF1-9 ≥ 5%	22	143	11	13	252	132	44	40	657
Population with TF1-9 ≥ 5% (Millions)	1.3	19.5	0.8	0.6	27.5	16.7	4.4	4.3	75
Districts suspected endemic (not mapped)	0	0	0	0	0	0	20	0	20

**Benishangul Gumuz*

Mapping remains to be completed in 20 districts of Somali Regional States. The completion of this will ensure that no one is left behind in ending the scourge of trachoma (Table 2).

Status of programme implementation: Ethiopia has been implementing the WHO recommended SAFE strategy for more than a decade to control trachoma. Geographical coverage of SAFE intervention has been increased from 3 woredas in 2003 to 358 woredas in 2015 as a result of massive effort in the nationwide mapping 2013/14. TT surgery is steadily increasing - from 15,000 to over 140,000 surgeries per year from 2001 through 2015. Similarly, significant scale-up of MDA with Zithromax® has been achieved from 300,000 treatments to over 36M treatments per year from 2003 through 2015. In areas where interventions are underway, periodic impact evaluations were made. Amhara is the region where complete geographic and population coverage has been achieved even before the nationwide trachoma mapping. In Amhara, where the intervention existed previously, impact surveys carried out during 2013/14 revealed a marked drop in TF prevalence from 62.6% (at baseline) to 26.3% while TT decreased from 5.2% (at baseline) to 4%.[1] A decreased prevalence is observed in many of the woredas, 9 woredas achieved the elimination target of TF prevalence below 5%. This indicates the importance of the SAFE strategy while it also advocating for more robust, coordinated, and multi-sectoral action to address the F&E components for realizing Ethiopia's commitment towards the global goal of eliminating blinding trachoma by 2020 (GET2020). A noteworthy achievement is the nationwide trachoma mapping surveys conducted in 2013/15 which covered all districts except 20 in Ethiopia Somali region. This mapping supports the evidenced-based trachoma action plan at both the national and regional levels. The following figures (Figures 5-7) depict the massive efforts and achievements made in control of trachoma through the SAFE strategy.

1 Amahara Regiona Health Bureau - The Ethiopian Initiative to Clear the TT Backlog: Fast Track to the Elimination of Blinding Trachoma, February 2015

Figure 4: Districts with trachoma intervention by region 2003-2015

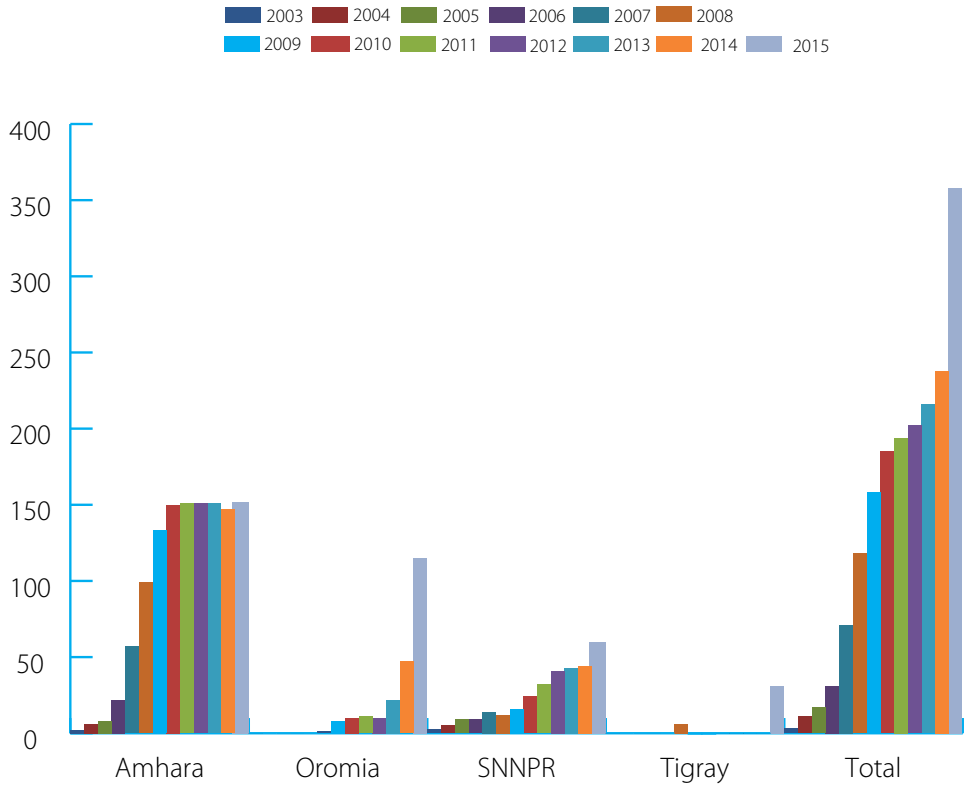


Figure 5. Number of people receiving treatment by year(millions)

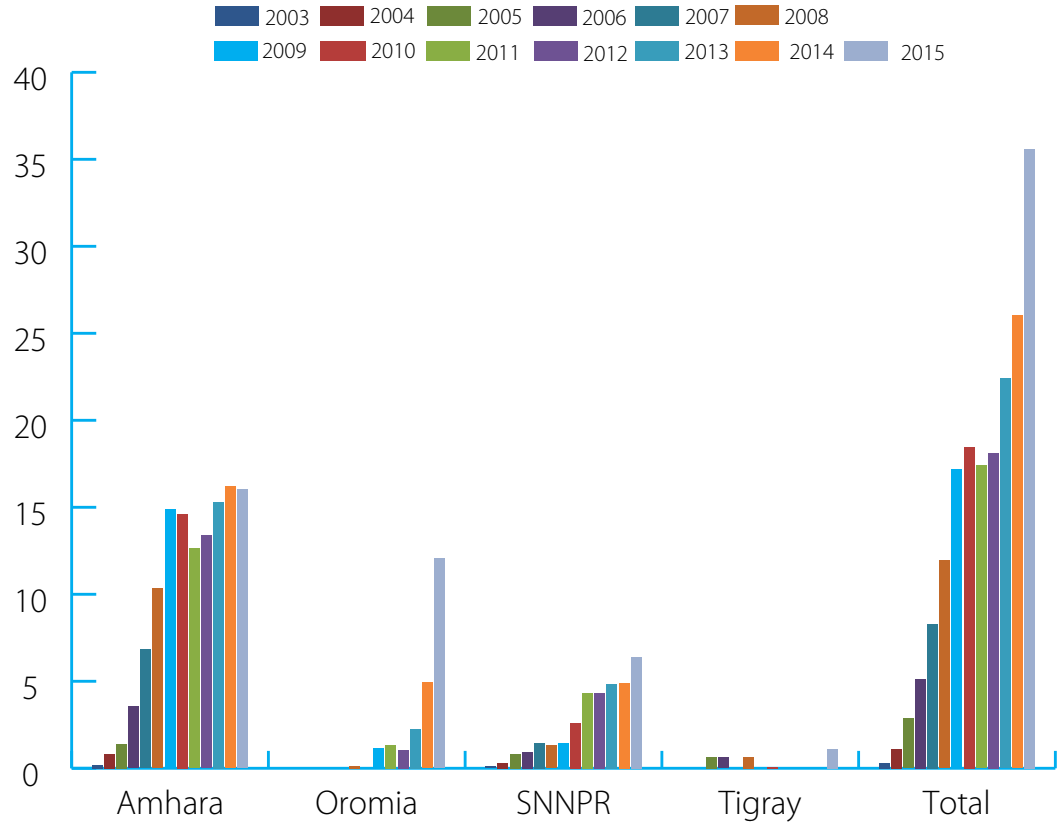
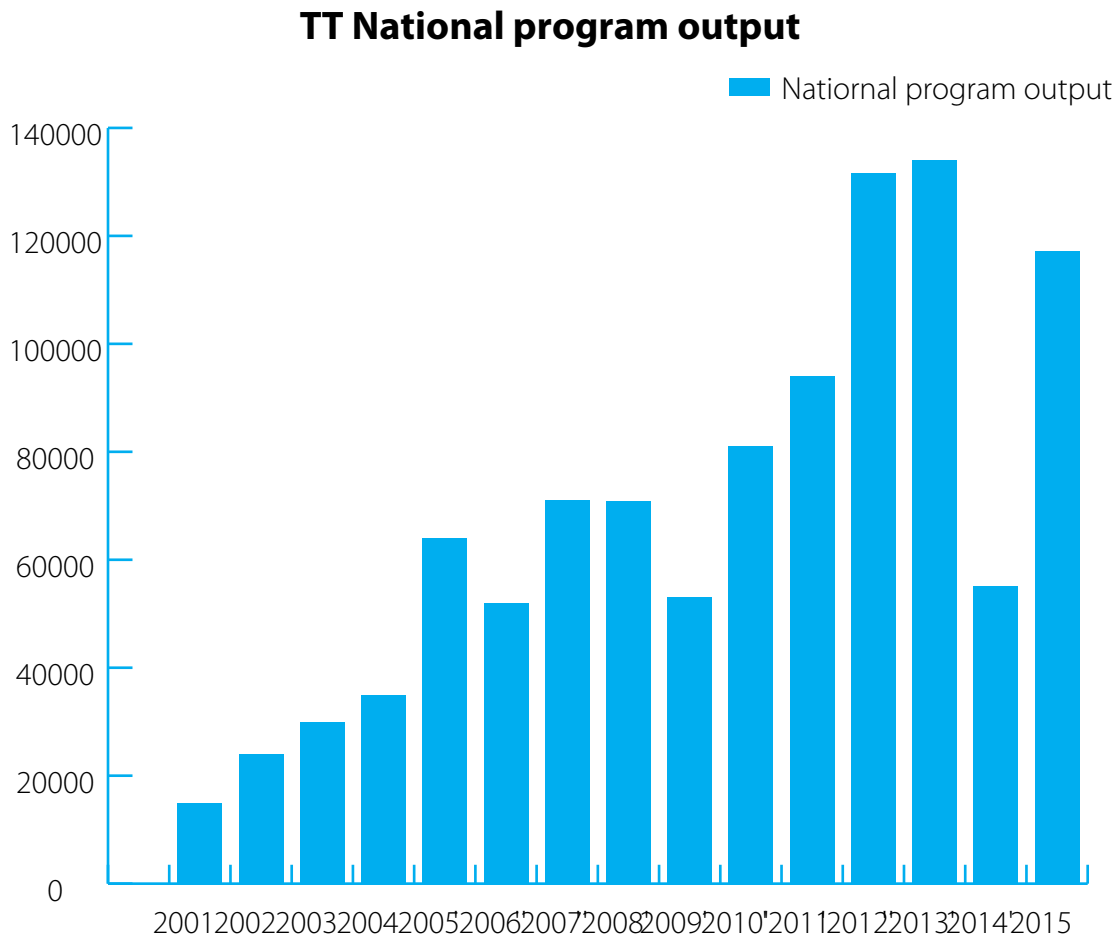


Figure 6 Trends in Trichiasis surgery performance, number of surgeries performed, 2001-2015, Ethiopia



Despite efforts in decreasing the TT surgery backlog and improving the access and quality of trichiasis surgery services, there are still an estimated 650,845 people that require urgent eyelid surgery for trichiasis. This huge TT backlog needs to be cleared to achieve the national target of the elimination of blinding trachoma by 2020 as well as to prevent blindness and to ensure improved quality of life of those who suffer from the disease. In support of the existing efforts the Honorable Minister of Health initiated an ambitious campaign to clear the TT backlog in endemic woredas nationally within 18months. The FMOH is committed to setting an example both for the country and the global trachoma community by clearing the trachoma backlog which accounts for 30% of the sub-Saharan trachoma burden.

The initiative was officially launched in February 2015. Four zones were designated to be included in the startup phase; one each from the four regions with the highest TT backlog. The pilot sites were Tigray Region-Central zone, Amhara Region-East Gojam Zone, Oromia Region-Jimma Zone and SNNP Region-Gurage Zone.

The transition from startup phase to national scale up took place in October and November 2015, with ensuring the clearing of the TT backlog by the end of 2016 a national priority for trachoma control programme [18].

While the water, sanitation, and hygiene (WASH) sector was not previously well integrated to trachoma control activities; the country has been making huge efforts in improving the WASH sector. The 2014 Mini-DHS survey revealed that household (HH) latrine coverage with improved (pit latrine with slab) and non-improved (pit latrine without slab) latrines to be 2.5% and 54.7% respectively [19]. Similarly,

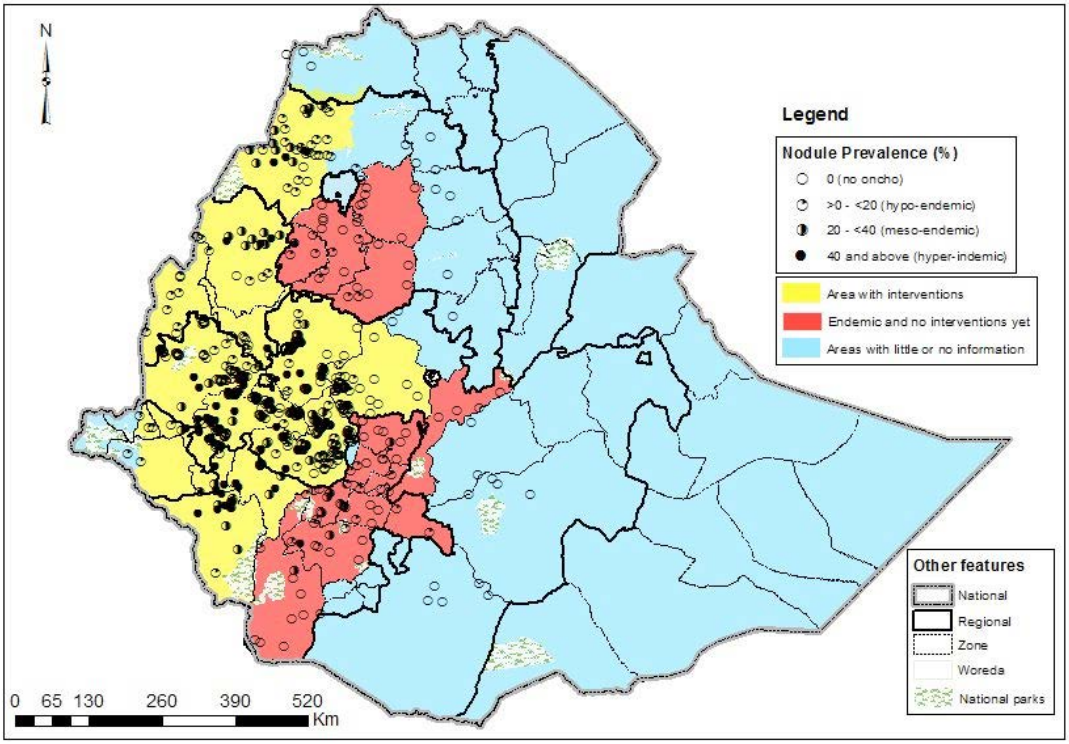
the proportion of HHs obtaining drinking water from improved and unimproved sources was 54.5% and 44.7% respectively. The absence of standard indicators for measuring facial cleanliness of children remains a challenge. Furthermore, much effort is required to ensure collaboration between trachoma and WASH implementing partners to leverage resources and to improve the F and E component of trachoma control strategy.

1.3.2. Onchocerciasis/River blindness

Epidemiology and burden of disease: The western part of Ethiopia, where many rivers with vegetation provide a suitable habitat for the ***Simulium*** black-fly vector, is known to be endemic for onchocerciasis based on the basis of rapid epidemiological mapping of onchocerciasis (REMO) (Figure 8). In these areas, the prevalence of onchocerciasis is generally higher closer to rivers, with the prevalence of infection dropping gradually as further from the rivers (FMoH/WHO, Onchocerciasis Report 2010). The central highlands and arid lowlands of Ethiopia are generally thought to be free of onchocerciasis. This is likely due to the highland's low temperature and the lowland's slow flowing rivers, the dry weather, and a lack of suitable vegetation, which are unsuitable environments for both the vector and the parasite. However, mapping of onchocerciasis in the eastern part of the country was not conducted due to the lack of historical evidence and the ecological unsuitability for transmission for onchocerciasis. The Ethiopian Onchocerciasis Elimination Expert Advisory Committee advised the country to document important information, which builds up the elimination dossier. Parts of four regional states (Amhara, Oromia, SNNP, and Gambella) and all woredas of Benishangul-Gumuz are known to be endemic for onchocerciasis.

The total population at risk is estimated to be over 17 million. The country is implementing elimination strategies where MDA is being undertaken through HDA and health education. The latter includes advocacy, social mobilization and community sensitization.

