SOUTH SUDAN NEGLECTED TROPICAL DISEASES (NTDs)

MASTER PLAN | 2023 - 2027

Foreword

The Government of the Republic of South Sudan is committed to the optimal health and wellbeing of the South Sudanese people. This Master Plan is in line with the Health Policy and Health Sector Strategic Plan 2023-2027 and provides a framework for the development of Annual Operational Plans of Neglected Tropical Diseases (NTDs) in an integrated manner to maximize on benefits. It was developed as a collaboration between the Ministry of Health (MoH) and Ministry of Water Resources and Irrigation (MWRI) with the support of World Health Organization (WHO) and other partners.

In South Sudan, 19 NTDs are endemic; Trachoma, Onchocerciasis (River blindness), Lymphatic filariasis (Elephantiasis), Soil-Transmitted Helminths (Intestinal worms), Schistosomiasis (Bilharzia), Dracunculiasis (Guinea Worm), Human African Trypanosomiasis (Sleeping Sickness), Leprosy (Hansen Disease), Leishmaniasis(Kala-azar), Loiasis (African eye worm), Buruli Ulcer, Mycetoma, Dengue, Echinococcosis, Snakebite envenoming, Rabies, Scabies, Yaws and Tungiasis (Jiggers). All these neglected diseases are an obstacle to socio-economic development and quality of life of the South Sudanese people.

The MOH is leading its implementation through the Directorate of Preventive Health Services. The goal is to make South Sudan free from NTDs by 2030 through the implementation of WHO Roadmap for NTDs 2030. These interventions include preventive chemotherapy, case management, vector control and disease surveillance, improving access to safe water, sanitation and hygiene practices. Therefore, the masterplan provides a framework for multi-sectoral collaboration, and increased local leadership engagement and ownership.

The government hereby commit to actively contribute through its domestic health budget and will also engage the development partners and private sector to raise the additional resources needed for the achievement of the objectives in the master plan. We urge all stakeholders, both individuals and organizations, to play an active role in its implementation to enable the county to achieve its vision of a nation free of NTDs.

Hon. Yolanda Awel Deng Juach
Minister of Health
The Republic of South Sudan

Preface

South Sudan is endemic for 19 of the 20 Neglected Tropical Diseases classified by the World Health Organization. Some of these have been mapped in the country and interventions commenced. The NTD Strategic document provides guidance and plans for implementing programme activities in an integrated and holistic manner and ensuring that the multiplicity of stakeholders operating within this landscape is coordinated in accordance with Common African Positions (CAP) and Continental Framework (CF) on NTDs developed in Ethiopia in March 2020 and adopted by AU Commision in Lusaka in July 2022, which serve as guiding documents for the fight against these diseases, calling for increased national funding to achieve the goal of elimination.. This is particularly needful given the diverse nature of neglected tropical diseases and their control and elimination processes which require a multi-sectoral response. The document also provides some direction for financial sustainability which is a current challenge for the country given that it is still recovering from decades of internal conflict.

Given the development of the 2030 NTD Global Roadmap for the elimination of NTDs, it became critical that the country's NTD Master Plan not only aligns with the Common African position (CAP) and Continental Framework (CF) but also with the global document which had been produced through a process involving a diverse group of stakeholders.

South Sudan has therefore latched on this to develop its third-generation Master Plan which was based on extensive situation analysis, desk review, and several in-country consultative meetings with all critical stakeholders. As demanded by the 2030 NTD Roadmap, this document has emphasized three fundamental shifts in the approach to tackling NTDs. The three fundamental shifts include moving away from siloed, disease-specific programmes by intensifying cross-cutting approaches and coordination with other Ministry of Health programmes as well as other stakeholders, mainstreaming NTD programmes into national health systems, and changing operating models and culture to facilitate greater in-country ownership.
This approach is expected to increase the impact of accountability centred on the needs of people and communities. It is expected that this Master Plan will ensure judicious use of time and resources for maximum impact and that the country will attain the goals and objectives reflected in this strategic document thereby leading to a significant reduction of NTDs burden in South Sudan by 2027.

Acknowledgements

This document has been developed through an extensive consultation process with inputs being contributed by a wide variety of stakeholders within and outside the country for two years.

Contributors have ranged from experts in various NTDs and related fields, Ministry of Health staff, representatives from partner-organizations and related government ministries and parastatals. Inputs have not been limited to stakeholders at the national level but have been received from the sub-national levels. The involvement of this array of contributors to the development of this Master Plan is reflective of South Sudan's collective vision towards achieving a nation free of NTDs.

Acknowledgement goes to the following institutions; World Health Organization (WHO), The Carter Center (TCC), AMREF Health Africa, Christian Blind Mission (CBM), ASCEND, MENTOR Initiative, German Leprosy and TB Relief Association (GLRA), Interchurch Medical Assistance (IMA), The University of Juba, Ministry of General Education and Instructions (MoGEI), Ministry of Water Resources and Irrigation (MWRI), other line ministries, among other stakeholders who devoted their precious resources to the development of this document.

Very special appreciation goes to the World Health Organization (WHO) and ARISE through ENDFUND for the technical and financial support and as well as other partners who have contributed in other ways to successfully develop this strategic document.

It is to the credit of the Ministry of Health and to the four directors that head various aspects of the NTD programme for collectively and successfully driving the process to a conclusive end.

It is my desire that all those that have contributed to this development of the South Sudan NTD Master Plan will also provide support to its implementation, as well as track progress in the attainment of its strategic objectives.

15.12.23

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MINISTRY OF HEALTH
15 DEC 2023
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Abbreviations and Acronyms

AIDS	Acquired Immunodefiency Syndrome
AFRO	Africa Region of the World Health Organization
APOC	African Programme for Onchocerciasis Control
CDD	Community Drug Distributor
CF	Continental Framework
CHANGES	Community Health and Nutrition, Gender and Education Support
CHDs	Child Health Days
CM	Case Management (NTDs)
CMCHWs	Community Maternal Child Health Workers
CHW	Community Health Worker
ComDT	Community Directed Treatment
DALYs	Disability Adjusted Life Years
DEC	Diethyl carbamazine Citrate, an anti-filarial drug
DFMO	DL - alpha-difluoro-methyl-ornithine (Eflornithine), a trypanocidal
DHT	District Health Team
ECCAS	Economic Community of Central African States
GDP	Gross Domestic Product
GNP	Gross National Product
GPELF	Global Programme for Elimination of Lymphatic Filariasis
GWE	Guinea Worm Eradication
HAT	Human African Trypanosomiasis
HIV	Human Immunodeficiency Virus
HSSP	Health Sector Strategic Plan
IDSR	Integrated Diseases Surveillance and Response
IEC	Information Education and Communication
IGAD	Intergovernmental authority on Development
ITNs	Insecticide Treated Nets
IVM	Ivermectin
IU	Implementation Unit
LF	Lymphatic Filariasis
LFE	Lymphatic Filariasis Elimination
MADP	Mectizan Albendazole Donation Programme

MBD	Mebendazole
MDA	Mass Drug Administration
NGDO	Non-Governmental Development Organization
NGO	Non-governmental Organization
NTD	Neglected Tropical Disease
ONCHO	Onchocerciasis
PATTE	Pan African Tsetse and Trypanosomiasis Eradication Campaign
PCT	Preventive Chemotherapy
PELF	Programme for Elimination of Lymphatic Filariasis
PHC	Primary Health Care
PZQ	Praziquantel
SAC	School-age children
SAEs	Severe Adverse Events
SBCC	Social and behaviour change communication
SBE	Snake bite envenoming
SCH	Schistosomiasis
STH	Soil-Transmitted Helminthiasis
STC-HPDC	Specialised Technical Committee on Health,Population and Drug
TRA	Trachoma
TDR	Special Programme for Tropical Diseases Research
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VL	Visceral Leishmaniasis
WASH	Water, sanitation and hygiene
WFP	World Food Programme
WHA	World Health Assembly
WHO/AFRO	World Health Organization Regional Office for Africa
WHO	World Health Organization of the United Nations

Key definitions

Control: Reduction of disease incidence, prevalence, morbidity and/or mortality to a locally acceptable level as a result of deliberate efforts; continued interventions are required to maintain the reduction. Control may or may not be related to global targets set by WHO.

Elimination (interruption of transmission): Reduction to zero of the incidence of infection caused by a specific pathogen in a defined geographical area, with minimal risk of reintroduction, as a result of deliberate efforts; continued action to prevent re-establishment of transmission may be required. Documentation of elimination of transmission is called verification.

Elimination as a public health problem: A term related to both infection and disease, defined by the achievement of measurable targets set by WHO for a specific disease. When reached, continued action is required to maintain the targets and/or to advance interruption of transmission. Documentation of elimination as a public health problem is called validation/intervention.

Eradication: Permanent reduction to zero of the worldwide incidence of infection caused by a specific pathogen, as a result of deliberate efforts, with no risk of reintroduction.

Hygiene: Conditions or practices conducive to maintaining health and preventing disability.

Integrated vector management: A rational decision-making process to optimize the use of resources for vector control.

Mass drug administration: Distribution of medicines to the entire population of a given administrative setting (for instance, state, region, province, district, sub-district or village), irrespective of the presence of symptoms or infection; however, exclusion criteria may apply. (In this document, the terms mass drug administration and preventive chemotherapy are used interchangeably.)

Morbidity: Detectable, measurable clinical consequences of infections and diseases that adversely affect the health of individuals. Evidence of morbidity may be overt (such as the presence of blood in the urine, anaemia, chronic pain or fatigue) or subtle (such as stunted growth, impeded school or work performance or increased susceptibility to other diseases).

Monitoring and evaluation: Processes for improving performance and measuring results to improve management of outputs, outcomes and impact.

Platform: Structure through which public health programmes or interventions are delivered.

Preventive chemotherapy: Large-scale use of medicines, either alone or in combination, in public health interventions. Mass drug administration is one form of preventive chemotherapy; other forms could be limited to specific population groups such as school-aged children and women of childbearing age. In this document, the terms preventive chemotherapy and mass drug administration are used interchangeably.

Executive Summary

The Republic of South Sudan made up of 10 States and 3 Administrative areas, is one of the most diverse countries in Africa. It is home to over 60 different major ethnic groups, and the majority of its people follow traditional religions. It is a landlocked country in East-central Africa that gained its independence from Sudan in 2011, measuring 644,329 square Kilometres and is bounded on the north by Sudan; on the east by Ethiopia; on the south by Kenya, Uganda, and the Democratic Republic of the Congo; and the west by the Central African Republic. The terrain of South Sudan features massive plains and plateaus. One of the most interesting landforms here is the Al Sudd region which is a large swampy land located in the central region of a clay plain occupying the heart of South Sudan.

Neglected Tropical Diseases (NTDs)

Based on available mapping data, historical information and data from published papers South Sudan is affected by nineteen (19) Neglected Tropical Diseases, most of which are readily preventable and/or treatable. Some of these have been mapped and interventions commenced while a number, particularly case management NTDs are either yet to be mapped or fully mapped.

The mission of the South Sudan NTD is to implement NTD policy and plan through the delivery of effective, efficient, quality and affordable health services contributing to the strengthening of the health system and improved health status and sustainable development in the country. The vision is a South Sudan where neglected tropical diseases (NTDs) will no longer be public health problems of significance.

This strategic plan envisages a 50% reduction in people requiring interventions against neglected tropical diseases, 50 counties having eliminated at least one neglected tropical disease as a public health problem, and two neglected tropical diseases eradicated or eliminated countrywide by 2027. To achieve these the Programme's Strategic Priorities are:

- **Accelerating programmatic action,**
- **Intensify cross-cutting approaches,**
- **Operating Models and culture to facilitate country ownership, and**
- **Strengthen Resource Mobilization, Coordination and Communication.**

The operational framework component of this NTD master plan describes how South Sudan will in practice implement the planned activities. It reflects what the country's capacity needs are, how

resources will be mobilized, how potential risks will be addressed, the scale-up strategy, verification and assessment of disease elimination and how the sustainability of the project achievements will be ensured.

The major activities that have been planned include procurement of medicines, conducting mapping surveys, capacity building of personnel at various levels, conducting of MDA, case management, surveillance, integrated vector management, and advocacy sensitization and resource mobilization campaigns. Others include the development of structures in States, development of tools and guidelines for NTD implementation, programme review meetings, supervision, monitoring, impact assessment, and establishment of an integrated data management system,

The cost estimates show that the country requires investment worth approximately **202.7 million dollars** for NTD over the planned period. This includes the cost of donated drugs together with the cost of storage and freight.

Introduction

The Neglected Tropical Diseases (NTDs) Programme Master plans are essential components for effective planning and implementation of sustainable NTD programmes. The Plan provides programme goals and objectives, as well as a five - year detailed strategic plan based on extensive situation analyses and addresses all components of the NTD programmes considered relevant to South Sudan. It enhances synergies among various NTD initiatives; provides the basis for integrated or linked NTD project plans and includes costing and financing requirements for effective NTD programme implementation and performance.

The following had been brought into perspective in the implementation of this Master Plan:

- Comprehensive strategies which are linked to national priorities, targets and goals to cover all NTDs - preventive chemotherapy and case-management NTDs.
- Planning based on national strategic priorities rather than a disease.
- Activities with other health interventions and within the NTD programme to solve shared problems integrated and consolidated
- Cost financing of the NTD Programme in order to ensure financial sustainability, and links the NTD programme to health sector planning and financing mechanisms
- The Master Plan provides a strong base for the country's annual NTD work plans.
- Implementation of the Plan promotes partnership and collaboration.

The NTD Master Plan forms the basis for harmonized implementation and performance monitoring of all NTD interventions in South Sudan. The Plan aims to provide all partners and stakeholders working on NTDs with harmonized tools that will facilitate integration, partnership, and collaboration and therefore effectively manage available resources while reducing wastage. The Plan will also facilitate the achievement towards the 2030 NTDs elimination targets and goals. It is guided by the following strategic priorities:

- Accelerating programmatic action,
- Intensify cross-cutting approaches,
- Operating Models and culture to facilitate country ownership, and
- Strengthen Resource Mobilization, Coordination and Communication.

Progress in the implementation of planned activities as well as the programme performance and output will be monitored regularly and evaluated at appropriate intervals. The strategic plan will be the framework for partner coordination, harmonization and alignment. The content is expected to enhance commitment and accountability, transparency, and evidence-based and verifiable plans of all stakeholders to enhance effective and sustainable resource mobilization.

The preparation of this NTD Master Plan is part of a process that includes analysis, development of the NTD programme plan, and approval and scaling up of the national NTD Strategic and Operations Plans. The following steps were taken in the development of this document: reviews, consultation meetings and workshops, involvement of partners and stakeholders in-country and outside, as well as consideration of outcomes of various monitoring and evaluation activities.

Given the development of the 2030 NTD Global Roadmap for the elimination of NTDs, South Sudan's NTD Master Plan must align with the global document which had been produced through a process involving a diverse group of stakeholders. This Master Plan is also in alignment with the framework and guide designed by the World Health Organization Regional Office for Africa.

This Master Plan builds on the foundation and progress made in the implementation of previous strategic plans and tries to address some of the inherent challenges. In line with the 2021- 2030 NTD Global Roadmap, this strategic plan is geared towards ensuring three fundamental shifts in the approach to tackling NTDs: first, increase accountability for impact by using impact indicators instead of process indicators, as reflected by the targets and milestones in Part II and accelerate programmatic action; secondly, move away from siloed, disease-specific programmes by mainstreaming programmes into national health systems and intensifying cross-cutting approaches centred on the needs of people and communities: and thirdly, change operating models and culture to facilitate greater ownership of programmes by countries.

This document is divided into four main sections: Part1 - NTD Country Situational Analysis; Part2 - Strategic Agenda, Purpose and Goals; Part3 - Implementing the Strategy - NTD Operational Framework; and Part4 - Budgeting for Impact, Estimates and Justification. Figure 1 below reflects an overview of the key contents of this Master Plan while Figures 2 and 3 illustrate the NTD master plan development and revision process.

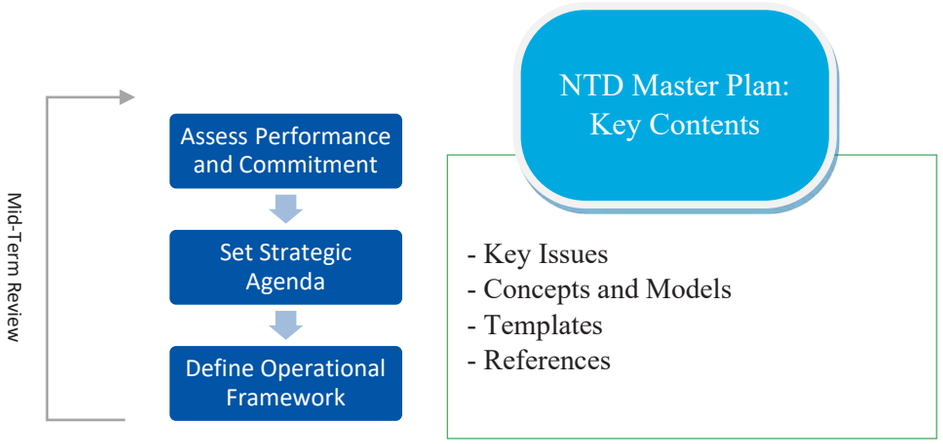

Figure 1. NTD Master Plan Key Contents

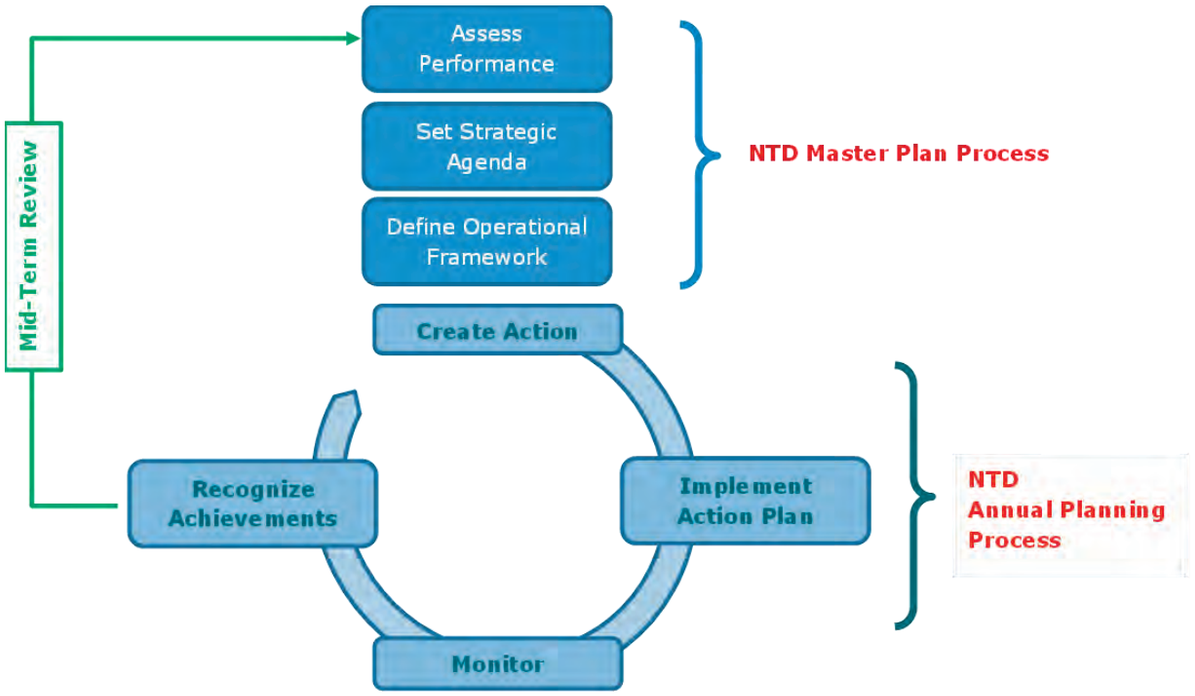

Figure 2. NTD Master Plan: Process and Management Cycles

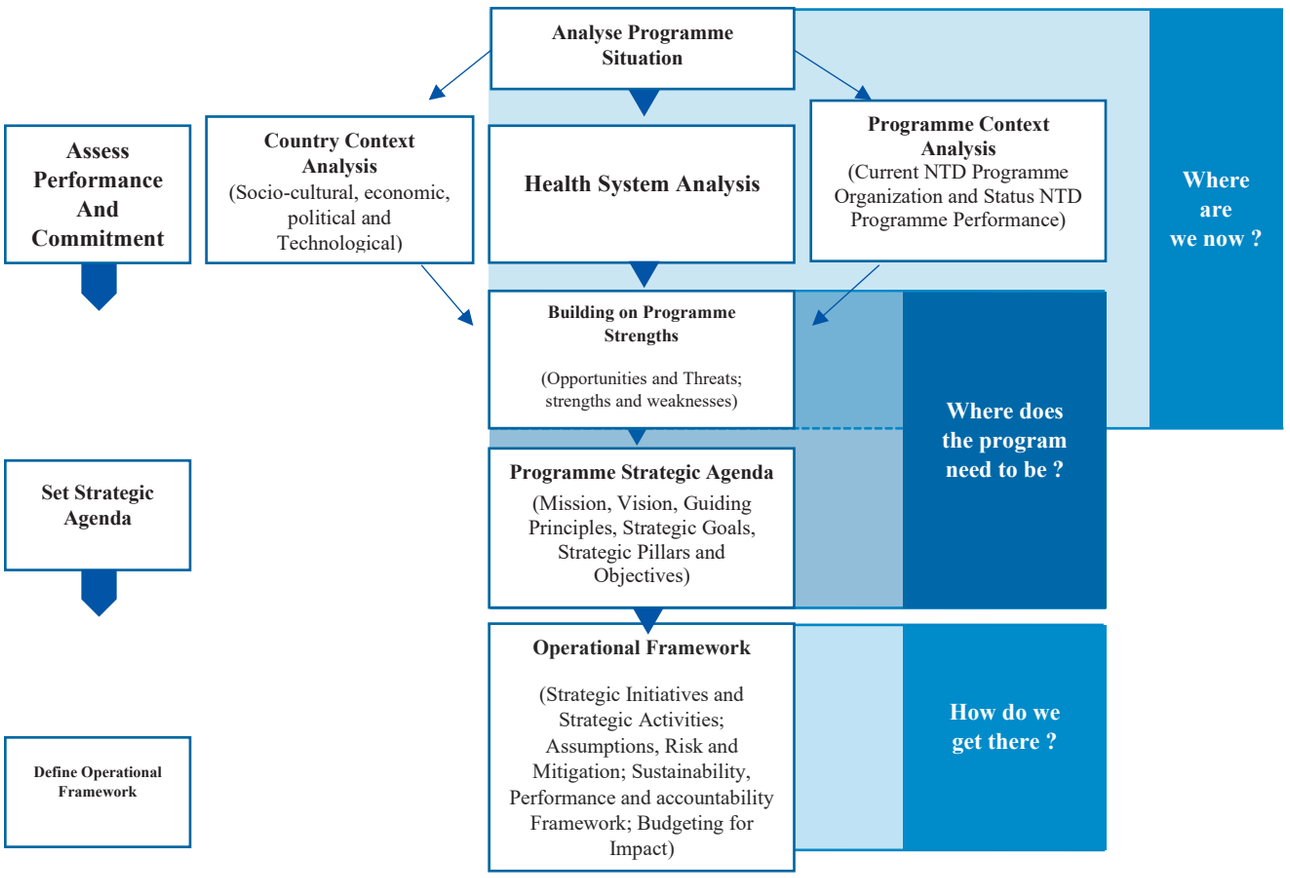

Figure 3. NTD Master Plan Process

Part 1: NTD Situation Analysis

Section 1.1. Re-assessment of National Priorities and the National, Regional and Global NTD Commitments

South Sudan Ministry of Health's vision is a healthy and productive population living a dignified life. The top ten priority diseases in South Sudan include Malaria, Diarrheal, RTI/Pneumonia, STI, Typhoid, Malnutrition, Tuberculosis, HIV/AIDs, Eye Infection and Brucellosis. NTDs are generally coming into reckoning as key public health issues within the health system. Based on available mapping data, historical information and data from published papers South Sudan is affected by nineteen (19) Neglected Tropical Diseases, most of which are readily preventable and/or treatable. Some of these have been mapped and interventions commenced while a number, particularly case management NTDs are either yet to be mapped or fully mapped.

NTDs have received in recent times increased attention and there have been significant strides made globally in the control, eradication, and elimination of NTDs. This increased attention and improved resource mobilization have occurred on account of regional and global commitments. These commitments include the following:

- The Accra Urgent Call to Action on NTDs (June 2012)
- The London Declaration on NTDs (January 2012)
- WHA resolution on NTDs at Sixty-sixth WHA in May 2013
- Regional consultative meeting on NTDs in Brazzaville (2013)
- The sixty-third session of the African Regional Committee (RC63, September 2013) adopted the Regional strategy on neglected tropical diseases (NTDs) which is in

alignment with the resolution on NTDs adopted by the Sixty-sixth World Health Assembly in May 2013

- The Addis Ababa commitment to NTDs (December 12, 2014)
- The TVD Regional Resolution (AFR/RC72/7) July 2022: Framework for the Integrated Control, Elimination and Eradication of Tropical and Vector-Borne Diseases in the African Region, 2022–2030
- The 2022 Kigali declaration on Malaria and Neglected Tropical Diseases (NTDs)
- Global NTD Road maps

Most of these policy documents call for improved and sustainable funding, country ownership and leadership, rapid scale-up of interventions, integrated systems for delivery of interventions, and generally work towards global control and elimination of NTDs

In addition to all these policy documents, there have been drug donation programmes by various pharmaceutical companies as well as funding for NTD programme activities which have been increasing over time.

The Global NTD Road Map (2021 – 2030) appears to be the most comprehensive and lists ambitious over-arching and cross-cutting as well as disease-specific targets to be achieved by 2030. It is in light of this road map that this current NTD Master Plan has been developed.

Within the country, there are policy documents and commitments that impact on NTDs. These include a **national policy on NTD control** and the **national health sector strategic plan** as well as **state work plans.**

The NTD Master Plan forms the basis for harmonized implementation and performance monitoring of all NTD interventions in South Sudan, under the leadership of the government. The Plan aims to provide all partners and stakeholders working on NTDs with harmonized tools that will facilitate integration, partnership, and collaboration and therefore effectively manage available resources while reducing wastage. The Plan will also facilitate the achievement towards the 2030 NTDs elimination targets and goals.

Section 1.2. National Context Analysis

1.2.1 Country Analysis

The Republic of South Sudan is the world's newest nation and became Africa's 55th country on July 9, 2011. The estimated population is 12.4 million with an estimated annual growth rate of 1.77%. It is one of the youngest populations in the world with 74% of the population below 30 years making it a country with most of the population being youths with a median age of 19.0 years. The total fertility rate is estimated at 5.7, and most of the population lives in rural areas with only 24.6% living in urban settings.

The country occupies an area of 644, 329 square kilometres in central Africa. It is bordered by Ethiopia, Sudan, the Central African Republic, the Democratic Republic of the Congo, Uganda, and Kenya. In 2007, South Sudan adopted English as the official language of communication, even though there was a severe shortage of English-speaking teachers in all scientific and technical fields. The major religion followed in South Sudan is Christianity followed by traditional religions and a minority of Muslims (less than 10%). The literacy rate is one of the world's lowest especially for females over the age of 15 (19%) compared to 35% for males of the same age group. The total net enrolment rate in primary education was 38% in the period 2010-2020 while the total net enrolment rate in lower secondary education during the period was 44%.

The PEST analysis is presented below. This analysis gives a picture of South Sudan's Political, Economic, Social and Technological situation which may have some influence on the implementation of the Master Plan bearing in mind the different NTDs in the country. Figure 4 articulates issues that have a direct influence on NTD implementation in the country.

Political

The conflicts in December 2013 and July 2016 have pushed back the realization of peace and development ambition that could have been achieved otherwise and worsened the humanitarian crisis. South Sudan remains one of the most volatile states in the world, and the ongoing peace process within the country remains fragile. In September 2018, the conflicting parties agreed to sign the Revitalized Peace Agreement and by the 22nd of February 2020, the Revitalized Transitional Government of National Unity (R-TGoNU) was formed. The structure of the R-TGoNU included the President, the First Vice-President, four Vice Presidents, the Council of Ministers and Deputy Ministers.

The First Vice-President and four Vice Presidents each oversees a specific cabinet cluster. The First Vice-President oversees the governance cluster, while the other four Vice-Presidents each oversee one of the following clusters: Economy; Services; Gender and Youth; and Infrastructure. The Legislature is constituted by the Transitional National Legislative Assembly and the Council of States. The Judiciary is independent and subscribes to the principle of separation of powers and the supremacy of the rule of law. The mandate of the R-TGoNU includes restoring permanent and sustainable peace, reforming the civil service, and rebuilding the country's infrastructures while working closely with the Counties of the Intergovernmental Authority on Development. Although civic participation in governance is still low, partners are helping to provide support. The decentralized nature of governance also facilitates public participation at the subnational level.

The country administratively comprises of 10 States and three Administrative Areas (Pibor, Ruweng and Abyei), which are divided into 79 counties (with a new county recently carved out that brings the number to 80). The counties are further subdivided into Payams which are comprised of Bomas as the most peripheral unit. The R-TGoNU at the national and subnational level grapples with the institutionalization of accountable governance and improvement of service delivery due to the hitherto inadequate human resource and management capacities as well as weak accountability systems.

WHAT IS POLITICAL WILLS IN REGARDS TO NTDS CHALLENGES

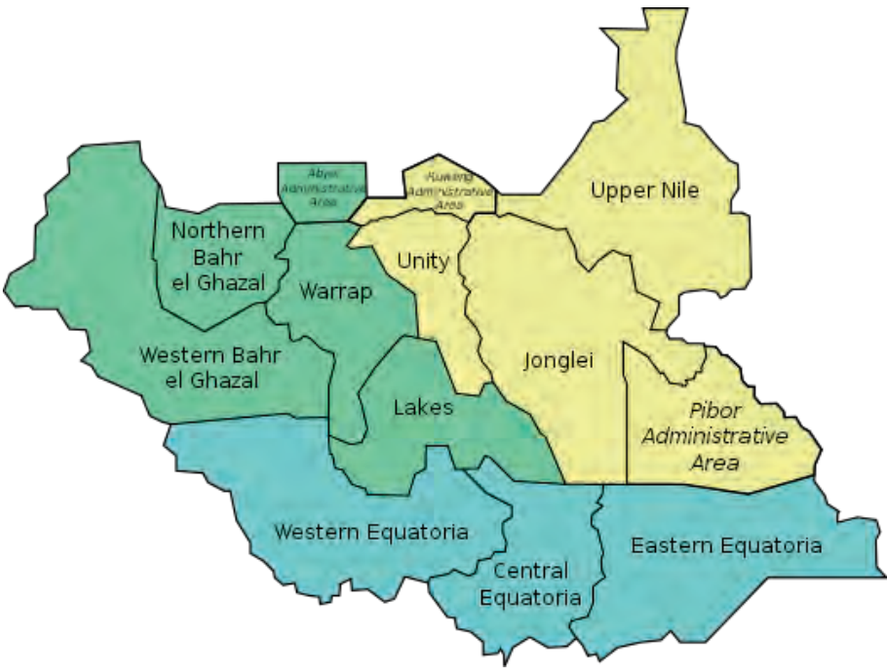

Figure 4: Map of South Sudan showing the States and Administrative Areas

There is a political will to support NTD control in the country however there is limited funding allocation for NTD control and subsequent elimination. Currently, most of the funding for NTD control comes from donors. There are also tax exemptions for donated drugs which work positively for the NTD programme. The donations are also shrinking hence there is a need for the domestic Resource Mobilization DRM efforts to be initiated. Bureaucracy has also led to slowing down processes of implementation.

Economic

South Sudan's economy relies mainly on oil and other natural resources like copper, iron ore, among others. As in many developing countries, South Sudan is heavily dependent on basic agriculture and export of raw material especially oil. The GDP per capita was US$ 1,119 (2015) with an estimated negative growth rate of -10.8% in the same year. The nascent economic recovery as a result of rising oil prices was suddenly and sharply derailed in 2020 by locust invasions, floods, and the COVID-19 pandemic.