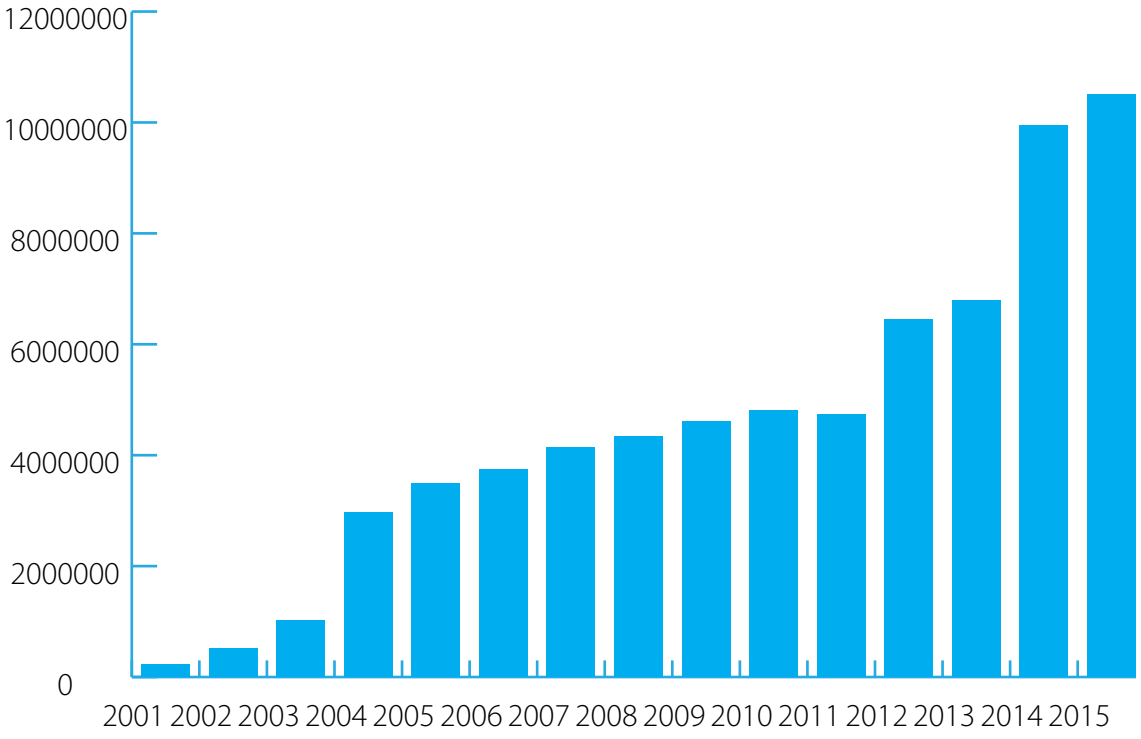
Figure 7. Onchocerciasis endemicity and operational map of Ethiopia, 2015



Status of programme implementation: The implementation of the national onchocerciasis

programme started in 2001 in 16 woredas of Keffa-Sheka zone in SNNPR with an annual treatment of hyper and meso-endemic woredas. Since 2012, the country has been implementing onchocerciasis elimination strategies targeting all endemic woredas. Preventive chemotherapy using MDA is the main intervention strategy. MDA is implemented by community drug distributors through the health development team. Health education is one of the strategies to raise the awareness of communities and assists social mobilization of the community before and during MDA (Figure 9). Out of 188 endemic woredas, 184 are eligible for bi-annual treatment based on the criteria set by the Ethiopian Onchocerciasis Elimination Expert Advisory Committee (EOEEAC) in 2014 so as to ensure elimination by 2020.

Figure 8. People treated for onchocerciasis, 2001-2015, Ethiopia



1.3.3. Schistosomiasis

Epidemiology and burden of disease: In Ethiopia, the intestinal form of schistosomiasis (caused by ***Schistsoma mansoni)*** is widely distributed (Figure 9) while the uro-genital form (caused by ***S. haematobium***) is more restricted in distribution primarily to foci in the rift valley region. There are an estimated 38.3 million people living in schistosomiasis endemic areas, comprising 34.4 million pre-school children, 12.3 million school-aged children, and 21.6 million adults.

Figure 9. Current burden of schistosomiasis in Ethiopia

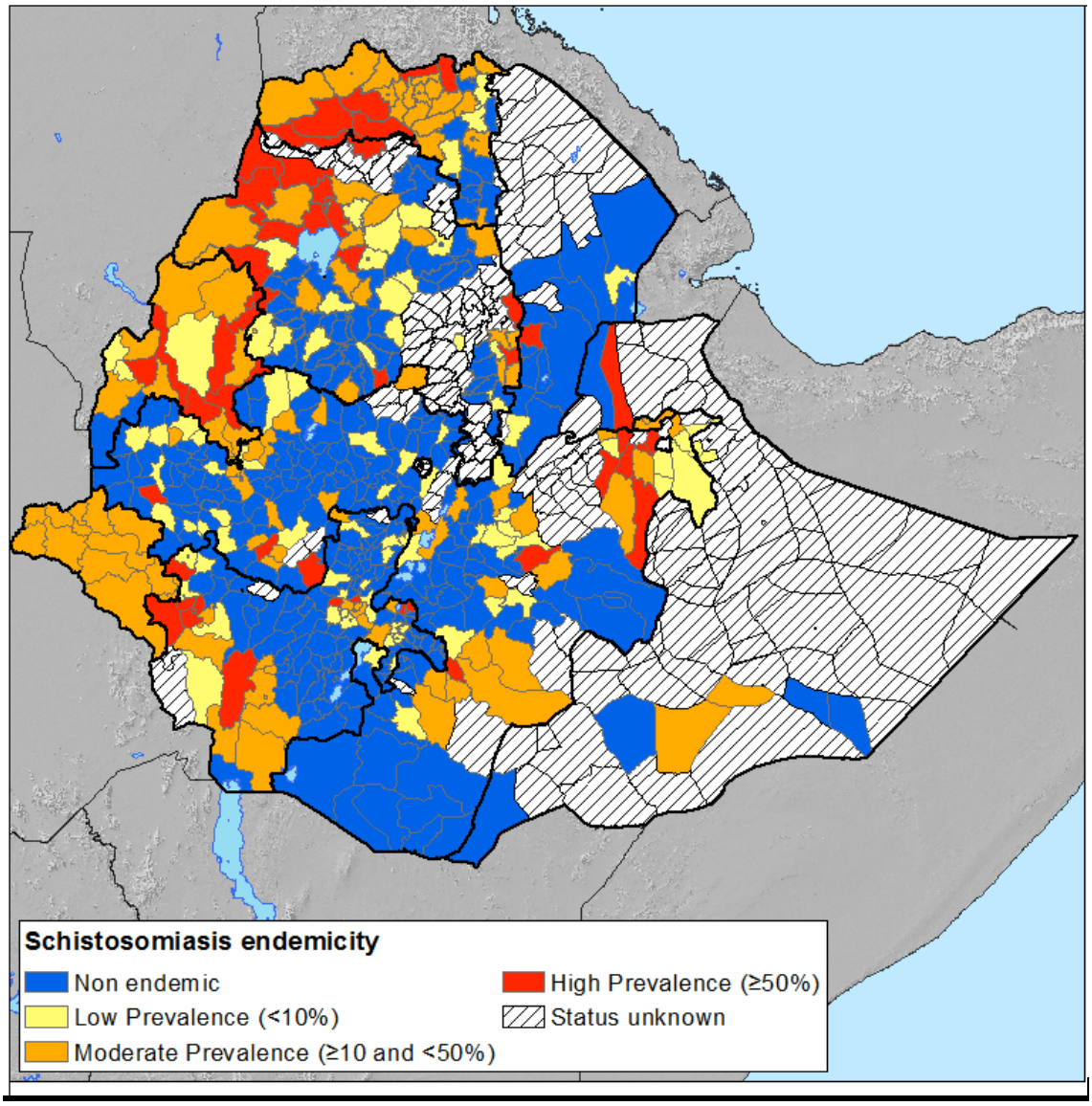


Table 3 distribution and mapping status of schistosomiasis in Ethiopia, 2014

	Transmission intensity				To be Determined	Endemic Woredas	Woredas Requiring Treatment
	High	Medium	Low	Uninfected			
Number of woredas	67	135	183	355	53	385	385

The co-ordinated large-scale mapping of both schistosomiasis and STH was conducted between December 2013 and April 2014 in nine regions of the country by the Ethiopian Public Health Institute (EPHI). The results from this were combined with the 2013 mapping of Amhara region, conducted in partnership with The Carter Center. A second phase of mapping was conducted in June 2015, with support from the WHO to map Somali, Addis Ababa, and to complement Amhara mapping with information on the distribution of urogenital schistosomiasis. A decision will be taken at a later time to determine whether to seek funds to conduct mapping in the few remaining districts of Somali and Afar to complete the national picture. These are not thought to be at high risk of infection (Table 3).

Status of programme implementation: Ethiopia initiated its deworming programme in 2007 when approximately 1 million school-aged children were treated for schistosomiasis and STH. It further treated 1.07 million school-age children in 2013. One hundred and nine woredas received treatment for schistosomiasis in April 2015, thereby reaching 2.9 million school-aged children (both enrolled and non-enrolled.). The national deworming programme was officially launched by the FMOH in November 2015. The first national campaign in the same month treated approximately 5 million school-aged children against schistosomiasis.

Thanks to the leadership of the FMOH and the generosity of funders and partners, Ethiopia now has a fully-costed five-year national programme which will control the morbidity of schistosomiasis and STH by 2020. This will involve the distribution of over 100 million treatments to school-aged children and will look to expand treatment to adults in priority areas.

1.3.4. Soil-transmitted helminths

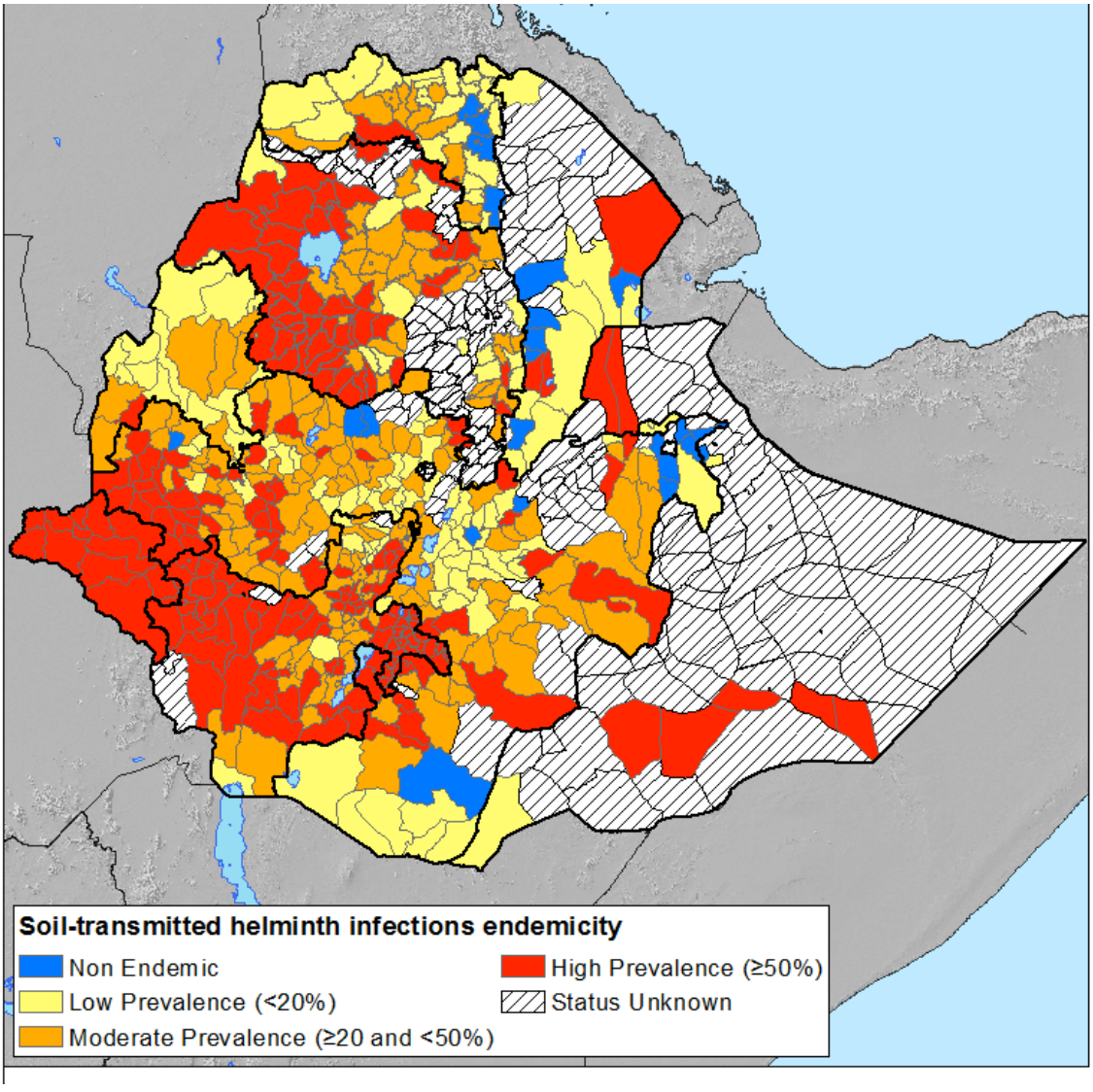
Epidemiology and burden of disease: STH infections are distributed very widely throughout the country (Figure 11). The number of people living in STH endemic areas is estimated at 81 million, which is comprised of 9.1 million pre-school-aged children, 25.3 million school-aged children and 44.6 million adults. The number of individuals living in areas qualifying for STH-treatment (***the current protocol does not qualify MDA in areas with low infection prevalence***) is 56.7 million, comprised of 4.6 million pre-school children, 17.7 million school-age children, and 31.3 million adults). The coordinated large-scale mapping of both schistosomiasis and STH as described previously demonstrated that 475 woredas require treatment against STH (Table 4).

Table 4. Soil-transmitted helminths distribution and mapping status by woreda in Ethiopia, 2015

	Transmission intensity				To be Determined	Endemic Woredas	Woredas Requiring Treatment[2]
	High	Medium	Low	Uninfected			
Number of woredas	257	218	246	33	53	721	475

2 The WHO does not currently recommend MDA against STH for low infected areas

Figure 10. Burden of STH in Ethiopia, 2015



STH programme implementation: In 2007, 1 million school-aged children received deworming treatment for both STH and schistosomiasis. Furthermore, 11.6 million and 7.8 million school-aged children received treatment in 2013 and 2014, respectively**.** Likewise, 2.9 million school-aged children, both enrolled and non-enrolled, were treated in April 2015, and approximately 13 million school-age children were dewormed following the launch of the country's national deworming programme in November 2015. Likewise, since 2008 deworming of 2-5 years old pre-SAC for STH has been conducted alongside Vitamin A distribution; this programme treats in 800 woredas covering close to 8 million pre-SAC. Additionally, STH treatment for adolescents (15-19 years of age) commenced in 86 high priority woredas in 2015.

1.3.5. Lymphatic Filariasis

Epidemiology and burden of disease: Lymphatic filariasis (LF) is one of the most debilitating and disfiguring diseases in Ethiopia, with an estimated 5.6 million people are at risk of infection. The FMOH, in collaboration with partners, has completed LF mapping in all regions. The results of these surveys indicate that the infection is endemic in 112 woredas in8 regions (one in Afar, 19 in Amhara, 13 in Benishangul-Gumuz, 7 in Gambella, one in Harari, 36 in Oromia, 30 in SNNPR and 5 in Tigray) [20,21] (Figure 12). Of these 52 woredas are co-endemic for onchocerciasis, 53 for podoconiosis and 102 for STH. Though detailed information about lymphoedema and hydrocele burden is not available, the first phase of the mapping surveys (2008-2010) carried out in a sample population of 11,685 individuals living in 112 districts of western Ethiopia indicated that the prevalence of hydrocele (in males) and limb lymphoedema was 0.8% and 3.6%, respectively [20]. Moreover, in the recently conducted (2016), hydrocele and lymphoedema burden assessment in 20 LF/Podoconiosis co-endemic woredas of Amhara and SNNPR, 1019 hydrocele sufferers have been identified. The re-mapping of districts with prevalence bordering the WHO-recommended threshold for treatment of 1% reduced the number of endemic districts in the country to 70, which a corresponding decrease in the population at risk of infection to 5.6 million.

Figure 11. Distribution of lymphatic Filariasis, Ethiopia, 2014

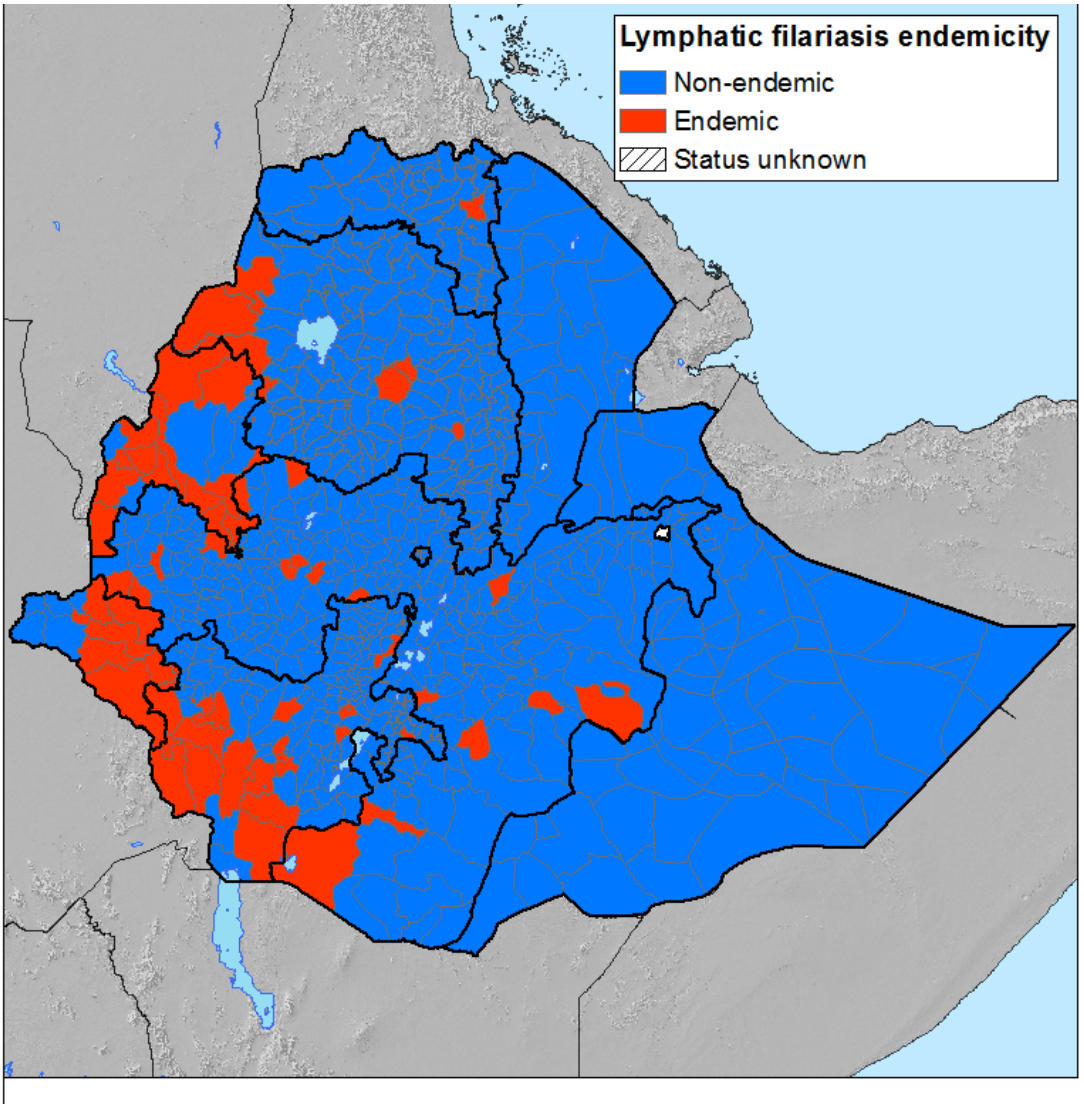


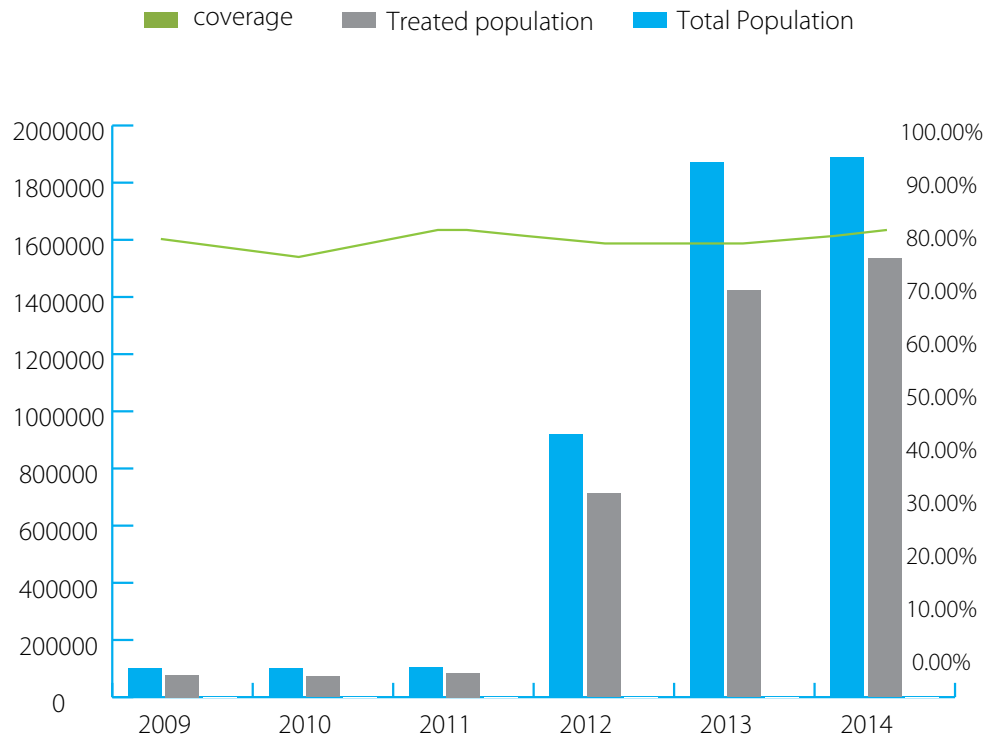
Table 5 .Prevalence of lymphatic filariasis in Ethiopia, 2014

Region	Mapped woredas	Endemic woredas§	Prevalence	Method of survey	Year of survey and reference
Amhara, Benishangul-Gumuz, Gambella, Oromia, SNNP	112	37	3.7% (ranges from 0% to over 30%)	ICT cards	2012, Shiferaw et al[20]
Addis Ababa, Afar, Amhara, Benishangul-Gumuz, Dire Dawa, Harari, Oromia, SNNP, Somali, Tigray	659	75	0% to 5.8%	ICT cards	2014, P. Rebollo et al[21]

§ remapping of 45 districts with boarder line results reduced the total number of LF endemic districts to 70.

Lymphatic filariasis programme implementation: An annual MDA for LF has been implemented since 2009 in five districts of Gambella region alongside the onchocerciasis control programme. This was expanded in 2012 to include a further sixteen districts - eight districts in Bench Maji zone of SNNPR, two districts in Metekel zone of Benishangul-Gumuz, three districts in North Gondar zone of Amhara and 3 districts in West Wollega zone of Oromia regions). By 2013, another twelve districts started co-implementation (6 woredas in Kamashi and 5 woredas in Asossa zones of Benishangul-Gumuz, and one district in West Wollega zone of Oromia regions). In mid-2015 a further 8 districts in Oromia and 12 districts in SNNPR instituted MDA thus achieving the geographical coverage of 75.7% (53 districts) Figure 12. Of these woredas, five have completed five rounds of MDA while another sixteen have completed three rounds. Woredas that have completed five rounds are subject to impact assessment to determine the success of MDA in reducing the prevalence of LF and take appropriate action. Besides PC, integrated guidelines for lymphatic filariasis and podoconiosis morbidity management and disability prevention (MMDP) is completed. Collection of data on the therapeutic coverage for LF and the number of lymphoedema cases being treated is now included in the nation's HMIS.

Figure 12 Mass treatment coverage of lymphatic Filariasis, 2009 – 2014, Ethiopia

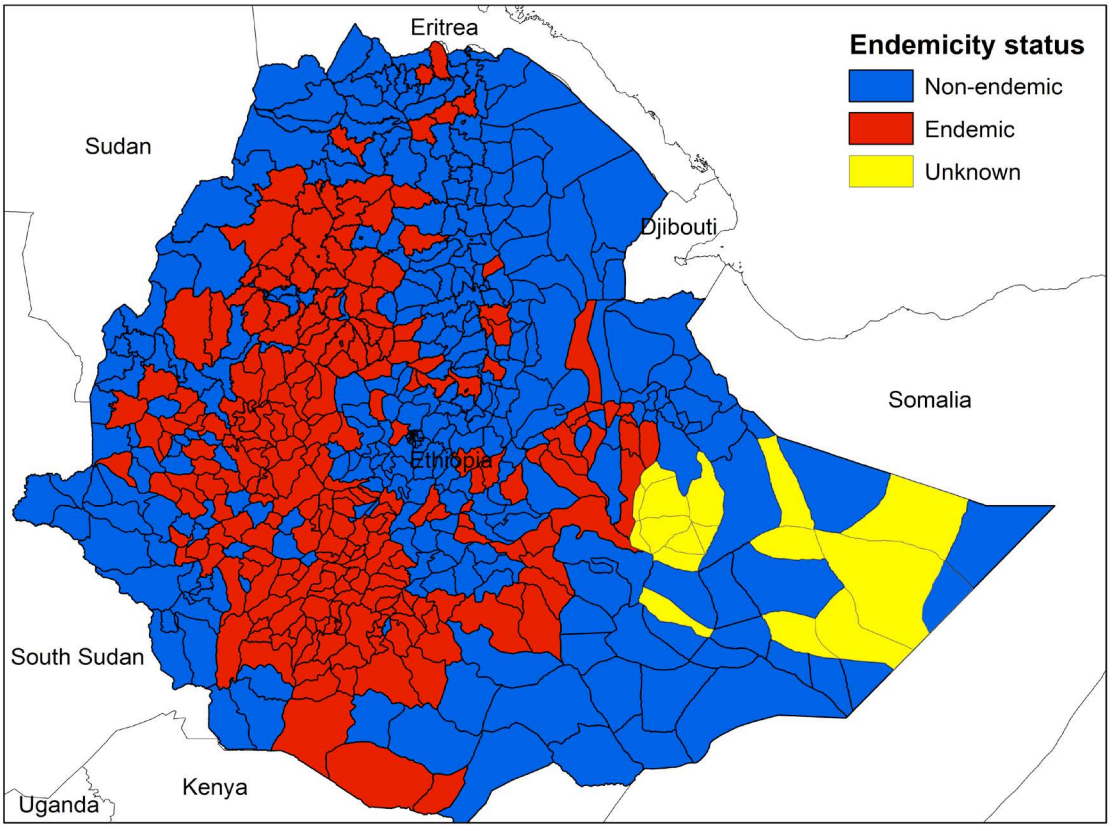


1.3.6. Podoconiosis

Epidemiology *and burden of disease*: Podoconiosis (i.e. endemic non-filarial elephantiasis) is a non-infectious geochemical disease caused by exposure of bare feet to red clay soil derived from volcanic rocks. The disease occurs in highland red clay soil areas, mainly among poor, bare footed agricultural communities, who do not wear protective shoes and/or wash the dust off their feet using soap and water.

A nationwide integrated LF and podoconiosis mapping survey was conducted in 659 woredas in 2013 [22-24]. An additional 116 woredas were also surveyed for podoconiosis and LF [20]. Overall, 775 woredas were mapped for podoconiosis and 345 were found to be endemic (Figure 13). Fifty-three of these woredas were co-endemic with LF.

Figure 13. Distribution of podoconiosis in Ethiopia, 2014



It is estimated that up to 3 million cases of podoconiosis exist in Ethiopia. The soil responsible for the disease is estimated to cover 24% of the surface area of the country, on which an estimated 43.8% of the population (34.9 million) lives. The national average prevalence is 4.0%, with highest prevalence in SNNPR (8.3 %) followed by Oromia (4.0%) and Amhara (3.9%) regional states. There are 345 woredas with prevalence of disease greater than 1% (Table 6).

Table 6. Classification of woredas by prevalence of podoconiosis among adults ≥15 years old in Ethiopia, 2015

Region	Woredas with ≤1% prevalence	Woredas with >1% prevalence (endemic)	Total
Addis Ababa	4	0	4
Afar	32	0	32
Amhara	80	64	144
Benishangul-Gumuz	17	4	21
Dire Dawa	7	0	7
Gambella	10	0	10
Harari	9	0	9
Oromia	154	144	298
SNNPR	27	128	155
Somali	48	1	49
Tigray	42	4	46
Total	430	345	775

Podoconiosis programme implementation: In general, fragmented efforts have been made to-date to control podoconiosis. However, as mentioned above, an integrated elephantiasis morbidity management guideline has been finalized. In addition, an indicator to record the number of lymphedema cases treated is now included in the HMIS. There are also several small-scale interventions in podoconiosis endemic areas which have proven to be very successful; however, these interventions are currently only available to around 60,000 podoconiosis patients (less than 5% of those in need) in around 40 districts of Amhara, Oromia and SNNP regional states. These services have been expanded to other endemic districts.

Current preventive interventions include behavior change communication at schools, kebeles and at various social events; and the donation of locally produced shoes by charitable organizations. Lymphedema management is also provided and includes foot hygiene, skin care, elevation and movement, foot wear, bandaging, and minor surgery.

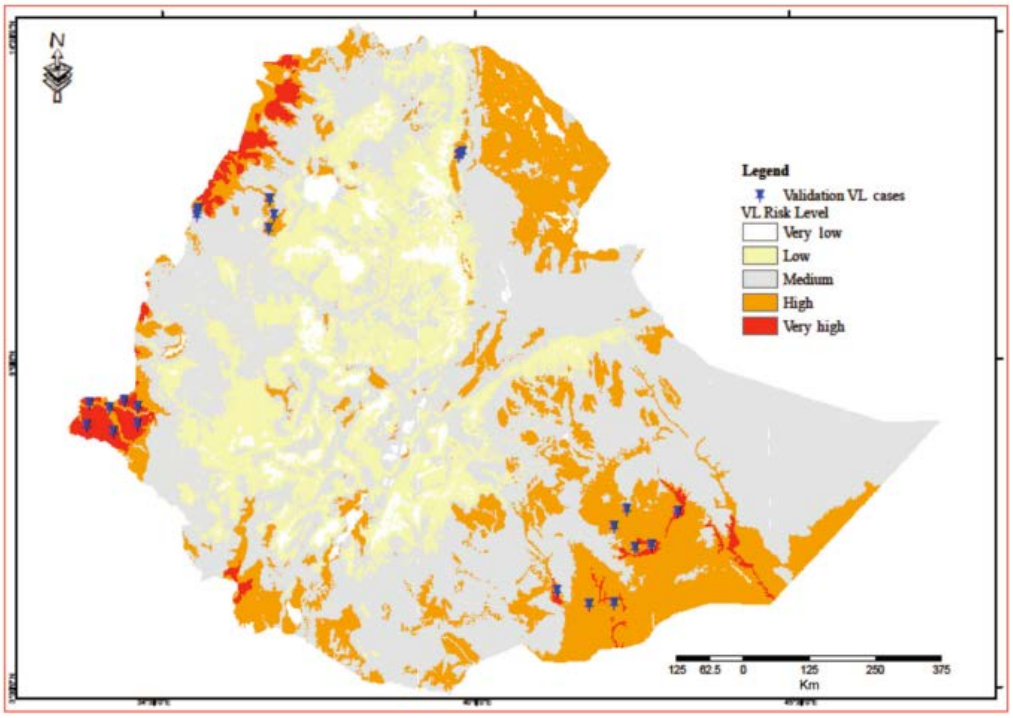
1.3.7. Leishmaniasis

Epidemiology and burden of disease: Leishmaniasis exists in two main forms in Ethiopia; visceral and cutaneous. Visceral leishmaniasis (VL) is one of the most important public health diseases present in five regions of the country**;** the disease is known to be endemic in:

- Metema plains, S. Gondar, and Welkite areas in Amhara regional state
- Humera plains and T/Adiabo areas in Tigray regional state
- The Omo plains, the Aba Roba focus and Weyto River Valley in SNNP regional state
- The Moyale area and Genale river basin in the Oromia regional state, and
- Afder and Liban zones in Ethiopian Somali region (Figure 14).

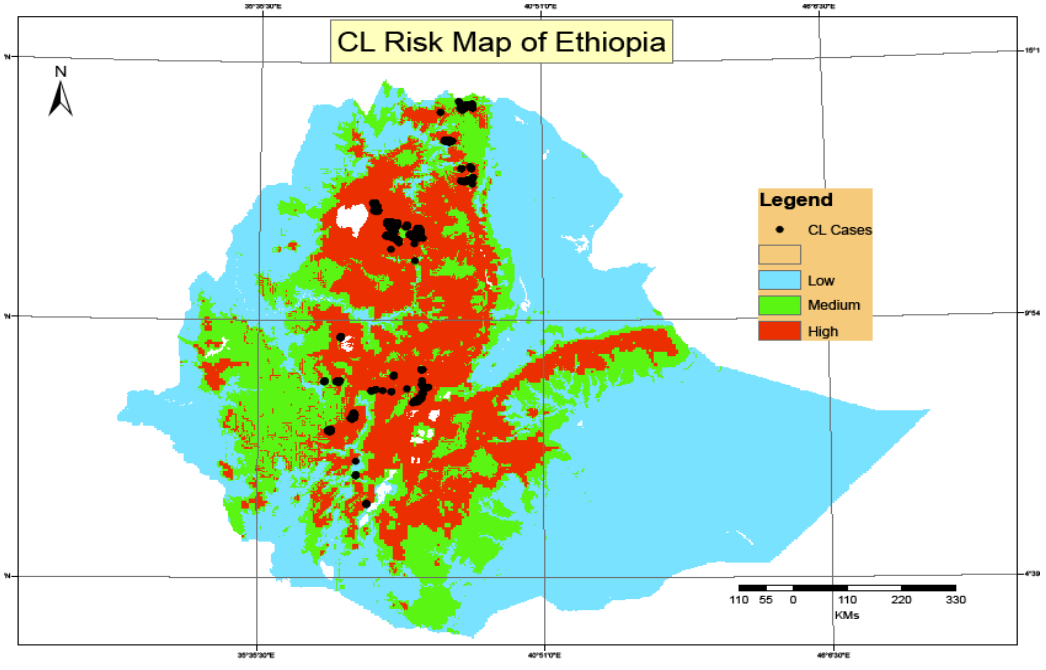
Estimates of annual incidence ranges range from 2,500 to 4,000 cases. However, the WHO global leishmaniasis burden report indicated 3700-7400 cases per year [25]. Ethiopia also has high VL-HIV co-infection (with HIV prevalence of 33% to 40% among VL patients) [26]. However, there is a declining trend in the annual number of VL-HIV co-infections, from 7.4% in 2011 to 3.0% in 2014 (***FMOH report***, Figure 17),

Figure 14 Risk map of visceral leishmaniasis, Ethiopia, 2013



The other form of the disease, cutaneous leishmanaisis, is known to be endemic in different parts of the country. However, the burden and distribution is not well known. A study conducted to assess the risk factors based on soil type, altitude, rainfall, slope and temperature found that the central highlands of the country are at high risk of CL with 170 woredas suspected to be endemic. Of these, 80 have been confirmed as endemic. The population at risk is estimated to be nearly 29 million (Figure 15) [27]. The annual incidence is estimated at between 20,000 to 30,000 [26], in comparison to 3.2 million people in 40 district at risk of visceral leishmaniasis [28].