Moreover, the inflation is daunting with the devaluation of the local currency and high unemployment rate as a result of the pandemic and Ukrainian war amongst many inter-related and bleak economic situations. The World Bank notes that supply shocks induced by flooding, locust invasions and COVID-19 disruptions, coupled with monetization of the government budget deficit and currency depreciation, increased inflation to an estimated 31.1% in 2020 from 24.5% in 2019. The South Sudanese pound (SSP) depreciated by 10% in November 2020 relative to the same period in 2019, to SSP 176 per US$ to an even record low in March 2023 with SSP 800 for the US$.

Poverty is widespread in the country and subsistence agriculture remains the main source of income for most of the population. Percentage of the population living on less than $3.20 a day in 2011 is 91.6%. Poverty is more widespread among displaced people and an estimated 91 per cent of displaced people live under the international poverty line of US$1.90 per person per day. Living conditions continue to exhibit one of the worst human crises in the world. The escalation of poverty and inequality continue to mark a staggering crisis. Poverty headcount jumped from 82% in 2016 to 88% in 2019, with 70% in urban areas owing to the growing urbanization and 36% in rural ones. With a Gini coefficient of 46.0%, income inequality is high and above Sub-Saharan Africa’s average of 43.0%. The percentage of population who have access to electricity is 7% in 2020.

Prolonged dry spells are common affecting crop and animal production leading to food insufficiency and malnutrition. This impacts on the prevalence of NTDs as well as on the cost of implementation.

Social

Due to the long period of civil war and internal strife there is a lot of population movements and community structures are just getting back to some levels of normalcy. Several internally displaced persons are living either in camps or with host populations. The post-conflict trauma has affected the overall health and attitudes of the general population. Life expectancy at birth is 56 years, while infant and under-five mortality is high at 150 deaths/1000 live births and 250 deaths/1,000 live births, respectively. Under-five mortality makes up 57% of the total deaths.

Global climate change has also greatly impacted South Sudan. Heavy flooding leads to displacement which directly affects implantation. Flooding also increases the risk of contamination of water with NTDs hence spreading infections. Movement of persons due to various reasons such as conflicts leading to IDPs and refugees has negatively affected implementation of NTD programs. Stigmatization exists for those affected by such NTDs as LF, leishmaniasis, onchocerciasis, leprosy, Buruli ulcer, and nodding syndrome

Technology

Juba - capital of Central Equatoria State and seat of the government of the Republic of South Sudan (RSS) - boasts a range of mobile phone for service providers. They include the popular MTN, Zain, and Digitel. However, the use of satellite phone services of Thuraya is far more extensive. It has a wider reach within the South due to satellite technology and is handy in many areas where there is no telecommunication set up, but is extremely expensive.

Transport and transportation infrastructure is still largely non-existent in many areas. Hence, transport and communication in South Sudan is difficult and expensive as most of the movement from one state to another is best by air owing to the poor state of roads, floods and insecurity.

Poor road network also increases the expenses during NTD implementation process. Poor or no network coverage in some areas make it hard for coordination of NTD activities. Internet in the NTD office is a challenge hence limiting work. Reports from the field personnel cannot be easily accessed due to this challenge too. DHIS exist but only at the district levels. Most NTDs are not integrated in the DHIS 2 with exception of leprosy. Inadequate equipment facilities

including vehicles, computers and other electronic devices also hampers NTD activities implementations.

The box below shows key issues that could impact on NTD programme implementation in the country.

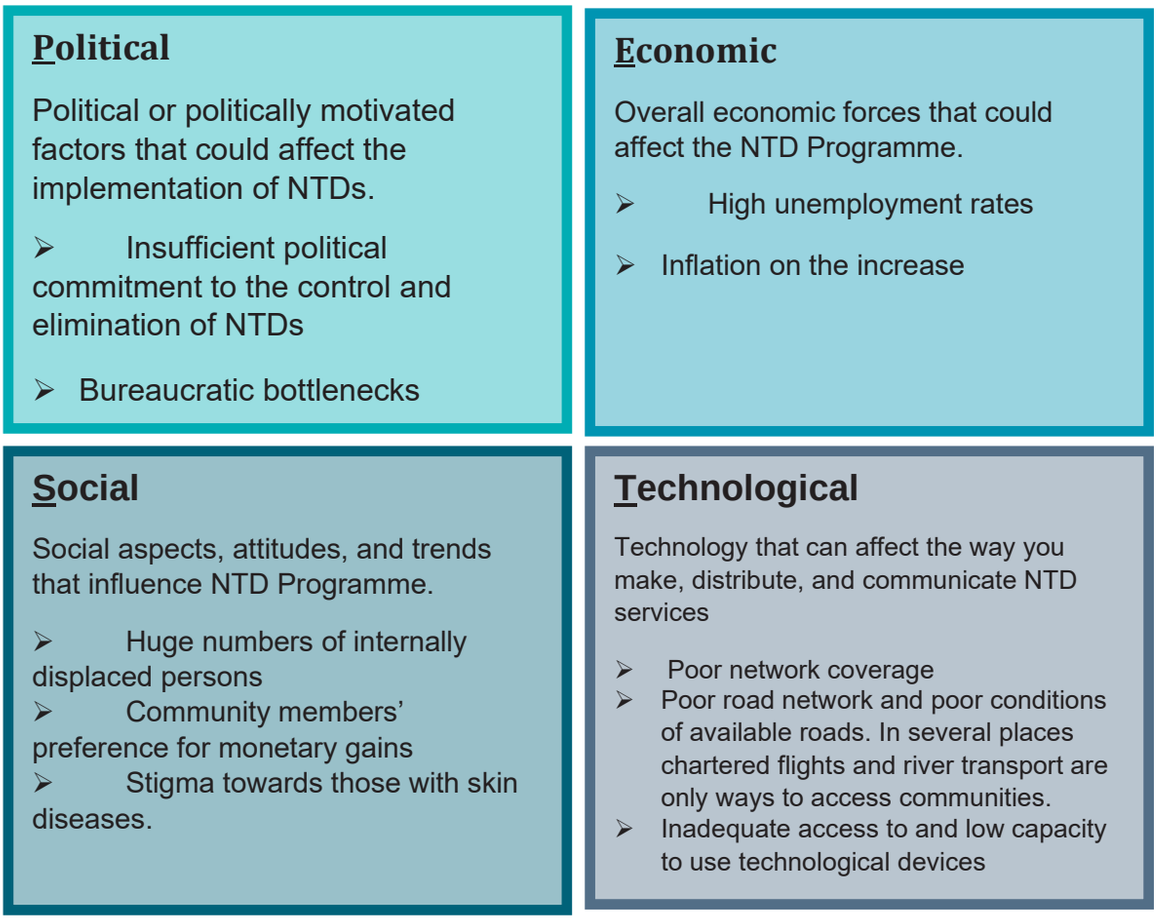

Figure 5. The PEST analysis

1.2.2. Health Systems Analysis

Health systems goals and priorities

South Sudan Ministry of Health's vision is a healthy and productive population living a dignified life while the mission is to improve health status of the people by effective delivery of the Basic Package of Health and Nutrition Services (BPHNS) through provision of health promotion services, control and elimination of diseases, control of injury and prevention of disability, enhancement of treatment and rehabilitation services, with full participation of the people. Communicable diseases are the major causes of morbidity and mortality. The top ten priority diseases for South Sudan includes: Malaria (50%), diarrhoea (17%) and RTI/pneumonia (10%) and Sexually transmitted diseases. Other causes of ill health and death include malnutrition, HIV/AIDS, tuberculosis, Neglected Tropical Diseases (NTDs) and Non-Communicable Diseases (NCDs). NTDs are gradually receiving attention in part due to the advocacies from national, regional and international actors/partners.

Analysis of the overall health system

The analysis of the overall health system is summarized in table 2 below

Table 2. Analysis of the country's health system using the Six Health System Building Blocks	
Service delivery	There are 1332 functional health facilities in South Sudan: 53 Hospitals, 341 Primary Health Care Centres (PHCC) and 938 Primary Health Care Units (PHCU). The health system in South Sudan is decentralized to States, Counties, Payams, Bomas and at the community level. Each level has specific roles to play. The national level sets policies, standards and guidelines; develops strategic plans and mobilizes resources; assures quality through supportive supervision, and carries out operational research. The States translate policies and strategic plans into annual plans and provide technical supportive supervision to the counties. Counties implement primary health care activities through the networks of health facilities in the Payams and Bomas. The County level also develops budgets and carries out implementation of the budget. Some of the challenges facing the service health delivery include inequitable distribution of health facilities with needs of pastoral communities inadequately addressed as well as gross shortage of health workers.
Health workforce	Health worker to Population ratio is 22 per 10,000 (26,122:12,000,000) with an estimated doctor–population ratio of 0.15 per 10 000 populations; and midwife/nurse–population ratio is 0.2 per 10000. This reflects a grossly inadequate health work force for the country. Distribution of available health workers is skewed markedly towards the urban areas, in particular, State

	capitals. The NTD health workforce has about over 50 at national level and 13 state focal coordinators In the last three years over 58000 CDDs have participated in MDA campaigns and some has become field surveillance officers in Guinea worm active case sweeps.
Health information	The Ministry of Health advocates and encourages one data, one report and one system (DHIS2). Data from facilities are collated on a monthly basis using HMIS tools and transmitted to DHIS2 at the county level. There are also the Weekly Integrated Disease Surveillance, community-based surveillance, vertical programmes reporting systems, Early Warning Alert and Response system for the emergency response in the IDPs, and sentinel surveillance systems. AFP, Guinea worm, TB, HIV, Immunization, and Cholera maintain parallel surveillance systems. Little information on health inputs and processes is collected and reported. Disease specific community-based surveillance systems exist for Guinea worm, PC-NTDs, but other community level health activities of health promotion and disease prevention nature do not have a formal reporting system. The reporting system is constrained by the security situation, inadequate human resource capacity (numbers and skills) and technologies to generate, analyze, disseminate and use health information
Medical products	The Ministry of Health launched a Pharmaceutical Policy (April 2022) with the aim of building robust systems for sustainable access to pharmaceutical and related health technologies. The Policy shall therefore guide all actions, efforts, effects and investments in the pharmaceutical sector and provide direction and guidance for all stakeholders in the pharmaceutical space in South Sudan. The National MOH in collaboration with partners and working with the State MOH, shall develop and implement national strategies for pharmaceuticals in combating and containing specific prioritized diseases in alignment with existing health systems processes, standards, structures and infrastructure. These shall include but not limited to selected infectious conditions, neglected tropical diseases, non-communicable diseases, emerging diseases and disease management Currently, the Central Medical Store supplies public health facilities with medicines and health commodities using the push system in three to six months' delivery cycles which often exceed the scheduled delivery dates. Under the push system of supply, inappropriate medicines frequently get supplied to health facilities. The medicines availability to patients and the stock status are affected by frequent and prolonged stock outs which is attributed to: inadequate allocation of funds; delayed and incomplete release of funds for medicines; lack of a functional Logistics Management Information Systems to inform quantification of needs resulting into poor procurement planning; inadequate storage spaces at all levels; challenging distribution system of medicines; and irrational use of medicines. Parallel and multiple medicines logistics systems by disease programmes and partners fragment the national medicines logistics systems resulting to poor estimation of national needs in material and financial terms. Owing to the ongoing emergency situation in the country, health development partners created the Medicines Emergency Fund to help the government respond

	to the crisis. This mechanism pulls financial resources to purchase medicines and handle the logistics to the health facilities. These funding mechanisms target curative health services in clinical settings. The Food and Drug Control Authority (FDCA) has been established to regulate the quality of drugs. The unit of Pharmacovigilance has been established within the FDCA. Some of the weaknesses in the system include poor regulation of the pharmaceuticals sector in the country which gives rise to substandard, counterfeit pharmaceutical products in the market. However, there is no system in place for destruction of expired drugs and a professional council that regulates the profession and practice of pharmacy is yet to be established. The essential medicines policy, essential medicines list, as well as clinical guidelines need to be reviewed and updated. Short shelf life of praziquantel coupled with security challenges and adverse events in infested children with high parasite loads resulting to rejection of treatments in some areas have led to quantities of tablets expiring.
Health financing	The sources of financing for the health sector include the government budget allocated through the Ministry of Finance and Economic Planning, as approved by the Council of Ministers. Health budget is about 4% of the national budget. Donor/ Partner funding through Development Assistance for Health (DAH) constitutes a significant revenue source, contributing about 60% of the planned health expenditure especially at primary health care level. Donor funding is channeled off budget, through partners mainly for recurrent expenditure, with little attention to health infrastructure development. There is also out of pocket payment, incurred by some patients in a number of health facilities. Most hospitals introduced user fees as a coping mechanism against inadequate funding. Additional expenses are incurred by patients when medicines are out of stock without necessarily getting into financial transactions with the health facility staff. There are no prepayments or insurance schemes to support cost sharing or private care in health facilities. The National Health Policy 2015-2025 and the Health Sector Strategic Plan 2015-2019 provides for communicable diseases control, including NTD strategic interventions. These provisions are indicative of the government commitment to eliminate NTDs.
Leadership and governance	The Honourable Minister of Health coordinates all health-related issues at the national level. The Undersecretary is the technical person that oversees the day-to-day running of the Ministry. 10 Directors General and other heads of tertiary health institutions report directly to the Under-Secretary. The same scenario is obtainable at the State level although there are some variations from State to State. County structures where there is a County Health Department (CHD) vary from one state to another following the last restructuring exercise. The NTD programme falls under the Directorate of Preventive Health Services with nine Directors reporting to the DG namely Director for Guinea Worm and Yaws Eradication; Director for PC NTDs; Director for CM NTDs; Director for TB, Leprosy and Buruli Ulcer; Director for Eye Care; Director NCD; Director of Environment; Director of Malaria; and Director for HIV/AIDs. At the state level, there are NTD State Coordinators and Guinea Worm State Coordinators.

	At the County level, there are County health departments with county NTD focal points. There is a national taskforce which operates as a coordinating body for the NTD and the MOH is planning to expand the coordination to include all NTDs.

Section 1.3. Gap Assessment

South Sudan is affected by a high burden of Neglected Tropical Diseases, most of which are readily preventable and/or treatable. Some of these have been mapped and interventions commenced while a number, particularly case management NTDs are either yet to be mapped or fully mapped.

1.3.1. Trachoma

Baseline mapping of 27 counties in five regions (Eastern Equatoria, Jonglei, Unity, Upper Nile and Western Equatoria) was conducted between 2001 and 2010. Of these 27 counties, 24 had trachomatous inflammation-follicular (TF) prevalence of over 30% (range: 30.1 – 80.1%), while 3 were below 5.0%; the threshold defining a public health problem. The trachomatous trichiasis (TT) prevalence (the stage when the eyelids are turned inward and cutting the cornea) were also very high ranging from 0.1% to as high as 15.1%. Additional baseline surveys and updated prevalence surveys (since many counties had data that was over 15 years old) were conducted in 2021 and 2022 and showed Unity, Upper Nile and Jonglei states remained endemic. Data from surveys have been used to guide implementation of the SAFE strategy (S= surgery, A= antibiotics, F= facial cleanliness, and E= environmental improvement via latrines and access to water). Antibiotics are distributed via mass drug administration (MDA) and rely on Zithromax® donated by Pfizer Inc. TT surgeries are conducted as part of either surgical campaign outreaches that may last one or two weeks or conducted at stand-alone clinics as part of routine eye health care.

The first national Trachoma Action Plan (TAP) was conducted in 2012 in Juba outlining a plan for the years 2012-2020. In 2019, a regional 5-year TAP for parts of Eastern Equatoria State was created.

In 2021 and 2022, with support from AMREF and The Carter Center, the MoH conducted trachoma prevalence surveys in 31 IUs / counties. 32 remaining IUs / counties will have trachoma baseline mapping while 1 county will have an impact survey in 2023. As of December 31, 2022, 33 IUs / counties were endemic for trachoma in South Sudan. **Figures 5** and **6** reflect TF and TT prevalence.

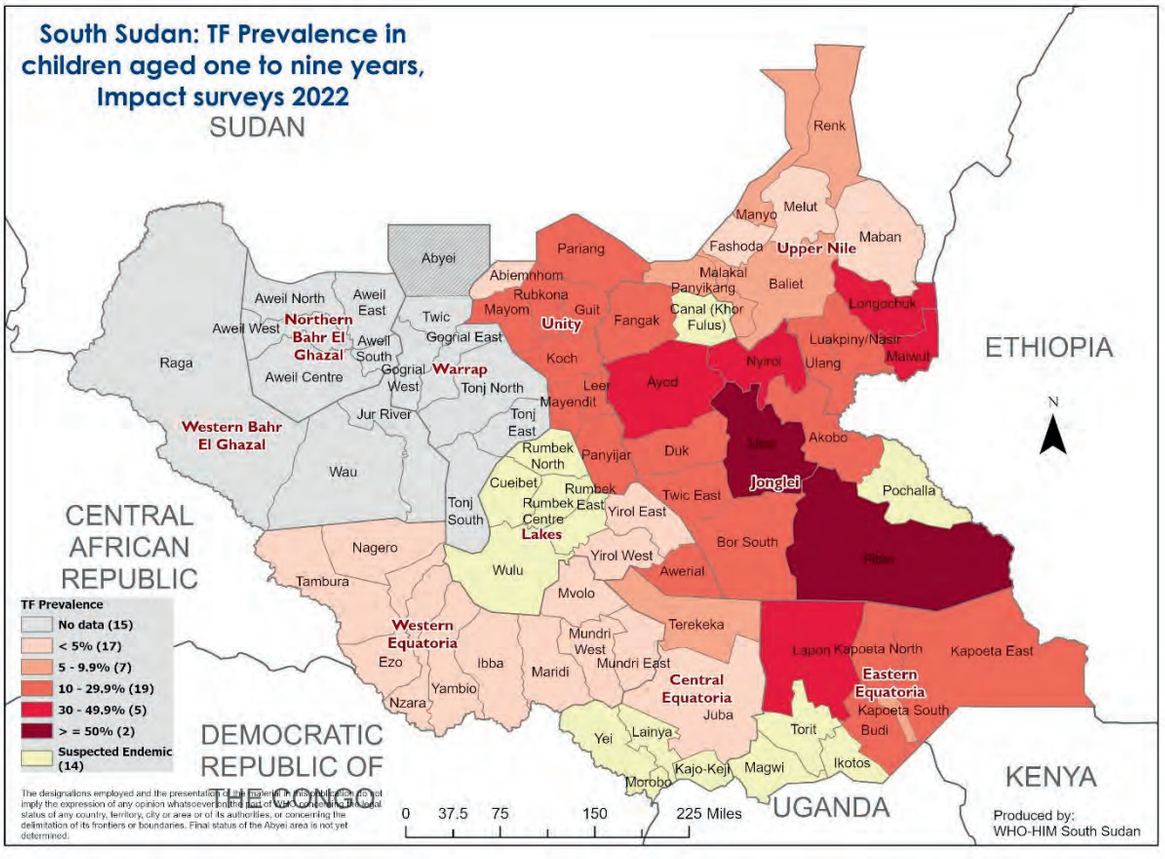

Figure 6: TF prevalence in children aged one to nine years, impact surveys 2022

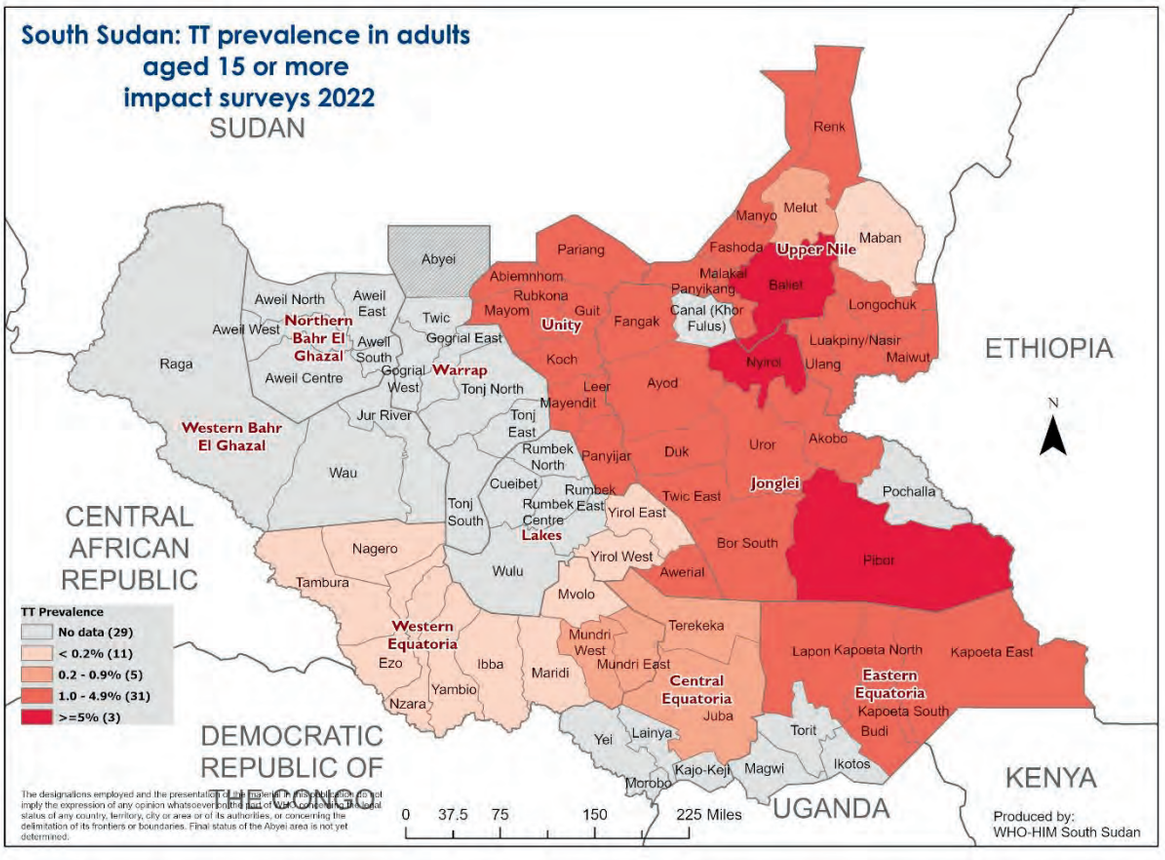

Figure 7: TT prevalence in adults aged 15 or more impact surveys 2022

1.3.2 Onchocerciasis [River Blindness]

Onchocerciasis is endemic in many parts of South Sudan. In 2003, the distribution of onchocerciasis was estimated using the Rapid Epidemiological Mapping of Onchocerciasis (REMO) method; leading to the classification of communities into three categories: priority areas requiring CDTI; areas not requiring treatment; and possible endemic areas that need further investigation. The main endemic foci are located in Western Bahr el-Ghazal, Western Equatoria, Central Equatoria and Lakes states. There are also endemic foci in North Bahr el Ghazal, Warrap, Eastern Equatoria, Jonglei and Upper Nile states. All foci surveyed in Unity State showed prevalence below 20%. With the focus now shifting from control to elimination, South Sudan in 2022 was able to carry out Mass Drug Administration with Ivermectin using Community Directed Distributors (CDD) in all the 48 identified endemic Counties for onchocerciasis, of which 34 were treated for Oncho-LF

(co-endemic) while 14 were treated for Oncho only (Figure 8). This activity which received technical support from Christian Blind Mission (CBM) and The MENTOR Initiative was supported financially from the END Fund.

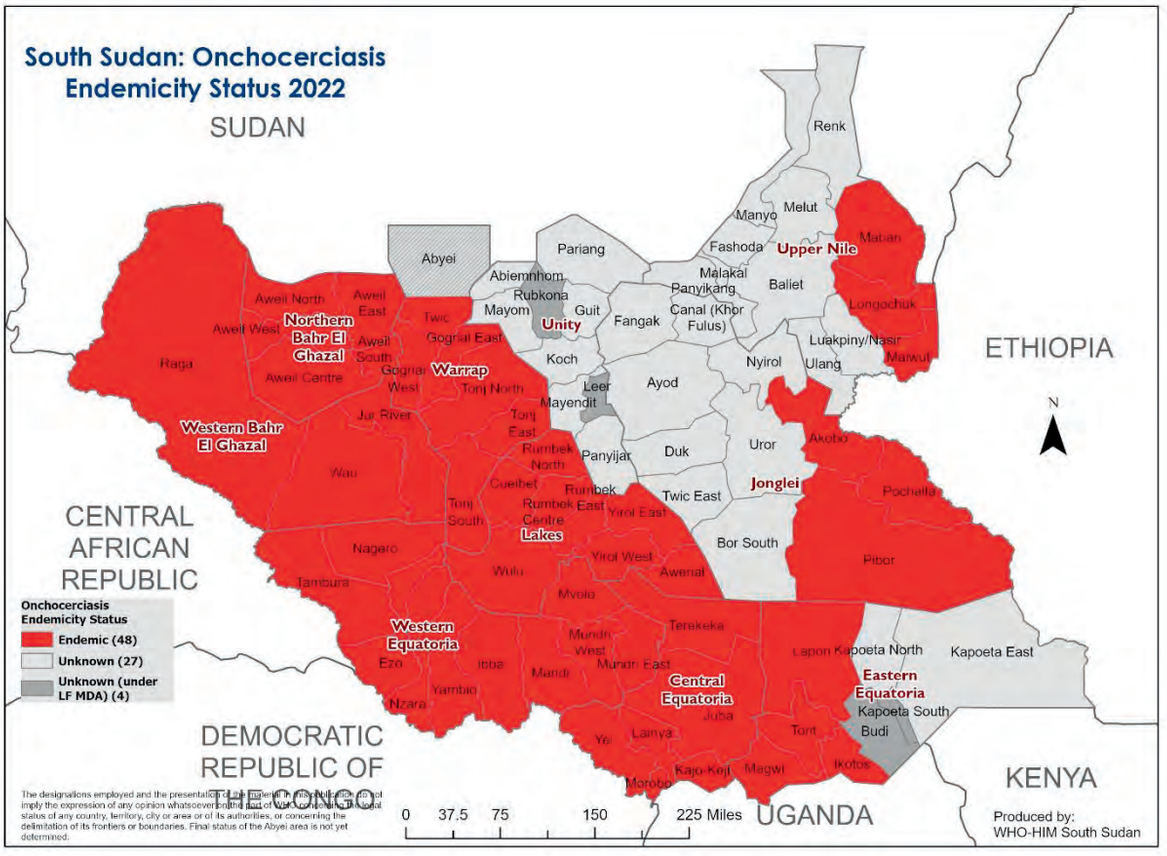

Figure 8: Map showing Onchocerciasis Endemicity Status 2022

Moreover, the Ministry of Health recently began to pay more attention to the reported high prevalence rates of a particular co-morbidity of onchocerciasis, namely Onchocerciasis-Associated Epilepsy (OAE)/Nodding Syndrome(NS).

1.3.2.1 Onchocerciasis-Associated Epilepsy (OAE)/Nodding Syndrome

In 1997 the number of cases seen, especially in the Lui/Amadi region, seemed to increase until the situation stabilized after about three years. Although the epicenter seemed to be Lui/Amadi, isolated or small numbers of patients were also reported from Katigiri and Rokon (Juba County), Yambio (Yambio County), Morobo (Morobo County), Bogori, Yeri, Kulu, Mvolo (Mvolo County), Billing, Wulu, (Wulu County), Maridi, Kozi (Maridi County) and Kotobi Mundri West County).

In 2006, WHO re-assessed new cases of Nodding Syndrome to be a severe seizure disorder characterized by abnormal electroencephalogram (EEG) findings, whose onset usually occurs among children between 3 and 18 years of age. An International Conference in Kampala (Uganda), in 2012, developed and eventually adopted the widely accepted case definition of Nodding Syndrome and outlined the required interventions to address the condition. The causes of this syndrome are unknown, but a strong association with onchocerciasis has been consistently reported in scientific literature. Surveys in the counties of Maridi, Mundri West and East, and Mvolo have reported the following prevalence rates of Nodding Syndrome, respectively: 2.6%, 0.9% and 2.2%.

In these same onchocerciasis endemic counties, the epilepsy prevalence rates (thus including all forms of onchocerciasis-associated epilepsy, OAE) were found to be 4.4% (Maridi), 3.3% (Mundri) and 5.1% (Mvolo). Colebunders R., et al (2018), Jada, S.R., et al (2022) Raimon, S., et al (2021).

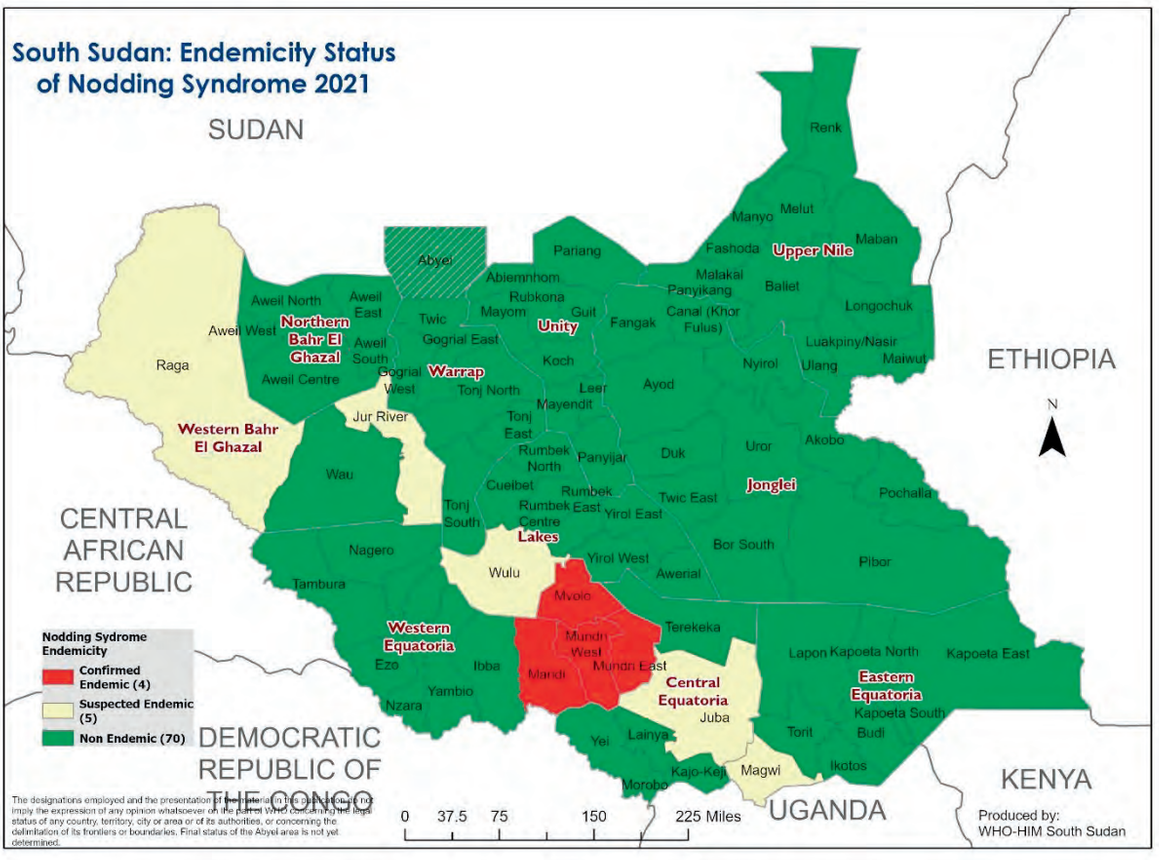

Figure 9: Endemicity Map of Nodding Syndrome in 2021

1.3.3 Lymphatic Filariasis (LF)

Mapping supported by the World Health Organization and other partners indicate that the disease is endemic in 50 counties, whereby 34 of them are Oncho co-endemic while remaining 16 counties are endemic for LF only. In 2022, South Sudan managed to treat all the 50 counties which includes the 34 Oncho- LF co-endemic counties and the 16 LF endemic only.