Figure 15. Cutaneous leishmaniasis risk map, Ethiopia, 2014



Leishmaniasis is an epidemic-prone disease, with many examples of outbreaks. Among the major outbreaks have been:

VL

- VL in in Humera -Tigray Region, 1997
- Konso SNNPR, 1999
- Metema /Quara, Amhara Region, 2001, and
- Libokemkem Amhara Region, 2004/5

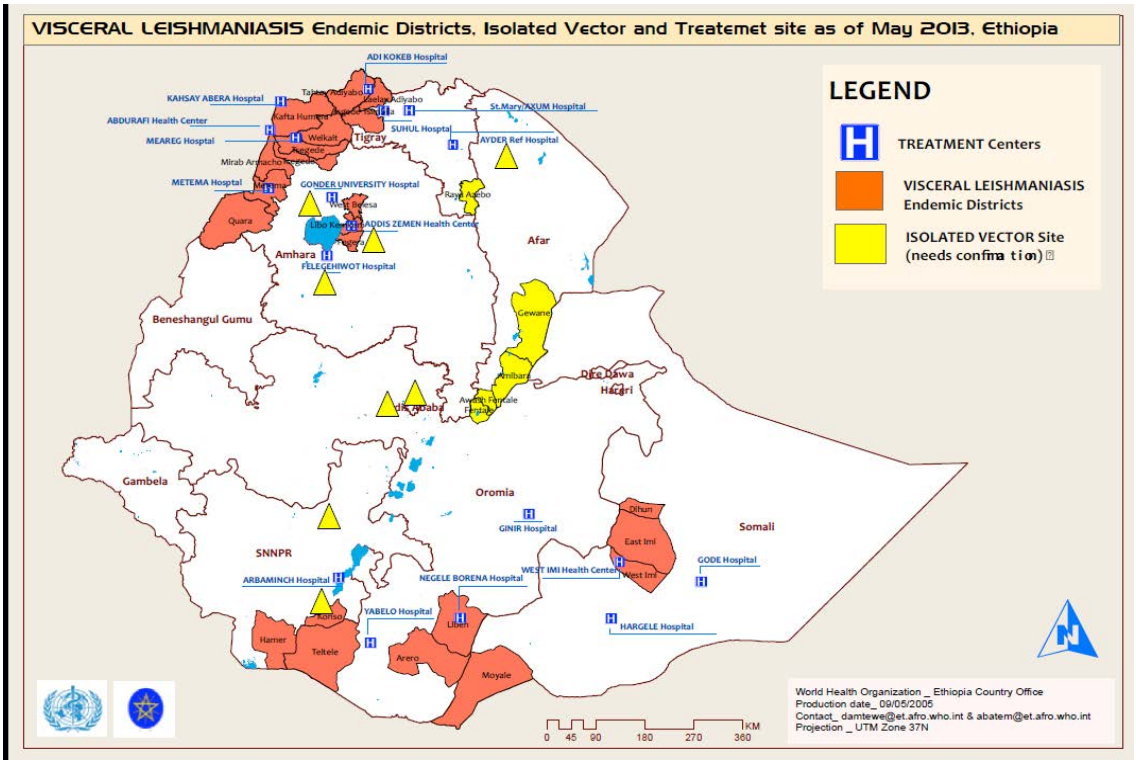
CL

- CL in Silte, SNNPR, 2008

VL is known for its high case fatality rate. In recent years a report from treatment facilities has shown a decrease in the case fatality rate 4.8% in 2012 to 2.6% in 2014 (FMOH report).

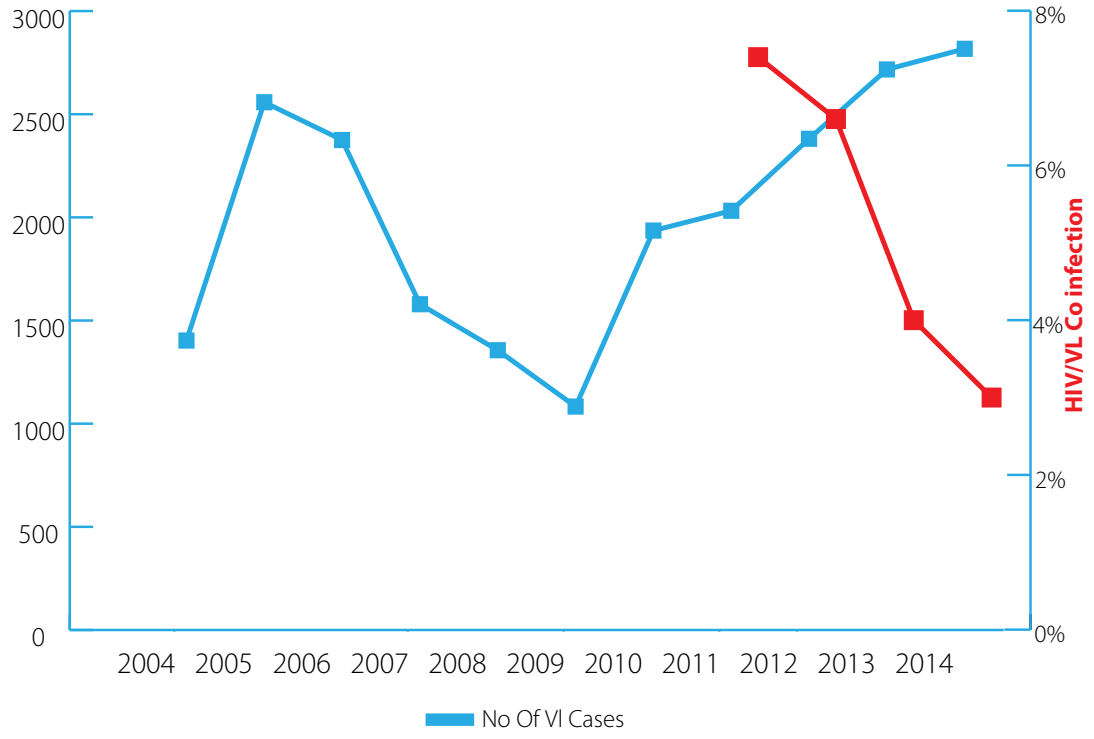
Leishmaniasis programme implementation: A leishmaniasis control programme was established in 2006, headed by the FMOH, following the 2005 Libokemekem outbreak. This commenced with the establishment of five treatment sites in Amhara, Tigray, and SNNP regional states. Though not sufficient, currently eighteen VL and eight CL treatment sites are operational in regions known to be endemic (Figure 16).

Figure 16.Leishmaniasis treatment centers, VL endemic districts and isolated vectors



CL Treatment sites

Figure 17. VL trends in Ethiopia 2004-2014 and HIV/VL co-infection trend 2011-2014

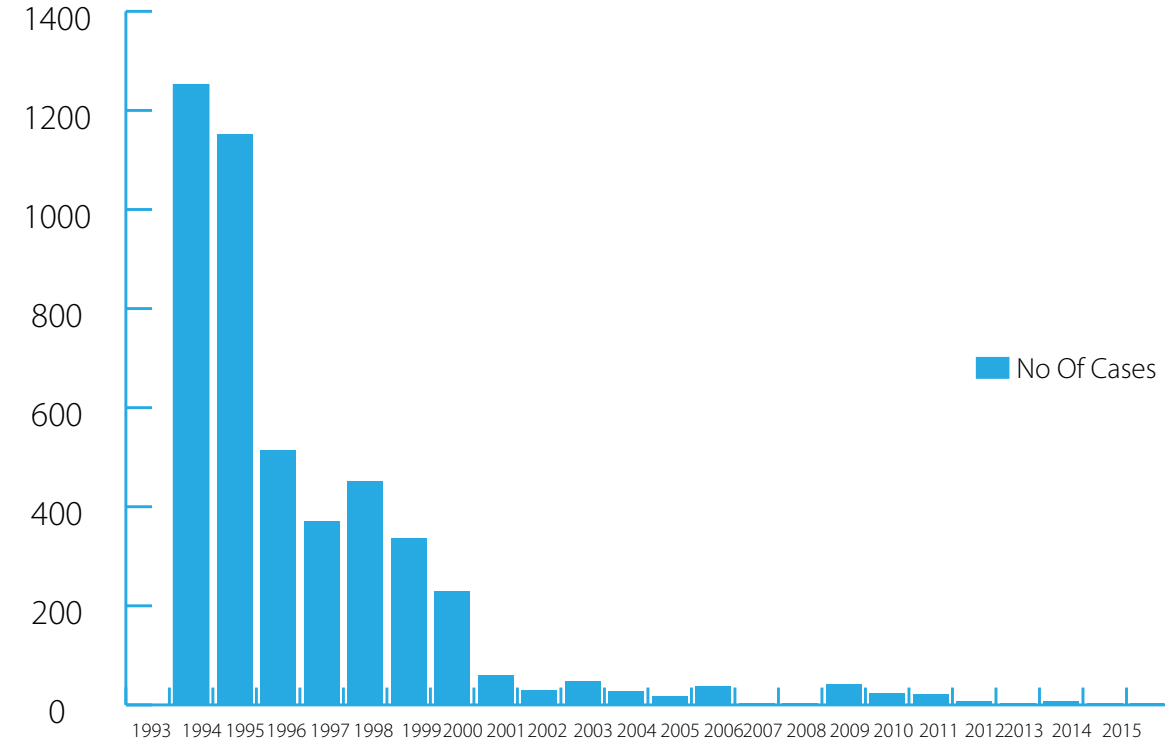


The control strategies and combinations of activities addressing human host, parasite and sand fly vector are designed in such a way to reduce morbidity and mortality of the disease and with a due emphasis to prevent epidemics and spread of the disease to new foci. Passive case detection and prompt management based on standard case definition followed by laboratory confirmation of cases has been used mainly to identify and treat visceral leishmaniasis suspected patients. RK39 rapid tests at Primary health care centers and RK39 rapid test, direct agglutination test (DAT), and microscopy on bone marrow, spleen or lymph node aspiration at district hospitals and tertiary hospitals are the mainstay of laboratory diagnosis of VL. Integrated vector control using LLITN/ bed net distribution and insecticide spraying are also taking place in the context of malaria control in endemic areas due to the fact that the diseases are often co-endemic. There is limited evidence and efforts in control of the cutaneous form of the disease.

Capacity building, including the training of health care workers and continuous training and supportive supervisions, have been conducted since the establishment of the programme. The first guideline for diagnosis, treatment and prevention of leishmaniasis was produced in 2006, and updated with the inclusion of CL in June 2013. Since 2013, Ethiopia has updated the guideline and adopted the use of Sodium stibogluconate (SSG)+ Paromomycin sulphate (PM) as the first line drugs following the WHO recommendation based on the evidence generated by multi-center randomized clinical trial in East Africa including Ethiopia. These has significantly reduced the duration and cost of treatment. However, the roll out of this practice is slow and of limited scope. Following the signature of a memorandum of understanding between the pharmaceutical manufacturer, Gilead, and WHO/FMOH in October 2012, Ethiopia has benefited from securing the donation of AmBisome for four years, which is free of charge for treatment of VL. However, as of 2014, only 342 CL cases were treated in VL treatment centeres.

1.3.8. Dracunculiasis (Guinea Worm Disease)

Figure 18 Dracunculiasis trend analysis, 1993 – May 2015, Ethiopia



Epidemiology and burden of disease: Overall, the global eradication campaign has made steady and substantial progress. Both the number of cases and of endemic villages has fallen significantly since the launch of the eradication efforts in the 1980s when 20 countries were endemic for the disease. Currently, there are four countries endemic for Guinea worm disease; Chad, Ethiopia, Mali and South Sudan. The country commenced control activities in 1994, at which point it recorded 1,252 cases. The national active case search that was carried out during 1993-94, identified 99 endemic localities in seven woredas (six woredas in Gambella and one woreda in South Omo). After establishing the endemicity of dracunculiasis a comprehensive intervention package was put in place. Since then, the number of reported dracunculiasis cases has steadily declined. The annual incidence of dracunculiasis in Ethiopia has reduced by more than 99% from 1994 to 2014 (Figure 19). Indigenous transmission of Guinea worm disease was interrupted in SNNPR in 2001. However, low intensity transmission still continues in Gambella region. Currently the disease is endemic in only one woreda of Gambella region, Gog.

Ethiopia reported three indigenous Guinea worm cases in 2014 representing a 57% decrease in the number of cases compared to the seven cases in 2013. Nonetheless, there is no reduction in the number of cases in 2015 when compared to that of 2014, with three confirmed human cases, along with 13 confirmed dog infection and one baboon infection. Reporting of Guinea worm cases and rumors was ensured through Integrated Disease Surveillance and Response (IDSR). The programme had taken opportunities for dracunculiasis surveillance to conduct active case search through other disease surveillance programmes like polio, during National Immunization days (NIDs). Ethiopian Dracunculiasis Eradication Programme (EDEP) has in the past created awareness about GWD and the cash reward through trainings, sensitization and distribution of IEC materials in both endemic and free areas of the country. Due to this, reward awareness in Ethiopia has improved, but is not yet at the level it needs to be. The main challenges of the programme are cross border movement, lack of safe water supply, no determined source of infection, unclear transmission dynamics, and the inaccessibility of some woredas such as Acobo and part of Jor.

Dracunculiasis programme implementation: Currently, the main strategic areas of focus include active surveillance with a set of interventions in endemic districts, Guinea worm disease surveillance in GW free areas includes community awareness on the cash reward system, and documentation of surveillance data and programme activities at all levels for eventual certification.

Table 7. NTD mapping /disease assessment status

NTD	# of woredas suspected to be endemic	# of woredas mapped or known endemicity status	# of woredas remained to be mapped or to know endemicity status
Trachoma	721	701	20
Onchocerciasis	829	188	182
Schistosomiasis	839	737	53
Soil transmitted helminthes	839	738	53
Lymphatic filariasis	775	775	0
Podoconiosis	775	775	0
Leishmaniasis			
VL	40	40	0
CL	170	80	0
Dracunculiasis	839	839	0

1.4. NTD Programme Implementation

Table 8. Summary of intervention information on existing PCT programmes, 2015

NTD	Year programme started	Woredas targeted	No. of woredas covered (geographical coverage)	Total population at risk in endemic woredas	No. (%) covered	Key strategies used	Key partners
Trachoma	2003	657	358 (56.3%)	75.0 million	26.0 million (34.7%)	SAFE	TCC, ITI, Orbis, LfW, FHF, GTM, RTI, MfM, WHO
Onchocerciasis	2001	188	151(83%)	17 million	9.9 million (62%)	MDA	WHO, TCC,LfW, RTI
SCH	2013	385	28.2%	12.3 million	10.0 million (81.3%)	MDA	SCI, The END Fund, CIFF, DtWi, DFID, WHO
STH	2013	475	21.4%	17.7 million	13 million (73.4%)	MDA	SCI, The END Fund, CIFF, DtWi, DFID, WHO
LF	2009	70	53 (75.7%)	5.6 million	4.1 million (73.2%)	MDA	TCC, FPSU, RTI, LfW, AAU, WHO

Table 9 Summary of intervention information on existing case management programmes

NTD	Year programme started	Total woredas targeted	No. of woredas covered (geographical coverage*)	No. of people covered	Key strategies used	Key partners
TT	2003	689	358 (52.0%)	117,087 (2015)	TT surgery	TCC, ITI, Orbis, LfW, FHF, GTM, RTI, MfM, WHO
Lymphatic Filariasis	--	--	--	--	Lymphedema management, Hydrocele surgery	FPSU, RTI MMDP, SSE
Podoconiosis	2005	345	40 (11.6%)	60,000 (5%)	Lymphedema management, rehabilitation, custom-made shoe provision, health education, psychosocial support, IGA	FPSU, NaPAN, BIG Lottery Fund, WHO
Leishmaniasis	2006	40	30	2837 VL and 342 CL	Surveillance, case detection and management, and health education	WHO, MSF, DNDi, AAU, AHRI, UoG, KalaCore
Dracunculiasis	1994	2	2 (100%)	100%	Active surveillance, Health education, Filter distribution Abate application	TCC, WHO, UNICEF

1.5. Gaps and Priorities

From the data analysis on the country profile and demographics, health system, and NTD programme status, strength, weaknesses, opportunities, and threats (SWOT) analysis of the NTD programme has been conducted. This information is summarized in the table below.

Box 1. SWOT analysis of national NTD programme

Strengths	Weaknesses
• Presence of high level political commitment • Development and launch of national NTD Master Plan • Increased domestic funding for NTDs • Inclusion of NTDs in HSTP • Wide range of funding and implementation partners • Development of NTD Research Network and Symposium to increase operational research capacity • The establishment of NTD unit at FMOH and NTDs expert at regional health bureaus • Existence of Pharmaceutical Logistics Management Unit (PLMU) at FMOH • Prepared Annual MDA calendar • Development of Integrated NT data base • Initiation of National NTDs annual review meeting • Development of disease-specific guidelines • Establishment of coordination mechanism at national level - national taskforce for NTD and technical working groups • Development of NTDs Mater Plan at regional state level • Engagement of HEWs and HDA as community drug distributors • Preparation and distribution of HEW NTD pocket and training manual • High commitment of stakeholders for NTDs (strong partnership with NGOs) • Inclusion of major NTD indicators into the national HMIS.	• Inadequate scale up of intervention • No uniform implementation modality (MDA calendar across regions, etc.) • Inadequate level of integration with other NTDs • Inadequate personnel deployment at all levels • Dependency on external resources • Absence of adequate attention for BCC • Inadequate leadership in some regions • Insufficient allocation of resources for interventions • Inadequate independent post-MDA coverage survey and impact assessments • Inconsistent reporting of adverse reactions • Lack of mechanism for reporting pharmaceutical logistics data from region to federal level • Inadequate coordination with other relevant ministries • Inadequate coordination of WASH and NTD integration. • Limited collaboration with Ministry of Education in integrating NTDs within training curriculum. • Low knowledge and skill of health providers on NTDs. • Weak NTD operational research capacity. • Unsatisfactory reduction in trachoma prevalence as evidenced by trachoma impact assessments. • Low knowledge and skill of health providers on NTDs.
Opportunities	**Threats**

Strengths	Weaknesses
• Improved donor interest towards NTD control and elimination • Ongoing, committed, large-scale drug donations • Expansion of health service coverage for increasing access and integration • Universal Primary and secondary education • Villagization and settlement of pastoralist communities • Fast economic growth • ONE WASH coordination office	• Harmful traditional practices and misconceptions • Inadequate latrine coverage and utilization • Inadequate safe water coverage • Inadequate behavior and attitudinal change • Cross-border and internal population movement • Climate change affecting vector population and disease trends • Late response and uncertainty on donor side for committed resources • Seasonal inaccessibility to monitor eradicable NTDs such as GWD • High level of stigma and discrimination against people affected by NTDs. • Shortage of drug donation for certain age groups (adults and children under five) • Possible community fatigue due to extended MDA.

Strengths and limitations in the 1st National NTD Master Plan (2013 - 2015)

The country's first NTD Master Plan was launched in Addis Ababa in 2013 and covered the period 2013 – 2015.

The most significant successes resulting from the 1st edition include:

a. Further increase in government leadership
b. Swift scale up of NTD interventions
c. Completion of mapping of most of the NTDs and clear understanding of the disease burden
d. Establishment of NTD team at FMOH
e. Participation and collaboration of stakeholders in preparation of the Master Plan
f. Launch of the Master Plan in Addis Ababa which increased high level advocacy
g. Mobilization of funds and drug donation
h. Enabling preparation of NTD Master plan at regional levels
i. Critical gaps to ensure success and high impact identified (e.g. integration with WASH)
j. National action plans and technical guidelines developed and put into practice

The areas for potential improvement from the 1st edition include:

a. Development of an Implementing MDA calendar
b. Further scale up of MDA to cover all endemic districts
c. Inclusion of morbidity management and disability prevention
d. Regular alignment of work plans with partners and stakeholders
e. Developing and putting into practice a guide for documenting and disseminating best practices
f. Strengthening coordination among stakeholders
g. Inclusion of key indicators in the HMIS for every NTD
h. Improve monitoring and evaluation and operational research of NTD programmes
i. Strengthen integration and collaboration with relevant programmes and sectors, e.g. malaria, WASH [29]

The current research and knowledge gaps and priorities for the national programme s for NTDs are outlined in Box 2, below.

Box 2. Gaps and priorities

Category	Gaps	Priorities
Planning	• Unavailability of HR structure/position for NTDs at all administrative levels • Inadequate indicators for NTDs in HMIS, e.g. face washing • Insufficient government budget for NTD programme activities • Inadequate joint planning of NTD Programme with stakeholders and partners • Incomplete mapping/disease burden assessment (trachoma, Oncho, STH/SCH, hydrocele, lymphedema, VL) • Uncertainty over funding landscape post current grants	• Align regional and partners' plans with the federal plan • Advocate and lobby for increased government budgeting for NTDs, inclusion of all relevant NTD indicators in HMIS, and institution of functional HR/structures at all levels within the FMOH and regions • Completion of mapping and burden assessment • Commence planning for transition once current grants expire
Coordination and management	• Weak collaboration and integration with other programmes and sectors, e.g., WASH, malaria • Inadequate integration between NTD programmes • Inadequate government leadership and coordination at regional levels	• Strengthen and harmonize co-ordination and integration mechanisms at all levels • Strengthen advocacy
Partnership	• Inadequate effort to diversify financial resource mobilization and acquire international experience	• Continuous identification, sensitization and nurturing of donors and partners

Category	Gaps	Priorities
Implementation of interventions	• Low coverage of interventions for trachoma, Podo, Leishmaniasis • Low coverage of lymphedema morbidity management • Inadequate skills and knowledge in applying FMOH's Health Education, Sensitization, Advocacy and Mobilization (HSAM) strategy • Inefficient NTD commodities supply chain management system • Under supply of donated NTD drugs such as PZQ • Non-existence of PZQ formulation for under five children	• Sustain coverage of interventions • Build capabilities/skills on health communication • Mainstream NTD drugs supply chain management within PFSA • Advocate for adequate supply of donated drugs and manufacturing pediatric PZQ formulation • Advocate for donation of PZQ and MEB for adult populations • Advocate for morbidity management of LF, podoconiosis and CL
Surveillance, monitoring and evaluation	• Incomplete mapping of trachoma in Gambella and Somali regions, and STH/SCH in a few woredas of Somali region and Afar • Incomplete burden assessment of lymphedema and hydrocele cases • Inadequate documentation and reporting mechanism	• Completing trachoma mapping in Gambella and Somali and STH/SCH mapping in Somali and Afar • Complete burden assessment in LF and Podoconiosis endemic woredas • Strengthen documentation and reporting mechanism for NTDs in the HMIS/IDSR at all levels, including through EPHI.

PART 2: NTD STRATEGIC AGENDA

2.1 Overall NTD Programme Mission and Goals

Strategic agenda for NTD

The national NTDs Master Plan envisages the attainment of an NTD free Ethiopia through the concerted efforts of the government of Ethiopia in a strengthened partnership with national, regional and international development partners and the meaningful participation of the community.

Overall NTD programme goals

Vision: To see an NTD-free Ethiopia so as to contribute to the national vision of "healthy, productive and prosperous Ethiopians".

Mission: To ensure the implementation of an integrated NTD strategy so as to control, eliminate, and eliminate neglected tropical diseases in Ethiopia.

Strategic Goal: To reduce the burden of NTDs using innovative, high-quality and cost-effective approaches that lead to the achievement of the set national programme targets.

2.2 Guiding principles and strategic priorities

The review and update of the 2016-2020 master plan was prepared based on the following guiding principles: Government ownership and leadership, evidence-based, consultative processes, transparency, inclusiveness, and community engagement.

In order to achieve the above NTD goals, the national programme focuses on four strategic priorities:

Strategic priority 1: Strengthen government ownership, advocacy, coordination and partnerships;

Strategic priority 2: Enhance planning for results, resource mobilization, and financial sustainability of national NTDs programmes;

Strategic priority 3: Community empowerment, scaling up access to NTD interventions, and health system strengthening

Strategic priority 4: Enhance NTD monitoring and evaluation, surveillance, and operational research.

The table shown below (Table 10) summarizes the four strategic priorities with their respective strategic objectives.

Table 10 Strategic framework summary

Strategic priorities	Strategic objectives
1. Strengthen government ownership, advocacy, coordination and partnerships	**1.** Strengthen the management and coordination mechanisms for the NTDs programme at national and subnational levels
	2. Strengthen and foster partnerships for the prevention, control and elimination of targeted NTDs
	3. Strengthen advocacy, awareness and effective implementation of targeted interventions through best practices and sharing of lessons
	4. Strengthen the advocacy, visibility and profile of NTD prevention, control, and elimination interventions at all levels

Strategic priorities	Strategic objectives
2. Improve planning for results, resource mobilisation, and the financial sustainability of National NTDs programme	**5.** Develop and update national NTD annual work plan, NTD guidelines and tools to support programme implementation
	6. Reinforce resource mobilization approaches and strategies at all levels for NTD interventions
	7. Support regional states to update documentation on regional NTD operations
	8. Strengthen integration and linkage of NTD programmes with other health programmes (malaria, HIV and AIDS, WASH, nutrition programme, polio eradication, etc.)
3. Community empowerment, scaling up access to NTD interventions and health system strengthening	**9.** Scale up an integrated preventive chemotherapy approach, including access to LF, STH, onchocerciasis, schistosomiasis and trachoma interventions
	10. Strengthen case-management-based NTD interventions including integrated packages
	11. Strengthen integrated vector management for targeted NTDs
	12. Strengthen capacity at all levels for NTD programme management and implementation.
	13. Strengthen community participation through the HDA
	14. Accelerate the implementation of disease burden assessments and integrated mapping of NTDs
	15. Strengthen the pharmaceutical supply chain management system
	16. Enhance the integration of NTD control within the PHC to ensure the sustainability of the programme/s
4. Strengthen NTDs monitoring, evaluation, surveillance, operational research and pharmacovigilance	**17.** Strengthen the monitoring of national NTDs programme performance and outcomes
	18. Strengthen the surveillance of NTDs and re-enforce the response to epidemic-prone NTDs; in particular, leishmaniasis
	19. Support operational research and documentation of evidence to guide innovative approaches to NTD programme implementation.
	20. Establish integrated data management systems and support impact analysis for NTDs
	21. Strengthen Pharmacovigilance in NTD control activities

2.3 National NTD Programme Goals, Objectives, Strategies and Targets

The national NTD prevention and control programme brings together a number of disease specific interventions and programmes. Integration is promoted as a cost-effective approach to maximize use of limited resource and to avoid missed opportunities. Table 11 below states the summarized global and/or national disease specific goals, objectives, strategies, and delivery channels for each NTD.

Table 11 Summary of disease specific goals and objectives

NTD global goal	National goal	Objectives	Strategies	Delivery channels
Eliminate blinding Trachoma by 2020	Eliminate blinding trachoma by 2020	In target woredas reduce: **a.** TF to <5% among children aged 1 – 9 years; **b.** TT to <1% among people aged 15 years and older (or <0.1% among the general population).	SAFE	• Health facility based, outreach and mobile teams for TT surgery; • Community based MDA through HEP and HDA, • Schools
Interrupt transmission of Onchocerciasis by 2020	Interrupt transmission of Onchocerciasis by 2020	In all target woredas: **a.** Reduce prevalence among exposed children (<10 years) to <0.1%; **b.** Reduce and maintain fly infection rate at <0.05%; **c.** Increase and maintain treatment coverage at 80% and over in at risk populations; **d.** Increase and sustain geographic coverage at 100%	• Biannual or annual MDA using Ivermectin; • Health education • Vector control in isolated areas based on feasibility	Community based MDA through HEP and HDA
Eliminate Schistosomiasis to a level where it is no longer a public health problem by2025	Eliminate SCH to a level where it is no longer a public health problem by 2020	In all target woredas achieve: **a.** 100% geographical coverage with MDA; **b.** Attain and sustain >75% therapeutic coverage; **c.** Decrease intensity of infection by 65-90% from baseline.	• Annual school-based deworming using PZQ; • Expansion of treatment to adults where appropriate/feasible • Health education and promotion; • Collaboration with WASH sector to improve access and utilization of safe water and sanitation services; • Operational research on feasibility and effectiveness of vector control for the elimination of SCH.	School based MDA and PHCU. Explore appropriate approaches for treatment of adults.

NTD global goal	National goal	Objectives	Strategies	Delivery channels
Control Soil-Transmitted Helminths as a public health problem by 2020	Control STH to a level where it is no longer a public health problem by 2020	By 2020 in all target woredas achieve: • 100% geographical coverage with MDA; • Attain and sustain>75% therapeutic coverage; • Reduce heavy and moderate infection intensity to less than 1%.	• Annual school-based deworming using Mebendazole or Albendazole; • Integrate with on-going pre-SAC, adolescents and adult deworming undertakings; • Explore opportunities for expansion of treatment to adults • Promotion of social behaviour change; Collaboration with WASH sector to improve access and utilization of safe water and sanitation services. • Operational reseawwwwwwwwwwwwwwwrch on feasibility and effectiveness of elimination of STH	School based MDA and PHCU. Explore appropriate approaches for treatment of adults.
Eliminate Lymphatic Filariasis by 2020	Eliminate lymphatic filariasis by 2020	By 2020 in all endemic woredas: Increase and maintain treatment coverage at 65%; • Increase and sustain geographic coverage at 100%; • Improve access to hydrocele surgery services to 85%; • Ensure 100% access to lymphedema management.	• Annual MDA using Mectizan and Albendazole; • Hydrocele Surgery; • Lymphedema Management • Vector control (indoor residual spraying and LLIN	• Community based MDA through HEP and HDA • PHCU and Hospitals
Podoconiosis elimination	Eliminate podoconiosis by 2030	By 2020: • Ensure 100% access to lymphedema management in all endemic woredas; • Ensure 70% regular shoe wearing and proper foot hygiene practice in all endemic woredas	• Lymphedema management; • Health education and promotion; • Psychosocial support.	PHCU, hospital

NTD global goal	National goal	Objectives	Strategies	Delivery channels
Leishmaniasis control	Control Leishmaniasis by 2020	• Maintain case fatality rate due to VL to less than 3%; • Scale up VL treatment centers from 18 to 30 facilities in endemic districts • Scale up CL treatment	• Increase access to early diagnosis and treatment; • Improve diagnostic and treatment skills; • Conduct operational research on prevention of Leshimaniasis • Strengthen disease surveillance; • Health education and promotion; • VM (indoor residual spraying and LLIN); • Conduct clinical trial on treatment of CL and use evidence to Increase treatment of severe CL cases from 8 to 80 health facilities in endemic districts by 2020.	• PHCU, hospitals • Academia and research institutes
Guinea worm eradication by 2020	Certification of Ethiopia as GWD free by 2020	Interrupt indigenous Guinea worm disease transmission by 2017	• Active surveillance in endemic districts; • Passive surveillance; • Community awareness on GWD and cash reward; • Documentation of GWD data at all levels.	HEP and HDA, GW officers

2.4. National Milestones

The following tables show the national milestones for each NTD over the coming five-year period

Table 12 Blinding trachoma elimination milestones 2016–2020

Indicators		2016	2017	2018	2019	2020
1	Complete mapping of trachoma in the remaining districts of Afar and Ethiopia Somali regions	20 (100%)	-	-	-	-
2	Scale up geographic coverage of SAFE interventions in trachoma endemic districts	550 (83.6%)	657(100%)	657(100%)	657(100%)	657(100%)
3	Maintain the optimal therapeutic coverage for control of trachoma in every intervention district	>80%	>80%	>80%	>80%	>80%
4	Conduct first impact assessment activities in all trachoma districts which achieved the recommended round of treatment	149	47	175	199	110
5	Target of number of districts that have achieved elimination of blinding trachoma (cumulative)	149	196	371	570	657
6	Number of districts which have commenced trachoma surveillance surveys following elimination (cumulative)	149	196	371	570	657
7	Scale up trachomatous trichiasis surgery and clear TT backlog in all endemic districts (remaining back-log)	650,845	155,000	67,500	52,500	30,000

Table 13. Onchocerciasis elimination milestones 2016-2020

Indicators		2016	2017	2018	2019	2020
1	Completed mapping/delineation of onchocerciasis and determined endemic areas and the population at risk (woredas)	839 (100%)				
2	Number of woredas where MDA has commenced, including LF co-endemic areas	188 (100%)				
3	Achieved100% geographical coverage of MDA in onchocerciasis endemic woredas	(100%)	(100%)	(100%)	(100%)	(100%)
4	Conducted more than 10 rounds of MDA in endemic woredas with regional coverage of 80% and over	8	31	18	36	95
5	Conducted programme evaluation (impact assessment) in endemic woredas after at least 10 rounds of MDA	4	31	18	36	95
6	Conducted and passed epidemiological and entomological assessment in woredas	4	31	18	36	95
7	Proportion and number of woredas where treatment has been stopped					188
8	Present "dossier" or in-country verification of absence of transmission	-	-	-	-	1

Table 14. Schistosomiasis elimination milestones 2016–2020

Indicators		2016	2017	2018	2019	2020
1	Completed mapping of SCH in remaining woredas and determine areas above intervention threshold (woredas)	839 (100%)				
2	Commenced implementation of school-based/community-based treatments in endemic woredas, woreda (%)	143 (100%)	193 (100%)	230 (100%)	193 (100%)	62 (100%)
3	Conducted 3-5 years of consecutive treatments in all endemic woredas with regional/State coverage of over 75%, woredas woreda (%)	-	60 (100%)	60 (100%)	60 (100%)	60 (100%)
4	Conducted first impact assessment activities in SCH endemic woredas after at least 3 years of consecutive treatment			100%		100%