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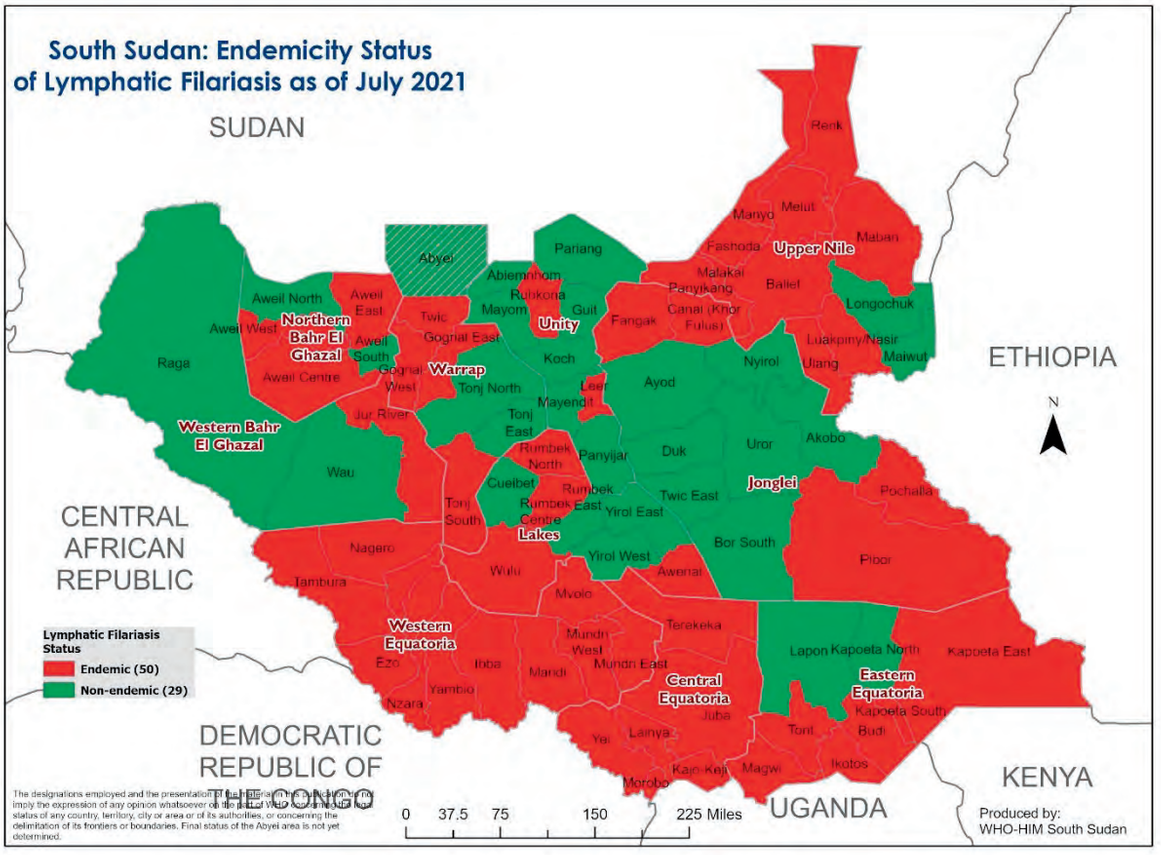


Fig 10: Map on Endemicity and Treatment Profile of Lymphatic Filariasis in South Sudan as at July 2021

1.3.4 Soil Transmitted Helminths (STHs)

Though data collated by UNICEF from health partners (NGOs, etc.) operating in the South Sudan during the war consistently indicated that 8-10% of all outpatient visits were for treatment of intestinal worms, mapping surveys indicate this is not a major public health problem. Only six counties - all located in Central Equatoria - meet the threshold for mass drug administration. In other places, infection levels for any of the STHs were generally low (figure 10). Two counties in Central Equatoria (Lainya and Morobo) have endemicity level ≥50%. Hook Worm infections were more prevalent as it was observed in 170 sites with 18 sites

(located in Juba, Lainya, Yei and Morobo in CES with 2 sites in Pochalla) having prevalence of ≥50%. The highest was 80.65% observed in Yei Centre. Ascariasis infections were found in 25 sites with only two sites (in Pochalla) having a prevalence of more than 20% infection (26.67% and 28.89%). Trichuris infection was recorded in 45 sites with three sites (two in Pochalla and one in Terekeka) having infection rates between 26% - 34%.

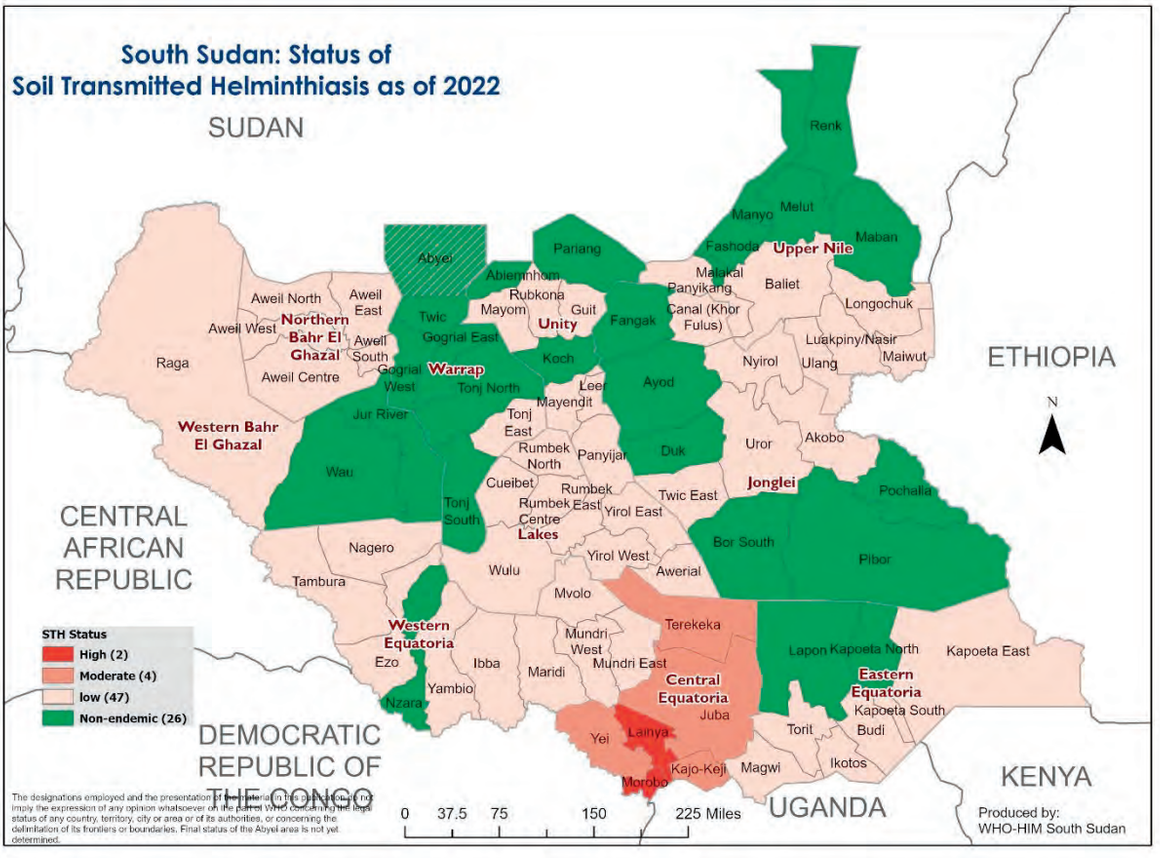


Figure 11: Status of Soil-transmitted Helminthiasis as of 2022

1.3.5 Schistosomiasis.

A total of 65 counties and 317 payams are endemic for schistosomiasis in South Sudan. Three counties are in the high-endemicity category while 22 counties are in the moderate endemicity category. Diving deeper, given the focal nature of the transmission, there are 29 payams that fall within the high-endemicity category and 134 payams are of moderate endemicity. Most of the high and moderate endemic payams are within Unity State that lie within the grasslands and flooded plains. Central Equatoria, Jonglei, Upper Nile, and Western Bahr el Ghazal contain quite significant numbers of payams that are schistosomiasis-endemic. Overall, most of the

infections occur within grasslands, forest/wooded areas and flooded plains of the country. The western part of the country and located in the tropical savannah and part of the grasslands has low prevalence for schistosomiasis. Based on available mapping data urinary schistosomiasis is more widespread with this being seen in 140 sites while intestinal schistosomiasis was observed in 65 sites. However, with regards to infection levels 36 sites recorded prevalence >30% for intestinal schistosomaisis. This was observed mainly in three States (Jonglei, Unity and Central Equatoria) with a site in East Equatoria. Seven sites had over 70% prevalence: Gok Yom in Bor South of Jonglei (92%); Wadakama in Manyo, Upper Nile (91.1%); Yei centre in Yei, CES (80.65%); Pariak in Bor South (78.85%); Githum in Awerial, Lakes (75%); Naliam in Leer, Unity State (74.58%); and Mayen in Bor South (73.47%). For urinary schistosomiasis only 6 sites in 5 States (Upper Nile, Jonglei, Lakes, Unity and Warrap) had infection rates 30% and above with the highest (57.69%) recorded in Guthum in Abuyong payam, Awerial county in Lakes State. The site in Abuyong payam, Awerial county in Lakes State is the only site where high levels (≥50%) of infection were observed for both urinary and intestinal schistosomiasis.

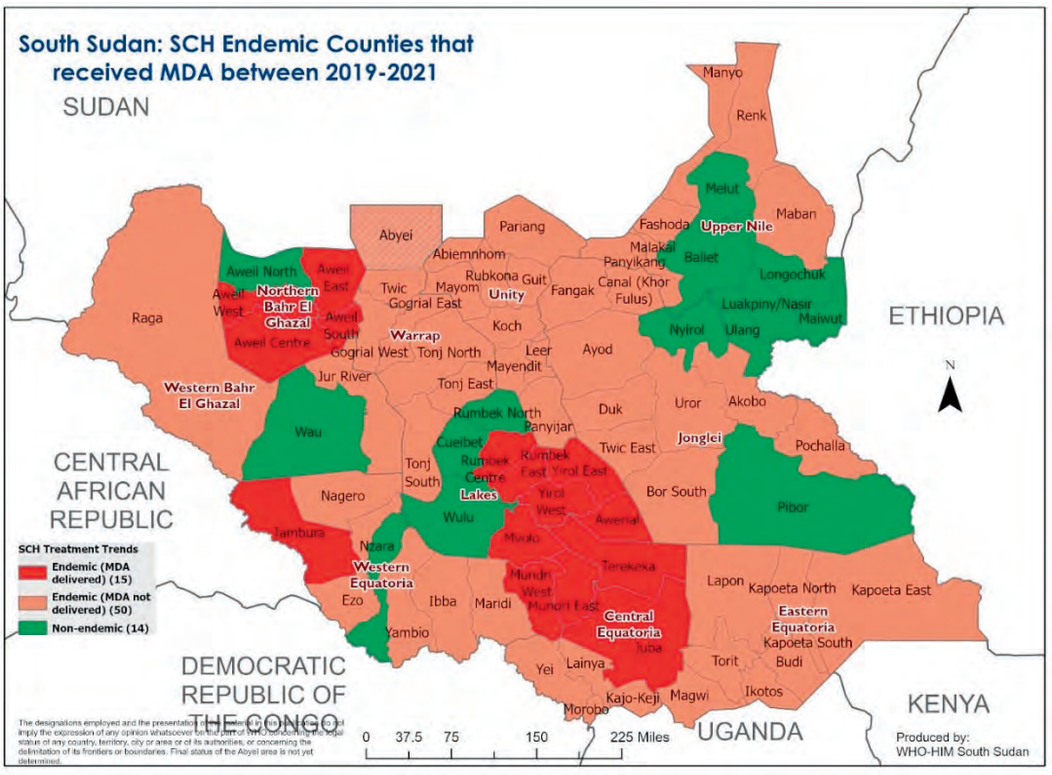


Figure 12: Status of Schistosomiasis Endemicity by Counties as of 2022

1.3.6 Dracunculiasis (Guinea Worm)

The South Sudan Guinea Worm Eradication Program being an offshoot of the GWE programme started in the Republic of Sudan with support from The Carter Centre had made tremendous progress in the control and elimination of GW. In 2014, only 70 cases when compared to 113 cases for the same period in 2013 were reported giving a reduction of 38 percent. This was a remarkable success considering political and ethnic hostilities that broke out in December 2013 and spilled over into early 2014. Even given circumstances of unrest and an isolated outbreak (accounting for the majority of South Sudan's 2014 cases), the program continued to function at a high level by reducing and containing cases. In the year 2015, only 3 confirmed cases of Guinea worm disease were reported accounting for 94 % reduction compared to 2014. In 2022 5(five) cases were reported in humans with 3 contained 2 not contained. (4 from Awerail country in Lake state and 1 case in Lopa/Lafon county in Eastern Equatoria state and 1(one) confirmed case in dog in Tonj East Warrap state.

Figure 12 presents the risk level surveillance by counties in early 2022

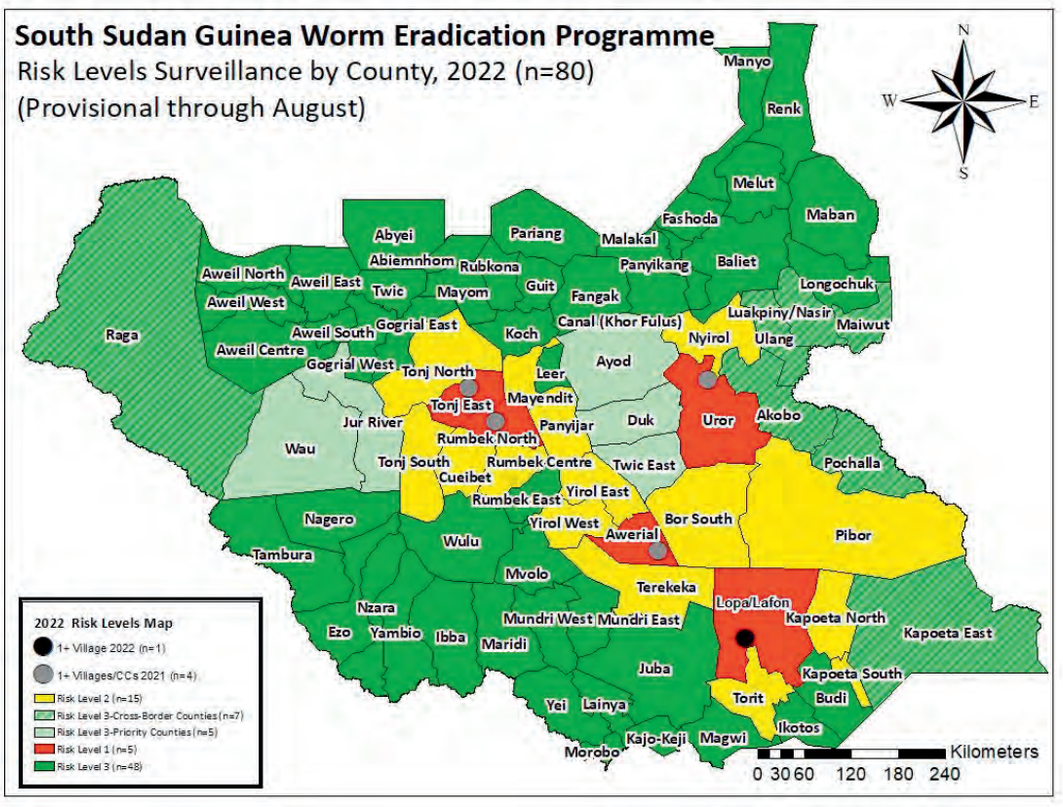


Figure 13 Risk level surveillance of GW by counties in early 2022

1.3.7 Human African Trypanosomiasis (Sleeping Sickness)

Human African Trypanosomiasis (HAT), caused by protozoan parasites of the genus *Trypanosoma*, and transmitted between infected humans and animals by tsetse flies (*Glossina* spp.) enter the blood stream during blood feeding. Two sub-species of *Trypanosoma* cause HAT, which are *Trypanosoma brucei rhodesiense* and *T. b. gambiense*. Other modes of infection are vertical transmission from mother to fetus during pregnancy and transfusion of contaminated blood or needle stick accidents. Humans are the main reservoir for *T. b. gambiense* (anthroponosis), however domestic animals such as pig, sheep and dog can also host the parasite.

In South Sudan, *T. b. gambiense* HAT is endemic in parts of Western, Central and Eastern Equatoria States, where some 1.8 million people are considered to be at risk. Counties affected by the disease are Tambura, Ezo, Yambio, Maridi, Mundri, Juba, Yei, Kajo Keji and Magwi. It is important to note that there is no current evidence for the occurrence of *T.b. rhodesiense* in the country.

From the mid-1990s until 2005, large-scale HAT control activities in South Sudan were carried out by NGOs, leading to an important decrease in the number of cases that caused a progressive withdrawal of NGOs involved in HAT control. Due to their withdrawal, there occurred an unreported resurgence of the disease where 92% of the screening done in 2010, revealed that 76% of patients were diagnosed as already with second-stage disease (Ruiz-Postigo, et al;2012).

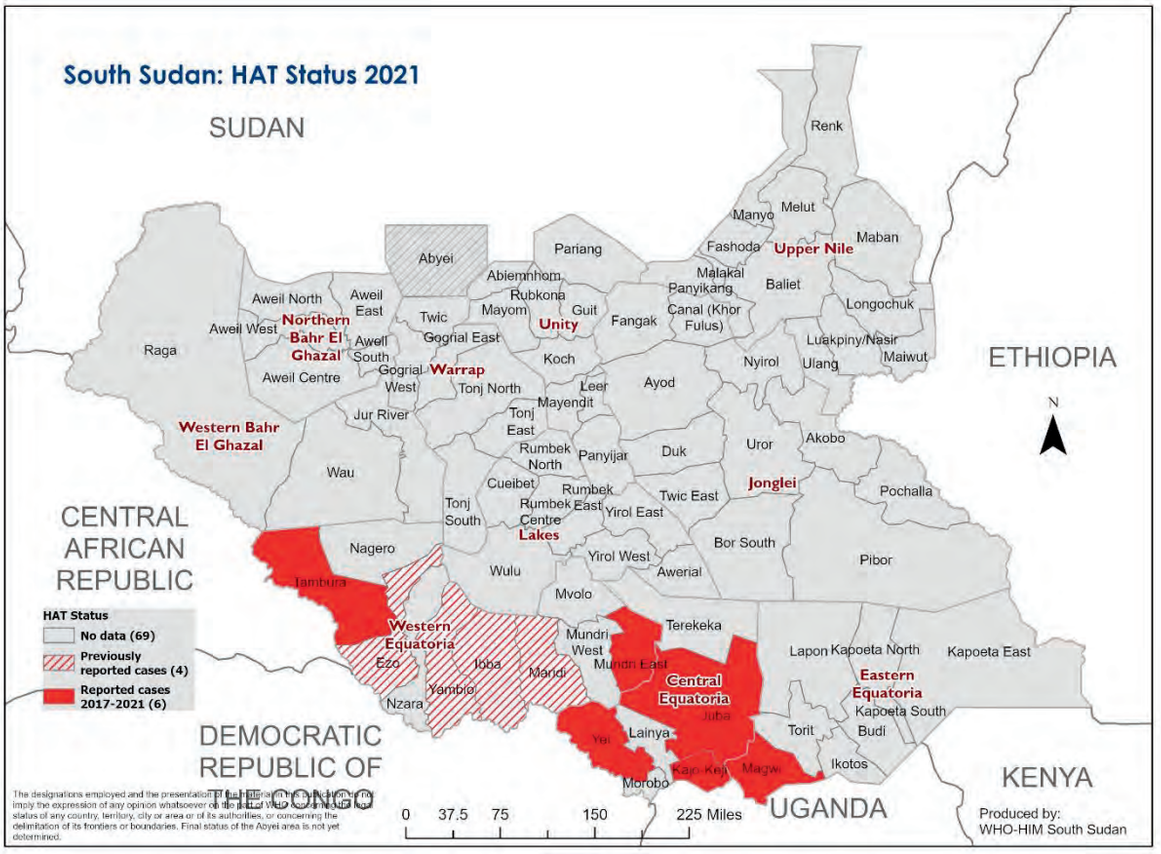


Figure 14: HAT Status 2021

1.3.8 Leprosy [Hansen Disease]

South Sudan conducted leprosy mapping between August 2021 and December 2022. A total of 58 (73.42%) out of 79 counties were effectively visited for data collection. The remaining 21 counties were not reached for several reasons ranging from transportation challenges and other logistics issues to insecurity, or flooding in some counties.

The mapping results revealed that only 25 health facilities distributed in 19(26.58%) counties were currently providing leprosy treatment and care services in the whole country. New cases of leprosy were detected in 41 counties during the mapping exercise of 2021 and 2022. However, when considering the period 2017-2022, new cases of leprosy were reported in 53 (91.38%) counties out of the 58 effectively mapped, while, 5(8.62%) counties registered no cases of leprosy. Pending the mapping of the remaining 21 counties, leprosy can be said to be endemic in 91.38% of counties in South Sudan.

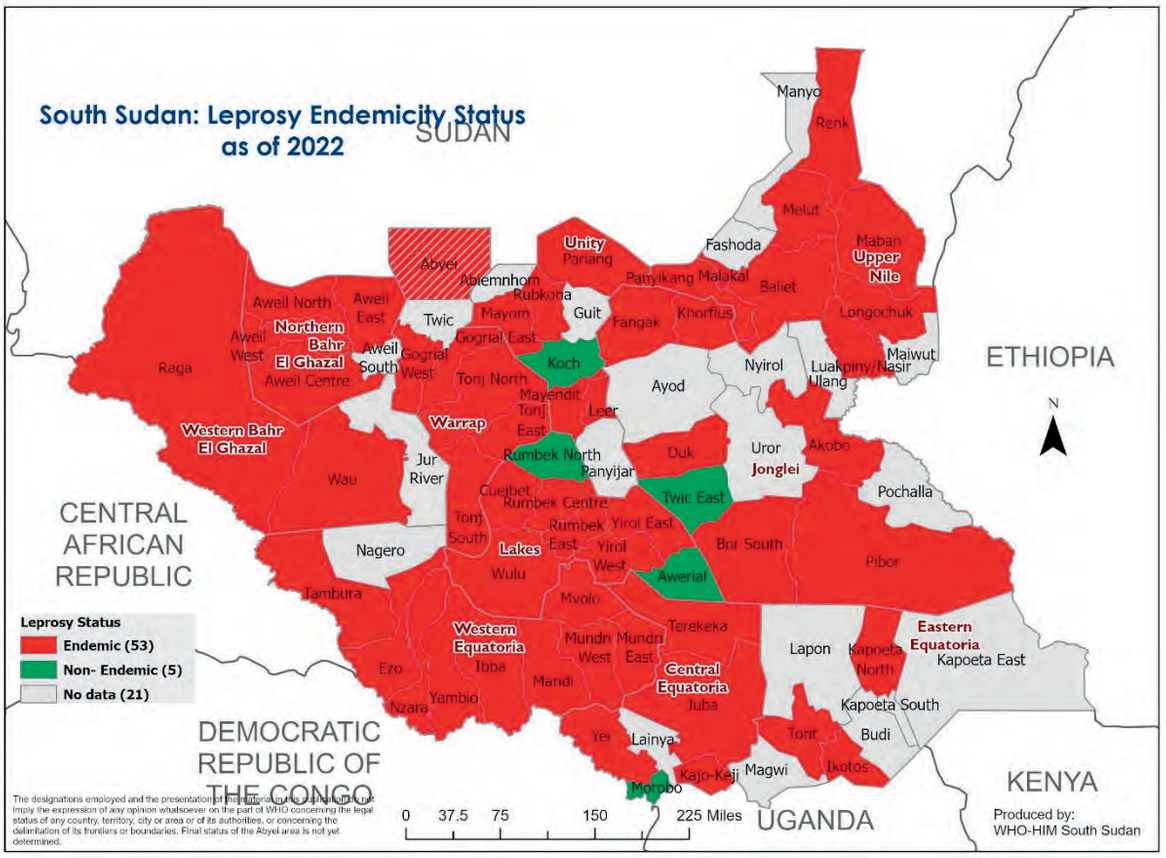


Figure 15: Map showing leprosy endemicity status by county 2022

1.3.9 Visceral leishmaniasis

In South Sudan, kala-azar occurs in two separate foci in four states and is caused by *Leishmania donovani. Phlebotomus orientalis* is the vector in the northern kala-azar focus of Upper Nile, Jonglei and Unity States, while *Phlebotomus martini* is responsible for transmission in the southern focus in parts of Eastern Equatoria State. The disease was first reported from South Sudan in 1904 and the first epidemic was documented in 1940, with a death rate of 80%. In 1988 it emerged that an epidemic had been devastating the Western Upper Nile since 1984, ultimately causing an estimated 10000 deaths in a population of 280 000 over a ten-year period.

The World Health Organization (WHO) estimates that globally about 500,000 new cases and over 50,000 deaths of kala-azar occur every year. Over 90% of these cases are from seven countries: Bangladesh, Brazil, Ethiopia, India, Nepal, Sudan and South Sudan. In Africa, there are six countries endemic for VL, namely Ethiopia, Kenya, Somalia, Uganda, South Sudan and Sudan. Kala-azar generally affects poor and neglected populations living in remote rural areas.

If not treated, more than 95% of kala-azar cases will eventually result in death, as VL is the third most important vector-borne disease after malaria and lymphatic filariasis

In 2014, MoH, WHO and partners reported an estimated 10,000 new cases, and 4% case fatality rate in twenty-four kala-azar treatment facilities in Jonglei, Upper Nile, Unity and Eastern Equatoria States of South Sudan.

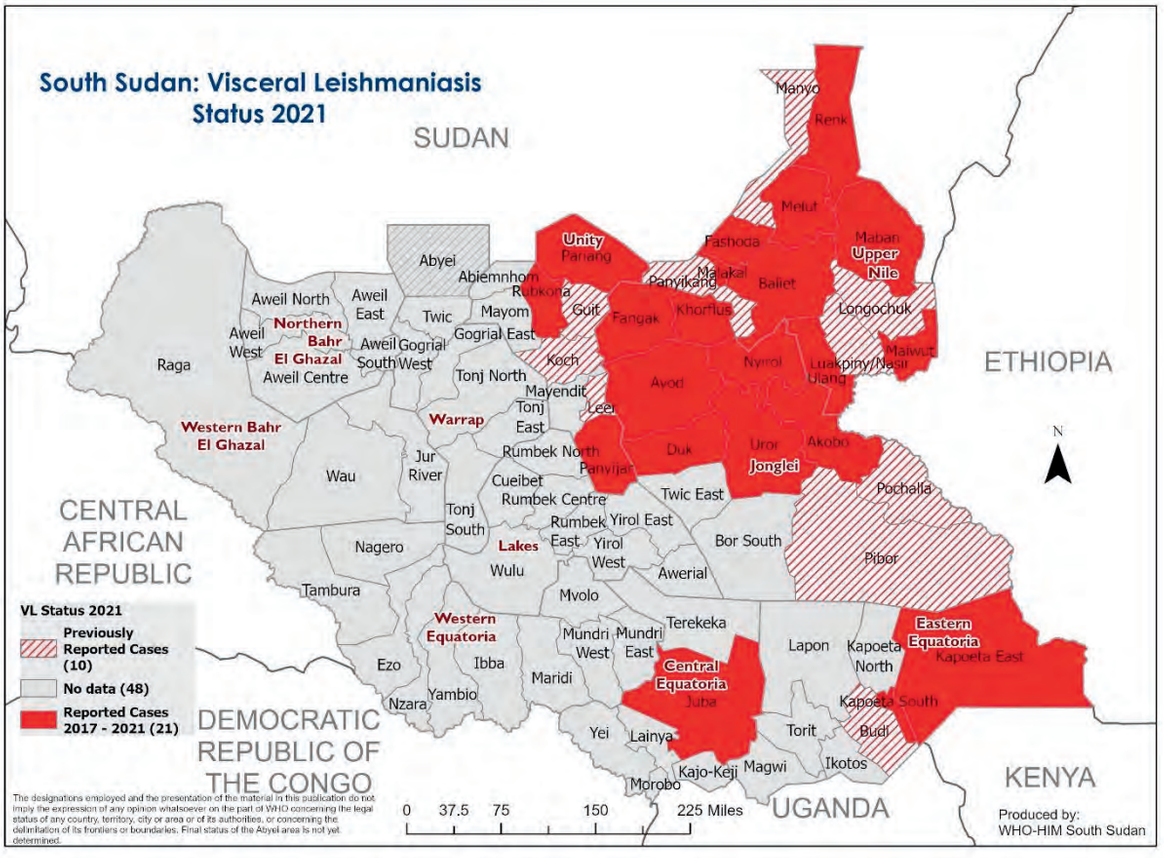


Figure 16: Visceral Leishmaniasis Status 2021

1.3.10 Loiasis [African eye worm]

In the past, a number of studies on *L. loa* were conducted in Sudan (Woodman & Bokhari 1941, Kirk 1953). To date it seems that the geographical distribution based on these data still applies. At the time, loiasis was found to occur between latitude 4º to 6º North, extending westwards into French Equatorial Africa and southwards into the Belgian Congo. It did not occur east of longitude 30º East and was not reported in Uganda. In South Sudan, this region corresponds to the present day Western Equatoria. In the 1950s about 20% of the population was infected with *L. loa*. The limited data collected over the last years indicate that prevalence remains high (APOC 2005). This is of major concern to the onchocerciasis control programme, because parts

of Western Equatoria, Eastern Equatoria and Jonglei are co-endemic for loiasis and onchocerciasis and or lymphatic filariasis, meaning that specific treatment procedures should be followed to avoid adverse reactions resulting from MDA with ivermectin. Further prevalence data are therefore needed to develop a map indicating high-risk areas (*L. loa* prevalence >20%) (Diggle et al. 2007), so that a modified ivermectin distribution protocol can be implemented in these areas co-endemic for *L. loa* and *O. volvulus or LF.* The information desired is also important for clarity to allow targeted implementation of a modified onchocerciasis treatment protocol and formulation of an intervention strategy for areas where LF and *L. loa* are co-endemic.