Table 15. Soil-transmitted helminthes control milestones 2016-2020

Indicators		2016	2017	2018	2019	2020
1	Completed mapping of STH and determined areas above intervention threshold and the total number of endemic woredas	839 (100%)				
2	Begun implementation of school-based/ community-based treatments in endemic woredas	475 (100%)	475 (100%)	475 (100%)	475 (100%)	475 (100%)
3	Conducted 3-5 years of consecutive treatments in all endemic woredas with regional/State coverage of over 75%	-	475 (100%)	475 (100%)	475 (100%)	475 (100%)
4	Conducted first impact assessment activities in STH endemic woredas after at least 3 years of consecutive treatment			100%		100%

Table 16. LF elimination milestones 2016-2020

Indicators		2016	2017	2018	2019	2020
1	Completed mapping of LF and determined LF endemic areas and the population at risk	786 (94%)	8 3 9 (100%)			
2	Proportion of endemic woredas where burden assessment is fully completed	40 (57.1%)	30 (42.9%)			
3	Begun implementation of LF MDA in districts requiring LF MDA	70 (100%)				
4	Achieving100% geographical coverage in LF endemic districts	70 (100%)				
5	Conducted more than 5 rounds of MDA in all endemic woredas with regional/State coverage more than 65%	0	5	17	17	31
6	Conducted first TAS activities in all of LF endemic woredas after at least 5 rounds of MDA (Number of woredas)	0	5	17	17	31
7	Conducted and passed at least 2 TAS activities in 75% of woredas	-	-	-	5 (4.5%)	17 (15%)
8	Present "dossier "for in-country verification of absence of LF transmission	-	-	-	-	1

Indicators		2016	2017	2018	2019	2020
9	Number and percentage of woredas where there is full coverage of morbidity- management services and access to basic care	34 (48.6%)	56 (80%)	70 (100%)	70 (100%)	70 (100%)
10	Number and percentage of woredas where 75% of hydrocele cases benefitted from appropriate surgery	10 (14.3%)	40 (57.1%)	70 (100%)	70 (100%)	70 (100%)

Table 17. Podoconiosis elimination milestones 2016-2020

Indicators		2016	2017	2018	2019	2020
1	Completed mapping of Podoconiosis and determined endemic areas and the population at risk (woredas)	775 (100%)				
2	Number and percentage of endemic woredas where burden assessment is fully completed	60 (17%)	120 (35%)	165 (48%)		
3	Number and percentage of individuals with shoe wearing practices in endemic woredas	12m (35%)	14 m (40%)	17.5m (50%)	21m (60%)	24.5 m (70%)
4	Number and percentage of woredas where there is full coverage of morbidity- management services and access to basic care	60 (17%)	120 (35%)	220 (64 %)	300 (87%)	345 (100%)
5	Number and percentage of individuals with proper regular foot hygiene practice in endemic woredas	10.5 m (30%)	14 m 40%	17.5m 50%	21 mill 60%	24.5m 70%
6	Number and percentage of endemic woredas with at least one functional patient association	60 (17%)	120 (35%)	220 (64 %)	300 (87%)	345 (100%)

Table 18. Leishmaniasis control milestones 2016-2020

Indicators		2016	2017	2018	2019	2020
1	Active case detection in 100% of highly endemic visceral leishmaniasis (VL) districts	5 (50%)	10 (100%)			
2	Passive case detection in 100% of other endemic districts	40 (100%)	40 (100%)	40 (100%)	40 (100%)	40 (100%)
3	Referral/management of all patients in VL treatment centers	18	20	25	25	30
4	Managed severe and complicated VL cases in referral centers	5 (100%)				
5	Scale up facilities providing severe and complicated CL treatment	10 (12.5%)	25 (25%)	45 (56%)	65 (81%)	80 (100%)
6	Conducted clinical trial on treatment of CL	-	3	-	-	-
7	Rollout of SSG-PM combination therapy for treatment of visceral leishmaniasis in all treatment sites	18	20	25	25	30
8	Implement vector management for prevention of VL in all endemic woredas	40 (100%)	40 (100%)	40 (100%)	40 (100%)	40 (100%)
9	Conduct Leishmania prevalence survey	-	1	-	-	-

Table 19. Dracunculiasis (GWD) elimination milestones 2016-2020

Indicators		2016	2017	2018	2019
1	Active case detection in 100% of Highly endemic woredas	2 (100%)	2 (100%)	2 (100%)	2 (100%)
2	Passive case detection in 100% of other non-endemic woredas	839 (100%)	839 (100%)	839 (100%)	839 (100%)
3	Manage all patients/suspected cases in peripheral health facilities (Case containment centre [CCC] for GWD)	100%			

PART 3: OPERATIONAL FRAMEWORK

3.1 Community Empowerment

Community empowerment and mobilization are central to NTD prevention and control. They are even more important in the present phase of Ethiopia's NTD programme effort towards elimination. Success in achieving the health related sustainable development goals (SDGs) requires active and meaningful participation and ownership by communities and strong partnerships between households and health workers. Information, Education and Communication are key components of community empowerment and mobilization.

The Health Extension Programme educates, mobilizes, and involves the community in all aspects and stages of NTD control and elimination which leads to increased ownership of the programme. It is recognized that it is only at the community level that the elimination will be achieved. This will be effected through the health extension programme through the health development army; a new initiative which creates a network of health workers and volunteers to expand the best practices in health on a large scale. With the help of the Health Extension Workers, the health development army members will conduct regular meetings, identify bottlenecks in the prevention, control and elimination activities and fill identified gaps as per the discussion. The health development army, under its network and development teams, mobilizes communities on the uptake and utilization of NTDs services, including for MDA campaigns, health education, environmental management including utilization of LLINs and improvement of health seeking behaviour. By conducting these activities in a sustainable manner, it is possible to create a resilient and empowered community.

The community mobilization through HEP and HDA will be complemented with integrated social behaviour change communication (SBCC). SBCC materials will be customized and prepared based on previously identified gaps at the community level. IEC/BCC provides information and skills to populations at risk of the diseases so that they can make informed decisions and participate in prevention, treatment, and control and/or elimination activities.

In particular, information communication education (IEC) /SBCC raises community awareness about the signs and symptoms of the diseases, encourages early health-seeking behaviour and treatment compliance and creates/increases demand and utilization of services. The overall goal of integrated IEC/SBCC interventions is to increase community understanding, mobilize resources and guarantee sustainable results. This is done through a variety of media and other channels including mass media, interpersonal communication (especially from health extension workers), participatory communication (including community dialogue), and social mobilization (particularly during drug distribution campaigns).

3.2 NTD interventions

The NTD interventions consist of three important packages:

- Preventive chemotherapy (PC)
- Intensive disease management
- Disease transmission control
- Vector and reservoir control
- Improvements in sanitation and water quality and supply

3.2.1 Scaling up preventive chemotherapy interventions

Box 3. Ethiopian annual mass drug administration and school-based deworming schedule

SN	Programme	Round One	Round Two	Remarks/Justification
1	Trachoma – Community-based MDA	Second week of November		• This avails an adequate time interval between MDAs for Trachoma and other PC-NTDs
2	Onchocerciasis and Lymphatic filariasis, Onchocerciasis /LF co-endemic– Community-based MDA	Second week of October	First week of April	• Lymphatic filariasis endemic districts included in Round Two MDA will be integrated with STH so as to increase efficiency and reduce the quantity of albendazole tablets required. • Round One onchocerciasis MDA will be undertaken with or without albendazole integration depending on STH endemicity.
3	Schistosomiasis and STH – School and community based deworming	Second week of October	First week of March [Round Two ONLY for STH in twice a year endemic woredas]	• Scheduling at these time ensures covering all school age children and will further help children to stay healthy and learn better throughout the school year

Preventive chemotherapy is a package of activities for the mass distribution of drugs to the right target population. The package of activities during preventive chemotherapy includes programme coordination, HSAM, census of target population, training, drug distribution, and M&E. There will be a variation in the type and number of the drug combination distributed at a particular time depending on the type of diseases targeted and their co-endemicity in a given woreda, and the national goal and strategy. Table 19 summarizes the list of drugs, delivery channels, timing, possible disease combinations and requirements.

Table 20. Types of Mass Drug Administration

Disease Combination	MDA Type	Timing of Treatment	Delivery channel	# of Target Woredas	Requirement
LF, onchocerciasis, schistosomiasis, STH (high prevalence), trachoma	MDA1	March (Week One)	Community based	TBC	Training of health personnel; Training of teachers in addition to health professionals in school based programmes; Social mobilization; Supportive supervision; Production of tools; Logistics for drug distribution and management.
	MDA3	October (Week One)	Community based		
	T1	October (Week Three) (week three)	School based		
	MDA4	March (Week Three)	Community based		
LF, onchocerciasis, schistosomiasis, STH (high prevalence)	MDA1	March (Week One)	Community based		
	MDA3	October (Week One)	Community based		
	T1	October (week Three)	School based		
LF, schistomiasis, STH (high prevalence)	MDA1	March (Week One)	Community based		
	T1	October	School based		
LF, onchocerciasis, STH (high/ moderate prevalence)	MDA1	March (Week One)	Community based		
	MDA3/T3	October (Week One)	Community based		

Legend:

MDA1 = Ivermectin + Albendazole

MDA2 = DEC+ Albendazole

MDA3 = Ivermectin only (CDTI)

MDA4 = Azithromycin only

T1 = Praziquantel + Albendazole or Praziquantel + mebendazole

T2 = Praziquantel only

T3 = Albendazole or mebendazole only

The geographical access to PC interventions will be at scale so as to achieve the set goals of the national NTD programme. The table below (Table 21) summarizes the planned activities with the timeframe and resources needed to scale up the PC interventions in the respective target woredas.

Table 21 Activities for Strategic Priority 1 –Scale Up Access to PC Interventions

Activity	Details (sub-activities)	Timeframe	Resources needed
Strategic Priority 1: Scale up an integrated preventive chemotherapy approach, including access to interventions for trachoma, onchocerciasis, lymphatic filariasis, soil transmitted helminths, and schistosomiasis			
Supply chain of PC medicines (Ivermectin, Albendazole, Praziquantel, Mebendazole, Zithromax and Tetracycline eye ointment)	Identify treatment regimens for woredas	2016-2020	Annual report, prevalence data, trained HRH
	Estimate MDA drugs required and apply to donation programme/s	2016-2020	Finance, quantifying tools, trained HRH
	Follow up and manage shipping and customs clearance	2016-2020	Finance, vehicles, human resource
	Mainstream distribution to woredas and health centres through PFSA Hubs	2016-2020	Finance, vehicles, human resource
	Delivery/distribution to health centres, health posts	2016-2020	Finance, vehicles, trained manpower
Conduct social mobilization	Train HEWs and HDA	2016 – 2020	Logistics (training manual, audio-visual equipment, and finance and resource person
	Health education, promotion, and advocacy	2016 -2020	Logistic, human resource, finance
Conduct MDA	Train school teachers for school-based distribution	2016 – 2020	Logistics (training manual, audio-visual equipment, finance and resource person
	Train HDA for MDA at community level	2016 – 2020	Logistics (training manual, audio-visual equipment), finance and resource persons
	Distribute trachoma, onchocerciasis, LF drugs at the community facility	2016 – 2020	Finance, vehicles
	Distribute STH/SCH drugs in target schools	2016 - 2020	Finance, vehicles

3.2.2 Scaling up NTD case management interventions

The activities in the case management package include case identification (active and passive) and management of patients of a specific NTD. These encompass advocacy, health promotion, capacity building, mapping cases, provision of medical treatment and surgery, prevention of disability, integrated vector management (IVM), passive and active surveillance, and strengthening intersectoral collaboration and partnership. Table 22 summarizes the list of activities with the corresponding timeframe and resources required to scale up case management interventions for LF, podoconiosis, leishmaniasis and trachoma.

Table 22 Activities for case management interventions

Activity	Details (sub-activities)	Timeframe	Resources needed
Strategic Priority 2: Scale up integrated case-management-based disease interventions, especially against the following (lymphatic filariasis, podoconiosis, leishmaniasis, trachoma and GWD			
Situation analysis/ Planning	Situation analysis/burden assessments to identify the number of hydrocele, lymphedema, leishmaniasis and trichiasis cases	Annually	Finance, tool for assessment, vehicle, trained human resource
	Revise morbidity management guidelines, print and disseminate	2018	Finance, resource person
Medical supply chain management	Quantification and submission of request for donation/procurement, Follow-up shipping and customs clearance; Storage and distribution Streamline pharmaceutical and logistics data recording and reporting system	2016-2020	Finance, vehicle, trained HRH
	Avail adequate numbers of TT sets and supplies for clearing TT backlog	2016-2017	
Capacity Building	Identify training gaps	2016-2020	
	Develop training manuals for CM-NTDs	2016-2020	Finance, ressource person
	Prepare training guidelines and curriculum for in-service training	2016-2017	Finance and resource person
	Prepare comprehensive NTDs training manual for HEWs	2016	
	Provide in-service training on management of podoconiosis and other CM-NTDs for all health providers in endemic districts	2016-2020	Logistics (training manual, audio-visual equipment, and finance and resource person
	Update Integrated Eye Care workers training manual for mid-level health care providers	2016	
	Produce video on morbidity management as training aid and distribute to each health center	2016	Finance, resource persons,
	Develop and distribute rehabilitation, psychosocial counseling and IGA and other training manuals for CM NTDs	2016	Logistics (audio-visual equipment, finance, resource person, ttransportation, fuel, venue; HR Training modules and materials
	Training of health professionals and HEWs on morbidity management and counseling	2016-2020	Logistics (training manual, audio-visual equipment, and finance and resource person
	Conduct training for health care providers and lab personnel on leishmaniasis diagnosis and prevention	2016-2020	Logistics (training manual, audio-visual equipment, and finance and resource person
Social Mobilization	Develop IEC/BCC strategies and materials for advocacy and awareness creation and adoption of positive practice	2016	Finance, resource persons, hall,

Activity	Details (sub-activities)	Timeframe	Resources needed
Scale up of case management activities	Conduct hydrocele campaigns in areas/ districts with high number of hydrocele patients	2016-2020	Finance, human resource
	Desk review of CL treatment	2016	
	Clinical trial for CL	2016-2020	
	Integrate hydrocele surgery, case management for lymphedema and other CM-NTDs into routine health system	2016-2020	TOR, guidelines
	Create access to subsidized custom-made shoes for lymphedema sufferers who can't afford to buy shoes	2016-2020	Finance, shoe
	Establish treatment centers for CM-NTDs in selected health centers and health posts	2016-2020	Finance
	Provide treatment supplies in each treatment center	2016-2020	Finance, soap, bandage, antiseptic and other supplies and kits
	Controlled immersion and bandaging for GWD cases	2016-2020	Logistic supplies for the CCC, medical supplies for regular bandaging
	Conduct TT surgery in static facilities, outreach and mobile team approach	2016-2017	
	Train graduating health care professionals on morbidity management, counseling, case detection, and referral	2016-2020	Finance, resource persons
Surveillance, monitoring, and evaluation	Standardization of the integrated database tool; Capacity building (M&E officers) on CM-NTDs Conduct survey on recurrence of TT surgery at 6 months and one year, validate data	2016-2020	Budget, HRH

Table 23 below summarizes crosscutting interventions for targeted IDM NTDs, requirements and integration with non-NTD programmes.

Table 23. Case management and chronic care

Cross-cutting interventions	NTDs targeted	Requirements	Other non-NTD opportunities for integration
a. Surgery • Hydrocele surgery (hydrocelectomy); • Trichiasis surgery	• Hydrocele due to lymphatic filariasis; • Trichiasis due to trachoma	• Training of medical doctors, health officers, and nurses; • Provision of surgical kits; • Hospitals or appropriate primary health care units with good surgical facility; • Follow-up and supervision.	Capacity building for basic surgery skills at the district level
b. Lymphedema management	• Lymphedema due to LF and podoconiosis	• Training of health officers, nurses, HEWs; • Basic medical consumables and hygiene kits; • Essential drugs like antibiotics, analgesics, antipyretics; • Follow-up and supervision.	Drugs and medical supplies for regular health services.
c. WASH	• Trachoma, STH/ SCH	• Engaging communities; • Integration with water, hygiene and sanitation interventions; • Joint follow-up and supervision.	Membership in multi-sectoral WASH coordination committees at national and regional levels; School health programmes.

3.2.3 Scaling up NTD transmission control interventions

Transmission control for NTDs is a cross-cutting intervention for both vector-borne and other diseases. The NTD transmission control interventions are complementary to preventive chemotherapy and case management. They should be conducted in all NTD endemic woredas. These activities include vector control and environmental measures. Table 24 summarizes the key interventions packages identified for transmission control.

Table 24 Intervention packages for transmission control

Cross-cutting interventions	Targeted NTD	Requirements	Other non-NTD opportunities for Integration
Long-lasting insecticide nets (LLIN)	LF, leishmaniasis	Identifying co-endemicity, funding	Malaria prevention and control
Indoor residual spraying (IRS)	LF, leishmaniasis	Insecticides, funding	Malaria prevention and control
Larvicide spray	Schistosomiasis, onchocerciasis, LF, Guinea worm disease	Larvicidals such as Temephose/ Abate chemical	Malaria prevention and control
Environmental management	Trachoma, STH/SCH, LF, podoconiosis	Social mobilization; Community engagement	Malaria prevention and control, development projects, WASH interventions.