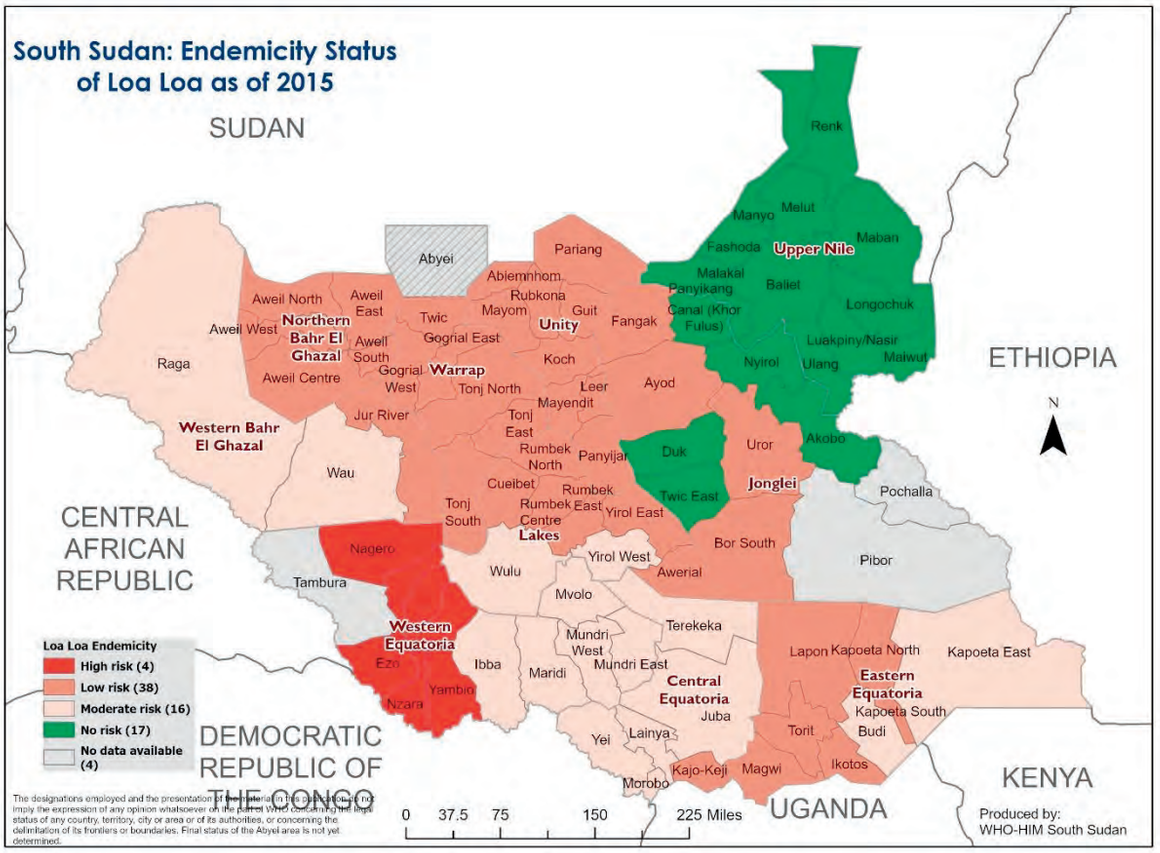


Figure 18: Endemicity status of *Loa loa* as at 2015

1.3.11 Buruli Ulcer

During the 1990s, when the International Committee of the Red Cross (ICRC) reported four cases of Buruli ulcer from Upper Nile and Bahr el Gazal. Before then the occurrence of the disease in South Sudan was unknown. From 2000 through 2006 an estimated 16,000 internally

displaced people (IDPs) from the area around Raga were displaced to Mabia IDP camp in Tambura County. In July 2002, a suspected Buruli ulcer epidemic in the camp was reported by CARE International to WHO. From 25th to 26th July 2002, WHO, the Kenya Medical Research Institute (KEMRI) and CARE International carried out field investigation and collected specimens. Laboratory analysis and confirmation were conducted by KEMRI and the Institute of Tropical Medicine, Antwerp, Belgium. Though tests carried out at KEMRI showed that the 17 patients tested were infected with Mycobacterium species, *M. ulcerans* was only detected in two of the patients, using polymerase chain reaction (PCR).

This was the first confirmed existence of Buruli ulcer in South Sudan. After the notification various agencies responded, including WHO, CARE International, Medair, Church Ecumenical Action in Sudan (CEAS) and the Catholic Church. A health facility was established in the camp to deal exclusively with the Buruli ulcer cases. From July 2002 to February 2004, a total of 1077 suspected Buruli Ulcer cases were diagnosed in Mabia. At Yambio hospital 5 cases, all from Nzara were diagnosed and treated. In Mabia the disease occurred predominantly in the IDPs and was most common among children (accounting for 60% of all cases), although it is known to affect all age groups. In 2004, an advocacy meeting was convened in Nairobi (26-27 February) to improve awareness and strengthen surveillance and control of Buruli ulcer. One Sudanese surgeon was trained in Ghana on Buruli ulcer management and a national counterpart to the WHO focal point was appointed to coordinate all Buruli Ulcer activities in South Sudan. Under this leadership, national and regional task forces were established, and an investigation team was formed, which visited Mabia, Tambura, Nzara and Yambio counties to determine the scale of the problem in Western Equatoria. The disease was confirmed in all counties, and one case was reported from Nimule hospital (Eastern Equatoria). Suspected cases have since also been reported from Upper Nile and Central Equatoria, but have not been confirmed to date. This indicates that other states of South Sudan may also be endemic for the disease, though based on current evidence the area around Nzara in Western Equatoria seems to be the epicentre. During 2005, the number of new cases reported from Nzara increased from four in 2004 to 23 new cases and one recurrent case.

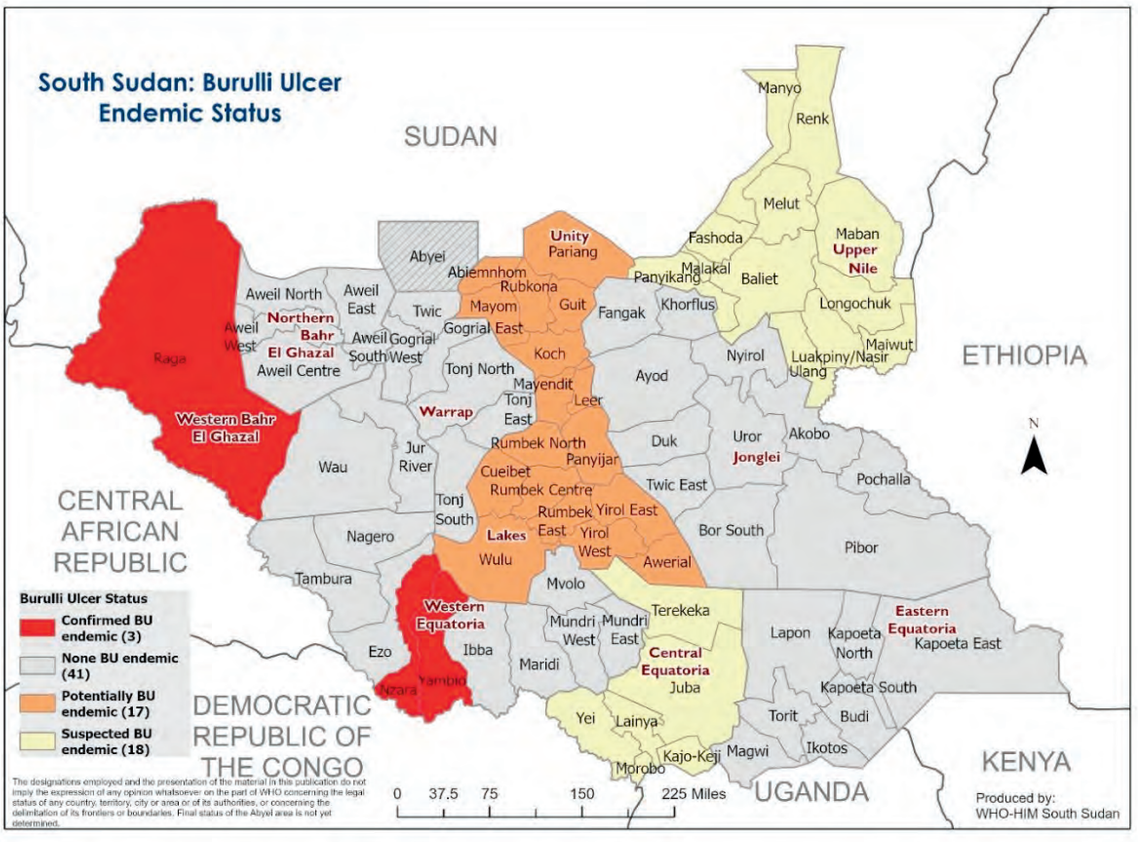


Figure 17: Map of Buruli ulcer endemicity status

1.3.12 Mycetoma

Mycetoma is characterized by a triad of painless subcutaneous mass, multiple sinuses and discharge containing grains, resulting in destruction, deformity and loss of function, which may be fatal. Mycetoma commonly involves the extremities, back and gluteal region. The disease is common among barefoot populations who live in rural areas in endemic regions but no person is exempted. Mycetoma commonly affects young adults, particularly males aged between 20 and 40 years, mostly in developing countries. People of low socioeconomic status and manual workers such as agriculturalists, labourers and herdsmen are the worst affected. Neighbouring Sudan is reported to have the highest incidence of mycetoma infections (Van de Sande, 2013; Azrag et al, 2019; Mohamed, Fahal, & van de Sande, 2015; Fahal, 2011) with a prevalence of 14.5 cases per 1,000 inhabitants being reported in some endemic areas of Sudan, including Gezira and White Nile states (Fahal, Mahgoub, EL Hassan, et al 2014). DNDi (2019) reports several managed cases in Sudan. A risk map initially developed by Samy, Van de Sande, Fahal & Peterson (2014) shows the geographic distribution of mycetoma cases and Acacia trees across Sudan and South Sudan confirms the high incidence of mycetoma in Sudan

with model predictions suggesting possibility of cases in southeast and north central of South Sudan. The 'mycetoma belt' however includes all of South Sudan.

1.3.13 Yaws

Yaws is a chronic skin infection characterized by papillomas (non-cancerous lumps) and ulcers. It is caused by the bacterium, *Treponema pallidum* subsp. *pertenue*

Characteristically, yaws affect children ≤15 years in poor communities situated in warm, humid and tropical environments. Poor personal hygiene and such common NTD drivers as poverty help spread yaws. The infection was traditionally treated with a single-dose, intramuscular benzathine penicillin, considered the “magic bullet” for fighting the disease (Handley, 2020). However, in 2012 it was demonstrated that a single dose oral azithromycin was as effective as benzathine penicillin at treating yaws, thus allowing interventions to be more easily deployed in remote communities, which are often the most impacted by the disease (Handley, 2020). Consequently, WHO developed a revised strategy for the eradication of yaws (the Morges strategy), which emphasises an initial round of MDA using azithromycin in endemic communities (Bodimeade, Marks and Mabey, 2019) Another vital development which is changing the way yaws is diagnosed is the introduction of the Chembio Dual Path Platform rapid test which makes it possible to diagnose patients using finger prick blood at the point of care. With this development there is less reliance on unreliable clinical diagnostics and better deployment for community surveillance and assessing individual cure (Handley, 2020). With the new NTD Roadmap 2030, yaws has been targeted for global eradication by 2030.

Mohammed (1985) points out that at some point in time yaws and the sister-infection, syphilis, were key public health problems in the old Sudan. Hewer (1934) reports 250 cases of yaws and syphilis among negroid races in the southern Sudan and general observations made upon 1,000 others seen casually. The prevalence of both yaws and syphilis reduced significantly with the wide use of penicillin, but may be re-emerging as public health issues with the extensive population movement and particularly the huge influx and presence of refugees (Mohammed,1985). Prevalence of yaws is currently unknown in South Sudan but is known to be endemic in neighboring DRC (WHO, 2018; Roser et al., 2018).

Based on historical data a total of 12 counties were reporting Yaws cases in central and Eastern Equatorial, Upper Nile, Jonglei, and Northern Bahr el Ghazal. Between 2021-2022, the Country integrated Yaws active search with leprosy mapping and GW case sweep, and a total

of 42 suspected cases were reported in seven counties, five of them are known to be endemic while 2 of them are non-endemic.

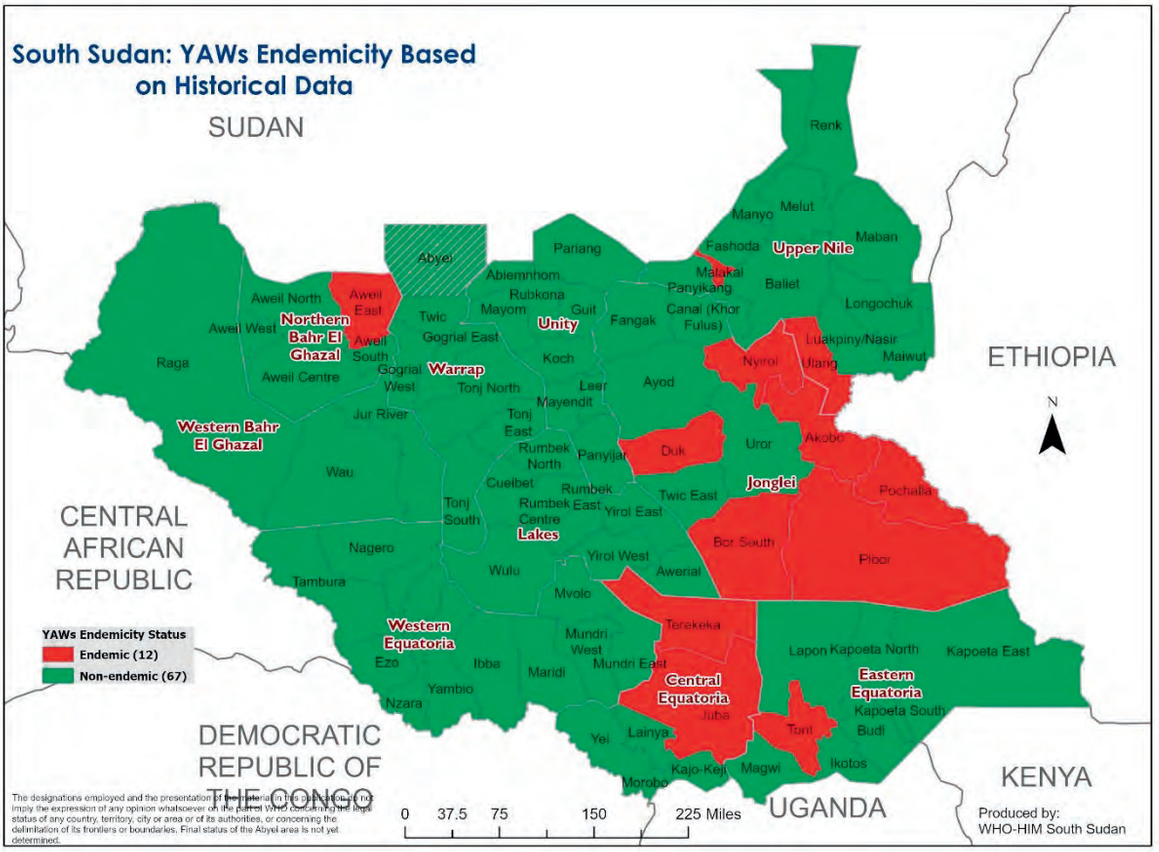


Figure 18: Yaw's endemicity in South Sudan based on historical data

1.3.14 Dengue

Dengue is a viral infection transmitted by the bite of an infected female Aedes mosquito with symptoms appearing on an average of 4–7 days after the infective bite. Dengue fever is a flu-like illness that affects everyone of both sexes and all those living in tropical and subtropical areas are at risk. There is no specific treatment for dengue fever. Dengue virus transmission and outbreaks are influenced by a number of factors including but not limited to climate change, the global trade, international travel, unplanned urbanization and high human population density (Tatem, Hay, & Rogers 2006; Wilder-Smith & Gubler, 2008; Stoddard et al., 2009; Gubler, 2002, Kendall et al., 1991). Evidence of dengue infection in Sudan has been severally documented with a number of outbreaks having been documented in 2010, 2013 and 2017, and reported in seven states across the country including the Dafur region (WHO, 2019; Abdallah, Ali, Mustafa & Adam 2012; Ali Khider & Mubarak, 2006). The risk of spread of dengue fever virus from Sudan is high due to the presence of suitable mosquito vectors (Aedes) in the

neighboring countries including South Sudan all of which experience floods and seasonal heavy rains annually (WHO, 2019; OCHA 2019). South Sudan has an age adjusted Death Rate for dengue for the country which is 0.02 per 100,000 of population with South Sudan being ranked #76 in the world (WORLD HEALTH RANKINGS).

1.3.15 Echinococcosis

Echinococcosis is a parasitic disease that occurs in two main forms in humans: cystic echinococcosis (also known as hydatidosis) and alveolar echinococcosis, caused by the tapeworms *Echinococcus granulosus* and *Echinococcus multilocularis*, respectively. Both forms of the disease have asymptomatic incubation periods that can last many years before clinical signs manifest as the parasite larvae evolve. However, both infections can cause serious morbidity and death. Dogs, foxes and other carnivores can host the adult worms and the parasite eggs in their faeces when ingested by humans develop into larvae in several organs especially the liver and lungs (WHO, 2020). Those living in pastoral communities are at greater risk of the disease because of poor hygienic conditions, illegal home and backyard slaughtering of animals coupled with the presence of stray dogs and poor veterinary services among others (Wumbiya et al., 2017)

Cystic Echinococcus (CE) is common in South Sudan (Thomas, Ellis-Owen & Winson 2015; Lado, 2008) but cyst localization is diverse (Lado 2008). Ahmed et al., 2018 cites several studies that established high prevalence rates of *E. granulosus* in stray dogs (50–70%), camels (35%) and sheep, goats and cattle (10–11%) with 0.3–1.04% of all humans being infected in central and South Sudan. Ochi, Akol, & Augustino (2015) report prevalence of hydatidosis in cattle, sheep and goats in Juba County, Central Equatoria State, South Sudan. Stewart et al., 2013 observe the endemicity of cystic echinococcosis among the Mundari pastoralist tribe living in cattle camps in Terekeka, South Sudan. The disease was also observed among other tribes including the Taposa, Buya and Turkana in Jonglei and Eastern Equatoria states (Magambo, Zeyhle, and Wachira 1998; Magambo et al., 1996; Ochi, Akol, & Lukaw 2016; Wumbiya et al., 2017). Mundari women were observed to harbour a disproportionate burden of hydatidosis compared to men which may be due to gender-specific, high-risk tasks (Stewart et al., 2013).

1.3.16 Snakebite envenoming

Snakebite envenoming is the medical condition resulting from a snakebite and which needs to be treated with antivenom in most cases. Snake-bite is a significant public health problem in

low-income countries where access to health care services is poor. In Sub-Saharan Africa 30,000 deaths and over 8,000 amputations are estimated annually from snakebites. World Health Organization's new road map envisions that deaths and disability from snakebite will be halved by 2030.

MSF reports treatment of 300 snakebite victims each year in Agok, most during the rainy season when snake bites are most common (MSF, 2019; Potet, 2018). Potet (2019) further observes that in MSF-run hospitals in Ethiopia, the Central African Republic and South Sudan, fewer than 1% of people bitten by snakes die when they have access to the right services and effective antivenoms. Several cases of snake bite were reported in Koujok, Akon and other payams within the Gogrial West County (Radio Tamazuj 2020).

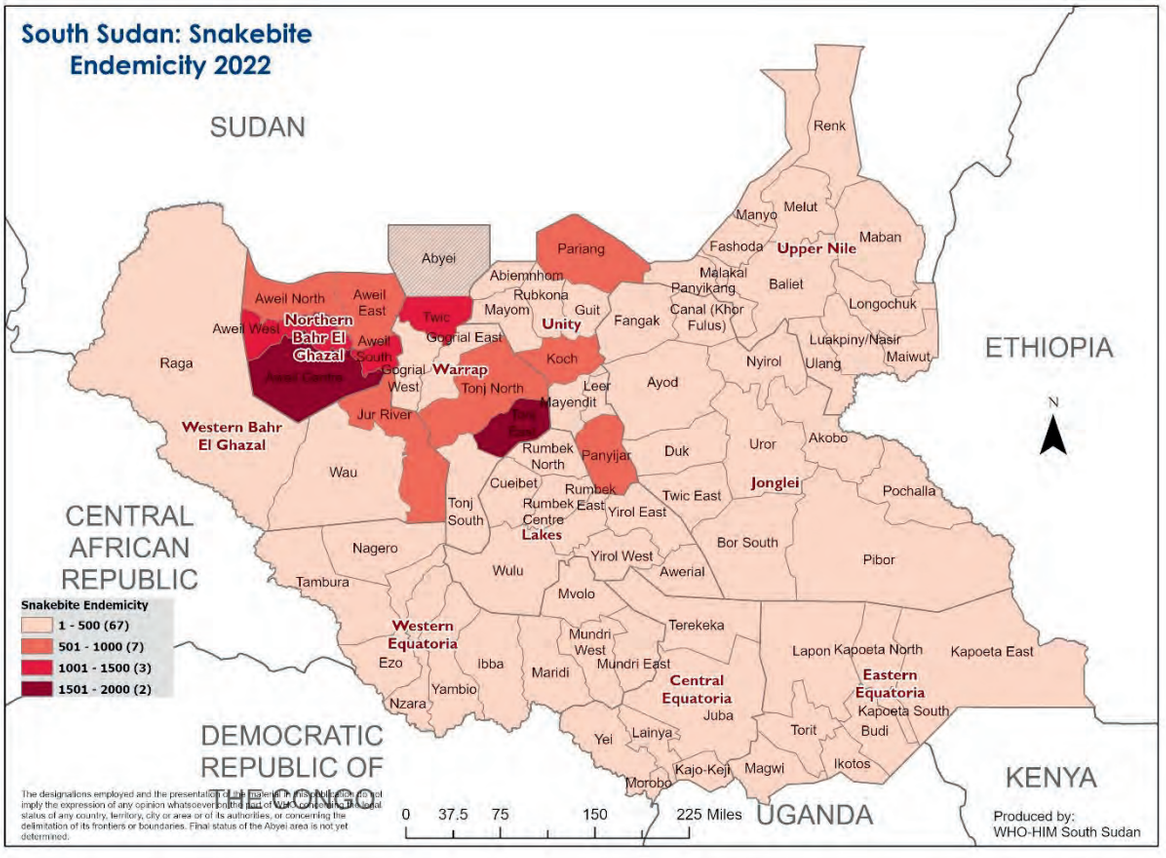


Figure 19: Endemicity map of snake bites cases in South Sudan 2022

1.3.18 Rabies

Rabies, spread through bites or scratches (usually via saliva), is a vaccine-preventable viral disease with dogs as the main source of human rabies deaths. Dogs account for up to 99% of all rabies transmissions to humans, and therefore rabies elimination is only possible with

vaccination of dogs and prevention of dog bites (WHO, 2020). Rabies is present on all continents, except Antarctica, with over 95% of human deaths occurring in the Asia and Africa regions. Kwaje (2018, unpublished) in a presentation at the Third GF-TADs Regional Roadmap Meeting for Eastern Africa with regard to the FMD, PVS reported 4 outbreaks of rabies in Central Equatoria between 2016 and 2017. Patti et al (2018) reported the death of two inpatients suspected of rabies in December 2017 followed by 29 reported cases of dog bites in January 2018 in Bentiu thus triggering suspicion of an outbreak of rabies. Following interventions, a total of 230 possible rabies exposures were recorded between 1 August 2017 and 20 April 2018. Taban (2018) highlighted public health risks attributed to dog transmitted zoonotic diseases including rabies based on a rapid situation assessment conducted in five Counties in Jubek, Terekeka, Western Bahr el Ghazal, Wau and Jonglei States and Abyei Administrative Area. The assessment found a strong linkage of suspected rabid stray dog bites and rabies cases among communities as well as low access to services for dog healthcare and post human exposure to suspected rabid dog bites.

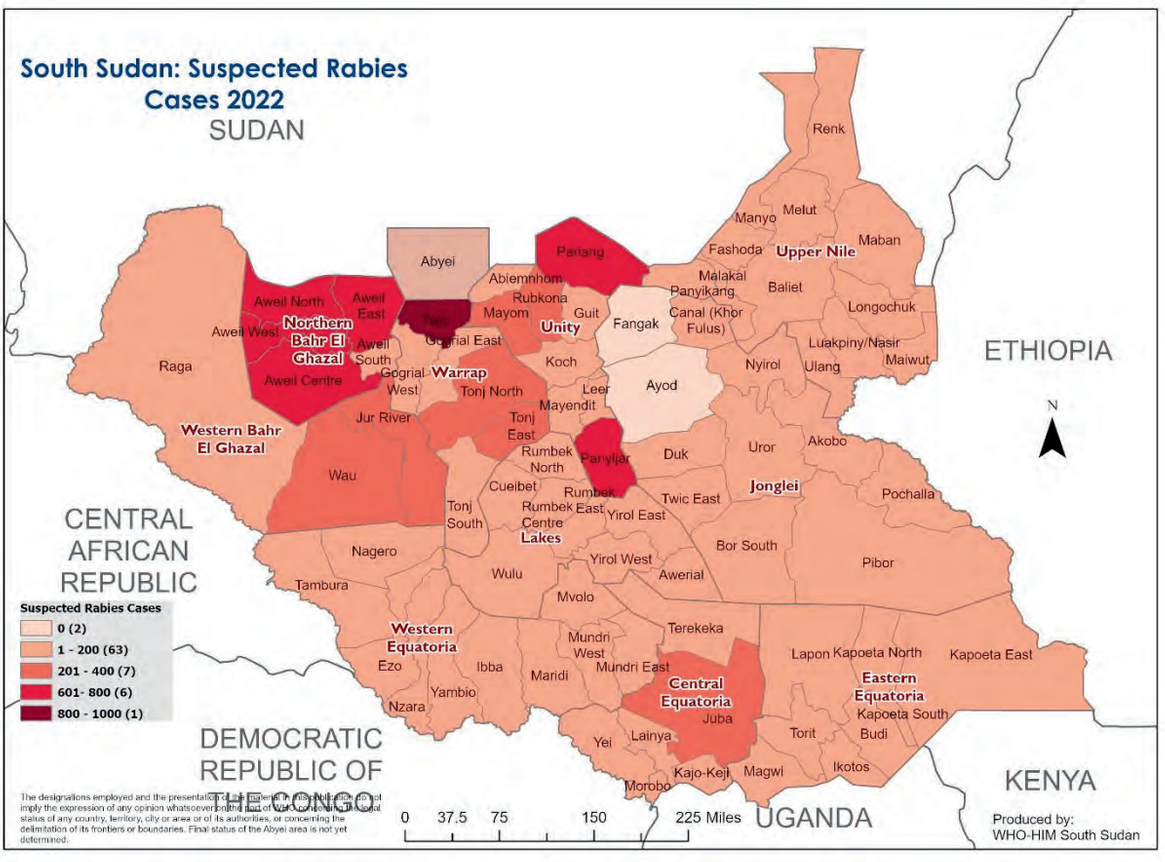


Figure 20: Suspected Rabies Cases 2022

1.3.19 Scabies

Human scabies is a parasitic infestation caused by mites, *Sarcoptes scabiei var hominis*, which burrows into the skin and lays eggs, eventually triggering a host immune response that leads to intense itching and rash (WHO, 2020). Scabies is a contagious skin infection and spreads through direct skin-to-skin contact and infested formites (handkerchiefs, garments and bedclothes). Primary management of affected individuals involves application of a topical scabicide. Oral ivermectin is also highly effective and well tolerated (WHO 2020, Ameen 2016), and is already an added advantage where the drug is distributed for onchocerciasis and lymphatic filariasis elimination (Engelman, Martin, Hay, et al. 2013; Mohammed, Deb, Stanton & Molyneux 2012). Engelman D, Cantey PT, Marks M et al (2018) note that scabies is prevalent in all countries. Karimkhani, et al., (2017) listed central and southern sub-Saharan African countries as relatively low in their global 2015 scabies age-standardized DALYs per 100,000 people in males, females, and both sexes. Berger (2020) listed scabies as part of the infectious diseases of Sudan and South Sudan.

In 2015 Catholic Radio reported the infection of at least 213 inmates of Wau Central Prison, and highlighted that a similar outbreak was first reported in 2013. Two electronic media (DABANGA TV and Radio Tamazuj) as well as OCHA (2013) reported several incidences at Sudan border areas with South Sudan. Given the refugee and IDP situation in South Sudan, scabies tends to thrive in overcrowded and poor environmental conditions (especially those lacking access to water for washing) surveillance in the camps and treatment of infected persons need to be scaled up.

PC-NTDs Co-endemicity

In South Sudan, PC-NTDs is co-endemic in various counties. Most of the counties are endemic for 2 or more of PC-NTDs as shown in figure 15. LF and Oncho are co-endemic in 34 counties while SCH and STH are co-endemic in 46 counties. LF/STH co-endemicity is in 35 counties and LF-loa loa co-endemicity is in 36 counties. For LF/Oncho endemic counties the country uses IVM in combination with ALB. In SCH endemic counties only Praziquantel (PZQ) is used. For LF/Loa loa co-endemic areas a combination of IVM and ALB is now used where no side effects have been reported overtime. However, for co-endemic counties implementing LF MDA for first time in 2022, only ALB was used (4 counties).

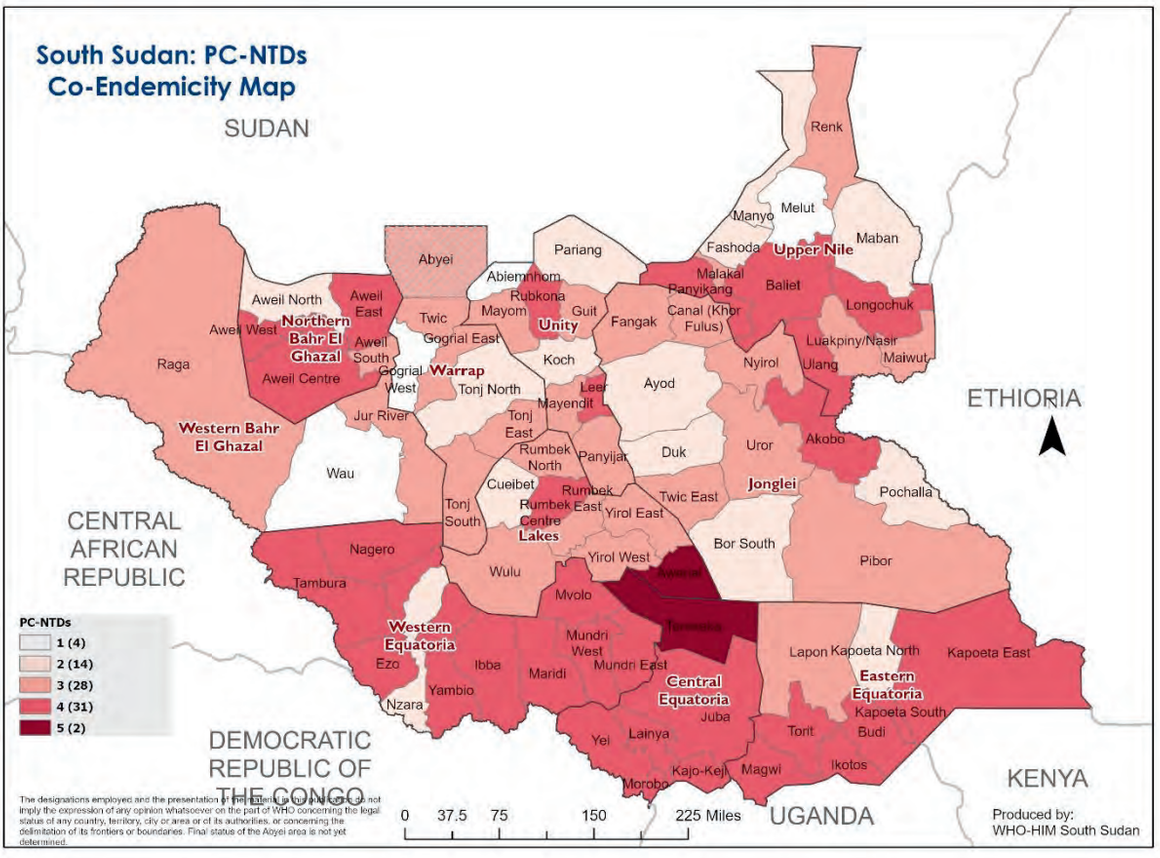


Figure 21: PC-NTD NTD Co-Endemicity Map

Section 1.4. Programme Context Analysis

1.4.1. Current NTD Programme Organization and Status

The information on the country population, schools and the number of health facilities at county level, the disease distribution profile, the mapping status and the PC-NTD Co-endemicity map are presented in tables 3, 4, 5 and figure 15.

State	Number of Counties	Number of IUs	No. of Bomas	Total population (2022)	Under- 5 (Pre-school)	5-15 Years (School Age)	No. Primary Schools	No. of peripheral health facilities		
								Referral	IU Level	Health Centres
Central Equatoria	6	6	224	1,834,639	219,984	491,683	969	3	12	260
Eastern Equatoria	8	8	256	1,657,934	190,664	444,327	60	0	10	211
Jonglei	11	11	371	2,168,715	249,402	581,216	709	0	6	188
Lakes	8	8	130	1,252,649	144,054	335,710	442	0	6	107
Northern Bahr el Ghazal	5	5	183	1,186,750	136,477	318,049	607	0	4	178
Upper Nile	12	12	276	1,607,559	184,871	430,827	546	0	4	155
Unity	9	9	295	1,038,811	119,464	278,402	421	0	12	205
Warrap	7	7	148	1,604,873	184,560	430,106	625	0	9	175
Western Bahr el Ghazal	3	3	87	551,563	63,430	147,819	301	1	5	107
Western Equatoria	10	10	186	911,212	104,790	244,204	881	0	7	255
Total	**79**	**79**	**2,156**	**13,814,705**	**1,597,696**	**3,702,343**	**5,561**	**4**	**75**	**1,841**

*Where implementation and administrative units are separate (e.g. onchocerciasis interventions), target communities in a district.

Table 1: National population data, schools, and health facilities at County levels

State	No. Counties	Number of Endemic Districts														
		PC – NTDs							Case Management diseases							
		LF	Oncho	SCH	STH	TRA	LOA	OAE (incl. NS)	HAT	Lep	BUD	Lesh	GWD (as at 2022)	Yaws	Rabies (as at 2022)*	Snake bites (as at 2022)*
Central Equatoria	6	6	6	6	6	1	6	No Data	3	4	No Data	0	0	2	3	6
Eastern Equatoria	8	6	4	8	6	5	8	No Data	1	3	No Data	3	1	1	8a	8
Jonglei	11	4	3	9	5	9	4	No Data	No Data	6	No Data	9	0	6	4	11
Lakes	8	4	8	5	8	1	8	No Data	No Data	6	No Data	0	1	0	7	8
Northern Bahr el Ghazal	5	3	5	4	5	0	5	No Data	No Data	4	No Data	0	0	1	4	5
Upper Nile	12	10	3	6	6	9	0	No Data	No Data	8	No Data	12	0	2	3	12
Unity	9	2	Unknown	9	6	8	9	No Data	No Data	5	No Data	6	0	0	6	9
Warrap	7	4	6	7	1	0	6	No Data	No Data	6	No Data	0	1	0	5	7
Western	3	1	3	2	1	0	9	No Data	No Data	2	1	0	0	0	1	3
Western Equatoria	10	10	10	9	9	0	3	4	6	9	3	0	0	0	5	10
Total	79	50	48	65	53	33	58	4	10	53	4	30	3	12	46	79

*Number of counties where cases were reported as at 2022Table 2: Known disease distribution in the Country

Endemic NTD	Total # Counties	No. of endemic Counties	No. of Counties mapped or known endemicity status	No. of districts remaining to be mapped or assessed for endemicity status
Buruli Ulcer	79	4	4	75
Dengue*	79	No data	None	79
Dracunculiasis	79	3	3	None
Echinococcosis*	79	5	None	79
HAT	79	10	10	69
Leishmaniasis (VL)	79	30	30	49
Leprosy	79	53	58	21
Loaisis*	79	58	58	4
Lymphatic Filariasis	79	50	79	None
Mycetoma*	79	No data	None	79
OAE (incl. Nodding Syndrome)	79	4	4	75
Onchocerciasis	79	48	48	31
Rabies*	79	79	None	79
Snake bite envenoming*	79	79	None	79
Scabies*	79	No data	None	None
Schistosomiasis	79	65	79	Nil***
Soil Transmitted Helminthiasis	79	53	79	None
Trachoma	79	33	47	32
Yaws*	79	12	14	79

Table 3: NTD mapping status

**Based on historical or published data /anecdotal information*
*** Elimination mapping needed in about 30 counties*
****Refined mapping needed at payam level*

1.4.1. NTD Programme Performance

PC-NTDs

Over the last five years (2018-2022), the country has scaled up interventions against PC-NTDs. In 2022, the country achieved 100% geographical coverage for both Oncho/ LF (64 counties: 34 Oncho-LF co-endemic, 14 Oncho only and 16 LF only) and 39% for trachoma. The population treated for at least one PC-NTD increased over the last five as well as shown in the graph below.

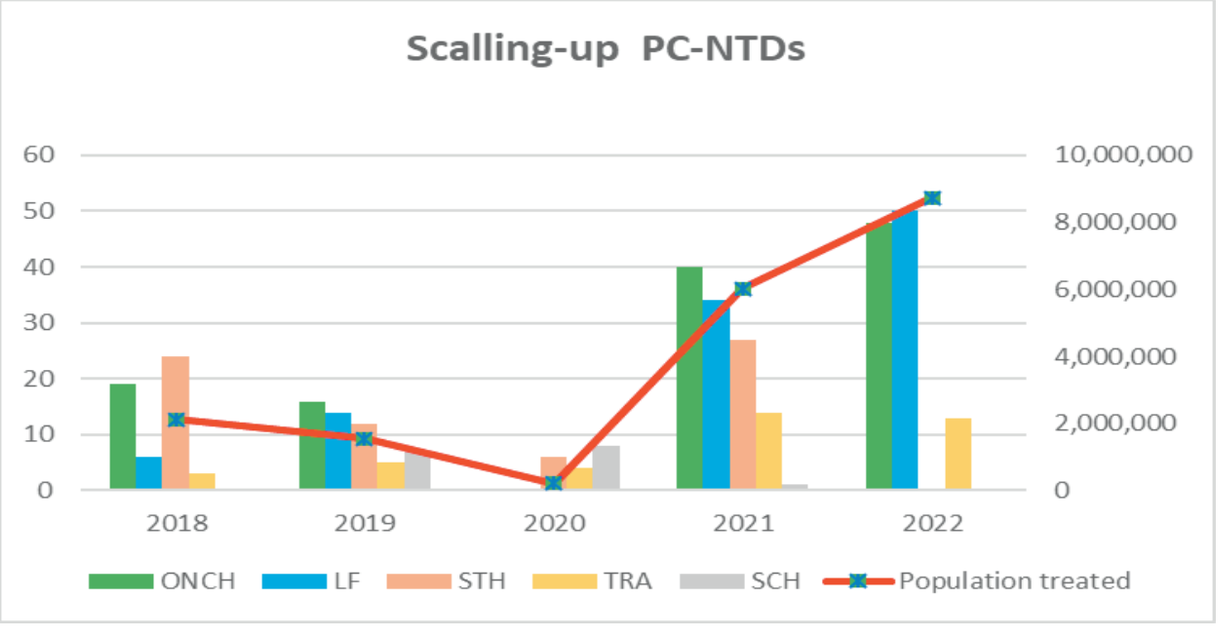


Figure 22: Scaling up of MDA interventions for PC-NTDs

LF MDA which started in 2018 achieved 100% geographical coverage in 2022. A total of 15 counties (IUs) still have not achieved any effective treatment round, 33 counties with <5 effective rounds (<65% coverage), and 2 counties have achieved five effective rounds coverage (≥65%). LF MMDP project (hydrocele surgery and lymphoedema patient care) was launched in 2021 but was interrupted in 2022 due to funding challenges, and will be relaunched in 2023.

Onchocerciasis MDA, done on an annual basis, started in 2005. One county (Maridi) is currently implementing bi-annual treatment due to oncho-associated epilepsy and additional seven counties are proposed for bi-annual treatment from 2023. 100% geographical coverage has been achieved.

Between 2017 and 2022, two counties have achieved >5 effective rounds of MDA (≥80% coverage), 32 counties with <5 effective rounds, and 14 counties have no effective treatment rounds.

The SAFE strategy for trachoma has been implemented in 14 endemic counties. Between 2018-2022 the programme operated on 3,555 people (TT surgery) and treated 2,795,630 with Zithromax and Tetracycline oil ointment in 5 Counties in EES and 9 Counties in Unity states. Impact assessment results have shown a reduction in TF prevalence in most of the surveyed counties. One county, Abiemnhom, has achieved the WHO threshold of TF elimination <5% in 1-9 years.

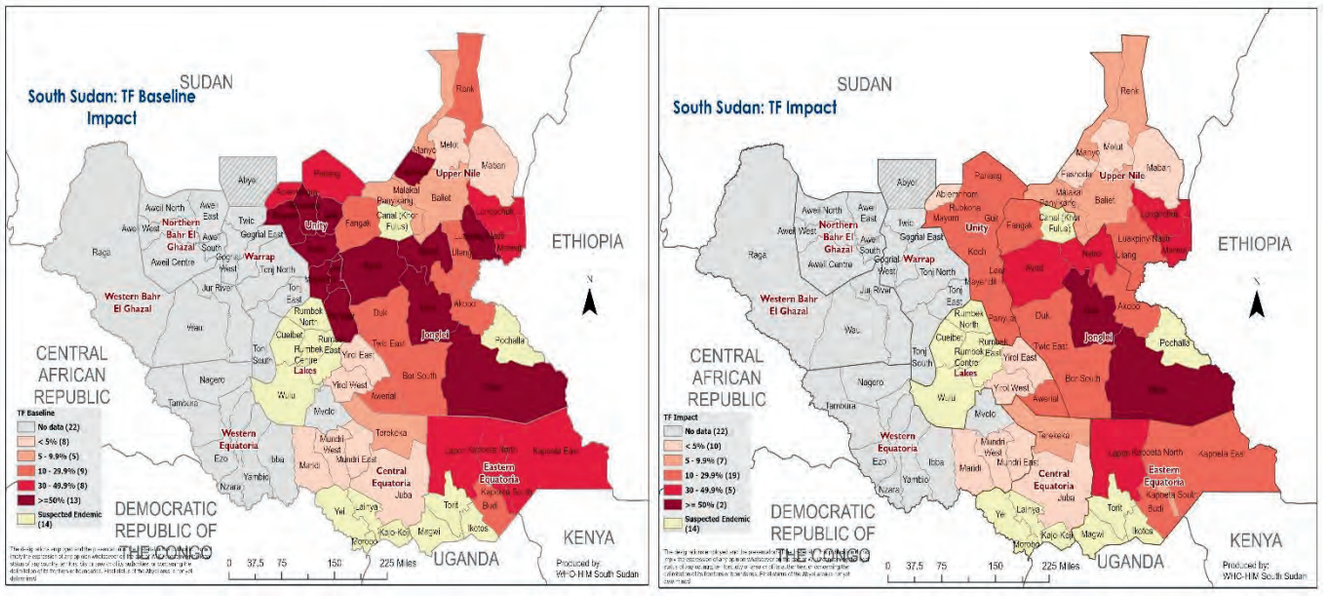


Figure 23: TF baseline (left) and impact (right)

SCH and STH MDA commenced in 2019 in 7 Counties with a SAC programme and National coverage of 37% and 10% respectively. In 2020, 8 counties were treated with SAC programme and National coverage of 29% and 10% respectively while in 2021, only one county was treated with SAC programme coverage of 56%.

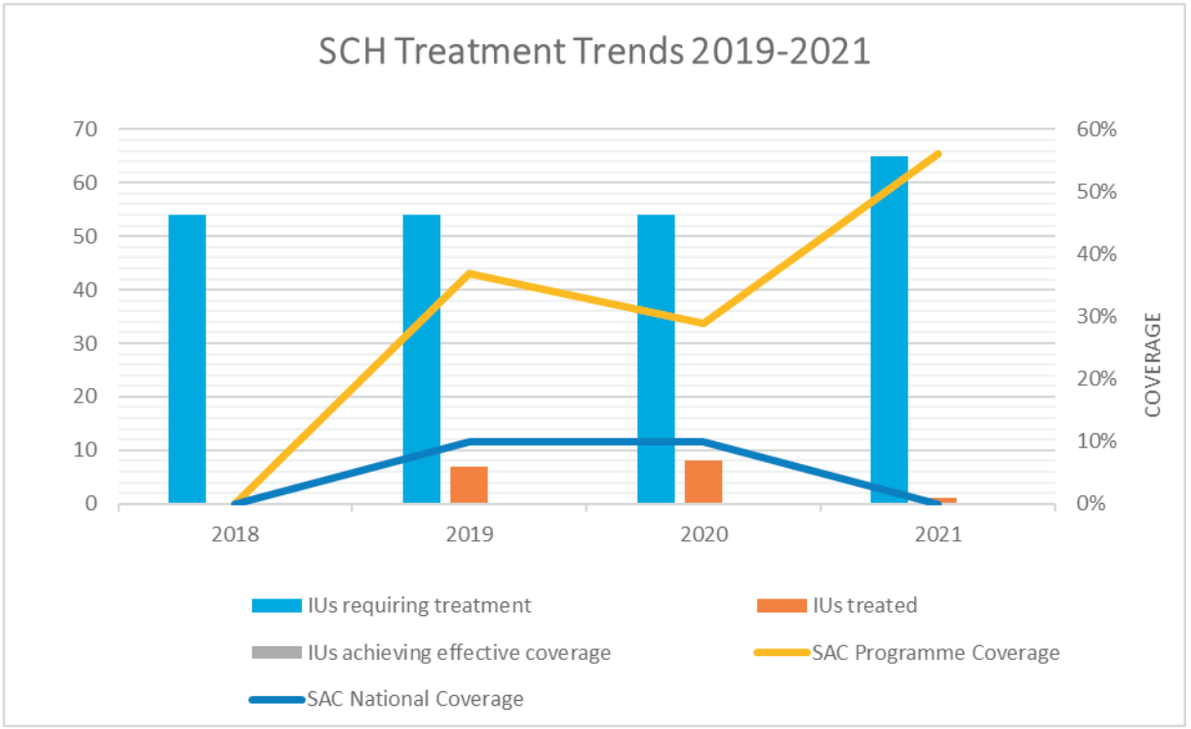


Figure 24: SCH Treatment Trends 2019-2021

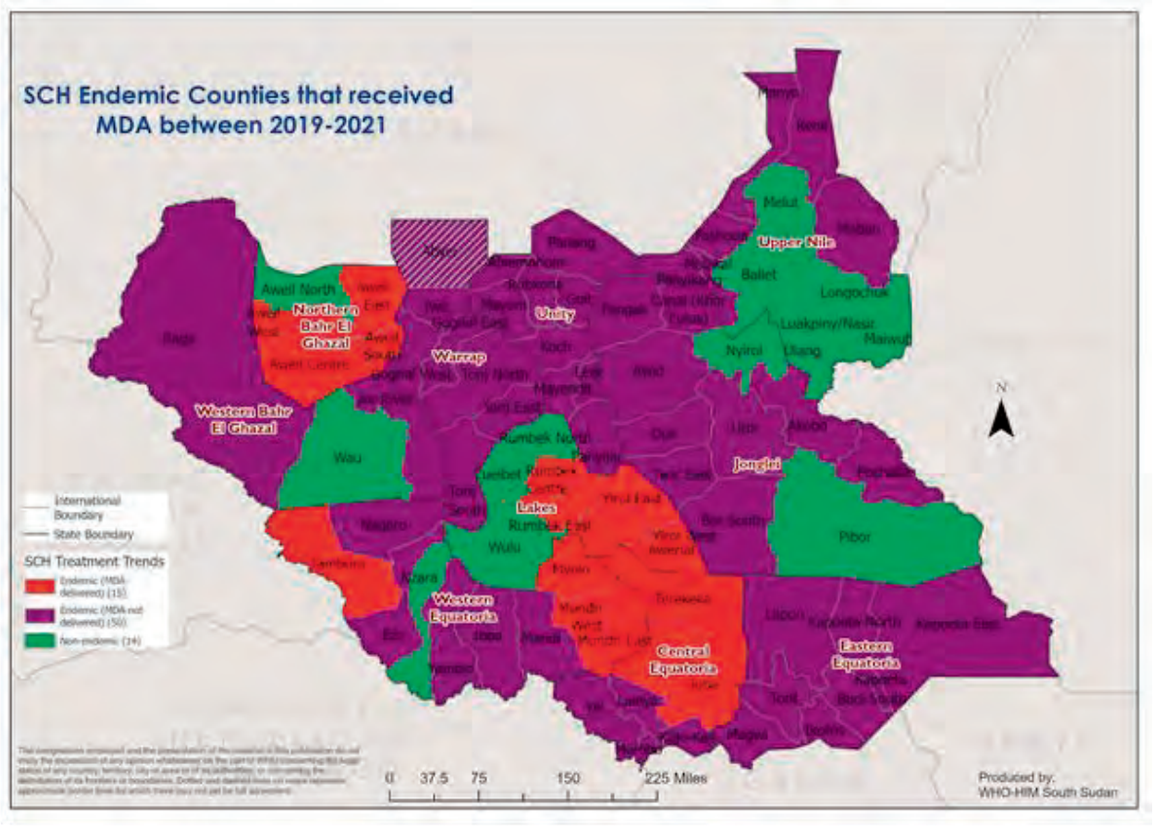


Figure 25: Map showing the SCH Endemic Counties that received MDA between 2019-2021

CM-NTDs

For Case Management CM-NTDs

South Sudan is in the process of stopping **Guinea Worm (Drancunculiasis)** transmission. It provisionally reported one case in 2020 after reporting six cases in 2016, zero cases in 2017, 10 cases in 2018, four cases in 2019, one case in 2021 and 6 cases in 2022. It found two infected animals, a dog in a household with human cases, in 2015 and 2022.

In responding to control and treatment for the HAT, the South Sudan Ministry of Health with support from WHO in 2018 developed a draft guideline on the Diagnosis, Treatment and Control for Human African Trypanosomiasis with a two-prong control approach to interrupt transmission by i) detecting and diagnosing infected people, and ii) treating them promptly. Health experts have been trained with support from WHO on the use of different diagnostic tools and case management. Between 2017 and 2021 30,387 people were screened for sleeping sickness of which 54 patients were treated in 11 counties in the Equatoria region.

For Visceral Leishmaniasis VL the MoH has upgraded the first line regime of monotherapy, sodium stibogluconate (SSG) for 30 days, to combination therapy of sodium stibogluconate (SSG) and paromomycin injections for 17 days. This is more effective than SSG monotherapy. In addition, it offers the advantage of halving the patient's required hospital stay, thus reducing overcrowding and the risk of nosocomial outbreaks of infectious diseases associated with overcrowding. The WHO South Sudan office has supported the Ministry of Health in providing training and guidelines on VL diagnosis, treatment and prevention to the health workers in the kala-azar treatment facilities. It is envisaged that using the guidelines coupled with the support of implementing partners there will be a renewed motivation for a more unified, directional and concerted effort in further improving the diagnosis and management of kala-azar patients. From 2017 to 2022 there has been a reduction in the VL treatment centres resulting in a reduction in the number of cases in 31 treatment centres.

All the other CM-NTDs are addressed as cases when they are present at health facilities throughout the country.

1.4.3 Performance of the other programmes that are closely related to the NTD programme.

Vector control

Malaria vector control methods in South Sudan include Long-Lasting Insecticide-treated Nets (LLINs), Indoor Residual Spraying (IRS) and Larval Source Management (LSM). Overall ownership of at least one ITN by household has declined from 66% in 2013 (MIS) to 63% in 2017 (MIS). Indoor residual spraying and LSM are currently not implemented in the country at the programme level. However, since 2012, Mentor Initiative has been implementing a combination of LLINs, IRS and LSM in the Refugee camps, PoC and IDP sites. These are expected to impact the LF burden but how this has impacted is yet to be assessed. There has been a minimal collaboration between malaria and NTD programmes. Currently, the NTD program has established communications to discuss areas of collaboration with the malaria control program.

Table 6 describes the various vector management or control activities conducted in South Sudan and how they potentially will impact on NTDs and others targeted for vector control interventions.

There is little collaboration between the NTD Programme and the various units that implement vector control activities. However, the implementation of this master plan will provide further impetus for collaboration with these line ministries and agencies.

Activity	Table 4. Vectors and Associated NTDs							
	Mosquitoes			Other Vectors				
				Snails	Black fly	Sand fly	Tsetse fly	Non-Vector
	LF	Dengue	Malaria	Schisto	Oncho	Leish	HAT	GWD
ITN	Yes	No	Yes			Yes	No	
IRS	Yes	No	Yes			Yes		
Larviciding	Yes	Yes	Yes		No			Yes
Traps		No					Yes	
Prevention/treatment of breeding sites	Yes	Yes	Yes	No	Yes "Slash & Clear",	Yes removal of waste/remains of damaged building where sand flies can breed		No

One-Health

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic Animals, wild animals, plants, and the wider environment including ecosystems, is closely linked and inter-dependent.

One Health approach in South Sudan focuses particularly on an issue relevant to Zoonotic diseases, food and water safety, nutrition and anti-microbial resistant.

- *Is there a One Health approach being implemented in the country?*

The Republic of South Sudan started one health approach implementation several years back, the Directorate of Preventive Health Services and the Directorate of International Health and coordination under the leadership of the Ministry of Health and with support from many partners led by WHO started engagement of line Ministries since 2017, the strong collaboration was a

milestone for one health approach implementation during Rift Valley Outbreak in Yirol East when a joint rapid response team was deployed to investigate and respond to RVF reported in Yirol East.

To strengthen one health approach in the country, the Ministry of health in collaboration with the Ministry of Livestock and Fisheries, Ministry of Environment, and other line Ministries such as the Ministry of Wildlife conservation and tourism, Ministry of Interior, Ministry of Defense, Ministry of Humanitarian Affairs and disaster management, Ministry of Presidential Affairs, and Ministry of Cabinet Affairs met recently with support from the tripartite partners such as WHO, FAO,OIE, ICRC, World Bank, US CDC, Africa CDC and other experts, East Africa Community (EAC). Currently, one health approach implementation is in collaboration with several stakeholders. The country is planning to launch a Multi-sectoral collaboration platform. This platform will support the implementation of One health approaches countrywide and will strengthen the following context: preparedness, investigation, and response to disease outbreaks or emergencies that require a one health approach; strategic assessment of public health risks, joint external evaluation; joint risk assessment; and the development and implementation of the National Action Plan for Health Security (NAPHS).

- *Which diseases and conditions are covered under the One Health approach.*

South Sudan National Action Plan for Health security and South Sudan one Health strategic plan (under review), identified zoonotic diseases of the greatest public health concern, which include Hemorrhagic fevers (Ebola, Marburg, Yellow Fever, dengue fever, Rift Valley Fever), cutaneous anthrax, brucellosis, bovine TB, highly pathogenic avian influenza (HPAI), rabies, and antimicrobial resistance.

- *What are the key interventions conducted and what are the opportunities for NTDs?*

In 2021, the Ministry of Health established a unit called Health security, surge capacity development and one health to coordinate the implementation of a National action plan for health security, training of surge emergency workforce and to ensure the implementation of one health approach. This unit is hosting one health desk which coordinates one health implementation in the

country. In February 2023, the one health technical working group which meets weekly developed the first draft of South Sudan's one health strategic plan. This plan will guide the one health implementation for 5 years.

South Sudan plans to launch a Multi-sectoral collaboration platform mechanism for easy implementation of one health approach in the country. The platform is led by the Ministry of Cabinets Affairs and the Ministry of Health is playing the role of secretariat. All the line Ministries and supporting partners are members. For more detailed the key activities implemented are in the NAPHS link below for the priority zoonotic disease control activities.

https://www.afro.who.int/publications/national-action-plan-health-security

WATER, SANITATION AND HYGIENE (WASH)

Coordination of WASH activities in the country

WASH has two components; the soft and hard components. The hard component includes drilling and rehabilitation of boreholes and water points, construction of latrines and installation of hand washing facilities. The soft component involves awareness campaigns on safe water handling, good hygiene and sanitation, and training of various categories of persons including water management committees, hygiene promoters training, water quality technicians, and hand pump mechanics. Awareness campaigns include PHASE, Rural appraisal, and community-led total sanitation (CLTS).

Coordination of WASH in South Sudan at the national level through the Ministry of Water Resources and Irrigation. This is done through the annual coordination of WASH cluster meetings for all WASH partners. At the state level, water and sanitation fall under the Ministry of Infrastructure and the Ministry of Cooperatives and Rural Development. At the county level, the WASH activities are coordinated by the department of water and sanitation headed by the Assistant commissioner while at the Payam level, there are water teams that organizes delivery of water to payams and the hand power mechanics, as well as hygiene promoters, assist in WASH activities

South Sudan is constrained by WASH services and facilities due to several factors including but not limited to constant conflicts, flood, poverty, lack of prioritization/investment and inadequate knowledge of basic hygiene behaviour and practices.

In 2023, the standard of living and well-being of an estimated 6.1 million people will be affected as a result of inadequate or lack of access to safe water and improved sanitation (The 2023 Humanitarian Need Overview (HNO) for South Sudan).

Despite the replenishment of major waterways for four consecutive long rainy seasons, 42 per cent of the population does not have access to an improved water source and 45 per cent need to walk for more than 30 minutes to access its main water source. This is particularly problematic for persons with physical disabilities, as well as for women and girls who are increasingly exposed to Gender Basd Violence GBV.

Displacement, insecurity and economic downturn have compounded the impact of historically low coverage of water infrastructure. The economic downturn has exacerbated the disruption of water services, limiting the resources available for the maintenance of wells and boreholes. In the areas hosting displaced people, above-capacity demand results in water points being unable to supply enough drinking water for the people, with the situation worsening when more people are displaced. Insecurity has also affected access to water. Protection concerns are also present, with 16 per cent of both rural and urban households reporting that they felt unsafe while collecting water at the water points.

Sanitation facilities across South Sudan are uncommon. Access to improved sanitation is below 10 per cent in 56 counties with the most extreme percentages found in Unity, Warrap, Northern Bahr el Ghazal, Eastern Equatoria and Jonglei where open defecation is practiced as a norm. On the other hand, Western Equatoria has the highest proportion of households with access to a latrine. South Sudan has historically displayed one of the lowest sanitation coverages globally due to long-lasting development challenges. Many communities still have open defecation due to a lack of latrines and cultural practices which require continuous awareness of community-led approaches. In some locations, constructed latrines are hardly used due to societal pressure, with people preferring to walk long distances to practice open defecation even at night. Recurrent flooding regularly damages the existing sanitation infrastructure and with frequent displacement, there is great hesitation by the communities to invest in, reconstruct or repair sanitation facilities

The 2021 multi-sector Household survey conducted revealed that 78% of Households use unsafe water, especially among the rural folks; 19% of villages do not access water at all, and water is

reportedly a major source of conflict in the community. The WASH severity classification report of 2021 revealed that WASH conditions were at phase-4 in all counties of South Sudan

Key WASH-related interventions in the country.

The Ministry of Health has recognized the vital role of different stakeholders and commitment to supporting and implementing integrated and coordinated WASH-NTD intervention at the national level to impact NTDs. Although partners in Water, Sanitation and Hygiene (WASH) and Neglected Tropical Diseases (NTD) work in the same communities, their interventions are poorly coordinated and this has led to sub-optimal impacts in both sectors. The reason for siloed interventions between the two sectors can be partly explained by the focus on different results and outcomes of the two sectors. Currently, various WASH partners are implementing the following interventions

- Provision of safe water in the community and institutions (New water points, rehabilitation of water points, climate resilient boreholes)
- Provision of basic and improved sanitation facilities and promotion of improved hygiene practices through the Community Led Total Sanitation (CLTS) approach, latrines
- Distribution of WASH NFI Non-Food Items like buckets and Saucepans (Targeted or during emergencies) during emergency
- Drilling of boreholes
- Supply of Solar powered or mechanized/ small water distribution systems in payams
- Supply of piped water in urban settings like Juba, Yei, Wau, Rage, Bentiu
- Construction of public toilets for environmental improvement is ongoing, especially in border crossings, marketplaces, camps, IDPs and within institutions like schools, health centres e.g. Nimule-crossing points, markets

The performance of the key WASH indicators in the country

According to the 2023 Humanitarian Need Overview for South Sudan, WASH performance is as follows:

- 58.0 % of HHs have access to an improved water source (42% have no access to an improved water source).

- 55.0% of people are within 30 minutes of potable water (45% of the people walk over 30 minutes to access its main water source).
- 21.3% of people with access to basic or improved sanitation facilities (78.7% practice Open defecation).

WASH and NTD intervention integration

There is a WASH NTD framework that was developed in 2020 but has not been validated and therefore not yet been rolled out. WASH-NTD-BCC strategy was also developed and validated but is yet to be rolled out

. These are to guide organizations and practitioners, governmental and non-governmental organizations, working to implement, support, and sustain inter-sectorial collaboration in South Sudan as an integrated part of NTD and WASH programmes, and as part of coordinated efforts in NTD-endemic areas. It will equip line sectors and implementing organizations with new thinking in targeting WASH and NTD interventions as a means of increasing synergies, promoting collaborative interventions and monitoring for WASH-NTD-specific health impacts. They are also meant to forge a common advocacy agenda that is built on sector synergies between all government agencies and partners implementing WASH and NTD activities.

Improvements in water, sanitation, and hygiene (WASH) infrastructure and appropriate health-seeking behaviour are necessary for achieving sustained control, elimination, or eradication of many NTDs (e.g. Trachoma, GWD, Schistosomiasis, STH and Dengue fever). Indeed, the global strategies to fight NTDs include the provision of WASH, but few programs have specific WASH targets and approaches. The Ministry of Health department of NTD during the planning process will ensure that endemic areas are included in planned investments in WASH infrastructure and promotion. This can be achieved by providing all counties with NTD endemicity and prevalence data to the WASH actors and introducing a plan alignment platform with both sectors.

Coordination of WASH and NTD partners

In WASH interventions, the Ministry of Water Resources and Irrigation partners with the following organizations to address NTD interventions:

- Ministry of General Education for WASH promotion e.g. hand washing events,

- MOH, UNICEF, OXFAM MENTOR Initiative, PAH, NSDO, RUWASA, and IAS which are mostly implemented WASH interventions in schools e.g. construction of latrines, boreholes, capacity building,
- Counties to sustain water points, give directions to all partners, enforce the guidelines, report shortfall and coordinate all WASH partners.
- WHO is involved in testing water quality with the ministry of water resources.
- UNOCHA, TCC, GIZ -mobilization of funding and engaging local and international organizations in emergency WASH interventions

To prevent, control and eventually eliminate many of the NTDs, improved access to water, sanitation and hygiene (WASH) plays a key role. The Ministry of Health will continue to enhance mutual understanding of the interrelatedness between WASH actions and the prevention and treatment of NTDs. Specifically, the Ministry of Health will promote targeted WASH-NTD programming in NTD-endemic areas hence increasing the leverage of sector-specific investment, promoting collaborative measurement and evaluation of NTD-specific health outcomes by WASH sector implementers and NTD actors (governmental and NGOs), as well as strengthen funding to coordinate and integrate WASH and NTDs programming by providing key strategies and messages for advocacy and policy development. It is also envisaged that a joint monitoring team is established involving all relevant sectors and stakeholders, to track the progress of the coordination and integrated activities to inform actions and decisions for further improvements.

The MoH-NTD department must coordinate with the South Sudan WASH Sector Steering Committee (SSWSSC), which is the highest WASH technical body and is led by the undersecretary of MWRI and has members from other ministries such as the Ministry of Finance, Planning (MFOP), MoH, Ministry of Environment and Forestry (MoE & F), Ministry of Land, Housing and Urban Development (MLHUD), Ministry of General Education and Instruction (MoGE & I), Ministry of Humanitarian Affairs and Disaster Management (MHADM), Ministry of Gender, Child and Social Welfare, Local Government Board (LGB), Ministry of Agriculture and Food Security and Ministry of Foreign Affairs and International Cooperation. The SSWSSC will be replaced by Water Council once the Water Act is enacted.

PHARMACOVIGILANCE

The Drug and Food Authority (DFCA) has been established to regulate the quality of drugs. The unit of pharmacovigilance has been established within the DFCA but this unit is not yet operational. Consequently, the development of pharmacovigilance guidelines is yet to be done. Pharmacovigilance is a system of monitoring and evaluating suspected adverse effects of a particular pharmaceutical product. It is the monitoring system that identifies and investigates any report of Severe Adverse Effects (SAE) associated with the use of any drug.

At the moment there is no pharmacovigilance for NTD medicines. However, there are structures in place that can be leveraged for pharmacovigilance. The existing structures include South Sudan General Medical Council, the Pharmaceutical Technical Working Group and the state MoH at the state level which provides oversight over the pharmaceutical sector. Additionally, with the COVID-19 pandemic and vaccinations, all the States have COVID-19 AEFI committees which can be strengthened to support NTD pharmacovigilance. During MDA Campaigns, the NTD programme also trained health workers at different health facility levels to respond to any case of Severe Adverse Effects (SAE) associated with the use of NTD drugs.