The key intervention packages for transmission vector control can vary and overlap for the various targeted NTD. To this end, various categories of interventions will be explored for the disease groups. Table 25 below summarizes the activities for disease transmission control.

Table 25. Activities for disease transmission control

Activity	Details (sub-activities)	Timeframe	Resources needed
Strategic Priority 3: Strengthening transmission control including integrated vector management and environment measures			
Developing Tools	Co-ordinate with the malaria/IRS programme; Develop/revise integrated vector management guidelines	2016	Finance, resource person
Training	TOT on integrated vector control and environmental management	2016 – 2018	Finance, Training modules/ guidelines, resource person
	Cascade integrated vector control and environmental management training	2016 – 2020	Finance, Training modules/ guidelines, resource person
	Training of spray operators	2016 – 2020	Finance, Training modules/ guidelines, resource person
Procurement of supplies	Procure integrated vector management relevant medical and non-medical supplies and equipment	2016 – 2020	Spray pumps, insecticides, etc.
Community sensitization and mobilization	• Develop IEC materials for use by integrated vector management environmental measures • Orientation to HEWs and HDA on proper use of IEC materials	2016 – 2020	Finance, IEC materials
	• Advocacy for policy makers • Community sensitization, awareness creation and mobilization	2016 - 2020	

Vector control (VM)	• Baseline studies (entomological and epidemiological)	2016 – 2020	Finance, resource person
	• Micro planning and TOT workshop	2016 – 2020	Finance, equipment and supplies
	• Spraying, supervision and monitoring	2016 – 2020	
	• Operational research on vector control and prevention of leishmaniasis, schistosomiasis, onchocerciasis & lymphatic filariasis	2016-2017	
	• Operational research on the impact of Temephos against guinea worm and snails, including malaria	2016 – 2020	
Monitor and evaluate quality of IRS and impact of ongoing IRS and LLINs (IVM) activities	Monitor quality of IRS using bio-assay tests	2016 - 2020	Monitoring tools, transportation, allowances, equipment and supplies
	Evaluation studies (Entomological, Epidemiological and post IRS)	2016 - 2020	Evaluation tools, transportation, allowances, equipment and supplies
Disseminate IVM reports	Collection of relevant information, compilation, production and distribution of reports	Twice per year	Stationery, allowances, Transportation, airtime

Intervention package for environmental improvement, supply of safe drinking water, and sanitation

Cross-cutting interventions	Targeted NTD	Requirements	Other non-NTD opportunities for Integration
Partnership for water supply improvement	Trachoma, STHs, Schistosomiasis, GWD	MoU between stakeholders	Water development partners
Partnership for sanitation improvement	Trachoma, STHs, Schistosomiasis, Podoconiosis, GWD	MoU with donors	WASH programme such as government wash structure
Social mobilization	All NTDs	Fully utilizing existing structure and Media	Strong structure and tools at community levels (Development team, HEWs, HDA)
Health promotion	All NTDs	Media, experience from other programmes	Radio and TV programmes on health, school health

Activity	Details (sub-activities)	Timeframe	Resources needed
Strategic Priority4: Strengthening integrated vector management and other interventions for the GWD			
Abate® chemical application in targeted ponds for dracunculiasis eradication	Selection and measurement of ponds to be treated with Abate® chemical	2016-2020	Skilled HR, Abate® chemical (Temephos) and measuring devices

3.3 Programme Management and Implementation

Strengthening of programmatic capacity is needed for scale up and to achieve the control and elimination goals. The list of activities planned to be undertaken to ensure building of the required capacity are given in Table 26.

Table 26. Activities and resources needed for strengthening capacity for the NTD programme

Strategic priority 5. Strengthening capacity at the national level for NTD programme management and implementation			
Activity	**Details (sub-activities)**	**Timeframe**	**Resources needed**
Training 1. NTD programme management 2. Equipment use 3. Disease surveillance (Trachoma, Onchocerciasis, SCH/STH, LF) 4. TT surgery 5. Lymphedema morbidity management 6. Hydrocele surgery 7. Leishmaniasis case management and laboratory techniques 8. Integrated refresher training for HEWs 9. Integrated database management (Federal and regional) 10. TIPAC	• Prepare/customize training manuals • Identify resource persons • Conduct training • Review training	2016 and as appropriate afterwards	Finance, resource persons
Provision of supplies and logistics • Computer, software, printers, vehicles, TT surgical kits, hydrocele surgical kit, Kato Katz, consumable supplies	• Forecast • Procure • Import • Distribute	2016 and onwards	Finance, resource persons
Experience sharing and networking	• Capacity needs assessment • Working visits to nearby countries (e.g. vector control in Uganda and Sudan, de-worming in Kenya) • Cross-border meetings • NTD scientific stature workshop (e.g. abstract writing skills, preparing papers for publications) • Explore international workshops and conferences • Participate on the workshops/ meetings • Document and disseminate best practices	2016-2020	Finance, resource persons

Based on the identified priority areas for initiating programme activities as outlined in the sections above, the scaling up/scaling down plan is highlighted in Tables 27 and 28 below.

Table 27 Scaling up/scaling down plan for PC interventions

NTD	Total # of woredas requiring MDA	Total at risk population (2015)	2016 # of woredas and total popn to be treated	2017 # of woredas and total popn to be treated	2018 # of woredas and total popn to be treated	2019 # of woredas and total popn to be treated	2020 # of woredas and total popn to be treated
PC implementation (MDA)							
Trachoma	657	75.0 million	550 69.4 million	531 66.6 million	484 62.3 million	309 40.7 million	110 14.9 million
Onchocerciasis	188	17 million	188 (14.3 million)	180 (13.7 million)	164 (12.5 million)	126 (9.6 million)	89 (7million)
Schistosomiasis	385	38.3 million	103 (4.5 million)	190 (7.7 million)	228 (8.7 million)	190(7.7 million)	60 (2.3 million)
STH	475	81 million	471 (27.3million)	471 (27.3million)	471 (27.3million)	471 (27.3million)	471 (27.3million)
Lymphatic filariasis	70	5.6 million	70 (5.6 million)	70 (5.6 million)	66 (5.2million)	49 (3.9million)	32 (3 million)

Table 28 Scaling up/scaling down plan for IDM

NTD	Total # of woredas requiring case management	Total at risk population	No. woredas and total popn to be treated	No. woredas and total popn to be treated	No. woredas and total popn to be treated	No. woredas and total popn to be treated	No. woredas and total popn to be treated
IDM implementation							
		2015	2016	2017	2018	2019	2020
LF – lymphedema management	70	5.6 million	34	56	70	70	70
LF - hydrocele surgery	70	5.6 million	10	40	70	70	70
Podoconiosis	345	34.9 million	60	120	220	300	345
VL	40	3.2 million	40 (2,700)	40 (2,700)	40 (3,000)	40 (3,000)	40 (3,000)
CL	170	29 million	170 (1,250)	170 (1,562)	170 (2,000)	170 (2,500)	170 (3,000)

3.4 Planning, Resource Mobilization and Financial Sustainability

Enhanced planning helps to ensure identification of the best strategies for NTD resource mobilization, nurturing partnerships and financial sustainability, thereby enhancing an enabling environment that will suit resource mobilization for the multiyear comprehensive NTD plan. The table below (Table 29) describes the list of activities with corresponding timeline and resources needed to implement strategic priority interventions.

Table 29. Activities for enhancing planning for results, resource mobilization, and financial sustainability of national NTD programme s

Activity	Details (sub-activities)	Timeframe	Resources needed
Strategic Priority 1: Develop and update national NTD policies, guidelines and tools to support active policy and programme			
Strengthen strategic and annual NTD planning process integrated with One Plan Principle	• Organize NTD planning meeting	2016-2020	Logistics supply Finance HR
Develop disease specific NTD guidelines/manuals, and SOPs	• Conduct consultation and review meetings	2016-2020	Finance, resource persons
	• Print and disseminate the national guidelines (LF and Podo MMDP, STH/STH Action plan, Oncho elimination guidelines, TAP)	2016-17	
Strategic Priority 2: Enhance resource mobilization approaches and strategies at all levels for NTD interventions			
Develop disease specific and/or integrated proposals	• Identification of resource personnel • Identification of potential donors	Annual	Finance, logistics, HR
Linking/integrating NTDs financing to the whole health sector financing system	• Hold joint meeting with Policy and Planning Directorate • Prepare harmonized financial plan	Annual	Finance, logistics, HR
Enhance community involvement and participation/contribution	• Conduct sensitization meeting at different administrative levels • Orient HEWs and HDA	Annual	Finance, logistics, HR
Strengthen public-private partnership	• Establish public-private partnership taskforce	2016	Finance, logistics, HR
	• Conduct regular taskforce meeting	Bi-annual	
Strategic Priority 3: Support regional states to update regional NTD documents			
Support regions to adopt NTDs policies and guidelines with special focus on the emerging regions	Assign resource persons to organize regional consultation meetings	2016-2020	Finance,
Provide technical assistance/ capacity building in developing regional master/action plans and SOPs	• Identify resource personnel • Assist regions to organize regional planning meeting	Annual	Finance, logistics, HR
Strategic Objective 4: Strengthen integration and linkage of NTD programmes with other health programmes (malaria, HIV and AIDS, WASH, nutrition programme, etc.)			
Ensure integration of NTDs with other health programmes	• Establish technical working group	2016	Finance, logistics, HR
	• Conduct regular meeting	Biannual	
Incorporate NTDs into health extension package	• Conduct consultation meeting	2016	Finance, logistics, HR
	• Organize training	Annual	

3.5 Leadership, Coordination and Partnerships

The implementation of this NTD Master Plan would be coordinated by the National Task Force for NTD (NNTF). The NNTF is composed of all the stakeholders working on NTD in the country, which, among others, include representatives of relevant line ministries, the Regional Health Bureaus, non-governmental development partners, academia and research institutions, UN agencies and donors.

Led by the National NTD Programme Coordinator at the Federal Ministry of Health, the NNTF has an executive committee composed of representatives of the technical working groups (TWG) of the various NTD (National Trachoma Taskforce; Schistosomiasis and Soil-Transmitted helminths TWG, Onchocerciasis, Lymphatic Filariasis, and Podoconiosis TWG; and Leishmaniasis TWG). The FMOH chairs the NNTF and serves as the Secretariat while WHO serves as the Co-Chair and Secretary. The NNTF meets at least once a year to deliberate on progress made in realizing the National NTD Master Plan and review and give direction for challenges and gaps encountered so as to ensure the achievements of the set goals and objectives.

NTD control could be streamlined at the sector level to establish effective longer-term multi-sectoral involvement at various operating levels. The key stakeholders need to ensure that there is sufficient advocacy for the NTD control programmes. The table below (Table 30) describes the list of activities for strengthening ownership, advocacy, coordination, and partnership.

Table 30 Activities for strengthening government ownership, advocacy, coordination, and partnership

Activity	Details (sub-activities)	Timeframe	Resources needed
Strategic Priority 1: Strengthen the coordination mechanism for the NTD control & elimination programme at national and sub-national levels			
Standardize NTD structure	Institute optimal NTD structure at all levels	2016-2017	Finance
Strengthen national NTD Taskforce	• Customize TOR for the various levels • Provide orientation training to members • Hold regular meeting	2016	Finance
Annual review meeting (ARM)	Hold regular integrated NTD programme review meeting	2016–2020	Finance
Strategic Priority 2: Strengthen and foster partnerships for the control and elimination of targeted NTDs at national, regional, district and community levels			
Partner mapping	Desktop review	2016 - 2020	Human resource
TWG meetings	Conduct regular TWG meetings	2016 - 2020	Logistics support Budget
Strategic objective 3: Enhance high level reviews of NTD programme performance and the use of lessons learnt to enhance advocacy, awareness and effective implementation			
Conduct regular ARM for NTD	Identify NTD stakeholders Prepare for ARM Conduct ARM	2016-2020	Budget, human resource, logistics arrangement
Best experience sharing	Documentation of best experience Conduct experience sharing	2016-2020	Budget, HR, logistics

Activity	Details (sub-activities)	Timeframe	Resources needed
Strategic Priority 3: Strengthen advocacy, visibility and profile of NTD control and elimination interventions at all levels			
Sensitization workshop	Plan workshop Prepare tools Conduct the workshop	2016-2020	
Conduct NTD Advocacy	Produce advocacy tools conduct media advocacy	2016-2020	Budget, Expert, media for advocacy

3.6 Pharmacovigilance

The Food, Medicine and Healthcare Administration and Control Authority of Ethiopia (FMHACA) is established to ensure that marketed medicines are safe and of a sufficient quality for the public. FMHACA has the responsibility to investigate safety concerns and take action to prevent and minimize medicine-related harm.

The National Medicine Advisory Committee, which is composed of medical and pharmacy professionals was established by FMHACA to advise and make recommendations on matters relating to pharmacovigilance.

Reporting

Suspected severe adverse event (adverse drug reaction), detected medication errors or product quality defects should be reported to the pharmacovigilance center at FMHACA. Reports can be sent either via:

- The yellow, prepaid report available at the facility **(Annex 2)**
- Telephone 011-5523142 (direct) or 0115524122 (via operator) or 8482 (toll-free line)
- Download report form from website www.fmhaca.gov.etand send via email: regulatory@fmhaca.gov.et and epharmacovigilance@gmail.com.

All severe adverse event (SAE) should be reported. There is a need to emphasize the reporting of suspected SAE to new medicines, serious adverse drug reactions, unexpected reactions and drug interactions. The reporter does not need to prove that there is a causal link between the drug and the adverse reaction. Therefore, uncertainty of the cause and effect relationship should not be a reason for not reporting. Reports relating to medication errors should specify information on the product, sequence of events up to the time of error, work circumstances during error, and type of error. If a medicine has caused an allergy, the FMHACA "Allergy card" **(Annex 3)** is recommended to be used i.e. it should be given to the patient so that he/she will not take that medicine in the future.

Pharmacovigilance experts at the central level enter the incoming reports into the national Pharmacovigilance Database Management System (PVDMS) according to internal routines. The PVDMS evaluates drug safety concerns highlighted by FMHACA and recommends what action is to be taken by the authority. The findings collected through pharmacovigilance activities are used to educate and promote rational, safe and more effective (including cost effective) use of medicines by health professionals and patients.

Reporting timelines

Any AE with at least a reasonable possibility of being related to the registered product should be reported accordingly:

- **Serious** SAE, unexpected and expected, must be reported immediately within 24 hours. Efforts must be taken to send a report that is as complete as possible.

- **Non-serious adverse drug reactions (ADRs)** must be sent within 90 days after he/she granted knowledge of the event.

The national pharmacovigilance system and NTD programme management must ensure satisfactory reporting and management of side effects and adverse events that may be linked to NTD intervention under programme setting. Table 31 below describes the list of activities to strengthening pharmacovigilance.

Table 31. Activities for strengthening pharmacovigilance in NTD programmes

Strategic Priority 1: Strengthen pharmacovigilance in NTD control activities			
Objective	**Activity**	**Timeframe**	**Resources needed**
Enhancing SAE management and reporting	Ensure availability and use of SAE/ADR reporting form and Allergy card at all level	2016-2020	Human and financial resource Logistics support
	Training for health workers on management and reporting of SAE	2016 – 2020	Human and financial resource
	Assure and reassure the public on SAE	2016 – 2020	Human and finance
Prevent or reduce SAE	Training for health workers on rational use of medicines	2016 – 2020	Human and financial resource
	Conduct sensitization workshop with programme managers and other stakeholders including drug regulatory authority on rational use of medicines	2016 - 2020	Human and financial resource
	Monitoring drug supply and rational use	2016 - 2020	Human and financial resources

3.7 Monitoring and Evaluation and Integration within Primary Health Care

FMOH will work with all relevant partners to devise the most efficient and effective method to track indicators on a regular basis and to improve the national data collection and utilization system to the point where these core indicators are collected in a reliable, accurate and timely manner. Outcomes of monitoring exercises will be used during reviews and planning to improve the system for achieving the desired goals and targets.

Impact assessment studies will be conducted periodically to measure progress towards achieving the set objectives.

The M&E section illustrates the indicators for monitoring each disease, a logical framework, and the major M&E activities to be conducted. The table below (Table 32) depicts the list of activities to enhance NTD M&E.