Table 5: Summary of intervention information on existing NTD programmes

NTD	Date programme started	Total Counties targeted	No. Counties covered (geographical coverage*)	Total population in target counties	No. (%) Covered	No. (%) Counties with required number of effective treatment rounds	No. (%) Counties that have stopped MDA	Key strategies used
LF	2018	50	50 (100%)	8,965,746	5,531,391 (58.0%)	2 (4%)	None	MDA, Active Screening, Passive Screening, Diagnosis, Surgery
Oncho	2017	48	48 (100%)	8,976,660	7,309,725 (68%)	0 (0%)	None	MDA
SCH	2019	65	9 (13%)	2,520,019	205,680 (6%)	1 (8%)	None	MDA; WASH
STH	2020	53	3 (50%)	208,026	4,720,992	0 (0%)	None	MDA; WASH
TRA	2018	33	14 (42%)	1,464,783	1,308,886 (89%)	6 (20.7%)	None	SAFE
HAT	2020	10	10 (100%)	2,400,615	4,547 (0.2%)	NA	NA	Passive screening at HF, Diagnosis, and treatment
Yaws		No data	No data	No data	No data	NA	NA	
Dracunculiasis	2006	3	3 (100%)	NA	NA	NA	NA	Active case finding, Health Education, treatment, larviciding.
Leishmaniasis (VL)	2020	30	23 (%)	4,406,957	2430 (0.06%)	NA	NA	Diagnosis and Treatment, HSAM
OAE (incl. Nodding Syndrome)	2019	4	75% (3 out of 4)	No data	3,000+ patients under anti-convulsive treatment	NA	NA	Survey, Vector Control, Active Case Finding through BHI, Anti-seizure treatment, Inclusive Education

Leprosy	2012	37	19	10,648,273	895	NA	NA	Mapping, KPI survey, treatment, and register updating
***Geographical coverage = No. of Counties covered by the programme / Total no. of endemic counties in the country**								

Section 1.5: Building on NTD Programme Strengths

Based on the analysis of information relating to the country profile, health system, and NTD programme status, a SWOT analysis of the NTD programme has been conducted and information is summarized in table 10.

Table 6: SWOT counteracting table

Weakness	Strengths counteracting Weaknesses	Opportunities counteracting Weaknesses
No clear structure at the sub-national level to assert government ownership and leadership Limited visibility for NTD Limited Resource mobilization Verticality in NTD programming limits integration The unclear burden of specific diseases Absence of "National Policy" for NTDs prevention, control, elimination or eradication No guidelines on case management of priority NTDs and related morbidities Weak implementation of WASH activities and poor integration of WASH in NTD programs No M&E work plan or logical framework or result framework	Established structure at the national level that could drive for sub-national structures Some special events at the national level give NTDs some visibility Integrated registry and reporting for the 5 PC NTDs. This also includes reporting on disability associated with these NTDs. Most PC-NTDs already mapped Inclusion of NTD (LF/Oncho/GW) morbidity and disability active case search during public health interventions A strategy for NTD/WASH Behavior change communication in existence Integrated data collection tools PC-NTDs (Tally sheet, L5, and supervisory checklist) and treatment register have been produced	Existence of functional official platforms for partners' collaboration and coordination: NTD Taskforce, SSOLFEC, SSGWEP Presence of supporting partners Cost-sharing across programmes: TCP MDA combined with GWD surveillance

Inadequate data management procedures		
Threats	**Strengths counteracting Threats**	**Opportunities counteracting Threats**
HR gaps exist at both national and state levels Low diagnostic and clinical capacity for NTDs (e.g. lack of trained TRA surgeons, and PHC staff) Absence of some key NTD-related indicators within SS DHIS2, concerning both PC MDA and NTD-associated morbidities Accessibility challenges due to security, topographic or climatic factors	Increased number of NTD programme staff under the MoH pay-roll 9 out of 11 (81%) endemic NTDs (VL, GW, Buruli Ulcers, HAT, STH, SCH, LF, Trachoma) have indicators integrated into the Health information system (DHIS2)	-Availability of technical human resource capacity at the national level for planning and leading the implementation program -Constitution and training of a pool of national supervisors supporting the implementation of campaigns at state and county levels

1.5.1. Gaps and priorities

Based on the SWOT Analysis, the major gaps and priorities are itemized (Table 11). Addressing these gaps and focusing on the priorities highlighted will enable the country achieve its strategic goals as reflected in this plan, and eliminate the transmission of some targeted NTDs.

Table 7: Gaps and priorities

Area	Gap	Priority
Planning	Inadequate skilled human resources at all levels	Develop an NTD human resources manual to reflect the required personnel. Use this as an advocacy tool for states
	Absence of policy for NTDs	Develop a national policy for NTDs prevention, control, elimination or eradication
	Inadequate visibility of NTD programmes at all levels	Focus on **program learning and documentation**, publishing of the best practices and successes stories (Producing **NTDs bulletin** (monthly or quarterly)
Coordination	Inadequate coordination mechanisms especially at the sub-national level	Set up a robust NTD country coordination mechanism as recommended by WHO
WASH/ Partnership	Inadequate collaboration with the WASH sector	Inclusion of WASH partners in the NTD task force and implementation of WASH activities
Intervention	Poor coverage of interventions	Ensure at least 100% geographic treatment coverage for all NTDs
Strengthening M & E as well as surveillance	Absence of framework and SOPs for monitoring NTD programmes	Develop NTDs monitoring and evaluation system. This should include an indicators framework, SOPs and user guide to ensure a consistent approach to collecting, and analysis of the information

PART 2: NTD Strategic Agenda

Section 2.1. NTD Programme Vision, Mission and Goals

Purpose and Goals

This section provides an overview of the targets and milestones for all NTDs that are endemic in South Sudan. The strategic agenda of the South Sudan NTD programme reflects the programme's vision, mission, and goals. It also delineates the strategic goals, major programme focus, and strategic milestones. In addition, the strategic priorities and strategic objectives indicate the main 'pillars of excellence' as well as the continuous improvement objectives that the programme seeks to achieve during the life cycle of the master plan (figure 16).

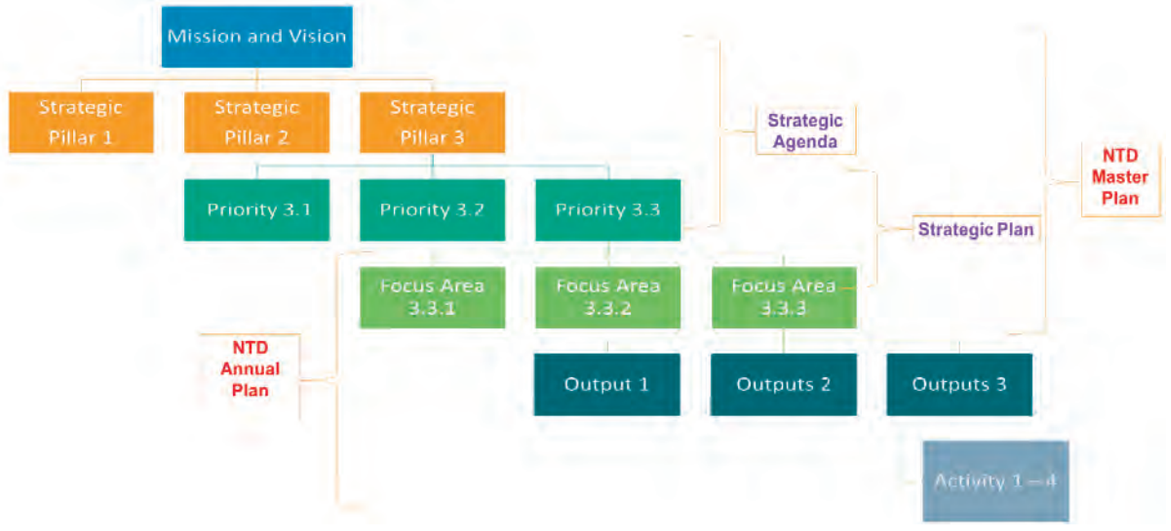


Figure 26. Hierarchy of Objectives for the South Sudan NTD programme

The South Sudan NTD Master Plan, which is a multi-year strategic plan, has clear strategic agenda and is captured as a major element of the strategic agenda. These are Mission, Vision, Guiding Principles, Programme Strategic Priorities and Pillars.

Table 8: Mission and vision

Vision	A South Sudan where neglected tropical diseases (NTDs) will no longer be public health problems of significance.
Mission	To implement NTD policy and plan through the delivery of effective, efficient, quality and affordable health services contributing to strengthening of the health system and improved health status and sustainable development in South Sudan

Section 2.2: Milestones and Targets

The overarching and cross-cutting targets, reflected below are derived from the NTD Global Roadmap 2021–2030, and will help in integration, coordination and country ownership and equity. Disease-specific targets have been set for each of the endemic diseases under one of the following: eradication, elimination (interruption of transmission), elimination (as a public health problem) or control.

2.2.1. Targets

2.2.1.A. Overarching targets

Table 9: Below shows the overarching targets for the country with a 2023-2027 timeline.

Indicator	2023 (Baseline)	2025 (Midterm)	2027
Percentage reduction in people requiring interventions against neglected tropical diseases	0%	30%	50%
Number of counties having eliminated at least one neglected tropical disease as a public health problem (Trachoma, LF, Schistosomiasis, STH, Kala-Azara, Sleeping Sickness etc.)	0	20	50
Number of neglected tropical diseases eradicated or eliminated (countrywide) as a public health problem (GW, Yaws,).	0	1	2

2.2.1.B. Cross-cutting Targets

Table 10: Below shows the cross-cutting targets for the country with a 2023-2027 timeline.

Domain	Indicator	2023	2025 (Midterm)	2027
Integrated Approaches	Integrated treatment coverage index for preventive chemotherapy NTDs (Total Number of people treated for each PC-NTD divide by Total number of Population requiring PCT for ALL PC NTDs).	0%	50%	90%
	Percentage of counties that adopt and implement MMDP and other associated morbidities (i.e. OAE, TT surgeries, Leprosy, Buruli ulcer, etc.) for target NTDs.	10%	50%	90%
Multi-sectoral Collaboration	The proportion of the population in endemic counties with access to safe water for SCH, STH and Trachoma control	0%	10%	30%
	Proportion and number of endemic counties with adequate sanitation manipulation for SCH, STH and Trachoma control	0%	15%	40%
	Proportion and number of endemic counties with adequate environmental manipulation for SCH, STH and Trachoma control	0%	15%	40%
Universal Health Coverage	Proportion of counties where 50% of all health facilities have and use guidelines for the management of NTD-related disabilities	0%	20%	50%
Country Ownership	Proportion of counties reporting on all relevant endemic neglected tropical diseases and associated co-morbidities	0%	40%	80%
	Proportion of counties collecting and reporting data on neglected tropical diseases disaggregated by gender	0%	40%	90%
	Number of States with fully functional NTD Task Forces (based on clear ToRs)	0	36	80
	Number of States mobilizing logistic and financial resources for NTDs	0	22	45
	Proportion of government direct funding towards NTD implementation	5%	20%	40%

2.2.1.C. Disease-specific targets

Table 11: NTD targets to be attained by 2027

Disease	Indicator	2023 (Baseline)	2025 (Midterm)	2027
Targeted for Eradication				
Dracunculiasis	Number of endemic counties MAINTAINING zero confirmed cases status	6	6	6
Yaws	Percentage of endemic counties where transmission has been interrupted	0%	30%	100%
Targeted for Elimination (Interruption of Transmission)				
Human African Trypanosomiasis (*gambiense*)	Percentage of endemic counties where transmission has been interrupted	0%	30%	90%
Leprosy	Percentage of counties with zero new autochthonous leprosy cases	0%	30%	90%
Onchocerciasis	Percentage of counties that have suppressed transmission	0%	20%	30%
Targeted for Elimination as a Public Health Problem				
Leishmaniasis (visceral)	Number of endemic counties reporting<1% case fatality rate due to primary visceral leishmaniasis	0%	25%	90%
Leishmaniasis (Cutaneous)	Unknown			
Lymphatic filariasis	Number of counties having stopped mass drug administration, and have passed TAS1	0	0	6
Rabies	Number of counties having achieved zero human deaths from rabies	0	2	5
Schistosomiasis	Number of endemic counties with no site recording heavy-intensity schistosomiasis infections	2	2	16

Soil-transmitted helminthiases	Number of endemic counties with no site recording soil-transmitted helminth infections of moderate and heavy intensity due to *Ascaris* lumbricoides, Trichuris trichuria, Necator americanus and Ancylostoma duodenale)	1	1	3
Trachoma	Number of endemic counties achieving (i) a prevalence of trachomatous trichiasis of <0.2% in ≥15-year-olds; and (ii) a prevalence of trachomatous inflammation—follicular in children aged 1–9 years of <5%	TT: 3 counties TF: 3 counties	TT:6 counties TF: 6 counties	TT: 10 counties TF: 10 counties
Targeted for Control				
Mycetoma	Number of States having ongoing interventions	0	2	4
Scabies	Number of States having scabies management programmes	0	0	4
Snakebite envenoming	Number of States with an incidence of snakebite achieving a reduction of mortality by 30% OR Number of counties having Snakebite envenoming management programmes	0 0	0 3	2 10
Echinococcosis	Number of States having Echinococcosis management programmes	0	2	3

2.2.2. Milestones

In order to achieve the overarching, cross-cutting and disease-specific targets as outlined in this strategic plan and given the progress so far made as elucidated in the fore-going sections the following disease-specific milestones are set for the South Sudan NTD programme. (See table below).

Milestones for targeted NTDs

Table 12: Milestones for LF elimination

Indicators	2023	2024	2025	2026	2027
Completed mapping of LF and determined LF endemic areas and the population at risk	79(100%)				
Begun implementing LF MDA in IUs requiring LF MDA including loiasis co-endemic areas	31(62%)	50(100%)			
Geographical coverage of LF MDA in endemic IUs	31(62%)	50(100%)			
Major urban areas with evidence of LF transmission under adequate MDA	50%	75%	100%		
Number of IUs conducted more than 5 rounds of MDA with coverage more than 65%	0(0%)	8(16%)	11(22%)	25(50%)	50(100%)
Number of IUs conducted their first TAS activities after at least 5 rounds of MDA.	0(0%)	0(0%)	9(18%)	11(22%)	25(50%)
Number of IUs conducted and passed at least 2 TAS activities.	0(0%)	0(0%)	0(0%)	0(0%)	9(18%)
Number of IUs started passive surveillance and vector control activities.	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Proportion and number of IUs where there is full coverage of morbidity- management services and access to basic care	4(8%)	6(12%)	8(16%)	10(20%)	20(50%)
Proportion and number of IUs where 75% of hydrocele cases benefitted from appropriate surgery	4(8%)	6(12%)	8(16%)	10(20%)	20(50%)

Table 12a.Milestones for targeted NTDs (Onchocerciasis)

Indicators	2023	2024	2025	2026	2027
Completed mapping of oncho and determined oncho endemic areas and the population at risk	79(100%)				
Begun implementation of oncho MDA in IUs requiring oncho MDA including loiasis co-endemic areas	32(67%)	48(100%)			
Geographical coverage of oncho MDA	32(67%)	48(100%)			
Number of IUs conducted more than 10 rounds of MDA with coverage more than 65%	0(0%)	0(0%)	0(0%)	7 (15 %)	10(21 %)
Number of IUs achieved suppression of transmission after at least 10 rounds of MDA.	0(0%)	0(0%)	0(0%)	0(0%)	7(15%)
Number of IUs where treatment has been stopped	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Number of IUs that achieved elimination of transmission	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)

Table 12b. Milestones for targeted NTDs (Trachoma)

Indicators	2023	2024	2025	2026	2027
Completed mapping of trachoma and determined trachoma endemic areas and the population at risk	79 (100%)				
Implementation of SAFE strategy in IUs requiring interventions	75%	100%			
Geographical coverage of SAFE strategy trachoma endemic IUs	75%	100%			
Target IUs requiring one round of treatment with coverage more than 80% or more	0 (0%)	4 (100%)			
Target IUs requiring three rounds of treatment with coverage more than 80% or more	1 (5%)	4 (19%)	6 (29%)	21 (100%)	
Target IUs requiring 5 rounds of treatment with coverage more than 80% or more	0 (0%)	0 (0%)	1 (17%)	1 (17%)	6 (100%)
Target IUs requiring 7 rounds of treatment with coverage more than 80% or more	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Proportion and Number of IUs that passed impact assessment	1(3 %)	1(3%)	9(28%)	16 (50 %)	25(78%)
Proportion and Number of IUs where there is full coverage of morbidity-management services	25%	50%	60%	75%	100%
Proportion of targeted IUs achieved the elimination of blinding trachoma	0 (0%)	1 (3%)	1 (3%)	9(28%)	16 (50%)

Table 12c. Milestones for targeted NTDs (Schistosomiasis)

Indicators	2023	2024	2025	2026	2027
Completed mapping of SCH and determined SCH endemic areas and the population at risk	79 (100%)				
Begun implementation of SCH MDA in IUs requiring SCH MDA	16 (42%)	38 (100%)			
Geographical coverage of SCH MDA	16 (42%)	38 (100%)			
Percentage of moderate - highly endemic IUs conducted more than 5 rounds of MDA with coverage more than 75%	0%	0%	0%	0%	16 (42%)
Number of IUs with full coverage of WASH interventions.	0(0%)	0(0%)	10 (26%)	20(53 %)	38 (100%)
Number of IUs conducted the first impact assessment after at least 5 rounds of MDA.	0%	0%	0%	0%	0%
Endemic IUs achieving moderate morbidity control	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Endemic IUs achieving advanced morbidity control	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Endemic IUs achieving elimination of transmission	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)

Table 12d. Milestones for targeted NTDs (Soil Transmitted Helminths)

Indicators	2023	2024	2025	2026	2027
Completed mapping of STH and determined STH endemic areas and the population at risk	79 (100%)				
Begun implementation of STH MDA in IUs requiring STH MDA	6 (100%)				
Geographical coverage in STH of STH MDA	6(100%)				
Percentage of moderate - highly endemic IUs conducted more than 5 rounds of with coverage more than 75%	0 (0%)	0 (0%)	0 (0%)	2 (33%)	2 (33%)
Number of IUs with full coverage of WASH interventions (target 47 IUs that are STH endemic).	0(0%)	0(0%)	2 (33%)	4 (67%)	6 (100%)
Number of IUs conducted first impact assessment at least 5 rounds of MDA.	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (33%)
Endemic IUs achieving moderate morbidity control	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (33%)
Endemic IUs achieving advanced morbidity control	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Endemic IUs achieving elimination of transmission	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Table 12e. Milestones for targeted CM-NTDs

Indicators	2023	2024	2025	2026	2027
Active case detection in 100% of highly endemic IUs	20%	40%	60%	70%	100%
Passive case detection in 100% of other endemic IUs	10%	20%	40%	50%	70%
Manage all patients in peripheral health facilities	5%	10%	40%	50%	70%
Refer severe and complicated cases for management at district hospitals and reference centres	5%	10%	40%	50%	70%
Achieved 100% geographical coverage of SAFE in trachoma target districts	76%	85%	100%		
Achieved 100% treatment coverage of identified HAT and leprosy cases	0%	30%	50%	70%	90%
Achieved 100% treatment coverage of identified cases for other CM-NTDs	10%	30%	50%	70%	90%
Started passive surveillance in at least 50% of target IUs for CM-NTDs targeted for elimination (HAT, Leprosy)	20%	40%	60%	70%	90%
Started sentinel site surveillance in at least 50% of target IUs for CM-NTDs targeted for elimination (HAT, Leprosy)	20%	40%	60%	70%	90%
Target IUs that sustained elimination of leprosy and achieved elimination of HAT	10%	50%	60%	70%	90%
Started passive surveillance in at least 50% of target IUs for other CM-NTDs	10%	40%	60%	70%	90%

Section 2.3: Guiding Principles

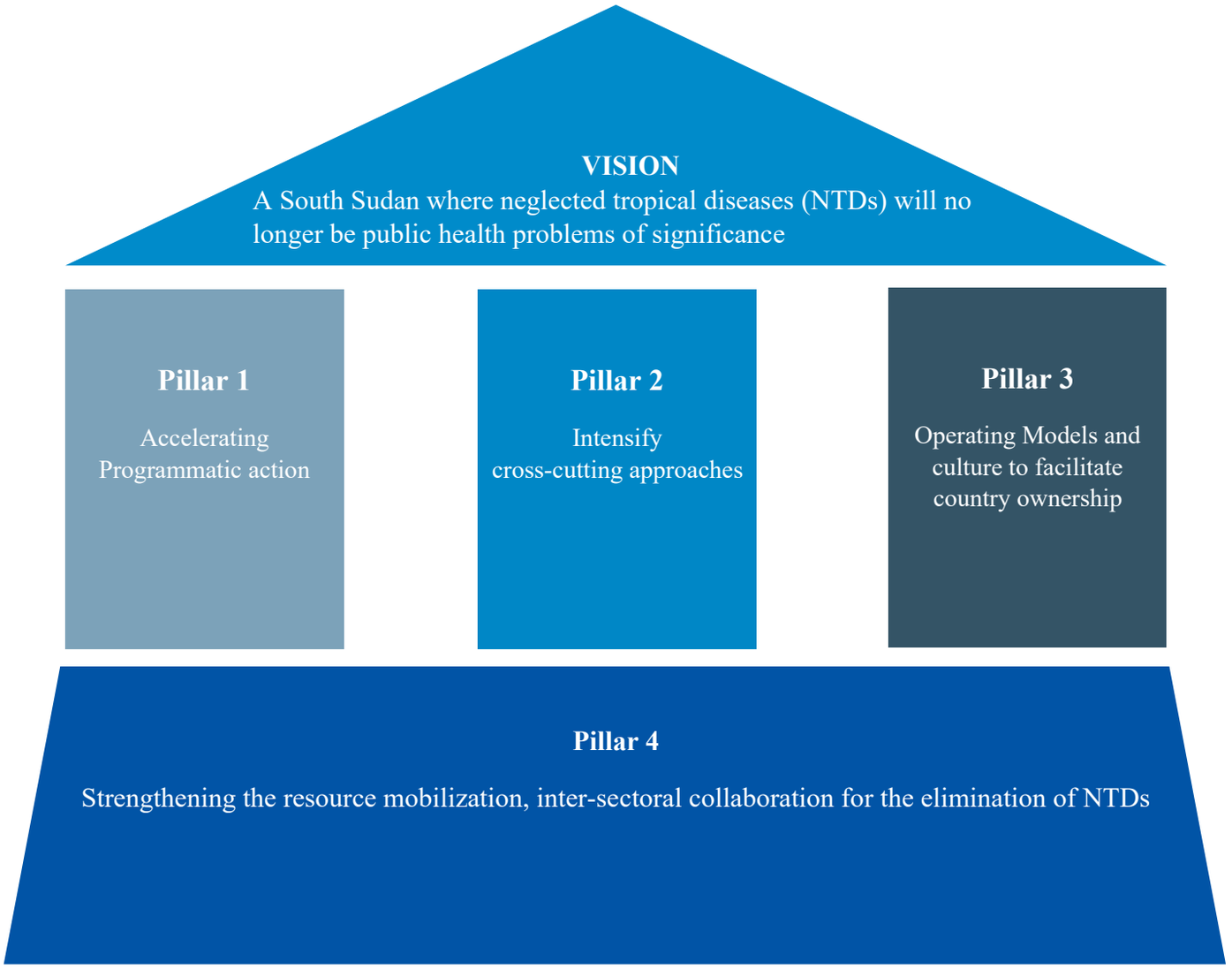
Table 13. Guiding principles

Guiding principles	• National leadership and ownership, • Commitment to collaboration and sharing, • Mutual accountability of national authorities and partners, Transparency and accountability, • Community engagement and participation
Guiding Principles are a broad philosophy that encompasses your personal beliefs and values and guides the programme throughout its life in all circumstances, irrespective of changes in its goals, strategies or type of work. They create a programme culture where everyone understands what's important.	

Section 2.4: Strategic Pillars and Strategic Objectives

2.4.1. Programme Strategic Pillars

Strategic Pillars are the key areas in which the NTD programme will be hinged to achieve tremendous success. The figure below gives an example of programme strategic pillars



2.4.1. Strategic Objectives

The strategic objectives are reflected in table below:

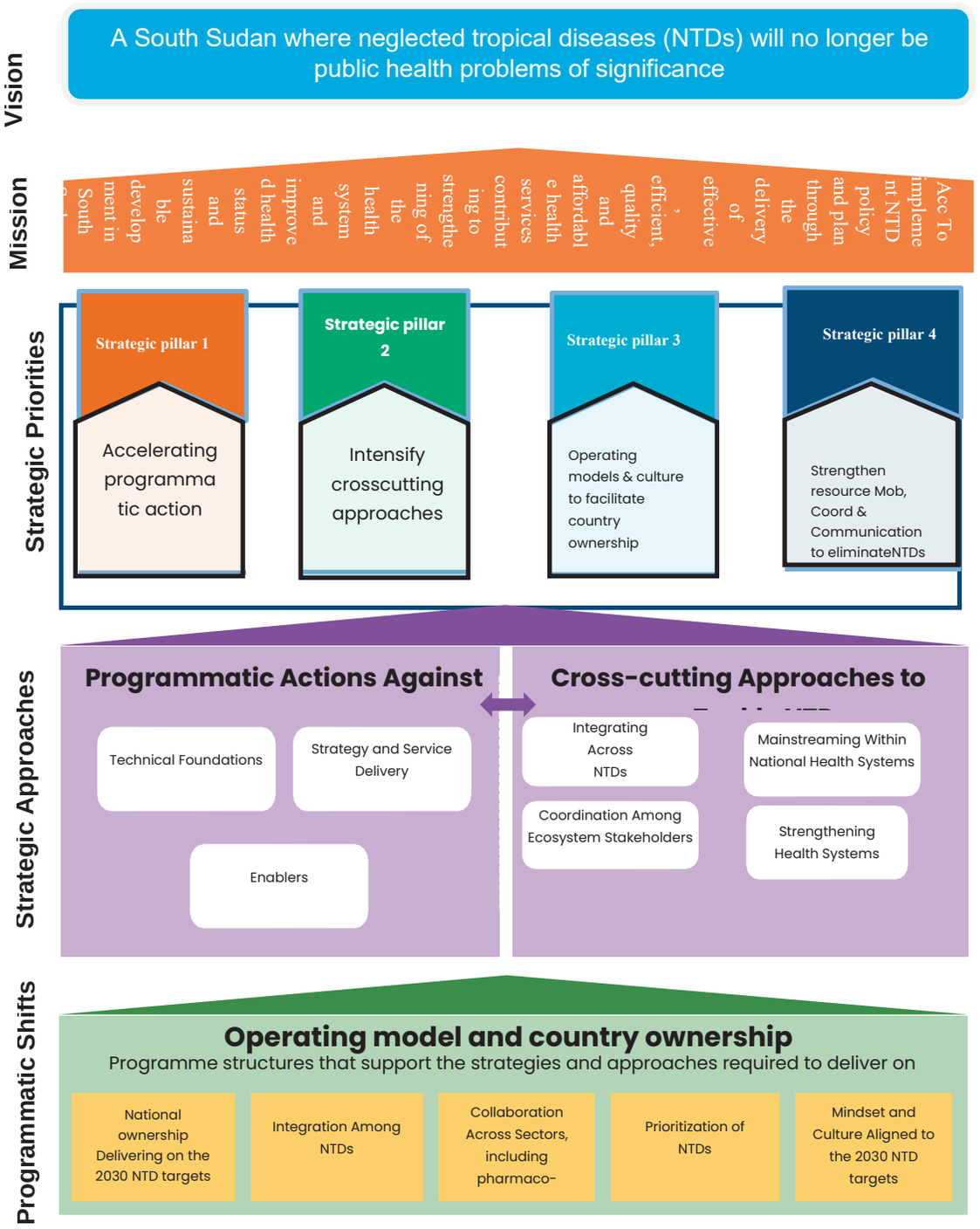
Table 14. Strategic Objectives for the Elimination of Neglected Tropical Diseases

Strategic Priority or Pillar	Strategic Objectives
I Accelerating programmatic action	Accelerate progress from confirmation of disease to mapping, screening and transform NTD surveillance into a core intervention
	Prioritize and strengthen monitoring and evaluation to track progress and decision-making towards the WHO NTD Roadmap 2030 goals
	Ensure timely effective supply chain management of quality-assured NTD Medicines and other products up to the last mile
	Strengthen advocacy, visibility and profile of NTDs for the elimination interventions at all levels as “best buys”
	Promote operational research and innovation as fundamental enablers of programmatic progress
II Intensify cross-cutting approaches	Strengthen identified platforms with similar delivery strategies and interventions (MDAs, skin NTDs, Morbidity management, SBCC, WASH, vector control and One health) for integrated approaches across NTDs.
	Mainstream delivery platforms within the national health system
	Strengthen multi-sectoral coordination, collaboration, and cooperation and foster partnerships in the prevention, treatment and care of patients with NTDs at all levels of healthcare.
	Strengthen capacity to implement the NTD programme including the integration of the NTD plan of action into the financial plans in all spheres
III Operating Models and culture to facilitate country ownership	Promote and strengthen country ownership and leadership through organizational structures at national and local government with dedicated funding
	Empower Counties and authorities in social mobilization, behavioural change and building local support for NTD interventions
	Promote youth engagement to influence positive change and norms in favour of the national NTD programmes
	Ensure donors, implementing partners and disease experts align their strategies and plans with the National NTD Plans
	Ensure development and review of integrated multi-year strategic plans and gender-sensitive annual operational plans for the control, elimination and eradication of targeted NTDs at national and sub-national levels
Pillar 4. Strengthen Resource	Promote community involvement and ownership of the program for optimal use of available resources

Mobilization, Coordination and Communication for the elimination of NTDs	Promote improved communication and awareness at the community level for the successful elimination of endemic NTDs.
	Promote advocacy and funding for increased and sustained access to effective NTDs services

2.4.2 Programme Strategic Agenda Logic Map

Figure 18 below provides a logical frame upon which the South Sudan NTD programme will work and its inter-relatedness



NTD STRATEGIC AGENDA

Part 3: Implementing the Strategy:

NTD Operational Framework

In line with the 2021- 2030 NTD Global Roadmap, this strategic plan is geared towards ensuring three fundamental shifts in the approach to tackling NTDs: **first**, increase accountability for impact by using impact indicators instead of process indicators, as reflected by the targets and milestones in Part II and accelerate programmatic action; **secondly**, move away from siloed, disease-specific programmes by mainstreaming programmes into national health systems and intensifying cross-cutting approaches centred on the needs of people and communities: and **thirdly**, change in operating models and culture to facilitate greater ownership of programmes by countries.