Table 32. Strategic priority 4: enhance NTD monitoring and evaluation, surveillance and operations research

Activity	Details (sub-activity)	Timeframe	Resources needed
Strategic Priority 1: Develop and promote an integrated NTD M&E framework and improve monitoring of NTDs, within the context of national health management information system (HMIS)			
Develop an integrated NTD M&E framework	• Develop and strengthen M&E framework guideline for NTDs • Partners' consultative meeting	Before December 2016	Human and financial resources, integrated NTD database
	• Integrate key NTD indicators with HMIS	2016	
	Strengthen sustainable monitoring of the programme at all level	Continuous/ ongoing	
	Conduct integrated regular supervision and monitoring using a standard checklist	Biannual/Quarter	• Supervision checklist • Human and financial support
	• Develop/customize, produce and disseminate standardized DQA tool • Partners' consultative meeting	2016	Finance, resource person
Strengthen/enhance the monitoring system of NTD programme	Train regional and woreda NTD point persons on M&E and data management	2016, 2018, 2020	Human and financial resources
	Planning meeting to develop annual work plans, at all level	Annual	Human and financial resources
	Conduct annual review of the NTD programme performance at all level	Annually at national level As applicable at regional, zone and woreda levels	Human and financial resources
	Follow-up on the implementation of NTD control interventions as part of the health extension packages	Ongoing	Human and financial resources, logistics
	Enhance integration of NTDs control within PHCU for sustainability	Ongoing	Human and financial resources
Strategic Priority 2: Support surveys and operational research, documentation and evidence to guide innovative approaches to NTD programme interventions			
Strengthen operational research on NTDs	Establish National NTD Research Advisory Committee	2016	• Human and financial resources and logistics
	Conduct annual national NTD research symposium	Annual	• Human and financial resources, logistics
	Identify priority areas and conduct research to strengthen programme implementation	Periodic	• Human and financial resources and logistics • Survey protocol and tools
	Conduct operational research on prevention methods of leishmaniasis	2016-2017	• Human and financial resources and logistics • Survey protocol and tools

Activity	Details (sub-activity)	Timeframe	Resources needed
Establish knowledge management system	Strengthen information sharing mechanism	Ongoing	• Human and financial resources, logistics
	Document and disseminate best practices	Annual (as appropriate)	• Human and financial resources • Data
Strategic Priority 3. Strengthen the surveillance of NTD and response			
Strengthen NTD surveillance and response system	Establish/strengthen active surveillance sites	Ongoing	• Human and financial resource • Logistics
	Enhance to use standard tool for surveillance at all levels	Ongoing	• Human and financial resources • Tools
	Periodic capacity building	Ongoing	• Human and financial resources • Training materials and logistics
	Ensure surveillance and residual interventions activities are incorporated in routine health care delivery	Ongoing	Human and financial resources
Strategic Priority 4. Strengthen integrated data management systems and support impact analysis for NTD as part of the national NTD data management system and plan			
Rollout the WHO integrated NTD database	Capacity building on the Information management system	Periodic	Human and financial resources
Strengthen data management system	Use of standardized data collection tool at all level	Ongoing	Human and financial resources
	Strengthen information flow for all activities to be captured in the WHO integrated NTD database	Ongoing	Human and financial resources
	Strengthen the use of NTD data at all level for decision making	Ongoing	• Human and financial resources • Database
	Conduct Data Quality Assessment	Periodic	• Human and financial resources • DQA tools • Logistics

Activity	Details (sub-activity)	Timeframe	Resources needed
Strategic Priority 5. Strengthen post-intervention surveillance and sustainability			
Conduct post intervention assessment surveys for onchocerciasis	Identify woredas which need impact assessment in each year from the woredas which received annual treatment for 10 consecutive years and biannual treatment for consecutive 5 years	2016 – 2020	MDA historical data
	Conduct post treatment surveillance (PTS) Conduct Impact Assessment Survey (IAS)	2016 - 2020	• Onchocerciasis technical experts and researchers (10 persons per woreda) • Tools and equipment for data collection (lab kits) • Financial resources
	Prepare sites which pass impact assessment for assessment of interruption of transmission (entomological, serological and, if needed, parasitological)	–	• Onchocerciasis technical experts and researchers • Tools and equipment for data collection and analysis
Conduct post-intervention assessment surveys for LF	Identify woredas which need impact assessment in each year	2016 (5 woredas) 2017 – 2020	MDA historical data
	Conduct impact assessment pre-TAS, and TAS 1, 2, and 3	2016 – 2020	• LF technical experts and researchers (per woreda) • Tools and equipment for the data collection (lab kits and reagents)
	Prepare sites who pass the impact assessment for transmission assessment survey	2018 – 2020	• LF technical experts and researchers • Tools and Equipment for the data collection and further analysis

Activity	Details (sub-activity)	Timeframe	Resources needed
Conduct post intervention impact assessment surveys for trachoma	Identify woredas needing impact assessment each year TF 5-9.9% after one round of treatment TF 10.29.9% after 3 rounds of treatment and TF>=30% after 5 rounds of treatment	2016-2020	MDA historical data
	Conduct impact assessment survey		• Trachoma technical experts and researchers • Tools and Equipment for the data collection • Financial support (25 thousand birr per woreda expected)
	Identify woredas for further F&E intervention for the elimination of blinding trachoma	2016-2020	• Technical experts and researchers • Tools and equipment for data collection and analysis
	Conduct district level surveillance in woredas which have achieved the elimination target at 2 years	2016-2020	• Trachoma technical experts and researchers • Tools and Equipment for the data collection • Financial support (25 thousand birr per woreda expected)
	Conduct biannual and annual Trichiasis surgery recurrence survey	2016-2017	• Trachoma technical experts and researchers • Tools and Equipment for the data collection • Financial support (25 thousand birr per woreda expected)
Conduct impact assessment surveys for podoconiosis	Identify woredas for the programme impact assessment • 4 woredas selected per region • 20 woredas selected per region	2017 -2020	Programme specific data
	• Conduct the programme impact assessments • Make informed decision for next level of intervention of the programme	2017 – 2020	• Programme specific survey tool • Experts on podoconiosis • Financial support

Activity	Details (sub-activity)	Timeframe	Resources needed
Conduct post intervention assessment surveys for STH/SCH	Identify sentinel sites which need impact assessment in each year from woredas that completed MDA as per the disease burden	2016	Programme specific data
	Yearly collect parasitological data from the sentinel sites	2016 – 2020	• STH/SCH technical experts and researchers • Tools and equipment for data collection and analysis
Strengthen leishmaniasis surveillance	Conduct ongoing active and passive surveillance of leishmaniasis Investigate new foci for leaishmania transmission	2016-2020	Human resource, capacity building and financial • Human resource, capacity building and financial, Leishmania skin test, DAT and medical supplies like syringe, gloves
Sustain post intervention surveillance in Guinea worm disease	Strengthen the IDSR system for Guinea worm surveillance and preparation for certification	Weekly for consecutive 3 years after zero report	Human and financial resource
Strengthen the health system for post-intervention surveillance	Capacity building at all levels	2016 and as appropriate	• Human and financial resource • Training materials • Supply and logistics
	Customizing post-intervention surveillance tools for PHCU level	2016	Human and financial resource
	• Integrate surveillance during MDA and National Immunization Days • Consultative meeting with the appropriate persons at all level for advocacy and appropriate implementation	Ongoing	Human and financial resources

BUDGET

It is estimated that the implementation of the master plan will cost Ethiopian Birr 3.16 billion (USD150.4 million). It is anticipated that the government, partners and donors that are currently supporting the NTD programmes will continue providing their assistance towards achieving the shared goals and objectives. In addition, all efforts will be made to further mobilize resources from within and outside the country for the financial gaps for executing some of the identified strategic interventions. The following table depicts the cost summary for the materialization of the national NTD master plan.

Table 33. Summary of estimated budget for 2016 – 2020

Activities and Sub-activities	Total budget	Contribution		Gap
		Country	Partners	
1. Coordination, Partnership & Advocacy	243,646,126.97	47,326,850		196,319,276.97
2. Planning and Resource Mobilization	15,500,000			15,500,000.00
3. Scale-up Interventions				-
Mapping	29,000,000.00			29,000,000.00
Mass drug administration	723,463,270.32	9,998,900		713,464,370.32
Drug (CM) supplies and procurement	24,290,072.89			24,290,072.89
Morbidity management & disability prevention	1,112,400,145.00			1,112,400,145.00
Vector control				-
Trainings/Capacity Strengthening	554,590,546.50			554,590,546.50
Infrastructure				-
Laboratory equipment & support				-
Total 3	2,702,890,161.68	57,325,750.00		2,645,564,411.68
4. M&E, Research				
Monitoring surveys	91,171,344.81			91,171,344.81
Disease surveillance	82,054,210.33			82,054,210.33
Operational research	68,378,508.60			68,378,508.60
Programme monitoring	136,757,017.21			136,757,017.21
Data management	77,495,643.09			77,495,643.09
Total 4	455,856,724.03	-		455,856,724.03
GRAND TOTAL	3,158,746,886	57,325,750		3,101,421,136

References

1. Central Statistical Agency [Ethiopia] and ICF International (2012) Ethiopia Demographic and Health Survey 2011. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International.
2. Central Statistical Agency (CSA) [Ethiopia] Population Projections for Ethiopia 2007-2037, Addis Ababa July 2013.
3. Federal Democratic Republic of Ethiopia Ministry of Health (2013) Ethiopia National Master Plan For Neglected Tropical Diseases. Avaiable at http://ntdenvision.org/resource/ethiopia_national_master_plan_for_neglected_tropical_diseases Acessed on 03-04-2014.
4. World Health Organization (2012) Accelerating Work to Overcome the Global Impact of Neglected Tropical Diseases a Roadmap for Implementation, World Health Organization,20 Avenue Appia, 1211 Geneva 27, Switzerland.
5. The Federal Democratic Republic of Ethiopia (2015) The Second Growth and Transformation Plan (GTP II) (2015/16-2019/20), National Planning Commission September 2015 Addis Ababa.
6. Mengitsu B, Shafi O, Kebede B, Kebede F, Worku DT, et al. (2016) Ethiopia and its steps to mobilize resources to achieve 2020 elimination and control goals for neglected tropical diseases webs joined can tie a lion. Int Health 8.
7. Ethiopia Ministry of Health Ethiopia's Fifth National Health Accounts 2010/2011.April 2014. Addis Ababa, Ethiopia.
8. The Federal Democratic Republic Of Ethiopia HSTP. Health Sector Transformation Plan (2015/16-2019/20). Agust 2015, Addis Ababa, Ethiopia
9. Ministry of Finance and Economic Development (2013) Annual Progress Report for F.Y. 2011/12. Growth and Transformation Plan. Addis Ababa, Ethiopia
10. World Health Organization (2006) The world health report 2006: Working together for health. Geneva, Switzerland: World Health Organization, 1211 Geneva 27, Switzerland.
11. Federal Democratic Republic of Ethiopia Ministry of Health (2014) Revised Human Resource for Health Strategic Plan. Addis Ababa, Ethiopia
12. Banteyerga H (2011) Ethiopia's health extension program: improving health through community involvement. MEDICC Rev 13: 46-49.
13. Balabanova D, Mills A, Conteh L, Akkazieva B, Banteyerga H, et al. (2013) Good Health at Low Cost 25 years on: lessons for the future of health systems strengthening. Lancet 381: 2118-2133.
14. The Federal Democratic Republic of Ethiopia Ministry of Health Health Sector Transformation Plan (GTP) 2015/2016-2019/20. Ministry of Finance and Economic Development (MoFED). October, 2015, Addis Ababa.
15. Ethiopia Federal Ministry of Health (2014) Ethiopia's Fifth National Health Accounts 2010/2011. Addis Ababa, Ethiopia.
16. World Health Organization Global Health Expenditure Database. Avaiable at http://apps.who.int/nha/database/Key_Indicators_by_Country/Index/en Accessed on 19/07/2016.
17. Solomon AW, Pavluck AL, Courtright P, Aboe A, Adamu L, et al. (2015) The Global Trachoma Mapping Project: Methodology of a 34-Country Population-Based Study. Ophthalmic Epidemiol 22: 214-225.
18. Habtamu E, Burton M (2015) Clearing the trichiasis backlog: experiences in Amhara, Ethiopia. Community Eye Health 28: 38.
19. Central Statistical Agency [Ethiopia] (2014) Ethiopia Mini Demographic and Health Survey 2014. Addis Ababa, Ethiopia.
20. Shiferaw W, Kebede T, Graves PM, Golasa L, Gebre T, et al. (2012) Lymphatic filariasis in western Ethiopia with special emphasis on prevalence of Wuchereria bancrofti antigenaemia in and around onchocerciasis endemic areas. Trans R Soc Trop Med Hyg 106: 117-127.

21. Rebollo MP, Sime H, Assefa A, Cano J, Deribe K, et al. (2015) Shrinking the Lymphatic Filariasis Map of Ethiopia: Reassessing the Population at Risk through Nationwide Mapping. PLoS Negl Trop Dis 9: e0004172.

22. Deribe K, Brooker SJ, Pullan RL, Sime H, Gebretsadik A, et al. (2015) Epidemiology and individual, household and geographical risk factors of podoconiosis in Ethiopia: results from the first nationwide mapping. Am J Trop Med Hyg: 148–158.

23. Deribe K, Cano J, Newport MJ, Golding N, Pullan RL, et al. (2015) Mapping and modelling the geographical distribution and environmental limits of podoconiosis in Ethiopia. PLoS Negl Trop Dis 9: e0003946.

24. Sime H, Deribe K, Assefa A, Newport MJ, Enquselassie F, et al. (2014) Integrated mapping of lymphatic filariasis and podoconiosis: lessons learnt from Ethiopia. Parasit Vectors 7: 397.

25. Alvar J, Vélez ID, Bern C, Herrero M, Desjeux P, et al. (2012) Leishmaniasis worldwide and global estimates of its incidence. PLoS One 7: e35671.

26. Deribe K, Meribo K, Gebre T, Hailu A, Ali A, et al. (2012) The burden of Neglected Tropical Diseases in Ethiopia, and opportunities for integrated control and elimination. Parasit Vectors 5: 240.

27. Seid A, Gadisa E, Tsegaw T, Abera A, Teshome A, et al. (2014) Risk map for cutaneous leishmaniasis in Ethiopia based on environmental factors as revealed by geographical information systems and statistics. Geospat Health 8: 377-387.

28. Tsegaw T, Gadisa E, Seid A, Abera A, Teshome A, et al. (2013) Identification of environmental parameters and risk mapping of visceral leishmaniasis in Ethiopia by using geographical information systems and a statistical approach. Geospat Health 7: 299-308.

29. Grimes JE, Tadesse G, Mekete K, Wuletaw Y, Gebretsadik A, et al. (2016) School Water, Sanitation, and Hygiene, Soil-Transmitted Helminths, and Schistosomes: National Mapping in Ethiopia. PLoS Negl Trop Dis 10: e0004515.

ANNEXES

Annex 1: Drug forecasting and logistics

NTD programme	Drug	Source of drug	Status of procurement (donated or purchased)	Minimum lead time before delivery	In-country consignee
Trachoma	AZT	Pfizer	Donated	3 to 4 month	FMOH/PFSA
Onchocerciasis	IVM	Mectizan Donation Programme	Donated	5-7 months	FMOH/PFSA
LF	ALB	WHO	Donated	5-7 months	FMOH/PFSA
STH	MEB	WHO	Donated	5-7 months	FMOH/PFSA
SCH	PZQ	WHO+SCI (CIPLA)	Donated + Purchased	5-7 months	FMOH/PFSA

Annex II: Adverse drug reaction reporting form

Food Medicine and Health Care Administration and control Authority of Ethiopia (FMHACA)

Adverse Drug Event Reporting Form

Patient Name (abbreviation) ----------	Card No ----------	Age .Date of Birth ----------	Sex -----	Weight ---------	Height ---------

Ethnic group ----------	Substance of abuse ----------

Information on suspected drug/vaccine S= Suspected drug C=Concomitantly used drugs

Drug name (write all information including brand name batch no and manufacturer	S/C	Dose/ dosage from, route, frequency	Date drug taking was started (D/M/Y)	Date drug taking was started (D/M/Y)	Date drug taking was Stopped (D/M/Y)	Indication (Reason for drug use)

Adverse drug event description (include all laboratory test results)

Annex III: Allergy Card

የመድኃኒት አለርጂ መታወቂያ ካርድ

የባለመታወቂያው ስም_____ያታ_____
እድሜየተወለዱበት ቀን_____
አድራሻ_____ወረዳ_____ቀበሌ_____ቤ.ቁ_____
ካርዱ የተሰጠበት ቀን_____
አለርጂውን ያስከተለው መድኃኒት ስም
1_____
2_____
3_____
በአለርጂው ምክንያት የደረሰው ችግር ዝርዝር
_____
_____
_____.
ተጨማሪ አስተያየት
_____.

እባክዎ ከካርዱ ጀርባ ያለውን መመሪያ ይመልከቱ

USAID msh SPS

መመሪያ

ለግንኙዎ ጤና ባለሙያ

- እባክዎ ሕክምና በሚሰጡ ወይም መድኃኒት በሚያድሉበት ወቅት ታካሚው ለየትኛው መድኃኒት አለርጂ እንዳለባቸው ይጠይቁ ። ከዚያም በዚህ መታወቂያ ካርድ ላይ ይመዝግቡላቸው ።
- ታካሚው ከዚህ በፊትያጋጠማቸውን አለርጂ አስመዝግበውም ከሆነ ካርዳቸውን እንዲያሳዩዎት ይጠይቁ ። ለአለርጂው ምክንያት የሆነው መድኃኒት በድጋሚ እንዳይታዘዝ ወይም እንዳይሰጥ ይከላከላል።

ለግንኙዎ ታካሚ

- እባክዎ መደየትኛውም የሕክምና መገልገያ ተቋም ማለትም ሆስፒታል ፣ ጤናጣቢያ ፣ ጤና ኬላ ፣ክሊኒክ ለመታከም ወይም መድኃኒት ቤት መድኃኒት ለመግዛት ሲሄዱ አለርጂ ካጋጠመዎት አለርጂውን ያስከተለው መድኃኒት ስም በዚህ መታወቂያ ካርድ ላይ እንዲመዘገብልዎት ይጠይቁ ።
- በሌላ ጊዜም ለመታከም ወይም መድኃኒት ለመግዛት ሲሄዱ ለጤና ባለሙያ ካርዱን ማሳየትን አይርሱ ። ለአለርጂው ምክንያት የሆነው መድኃኒት በድጋሚ እንዳይታዘዝልዎት መይም እንዳይሰዋዎት ይከላከልልዎታል።