Section 3.1: Strategic priorities and Key Activities

Table 15: Strategic Pillar 1 - Accelerating programmatic action

Strategic Priorities/ Activities	Key Activities	Time frame	Resources needed
Strategic objective 1: Accelerate progress from confirmation of disease to mapping, screening and transforming NTD surveillance into a core intervention			
Complete country-wide mapping of NTDs and implement surveillance mechanisms	• Review of current NTD prevalence maps in South Sudan & Identify gaps/ priority areas for mapping (onchocerciasis 31 IUs, trachoma 27 IUs, loiasis 4 IUs) • Conduct NTD mapping including morbidity mapping where there are gaps (Mapping to be carried out in an integrated way where possible (LF morbidity 50 IUs and trachoma) • Include LNOB aspects in NTD data collection • Set up and build capacity for NTD surveillance systems (PTS for PC-NTDs) sentinel sites. • Set up and build capacity for surveillance CM-NTDs	2023 - 2027	Funding, training, personnel, equipment, M&E system

Ensure Universal health coverage (i.e. Improve 'Leave no one behind' strategy)	• Conduct training for health workers on PC-NTDs • Scale up MDA for all 5 PC-NTDs implementation to achieve effective treatment coverage. • Conduct twice per year MDA in hyper-endemic IUs • Conduct training of CDDs on drug delivery and reporting of any SAEs • Provide MMDP services to endemic IUs. • Implement active surveillance and coverage evaluation surveys • Design and implement interventions that are inclusive to special population groups (pastoralists, refugees, IDPs, PLWDs, etc.). • Develop a beneficiary feedback mechanism. • Integrate PC-NTDs with the BHI structures to implement NTD interventions. • Conduct integrated mapping of CM-NTDs – Tungiasis, SBE, echinococcosis, taeniasis, VL, HAT • Improve surveillance and case management for CM NTDs. • Develop SAE guidelines for health workers • Develop MMDP management guidelines for health workers (to cover also co-morbidities strongly associated with NTDs, such as OAEpilepsy).	2023 -2027	Funds, human resources, transportation means, tools and equipment WHO guidelines on SAE and MMDP
Strategic objective 2: Prioritize and strengthen monitoring and evaluation to track progress and decision-making towards the WHO NTD Roadmap 2030 goals			
Establish an M&E system	• Develop an M&E framework for NTDs. • Integrate and customize NTD indicators into national HMIS (DHIS2). • Establish an electronic data collection and transfer system to improve the quality and timeliness of NTD data. • Develop a tool for data merge/link between NTD and WASH. • Develop SOP/manual for routine data quality assessment, data analysis and dissemination • Strengthen data management procedures including the process for collecting beneficiary feedback • Conduct periodic reviews of LNOB, beneficiary feedback and key KAP analysis for informed decision making • Conduct a review of WASH data in NTD hotspots.	2023-2027	IT expertise, funds, Computers at the County level, materials, Access to the internet, data clerks at the County level

Strengthen coordination	• Convene NTD partners to provide regular reviews on progress towards achieving set targets. • Hold quarterly NTD task force meetings at the National level to provide an update on activity progress and challenges. Implement periodic disease-specific assessments to assess impact.	2023-2027: bi-annual review	Personnel, funds, and logistics
Strategic objective 3: Ensure timely effective supply chain management of quality-assured NTD Medicines and other products up to the last mile			
Strengthen the NTD Supply Chain Management (integrated into the overall MoH Supply Chain System).	• Reactivate and operationalize the NTD Supply chain forum. • Review NTD Supply Chain Guidelines, and SOPs. • Develop quality control guidelines for NTD medicines. • Capacity building for SCM staff on management of NTD drugs. • Clearance of NTD medicines .and supplies • Establish NTD supply database in CMS	2023-2027	Focal person for NTD partners; meeting space
		2023 – 2027	Storage facilities, Supply Chain personnel, SOPs, Computer, funds, logistics
Strategic objective 4: Strengthen advocacy, visibility and profile of NTDs for the elimination interventions at all levels as "best buys"			
Reinforce /Strengthen National NTD Taskforce	• Review ToRs for the task force, to include increased advocacy and visibility of NTDs (members of taskforce should be representatives from key stakeholders involved in NTD elimination interventions such as Min. of Education, key WASH, one health and vector control partners, e.g. youth groups, LNOB, MARF etc.) • Advocacy with MWRI and WASH stakeholders to increase investment in WASH services in NTD endemic counties. • Collaborate with relevant ministries (Annual Review and Planning meetings, Taskforce meetings etc.). • Develop a National NTD Policy.	2023-2027	Venue for meetings, Software for online meetings, personnel, funds

Advocate for incorporation of NTDs into the school curriculum and in health promotion activities of WASH interventions.	• Establish a working group for incorporation of NTDs into the primary school curriculum and in health promotion activities of WASH • Strengthen the coordination mechanisms between the MoH, MoE, MWRI and other WASH stakeholders. • Establish a working group for the incorporation of NTDs into secondary and university (medical/veterinary college) curricula -One health, vector control and WASH	2023-2027	Human resources, logistics and funds
Develop a Marketing Strategy for NTD Elimination Programming in South Sudan	• Launch and disseminate the NTD Master Plan. • Conduct an advocacy analysis for NTD prevention; MDA, WASH and MMDP uptake. • Develop and implement a resource mobilization strategy for NTDs and WASH interventions. • Document and disseminate success stories (including successful collaboration) of the NTD programmes as well as publish a quarterly bulletin on NTDs and NTD annual report.	2023-2027	
Strategic objective 5: Promote operational research and innovation as fundamental enablers of programmatic progress			
Advocate for opportunities for funded operational research	• Engage with donor agencies to fund identified priority operational research areas; • Create a repository for operational research on NTDs conducted within the country. • Desk review past research in supporting NTD activities; identify advocacy for stakeholders (and ensure presence) • Identify priority research themes and knowledge gaps on NTDs • Publication of scientific papers in international Journals in collaboration with research institutions and universities • Engage National Universities and other research institutes to conduct more research on NTD. Develop simple guidelines (MoU/ToR) on how to collaborate with the Directorate of Policy, Planning, Budgeting and Research to obtain endorsement for research initiatives.	2023-2027	Funding, research teams, research equipment

Part 3: Section 2 (Strategic Pillar 2 - Intensify cross-cutting approaches)

Strategic Priority	Details (sub-activities)	Time frame	Resources needed

Strategic objective 1: Strengthen identified platforms with similar delivery strategies and interventions (MDAs, skin NTDs, Morbidity management, SBCC, WASH, vector control and One health) for integrated approaches across NTDs.			
Integrate delivery of services	• Develop integrated MDA protocols, guidelines/ SoPs for annual and twice-per-year Rxs and review reporting tools • Capacity-building to enable healthcare workers to deliver MDA for PC NTDs • Capacity-building to enable healthcare workers to screen, and diagnose relevant PC-NTDs and/or referral for subsequent clinical examination and relevant treatment • Post-exposure prophylaxis was administered to all contacts of detected and consenting cases (single-dose rifampicin reduces the risk of leprosy among contacts • Conduct MDA for scabies using oral ivermectin and topical scabicides e.g. permethrin, benzyl benzoate, malathion and sulfur ointment • Conduct MDA for Yaws in 100% of the endemic counties • Capacity-building to enable health care workers to screen, diagnosis of CM-NTDs and/or referral for subsequent clinical examination and relevant treatment • Training of health workers on self-care for relevant NTDs • Community awareness on self-care and referrals for relevant NTDs • Anti-stigmatization campaigns among youth /women, media • Screening CM-NTDs cysticercosis, Echinococcosis (imaging-ultrasound, X-ray), Taeniasis integrated with SCH/STH control • Provide integrated counselling and psychological first aid for snake bites, rabies, LF, leprosy patients and families • Rehabilitation to optimize the functioning of the individual in the community LF, leprosy, snake bites • Inclusion of NTDs in the training curriculum	2023 -2027	Human Resources, materials, and Funds
Integrate WASH/NTD	• Review integrated WASH and BCC protocols, tools and IEC including tools to collect beneficiary feedback • Implement the integrated WASH/NTD strategy • NTD programme to share micro-mapping data on the endemicity of WASH-related NTDs with the ministry of water and sanitation • Advocacy- Fundraising for WASH/NTDs • Social mobilization- Implement WASH/NTD social behaviour change in endemic IUs	2023 -2027	Human Resource and Funds

Implement Vector control intervention	• Integrate relevant NTD activities with the Malaria programme e.g. distribution of mosquito nets in LF endemic IUs • Develop and implement strategies for vector control; breeding sites/reservoirs • NTD programmes to manage human health related to vector-borne NTDs • Develop a surveillance system for case finding, laboratory confirmation and vector surveillance through established integrated sentinel sites		Human Resources, logistics, and Funds
Establish One Health strategy for NTDs	• Develop a One Health strategy for NTDs, including case definition, common targets, strategies and mechanisms for collaboration with other ministries • Create one health platform in collaboration with relevant stakeholders • Create national operational work plans to deliver interventions for NTDs with a human–animal–environment interface, with clear attribution of roles and responsibilities • Conduct joint awareness-raising and behavioural-change promotion with specific messages for targeted groups such as livestock keepers-deworming/husbandry • Advocate for meat inspection at slaughterhouses/homes in collaboration with veterinary • Support mass dog vaccination against rabies with the veterinary department • Support sensitization for Mass deworming of dogs (PZQ) echinococcosis with the veterinary department • Support management of the stray dogs population-(together with the veterinary department) • Use one health approach to survey for transmission of NTDs	2023 -2027	Human Resources, materials, and Funds
Strategic objective 2: Mainstream delivery platforms within the national health system			
Integrate NTDs into BHI	• Conduct training on integrated delivery of NTD services including management of morbidities • Conduct supervision of NTD-related activities within BHI • Delivery of the NTD programme through the BHI	2023 - 2027	Human Resources, materials and Funds
Integrate supply chain management	• Develop integrated guidelines, SOPs and tools for supply chain management • Procure medicines for PC-NTDs • Procure • Procure CM-NTD drugs –, ○ Procure antivenom, antibiotics and painkillers (snake bites	2023 -2027	Human Resources, materials, and Funds

	○ anti-rabies vaccines for humans and dogs, antivenoms for at-risk IUs ○ taeniasis, and echinococcosis dewormers for humans and cattle and pigs for taeniasis, ○ dewormers for dogs (Praziquantel) for echinococccosis and (albentazole/mebentazole for humans ○ Ivermectin for scabies ○ Leprosy-dapsone, rifampicin and clofazimine, steriodes ○ HAT drugs ○ VL drugs • Implement guidelines on supply chain management		
Strategic objective 3: Strengthen multi-sectoral coordination, collaboration, and cooperation and foster partnerships in the prevention, treatment and care of patients with NTDs at all levels of healthcare			
Establish the NTD coordination platform	Support National and State NTD task force meetings and other activities	2023 -2027	Human Resources, materials, and Funds
Enhance intersectoral collaboration at all levels	• Monitor implementation of NTD/WASH/one health and vector control SBCC strategy • Finalize, Disseminate and Monitor implementation of NTD/WASH/one health/vector control collaboration framework	2023 -2027	Human Resources, materials, and Funds
Strategic objective 4: Strengthen capacity to implement the NTD programme including the integration of the NTD plan of action into the financial plans in all spheres			
Incorporate NTD plans into the National MOH annual plan	Joint multi-sectoral review of the annual plan including a focus on LNOB implementation and multi-sectoral collaboration (Education, WASH, Youth, etc.)	2023 -20273	Human Resources, materials, and Funds
Build Capacity at various levels to implement the NTD programme	• Conduct ToTs at the national level on integrated NTD programme implementation • Conduct capacity building of M&E stakeholders at all levels (National State, County) • Conduct ToTs at the State level on integrated NTD programme implementation • Train Boma supervisors, CDDs and teachers on mass drug administration procedures • Capacity building for active case detection/screening - Healthcare workers • Capacity building of community in active case reporting	2023 -2027	Human Resources, materials, and Funds

Strategic Pillar 3: Operating models and culture to facilitate country ownership			
Strategic **Activity**	**Details (sub-activities)**	**Time frame**	**Resources needed**
Strategic objective 1: Promote and strengthen country ownership and leadership through organizational structures at national and local government with dedicated funding			

Establish and strengthen the NTD structure at all levels	Update organogram for NTD department at national and states levels	2023	Personnel, funding, logistics
	Develop guidelines and ToRs for NTD department personnel at all levels	2023	
	Conduct annual meetings of National and State NTD task forces	2023 - 2027	
	Conduct NTD programme stakeholders meeting	Bi-annual	
Strengthen State-level NTD coordination mechanism.	• Hold bi-annual review meetings at the national level • Hold bi-annual review meetings at the State level • Hold bi-annual review meetings at the County level • Integration of NTD treatment and surveillance at the health facility level, inclusive of Hospital, PHCC & PHCU • Establish data for action forum at all levels for decision making	2023 - 2027	Qualified HR, materials, funding, trainers, and data clerks at the county level
Increase political engagement with NTDs & WASH /One health and vector control stakeholders to increase domestic resources for NTDs	Meet with policy-makers to sensitize and update on progress made, challenges and gaps; advocate for a greater portion of the annual allocation	Bi-annual meetings (2023 – 2027)	Personnel, funding, logistics
Strengthen linkages & enhance integration with other MoH departments as well as key ministries and the WASH sector	• Map all relevant stakeholders for collaboration • Establish contacts with representatives of programmes, conduct meetings, follow up on recommendations • Integration of NTDs and WASH /one health and Vector control in planning and IEC	2023-2027	Human resources, logistics, and funds
Strategic objective 2: Empower Counties and authorities in social mobilization, behavioural change and building local support for NTD interventions			
Integrate NTDs programme with BHI and school programme	• Local recruitment of NTD focal point • Provide orientation for NTD focal points and for local government and authorities on SBCC and integrated implementation approaches to ensure universal coverage	2024	Personnel, funding, logistics (Clear map of BHI initiative; centralized NTD database)
	Set up a monitoring system for integrated NTD	2023	
Engage religious-based organizations/communities and the private sector in the fight against NTDs	• Sensitize religious leaders on NTDs to ensure universal coverage • Engage religious leaders in social mobilization and behaviour change communication	2023-2027	Human resources, logistics, and funds
Strategic objective 3: Promote youth engagement to influence positive change and norms in favour of the national NTD programmes			

Strengthen collaboration with youth organisations and NGOs working with youths	Map Youth Organizations and NGOs working with youths	2023	Active youth groups (scouts); funding; training materials
	Hold sensitization meetings and NTDs reporting with Youth Organizations and NGOs working with youths	2023-2027	
Establish sustainable initiatives for youth in NTD programming	Identify opportunities for NTD activities to be led by local youth;	2025	Personnel, funding, logistics
Strategic objective 4: Ensure donors, implementing partners and disease experts align their strategies and plans with the National NTD Plans			
Form elimination committees (TAGs); SCH/STH, Trachoma, CM-NTDs	• Identify people with the technical expertise on each of the NTDs • Holding disease-specific TAG meetings but with cross-cutting agenda	2023 – 2027	Human resources, logistics, and funds
Improve communication and coordination at all levels	Advocacy, sensations and information sharing on NTDs at all levels	2023 – 2027	Human resources, logistics, and funds
	Establish effective & efficient communication, feedback and complaint channels at all levels	2023 – 2027	
	Development & production of advocacy kits	2023 – 2027	
Strategic objective 5: Ensure development and review of integrated multi-year strategic plans and gender-sensitive annual operational plans for the control, elimination and eradication of targeted NTDs at national and sub-national levels			
Conduct annual programme planning meeting	Hold a planning meeting at the county s level	2023 – 2027	Human resources, logistics, and funds
	• Hold a planning meeting at the state level • Hold a planning meeting at the National level	2023 – 2027	
Increase/ Improve gender representation in NTD programming and implementation	• Recruit a gender specialist/consultant • Conduct OR on improving gender-sensitive NTD programming and implementation • Engage with relevant women's groups and the Ministry of Gender and Social Welfare Affairs • Implement the outcome of operational research on improving gender-sensitive NTD programming and implementation	2023 – 2027	Human resources, logistics, and funds

Strategic Pillar 4: Strengthen Resource Mobilization, Coordination and Communication for the elimination of NTDs

Strategic Priority	Activity	Timeframe	Resources
Strategic objective 1: Promote community involvement and ownership of the program for optimal use of available resources			
Improve community engagement and involvement in NTD Programme activities	• Hold quarterly Advocacy, sensitization and information-sharing meetings with relevant women groups/leaders and other key stakeholders (Chiefs, religious leaders, PLWD, pastoral communities) about NTDs at all levels • Develop and establish an effective communication strategy, feedback and complaint channels at all levels • Develop & produce advocacy kits and IEC materials relevant to NTDs programs • Organize NTD annual review meetings with stakeholders at the community and Boma levels • Establish local Boma level NTD task force meetings for sharing knowledge and increasing collaboration among sectors (WASH/one health/vector control stakeholders (MOEST, MOA/MOE)	2023-2027	Human Resources, logistics, and Funds
Strategic objective 2: Promote improved communication and awareness at the community level for the successful elimination of the endemic NTDs			
Promote community-level awareness of NTDs	• Meet with community leaders to sensitize and update on progress made, and challenges/gaps, and advocate for increased NTD financing in the annual fiscal year national budget. • Engage religious leaders in social mobilization and behaviour change communication in NTD interventions • Provide orientation for NTD focal person, local government authorities on SBC and integrated implementation approaches for countrywide coverage • Integrate NTDs BCC packages in the planned MOH activities and interventions.	2023-2027	Human Resources, logistics, and funds
Strategic objective 3: Promote advocacy and funding for increased and sustained access to effective NTDs services			
Establish MOH advocacy and public-private partnership	• Develop MOH advocacy and public-private partnership policy to enhance the involvement of the private sector in supporting NTD programs • Ensure sustained advocacy for funding NTDs programs from both domestic and global institutions/ stakeholders • Hold advocacy meetings with government and stakeholders to increase advocacy for NTDs financing and accountability for budgeting, strategic planning, and implementation	2023-2027	Human resources and Funds

Section 3.2: Toward NTD Programme Sustainability: Intensifying Coordination and Partnerships

NTD Structure

The national policy on control of NTDs creates two line divisions for the NTD programme. Currently, at the national level there is an NTD division headed by 4 Directors that is in-charge of the day-to-day management of the NTD affairs. This scenario has made reporting, accountability and implementation challenging in the drive towards control and elimination of NTDs in South Sudan.

To align with best global practices, it is envisaged that the National NTD structure will be administered under one office with subordinate Programme Managers in charge of specific diseases. This will involve a new organogram as presented in figure 19 below.

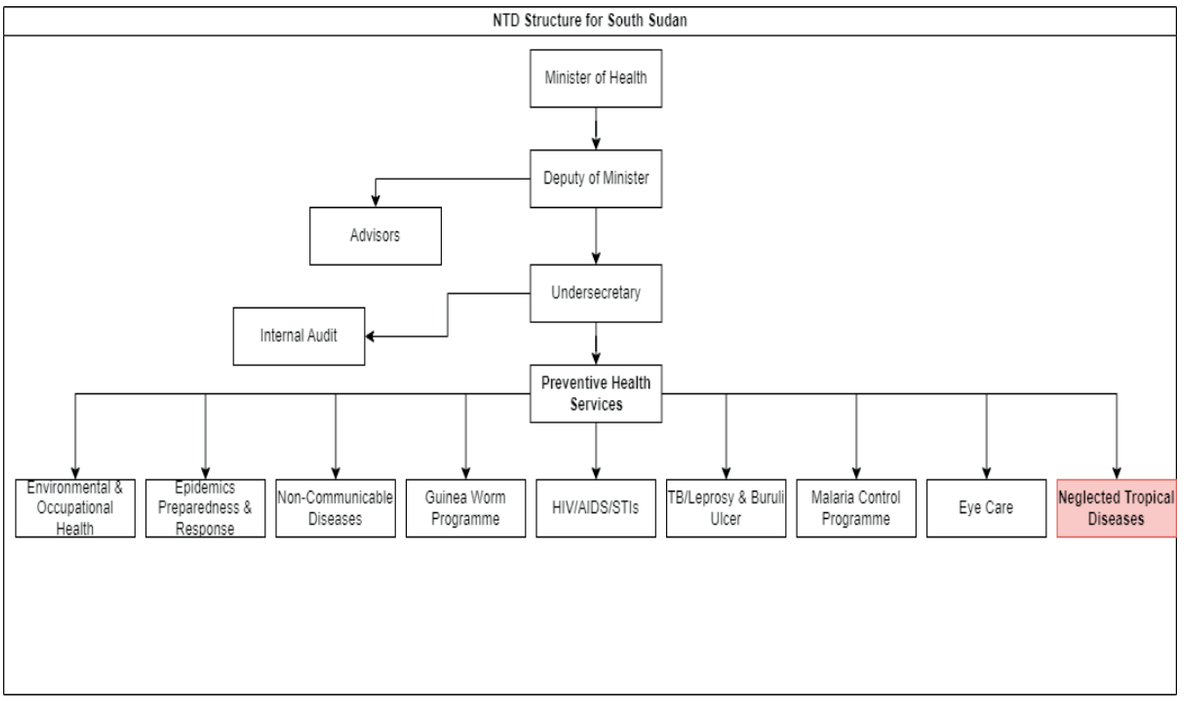


Figure 27: Proposed NTD structure for South Sudan

There is a technical committee, the NTD Steering Committee, which oversees programme implementation in the country. Relevant line ministries and government agencies are represented in the Steering Committee which provides the platform for collaboration of the Ministry of Health and other relevant government agencies for the implementation of NTD programme activities. There will be a national NTD technical advisory group which will be

made up of implementing partners that assist the NTD Programme in the coordination of programme activities (table 20).

In future the structure envisaged will be implemented and replicated in the 10 States and the 3 Administrative Areas.

Table 16. Suggested Membership and Terms of Reference – Programme Coordination Mechanism

Entity	Membership	Terms of Reference
National NTD Steering Committee		
Meeting frequency: Bi-annual Chair: Under Secretary Co-Chair: DG Preventive Health Services Host: Ministry of Health	DGs of listed ministries: M of Health M of Animal Resources M of Water Res & Irrig M of General Education M of Livestock &Fisheries M of Wildlife Con & T M of H Affairs & Dis Mgt. Academia Presidential Medical Unit Directorate of Intl Rel NGOs /Donor groups.	1. Oversee the development, implementation, monitoring and review of the country's NTD master plan and annual plans of action. 2. Establish linkages among NTD partners, with other relevant National development programmes and the Regional NTD framework. 3. Ensure that the commitments of the Government and all stakeholders are fulfilled. 4. Advocate and mobilize resources needed for NTD programmes in the country. 5. Ensure proper utilization and accountability of donor funds, including reprogramming when necessary.
National NTD Secretariat		
Meeting frequency: Weekly Chair: Director, NTDs Host: Ministry of Health	Key NTD technical officers as well as Admin & Accts Officer	1. Support the day-to-day operations of the national NTD programme. 2. Follow up the implementation of follow-up actions reached the Steering Committee and NTD TAG 3. Provide administrative support to the other arms of the coordination body.
National NTD Technical Advisory Group		
Meeting frequency: Quarterly Chair: Director NTDs Co-Chair: Academia Host: MoH	Reps of listed ministries M of Health M of Animal Resources M of Water Res & Irrig M of General Education M of Livestock &Fisheries M of Wildlife Con & T M of H Affairs & Dis Mgt. Academia Presidential Medical Unit Directorate of Intl Rel NGOs /Donor groups.	1. Support the monitoring and evaluation of NTD programme interventions and operations. 2. Review the NTD programme and strategy plans. 3. Identify capacity building and operational research gaps. 4. Recommend priorities and technical operational directions in line with national, regional and global guidelines
State NTD Committee		

Meeting frequency: Quarterly Chair: DG Host: SMoH	Reps of listed ministries M of Health M of Animal Resources M of Water Res & Irrig M of General Education M of Livestock &Fisheries M of Wildlife Con & T M of H Affairs & Dis Mgt. Academia NGOs /Donor groups.	1. Oversee the development, implementation, monitoring and review of the annual State NTD plan. 2. Establish linkages among NTD partners, with other relevant development programmes 3. Ensure that the commitments of the Government and all stakeholders are fulfilled. 4. Advocate and mobilize resources needed for the NTD programme in the State. 5. Ensure proper utilization and accountability of donor funds. 6. Review the NTD programme at the State level. 7. Identify capacity-building gaps within the NTD programme at the State level
State NTD Secretariat		
Meeting frequency: Weekly Chair: State NTD Coordinator Host: State Ministry of Health	Key NTD technical officers as well as Admin & Accts Officer	1. Support the day-to-day operations of the State NTD programme. 2. Follow up the implementation of follow-up actions reached the national level 3. Conduct periodic reviews, plan and implement NTD programmes at the State level
County NTD Committee		
County NTD Committee Meeting frequency: Quarterly Chair: CHD Director Co-Chair: NTD Coordinator Host: CHD	CHD Staff Dept of Health Dept of Animal Resources Dept of Water and rural development Dept. of Education Dept. of Wildlife Con & T SSRRC.	1. Oversee the development, implementation, monitoring and review of the annual County NTD plan. 2. Establish linkages among NTD partners, with other relevant development programmes 3. Ensure that the commitments of the Government and all stakeholders are fulfilled. 4. Advocate and mobilize resources needed for the NTD programme in the County. 5. Ensure proper utilization and accountability of donor funds. 6. Review the NTD programme at the County level. 7. Identify capacity-building gaps within the NTD programme at the County level
County NTD Secretariat		
Meeting frequency: Weekly Chair: County NTD Coordinator Host: CHD	Key NTD technical officers as well as Admin & Accts Officer	1. Support the day-to-day operations of the county NTD programme. 2. Follow up the implementation of follow-up actions reached national and State levels 3. Conduct periodic reviews, plan and implement NTD programmes at the county level

Table 17: Partnership Matrix

State	NTDs (List)	Veterinary (List)	WASH (List)	IVM (List)	One-Health (List)	Education (List)	Malaria (List)
CES	ONCHO-CBM and WHO LF-CBM and WHO Others NTDs-WHO	Unknown	Provision of clean water Rehabilitation of sanitation and water system Provision of sanitation and hygiene services Awareness and training Partners: UNEP, ICRC, JICA, UNICEF, IOM, UNESCO, GIZ, Malteser International, WASH Cluster and WASH-DOG. NGOs: UNIDOR, NSDO, SSDO, Nile Hope, RUWASSA, Water for South Sudan and Aqua Africa, AHA	INRAD (Vector Control)	Unknown		Net distribution –Unicef A-WHO
EE	GW- The Carter Center Trachoma- The Carter Center VL WHO HAT- FIND, and WHO Other NTDs- WHO	Unknown		Unknown	GW		Net distribution UNICEF TA WHO
Jonglei	VL- SSMRO, MSF , CMA, CMD, ICRC and WHO GW- The carter Center and WHO	Unknown		Unknown		GW	Net distribution UNICEF – TA WHO
Lakes	ONCHO–CMB, End fund and ESPEN/WHO LF–CBM, End Fund and ESPEN/WHO GW- The Carter Centre and WHO						
NBEG	ONCHO– ESPEN/WHO Other NTDs - WHO	Unknown		Unknown	Unknown		Net Distribution UNICEF TA WHO
Unity	VL – MSF, AHA, ICRC, CMA	Unknown		Unknown	Unknown		Net distribution UNICEF TA WHO
Upper Nile	VL – MSF, GOAL, UNKEA, IMC, ICRC, CORDAID, RI, World visions and WHO	Unknown		Unknown	Unknown		Net distribution UNICEF TA WHO

Warrap	ONCHO – ESPEN LF - ESPEN	Unknown		Unknown	GW		Net distribution UNICEF TA WHO
WES	ONCHO – CBM and EndFund LF – CBM and EndFund AHA	Unknown		Unknown	Unknown		Net distribution UNICEF TA WHO
WBEG	ONCHO-CBM, EndFund LF – CBM and EndFund	Unknown		Unknown	GW		Net distribution UNICEF TA WHO

Section 3.3: Assumptions, Risks and Mitigations

Risk is the process of examining how likely risks will arise in the implementation of the NTD programme. It also involves examining how the programme outcome and objectives might change due to the impact of the risks. The impact could be in terms of schedule, quality and cost.

Risk mitigation is the process of developing options and actions to enhance opportunities and reduce threats to the programme objectives. Risk mitigation progress monitoring includes tracking identifiable risks, identifying new risks, and evaluating risk process effectiveness throughout the programme period.

Potential Risk	**Before risk mitigation**			**Risk Mitigation**	**After risk mitigation**		
	Likelihood of occurrence	**Impact**	**Score**		**Likelihood of occurrence**	**Impact**	**Score**
	Certain =5 Likely =4 Possible =3 Unlikely =2 Rare =1	Severe =5 Major =4 Moderate =3 Minor =2 Insignificant =1	Likelihood x Impact		Certain =5 Likely =4 Possible =3 Unlikely =2 Rare =1	Severe =5 Major =4 Moderate =3 Minor =2 Insignificant =1	Likelihood x Impact
Risk Type = ***Operational Risks***							
Security challenges	4	5	20	Use security agents	4	3	12
Flooding	3	4	12	Implement activities before the rains	3	3	9
Famine	4	4	16	Approach humanitarian agencies to improve food support	3	3	9
Risk Type = ***Financial Risks***							
Donor fatigue	3	5	15	Improve resource mobilization	2	4	8
Pull out of partners	3	4	12	Improve resource mobilization	2	4	8
Risk Rating (Likelihood x Impact)							
19 – 25	Severe						
13 – 18	Major						
7 – 12	Moderate						
0 – 6	Minor						

Table 18: Risks Table

Managing risk means mitigating the threats or capitalizing on the opportunities that uncertainty presents to expected results. Failure to identify risks and failures to come up with risk mitigation strategies can and do kill projects. If no mitigation strategy can help, then *change* your strategy and project approach.

Table 18: Steps to mitigate risk

Avoid	Change plans to circumvent the problem
Control	Reduce threat impact or likelihood (or both) through intermediate steps
Share	Outsource risk (or a portion of the risk) to a third party or parties that can manage the outcome.
Accept	Assume the chance of the negative impact
Monitor	Monitor and review the process in which risk management is in place

Section 3.4. Performance and Accountability Framework

Table 20. Performance Indicators for Pillar 1: Accelerating programmatic action			
Strategic Priority	**Performance Indicators**	**Target**	**Date**
Strategic priority 1: Accelerate progress from confirmation of a disease to mapping, screening and transform NTD surveillance into a core intervention	No of IUs with completed mapping for PC-NTDs	79	2025
	No of IUs with completed mapping for CM-NTDs	79	2027
	No of NTDs with surveillance integrated into the routine health system	19	2027
	Approved policy and guidelines on NTDs available	19	2027
	No of cases reported for each CM NTD	All endemic areas	Annually
	Reduction in specific-NTD disease morbidity and prevalence	All targeted NTDs	2027
Strategic priority 2: Prioritize and strengthen monitoring and evaluation to track progress and decision making towards the 2030 goals	Guidelines for NTDs M & E available and in use	1	2024
	Existence of a central storage for the integrated NTDs database (DHIS 2) that is fully functional and effective	1	2023
	No & proportion of IUs using integrated NTDs recording and reporting forms	79 IUs	Annually
	No & Proportion of IUs submitting adequately completed NTDs Summary forms	79 IUs	Annually
	Number of integrated monitoring visits carried out per year	13	Annually
	No of IUs that implemented NTD-specific impact assessment activities	5 IUs	Annually - from 2023
	No & proportion of IUs that passed NTD-specific impact assessments	5 IUs	Annually - from 2024
	No & proportion of IUs where transmission for any NTD has been interrupted	5 IUs	Annually - from 2025
Strategic objective 3: Ensure timely effective supply chain management of quality-assured NTD Medicines and other products up to the last mile	No & type of guidelines produced and in use	5	2023
	No and proportion of states that adapted and are using NTD guidelines and standard operating manual	13	2023
	No & type of NTD drugs procured & available at good time	12	Annually
	No of States/IUs that received sufficient NTD drugs on time	13 (10 States and 3 Administrative Areas) / 79 IUs	Annually

	No of States/IUs with updated inventory records	13 (10 States and 3 Administrative areas/ 79 IUs	Annually
Strategic objective 4: Strengthen advocacy, visibility and profile of NTDs for the elimination interventions at all levels as "best buys"	Number & type of advocacy kits on NTDs produced	5	2023
	Number of line ministries/agencies and other stakeholders sensitized on integration with NTDs at each level	15	Annually
	No & proportion of States/ Counties that held sensitization meetings	13(10 States and 3 Admin. Areas)/ 79 IUs	Annually
	Number of editions of newsletter on NTDs produced annually	2	Annually
Strategic objective 5: Promote operational research and innovation as fundamental enablers of programmatic progress	Identified priority areas for operational research for NTDs available and circulated		2024
	No of Operational Research proposals on NTDs developed	5	Annually
	No of Operational Research conducted annually	5	Annually
	No of NTD personnel involved in NTD related Operational Research No of stakeholders participating in Operational Research	5 5	Annually

Table 20b. Performance Indicators for Pillar 2: Intensify cross-cutting approaches

Strategic Objective	Performance Indicators	Target	Date
Strategic objective 1: Strengthen identified platforms with similar delivery strategies and interventions (MDAs, skin NTDs, Morbidity management, SBCC, WASH etc.) for integrated approaches across NTDs	Number of NTD personnel/ health workers trained at each level	4000	Annually
	Number of integrated NTDs tools produced & in use	10	Annually
	No of persons treated for each NTD	All individuals in endemic IUs	Annually/Bi-annually
	No of Bomas covered for each PC NTD	All eligible Bomas in endemic IUs	Annually/Bi-annually
	No of IUs reporting integrated treatment	79 IUs	Annually/Bi-annually
	No of IUs with 100% geographic coverage for each NTD	79 IUs	Annually/Bi-annually
	No of IUs where 100% of endemic /target bomas achieve at least 80% therapeutic coverage –NTD	79 IUs	Annually/Bi-annually
	One health platform created	1	2023
	Number of advocacy meetings on one health held	4	Annually

Strategic objective 2: Mainstream delivery platforms within the national health system	Number of sensitization meetings with key sector Policy makers	10	Annually
	Number of meetings held on mainstreaming delivery platforms with national health system	10	Annually
	No & Proportion of schools utilized for NTD implementation	50% of schools in endemic IUs	Annually
Strategic objective 3: Strengthen multi-sectoral coordination, collaboration, cooperation and foster partnerships in the prevention, treatment and care of patients with NTDs at all levels of health care	Number of community-based programmes collaborating with NTDs programme	10	Annually
	Number of partners supporting NTDs	15	Annually
	Number of line Ministries & Agencies supporting and collaborating with NTDs	15	Annually
Strategic objective 4: Strengthen capacity to implement NTD programme and resource mobilization, including the integration of NTD plan of action into the financial plans at all spheres	NTD Resource Mobilization manual available and in use	1	2023
	Number of participants at the training workshop on resource mobilization & management for NTD management teams	20	Annually
	Amount of resources being contributed by partners to NTDs		Annually
	No & Proportion of States releasing funds for NTD control	10 States and 3 Administrative Areas	Annually

Table 20c. Performance Indicators for Pillar 3: Operating Models and culture to facilitate country ownership

Strategic Objective	Performance Indicators	Target	Date
Strategic objective 1: Promote and strengthen country ownership and leadership through organizational structures at national and local government with dedicated funding	Number & proportion of states with established and functional NTD units	10 States and 3 Admin Areas	2023
	Number of counties with focal persons for NTDs	79 Counties	2023
	Number of NTD partners' meetings held annually	4	Annually
	No of steering committee meetings held in a year	2	Annually
Strategic objective 2: Empower local government and authorities in social mobilization, behavioural change and building local support for NTD interventions	Number of NTD personnel/health workers mobilized at each level of implementation (including school teachers for school-based de-worming)	10,000	Annually
	No of Counties conducting social mobilization, behavioural change activities	79 Counties	Annually
Strategic objective 3: Promote youth engagement to influence positive change and norms in favor of the national NTD	Number of youth engagement sessions held	13 Sessions (10 States and 3 Admin Areas)	Annually
	Number of capacity building sessions for youths held	26	Annually

programmes			
Strategic objective 4: Ensure donors, implementing partners and disease experts align their strategies and plans with the National NTD Plans	No of workshops conducted on NTD's	1 workshop per State & 1 per admin area	Annually
	Number and Proportion of implementing partners aligning their strategies with the national NTD Plan	All IPs	Annually
	Number of review/stakeholders meetings held	2	Annually
Strategic objective 5: Ensure development and review of integrated multiyear strategic plans and gender-sensitive annual operational plans for the control, elimination and eradication of targeted NTDs at national and sub-national levels	Number of meetings with states to develop strategic plans for effective NTD implementation	2	2023
	No of training sessions held on development of State annual work plans	2	Annually
	No & proportion of States/Counties that developed and are using strategic /operational plans	10 States/ 3 Administrative Areas,79 Counties s	Annually

Table 20d. Performance Indicators for Pillar 4: Strengthen Resource Mobilization, Coordination and Communication for the elimination of NTDs

Strategic Objective	Performance Indicators	Target	Date
Strategic objective 1: Promote community involvement and ownership of the program for optimal use of available resources.	Number of Advocacy and sensitization meetings	All endemic Bomas	Annually
	A communication strategy	1	2023-2027
	Number of advocacy kits and IEC materials relevant to NTDs programs	Disease specific	2023-2027
	Annual review meetings with stakeholders	1	Annually
	Number of NTD task force meetings	2	Biannual
Strategic objective 2: Promote improved communication and awareness at the community level for a successful elimination of the endemic NTDs	Number of disease specific TWG meetings in consideration of cross-cutting issues	Disease Specific	Quarterly
	Number of sensitization and advocacy meetings for increased NTD financing in the annual fiscal year national budget.	1	Annually
	Number of social mobilization and behavior change communication meetings	Activity based	Annually
	Number of trainings/mentorships to NTD focal persons, local government authorities on NTDs	All Endemic IUs	Annually
	Number of Integrations of NTDs BCC packages in the planned MOH activities and interventions.	1	2023-2027
Strategic objective 3: Promote advocacy and funding for increase and sustained access to effective NTDs services	MOH advocacy and public private partnership policy	1	2023-2027
	Number of advocacy meeting with government and stakeholders to increase NTDs financing	1	Annually

PART 3

Implementing the Strategy: NTD

Part4: Budgeting for Impact: Estimates and Justifications

4.1 Introduction

The proposed NTD Master Plan (2023-2027) governs the prevention, control and, where feasible, elimination and eradication of neglected tropical diseases. It aligns with the NTD Roadmap '*Ending the neglect to attain the Sustainable Development Goals A road map for neglected tropical diseases 2021–2030*'[1]. The Master Plan is a tool for the government to plan for all NTD programmes in the country which will facilitate alignment among partners and stakeholders for joint and complementary support and accelerate progress towards the prevention, control, elimination and eradication of all relevant NTDs in the country. It provides all partners working on NTDs in the country with a harmonized tool that will facilitate joint support.

Information on the cost of providing health care services is becoming increasingly important. This section presents cost estimates for providing health care services under the Strategic Plan. The costs are based on data derived from programme-specific strategic targets, published documents on unit costs, and interviews with key experts in health-related fields. The data was processed in the TIPAC Model to generate the overall costing estimates.

Estimation of resources is a critical component towards sustainable financing of Neglected Tropic Diseases (NTDs), and resource mobilization on the funding gap needed to implement the interventions outlined in the South Sudan NTD master plan. This section describes in detail the level of resource requirements for the strategic plan period, the available resources and the

[1]WHO. Ending the neglect to attain the Sustainable Development Goals: a road map for neglected tropical diseases 2021–2030. Available at https://www.who.int/neglected_diseases/Revised-Draft-NTD-Roadmap-23Apr2020.pdf. Accessed on July 21, 2020.

gap between what is anticipated and what is required. Overall, this information on costs, resources available, and the financing gap should assist stakeholders to develop realistic annual health budgets without which annual operational plans cannot be designed or implemented more effectively.

The results will help implementers, policymakers, and funders by generating evidence to support NTD advocacy services and resource mobilization, to improve NTD resource allocation, planning and budgeting, and to help improve NTD system performance. The information from the analyses will be important for developing investment cases and for facilitating the calculation of the health and economic impact of NTD interventions.

4.2 Costing Methodology

Costing is a process of determining in monetary terms the value of inputs that are required to generate a particular output. It involves estimating the number of inputs required by an activity/programme. Costing may also be described as a quantitative process which involves estimating both operational (recurrent) costs and capital costs of a programme. The process ensures that the value of resources required to deliver services is cost-effective and affordable.

Sustainability is a complex concept that is defined as meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. In other words, can systems remain diverse and self-sustain indefinitely? Costing is one step towards answering this critical question at the programme level.

The costing combined both the TIPAC costing tool and the ABC costing tool. The Tool for Integrated Planning and Costing (TIPAC) is a Microsoft excel programme that helps users accurately estimate the costs and funding gaps of public health programs. The Neglected Tropical Disease (NTD) TIPAC can be used to effectively plan and coordinate future programme resources. TIPAC mainly focuses on 5 Preventive Chemotherapy (PC) NTDs namely; Lymphatic Filariasis (LF), Trachoma, Schistosomiasis (SCH), Onchocerciasis and soil-transmitted helminths (STH). However, depending on the endemicity of disease in a country other innovative and intensified disease management NTDs/disaster management strategies may be added to the tool. In the case of South Sudan, we added Leishmaniasis (Kalazar) and other prevalent CM/NTDs. TIPAC, however, is heavily reliant on known mapping, endemicity level and targeted population for at least the initial year.

4.3 Total resource requirements (2023 – 2027)

The cost estimates show that the NTD Department of Health in South Sudan, and other key stakeholders require an investment worth approximately **178** million dollars for NTD over the planned period. This sum includes the cost of donated medicines together with the cost of storage and freight.

Table 19: Resource requirements by Strategic Area (s) and Service Delivery in USD

SUMMARY	2023	2024	2025	2026	2027	TOTAL	%
SP 1 -Accelerating Programmatic Actions	9,831,386	11,194,910	13,608,895	16,508,493	19,987,627	71,131,312	35
SP 2 -Intensify cross-cutting approaches	7,040,151	8,659,712	10,281,526	12,339,409	14,686,540	53,007,337	26
SP 3 - Operating models and culture to facilitate country ownership	1,130,900	1,329,354	1,579,062	1,878,165	2,337,963	8,255,444	4
SP 4- Strengthen Resource Mobilization, Coordination and Communication for the elimination of NTDs Intensify cross-cutting approaches	609,800	742,005	902,871	1,098,614	1,336,793	4,690,083	2
Case Management Interventions with Medicines	9,151,130	10,989,079	12,480,721	15,015,389	17,942,673	65,578,991	32
TOTAL	**27,763,367**	**21,925,981**	**26,372,355**	**31,824,680**	**38,348,923**	**202,663,166**	100

Analysis of the cost requirements shows that 32% per cent of the funds will be required to cater for case management interventions and to procure needed medicines which are not donated. The cost drivers include the procurement of the medicines abd the MDA for scabies. Activities under Strategic Pillar 1 also take a third of the total budget (35%). The key driver here is the scale up of MDA for all 5 PC-NTDs implementation to achieve effective treatment coverage. Additional cost drivers include capacity building for different cadres of personnel and development of appropriate guidelines. Strategic Pillar 2 takes 26% over the five-year period. The main cost driver has to do with implementing the one health strategy..

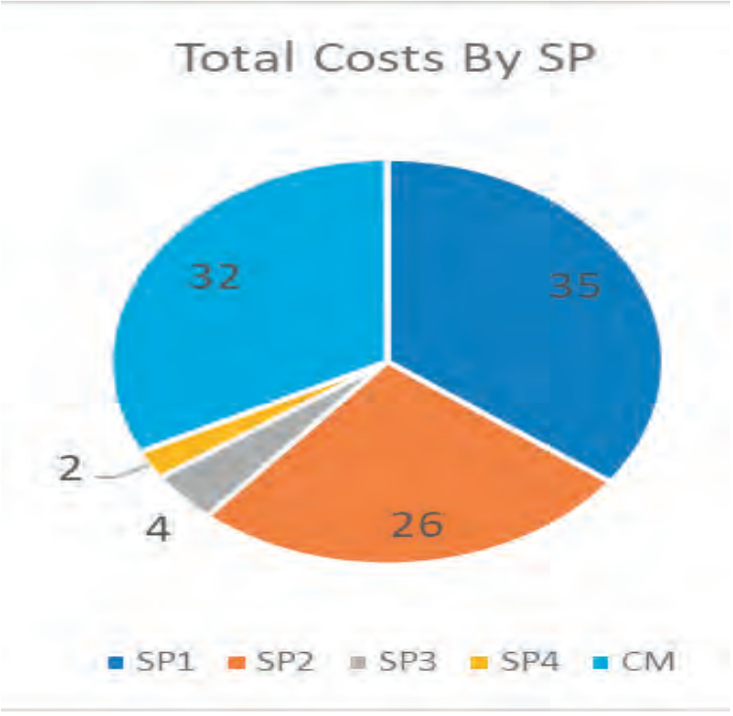


Figure 28: Proportion of costs by Strategic Pillar and Service Delivery Interventions

Five-Year NTD Service Delivery Interventions from TIPAC

The focus in South Sudan is to do annual Mass Drug Administration (MDA) to ensure they at least reach the targeted population. Moreover, if feasible the MOH is looking into conducting an integrated MDA for LF, ONCHO, Trachoma and SCH. However, in this costing, we have only integrated MDA for LF and ONCHO which has previously been done. Cost per treatment was used against the target population and the endemicity within the counties.

Figure below represents costs of the service delivery interventions over the five-year period. It shows that rising costs in the last two years of the planned period. The cost drivers for this rise have to do with mainly assessments as the Programme evaluates the various interventions that it had been implementing, and refocuses on interventions that are performing optimally.

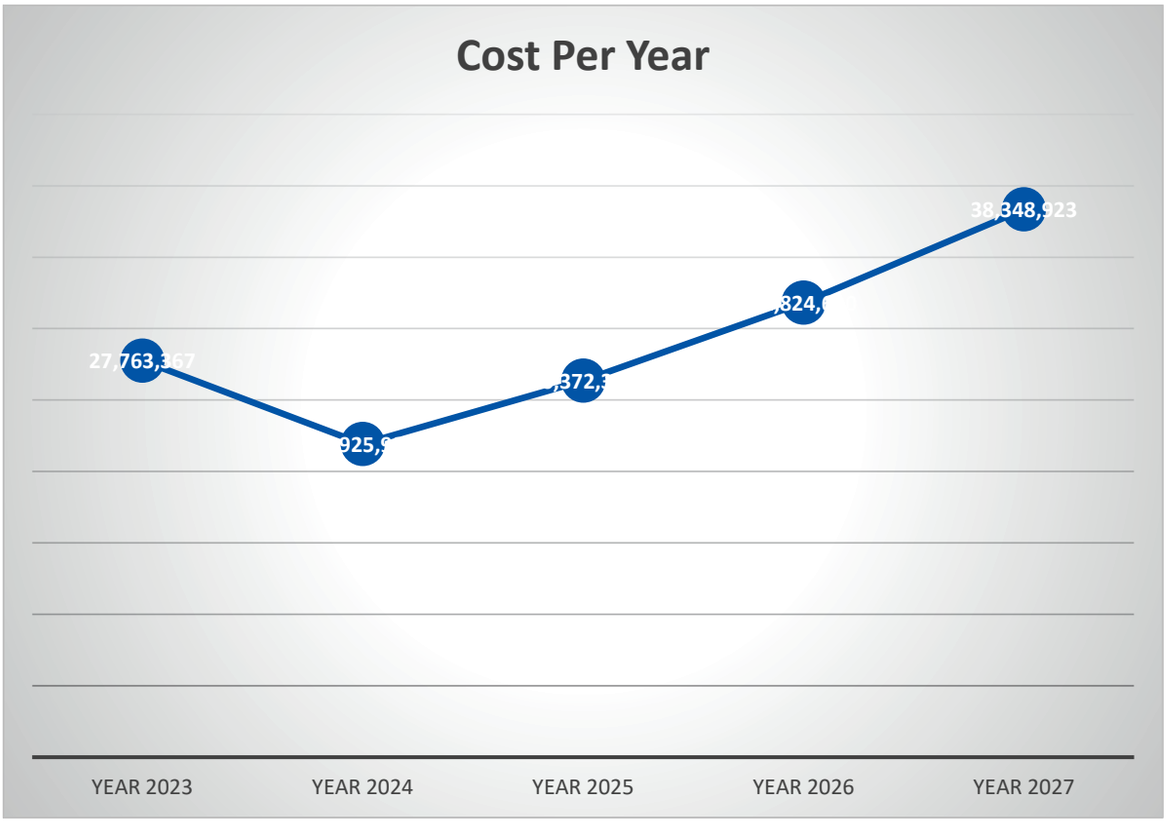


Figure 29: Cost of implementing service delivery interventions by year in USD

Cost of Drugs

There is very scanty information on the purchase of the PC NTD drugs within South Sudan. Currently, the country heavily relies on WHO-ESPEN for these drugs which are donated by pharmaceutical companies except for STH high-risk adults target population. However, the country will be responsible for the purchase of medicines that are not currently donated especially for case management interventions within the 5 years of implementing the master plan. .

4.4 ACTIVITY-BASED COSTING FOR STRATEGIC PILLARS FOR ALL NEGLECTED TROPICAL DISEASES

Activity-based costing (ABC) is a method of allocating costs to products and services based on each intervention and activity to achieve set goals /results. It focuses on the bottom-up approach. ABC is generally used as a tool for planning and control. All costs of activities are traced to the product or service for which the activities are performed. Direct labour and materials are relatively easy to trace directly to products, but it is more difficult to directly allocate indirect costs to products. Where products use common resources differently, some sort of weighting is needed in the cost allocation process.

In ABC, each of the **activities** requires **inputs,** such as labour, conference hall etc. These inputs are required in certain **quantities,** and with certain **frequencies.** The summation of the **product** of the **unit cost**, the **quantity**, and the **frequency** of the input will give the **total input cost.** Unit cost refers to the value of resources to provide a *service to one unit/person* (client or a patient). In activity-based costing all the ingredients to provide a service to one person are clearly defined. The quantity of each input (ingredient) in the provision of the service is required. The cost price of a unit of the input is also required for the calculation of the unit cost**.**

Explanatory Note

The ABC costing method was used to estimate the resources required for the strategic objectives, strategic areas and activities within the master plan concerning the relatively small number of items that make up the bulk of the total costing.

SP 1- Accelerating Programmatic Actions

From the analysis in Table 21, substantial resources (35% of total cost) will be required to accelerate progress from confirmation of disease to mapping, screening and transforming NTD surveillance into a core intervention. Currently, there are areas where the endemicity level of the different PC and CM NTDs is unknown. Mapping of all diseases is paramount for the elimination of each of the NTDs. The cost drivers include baseline surveys and capacity building on disease surveillance.

SP 2- Intensify cross-cutting approaches

The goal for this master plan is to have as many activities integrated for the effective utilization of resources including Mass Drug Administration, WASH, Knowledge Attitude and Practices and Behavior Change Communication for the NTDS. Under strategic objective 2; Strengthening identified platforms with similar delivery strategies and interventions (MDAs, skin NTDs, Morbidity management, SBCC, WASH etc.) for integrated approaches will take some good share of the budget. This SP will take 26% of the total cost.

SP 3- Operating models and culture to facilitate country ownership

This strategic pillar focuses on strengthening coordination structures in the country, improving political engagement with NTDs & WASH /One health and vector control stakeholders to increase domestic resources for NTDs, and strengthening linkages & enhance integration with other MoH departments as well as key ministries and the WASH sector. The major cost driver is implementing the one health approach. Overall, only 4% of the entire budget is devoted to this.

SP 4- Strengthen Resource Mobilization, Coordination and Communication for the elimination of NTDs

The strategic objective of promoting community involvement and ownership of the program for optimal use of available resources will take a good share of the resources needed largely driving the program's need to involve key stakeholders at all levels but particularly at the Boma and community levels. This will allow for community involvement and awareness creation of NTDs at the grass-root level. The cost drivers include the production of IEC materials for advocacy and media sensitization. Only 2% of the total budget is devoted to this pillar.

Case Management Interventions and Case Management Medicines

There is an attempt to separate the case management interventions with the procurement of medicines most of which had not been taking place. Issues on the new CM-NTDs not currently being addressed by the country are reflected here. There will be need to scale up existing CM interventions and these have associated implications. The key driver has to do with purchasing the right medicines and ensuring appropriate delivery and distribution as the case may be. Given the current prices of these medicines and the populations to be covered it is no wonder that 32% of the entire 5-year budget has been devoted for this line item.

Sub-activity	2023	2024	2025	2026	2027	TOTAL
Total	**27,763,367**	**32,915,060**	**38,853,075**	**46,840,069**	**56,291,595**	**202,663,166**
SP1: - Complete country-wide mapping of NTDs and implement surveillance mechanisms						
Review of current NTD prevalence maps in South Sudan & Identify gaps/ priority areas for mapping (onchocerciasis 31 IUs, trachoma 27 IUs, loiasis 4 IUs)	15,000	18,252	22,209	27,024	32,883	115,368
Conduct NTD mapping including morbidity mapping where there are gaps (Mapping to be carried out in an integrated way where possible (LF morbidity 50 IUs and trachoma)	60,000	73,008	88,836	108,096	0	329,940
Include LNOB aspects in NTD data collection	46,000	55,973	68,108	82,873	100,840	353,794
Set up and build capacity for NTD surveillance systems (PTS for PC-NTDs) sentinel sites.	75,000	93,998	117,808	147,649	185,049	619,504
Set up and build capacity for surveillance CM-NTDs	60,000	75,198	94,246	118,119	148,039	495,603
Conduct training for health workers on PC-NTDs	73,691	86,218	104,911	127,655	155,331	547,806
Scale up MDA for all 5 PC-NTDs implementation to achieve effective treatment coverage.	5,772,494	6,753,818	8,218,046	9,999,718	12,167,657	42,911,733
Conduct twice per year MDA in hyper-endemic IUs	803,765	940,405	1,144,285	1,392,366	1,694,231	5,975,051
SP1: - Ensure Universal health coverage (i.e. Improve 'Leave no one behind' strategy)						
Conduct training for CDDs on drug delivery and reporting of any SAEs	629,914	736,999	896,781	1,091,203	1,327,776	4,682,673
Provide MMDP services to endemic IUs (Hydrocele, Trachoma and Lymphoedema, Leprosy).	243,719	296,557	360,851	439,083	534,277	1,874,487
Implement active surveillance and coverage evaluation surveys	144,000	168,480	205,006	249,452	303,533	1,070,471
Design and implement interventions that are inclusive to special population groups (pastoralists, refugees, IDPs, PLWDs, etc).	400,000	441,293	536,965	653,379	795,032	2,826,669
Develop a beneficiary feedback mechanism.	54,000	63,180	76,877	93,544	113,825	401,427
Integrate PC-NTDs with the BHI structures to implement NTD interventions.	30,000	35,100	42,710	51,969	63,236	223,015
Improve surveillance and case management for CM NTDs.	1,318	1,542	1,876	2,283	2,778	9,798
Develop SAE guidelines for health workers	25,000	0	0	0	0	25,000
Develop MMDP management guidelines for health workers (to cover also co-morbidities strongly associated with NTDs, such as Onchocerciasis Associated Epilepsy (OAE)/ Nodding Syndrome.	25,000	0	0	0	0	25,000
SP1: - Establish an M&E system						
Develop an M&E framework for NTDs.	30,000	0	0	0	0	30,000
Integrate and customize NTD indicators into National HMIS (DHIS2).	30,000	0	0	0	0	30,000
Establish an electronic data collection and transfer systems to improve the quality and timeliness of NTD data.	20,000	0	0	0	0	20,000
Develop a tool for data merge/link between NTD and WASH.	15,000	0	0	0	0	15,000
Develop SOP/manual for routine data quality assessment, data analysis and dissemination.	45,000	0	0	0	0	45,000
Strengthen data management procedures including process for collecting beneficiary feedback	98,880	120,317	146,402	178,142	216,763	760,504
Conduct periodic review of LNOB, beneficiary feedback and key KAP analysis for informed decision making	3,000	0	0	0	0	3,000

Conduct review of WASH data in NTD hotspots.	15,000	0	22,209	0	32,883	70,092
SP1: - Strengthen coordination						
Convene NTD partners to provide regular reviews on progress towards achieving set targets.	45,000	54,756	66,627	81,072	98,648	346,103
Hold quarterly NTD taskforce meeting at National level to provide update on activity progress and challenges. Implement periodic disease specific assessments to assess impact.	12,000	14,602	17,767	21,619	26,306	92,294
SP1: - Strengthen the NTD Supply Chain Management (integrated into the overall MoH Supply Chain System).						
Reactivate and operationalize the NTD Supply chain forum.	8,000	9,734	0	0	0	17,734
Review NTD Supply Chain Management (SCM) Guidelines, and SOPs.	25,000	0	37,015	45,040	54,805	161,860
Develop quality control guidelines for NTD medicines.	570,000	693,576	843,943	1,026,910	1,249,544	4,383,974
Capacity building for SCM staff on management of NTD drugs.	10,605	12,904	15,702	19,106	23,248	81,565
Clearance of NTD medicines and supplies	9,000	10,951	13,325	16,214	19,730	69,221
Establish NTD supply database in Central Medical Store (CMS)	10,000	12,168	14,806	18,016	21,922	76,912
SP1: - Reinforce /Strengthen National NTD Taskforce						
Review ToRs for taskforce, to include increased advocacy and visibility of NTDs (members of taskforce should be representatives from key stakeholders involved in NTD elimination interventions such as Min. of Education, key WASH , one health and vector control partners, e.g youth groups, LNOB, MARF etc.)	5,000	0	0	9,008	0	14,008
Advocacy with MWRI and WASH stakeholders to increase investment of WASH services in NTD endemic counties.	104,500	127,156	154,723	188,267	229,083	803,729
Collaborate with relevant ministries (Annual Review and Planning meetings, Taskforce meetings etc).	10,000	12,168	14,806	18,016	21,922	76,912
Develop a National NTD Policy.	30,000	0	0	0	0	30,000
SP1: - Advocate for incorporation of NTDs into the school curriculum and in health promotion activities of WASH interventions.						
Establish a working group for incorporation of NTDs into primary school curriculum and in health promotion activities of WASH	7,500	9,126	11,105	0	0	27,731
Strengthen the coordination mechanisms between the MoH, MoE, MWRI and other WASH stakeholders.	15,000	18,252	22,209	27,024	32,883	115,368
Establish a working group for the incorporation of NTDs into secondary and university (medical/veterinary college) curriculum -One health, vector control and WASH	15,000	18,252	22,209	0	0	55,461
SP1: - Develop a Marketing Strategy for NTD Elimination Programming in South Sudan						
Launch and disseminate the NTD Master Plan.	8,000	9,734	11,845	14,413	17,537	61,529
Conduct an advocacy analysis for NTD interventions; MDA, WASH and MMDP uptake	85,000	103,428	125,851	153,136	186,336	653,750
Develop and implement a resource mobilization strategy for NTDs and WASH interventions.	5,000	6,084	7,403	9,008	10,961	38,456

Document and disseminate success stories (including successful collaboration) of the NTD programmes as well as publish a quarterly bulletin on NTDs and NTD annual report.	5,000	0	0	0	0	5,000
SP1: - Advocate for opportunities for funded operational research						
Engage with donor agencies to fund identified priority operational research areas;	45,000	54,756	66,627	81,072	98,648	346,103
Create a repository for operational research on NTDs conducted within the country	45,000	54,756	0	0	0	99,756
Conduct desk review of past research in supporting NTD activities to identify advocacy strategies for stakeholders	5,000	6,084	7,403	9,008	10,961	38,456
Identify priority research themes and knowledge gaps on NTDs	3,000	3,650	4,442	5,405	6,577	23,074
Publication of scientific papers on NTDs in international Journals in collaboration with research institutions and universities	2,000	2,434	2,961	3,603	4,384	15,382
Engage National Universities and other research institutes to conduct more research on NTDs. Develop simple guidelines (MoU/ToR) on how to collaborate with the Directorate of Policy, Planning, Budgeting and Research to obtain endorsement for research initiatives.	36,000	0	0	0	0	36,000
SP2: - Integrate delivery of services						
Develop integrated MDA protocols, guidelines/ SoPs for annual and twice per year Rxs and review reporting tools	798,000	0	0	0	0	798,000
Capacity building to enable health care workers to deliver MDA for PC NTDs	20,000	24,336	29,612	36,032	43,844	153,824
Capacity building to enable health care workers to screen, diagnosis of relevant PC-NTDs and/or referral for subsequent clinical examination and relevant treatment	25,000	30,420	37,015	45,040	54,805	192,280
Capacity building to enable health care workers to screen, diagnosis of CM-NTDs and/or referral for subsequent clinical examination and relevant treatment	25,000	30,420	37,015	45,040	54,805	192,280
Training of health workers on self-care for relevant NTDs	65,000	79,092	96,239	117,104	142,492	499,927
Community awareness on self-care and referrals for relevant NTDs	30,000	36,504	44,418	54,048	65,765	230,735
Inclusion of NTDs in the training curriculum in schools and institutions	15,000	18,252	22,209	27,024	32,883	115,368
SP2: - Integrate WASH/NTD						
Review integrated WASH and BCC protocols, tools and IEC including tools to collect beneficiary feedback	5,000	6,084	7,403	9,008	10,961	38,456
Disseminate the NTD-WASH Framework and the NTD-BCC Strategy	1,000	0	0	0	0	1,000
Implement the integrated WASH/NTD Framework	2,500	3,042	3,702	4,504	5,480	19,228
NTD programme to share micro-mapping data on endemicity of WASH-related NTDs with the MWRI, MoEF, MoGEI and Ministry of Agriculture and Natural Resources	75,000	91,260	111,045	135,120	164,414	576,839
Advocacy and Fundraising for WASH/NTDs	672,000	817,690	994,965	1,210,673	1,473,147	5,168,474
Social mobilization to implement WASH/NTD social behaviour change in endemic IUs	3,000	3,650	4,442	5,405	6,577	23,074

SP2: - Implement Vector control intervention						
Integrate relevant NTD activities with Malaria programme e.g distribution of mosquito nets in LF endemic IUs	8,000	9,734	0	0	0	17,734
Develop and implement strategies for vector control; breeding sites/reservoirs	33,000	40,154	48,860	59,453	72,342	253,809
NTD programmes to manage human health related to vector-borne NTDs	6,000	0	0	0	0	6,000
Develop a surveillance system for case finding, laboratory confirmation and vector surveillance through established integrated sentinel sites	36,000	43,805	53,302	64,857	78,919	276,883
SP2: - Establish One Health strategy for NTDs						
Develop a One Health strategy for NTDs, including case definition, common targets and mechanisms for collaboration with other ministries	40,000	48,672	59,224	72,064	87,687	307,647
Create one health platforms in collaboration with relevant stakeholders	15,000	18,252	0	0	0	33,252
Mapping of Yaws/Buruli ulcer, scabies , rabies, snake bites in all couties, Leprosy (16IUs)	149,647	182,090	221,567	269,603	0	822,907
Leprosy mapping (16 counties)	120,000	0	0	0	0	120,000
Mapping of cutenious leishmianiasis (CL) along counties bordering Ethiopia(5), Kenya (2) and Sudan (4)	0	115,596	140,657	0	0	256,253
Conduct MDA for scabies using oral ivermectin and topical scabicides e.g. permethrin, benzyl benzoate, malathion and sulfur ointment	1,900,000	2,311,920	2,813,144	3,423,034	4,165,148	14,613,246
Conduct MDA for Yaws in 100% of the endemic counties	0	979,524	1,191,885	1,450,285	1,764,707	5,386,402
Screening CM-NTDs cysticercosis, Echinococcosis (imaging-ultrasound, X ray), including	0	123,676	0	0	0	123,676
Provide integrated counselling and psychological first aid for snake bites, rabies, LF, leprosy patients and famililies	81,581	99,268	120,790	146,977	178,841	627,457
Antistigmatization campaigns among youth /women, media	150,241	182,813	222,447	270,674	329,356	1,155,532
Rehabilitation/patient care to optimize functioning of the individual in the community LF, leprosy, snake bites	354,139	430,916	524,339	638,016	776,337	2,723,748
Create national operational work plans to deliver interventions for NTDs with a human–animal–environment interface, with clear attribution of roles and responsibilities	15,000	18,252	22,209	27,024	32,883	115,368
Conduct joint awareness raising and behavioral change promotion with specific messages for targeted groups such as livestock keepers	112,000	136,282	165,827	201,779	245,524	861,412
Advocate for meat inspection at slaughter houses/homes in collaboration with the veterinary department	20,000	24,336	29,612	36,032	43,844	153,824
Support mass dog vaccination against rabies with VETs department	45,000	54,756	66,627	81,072	98,648	346,103
Use one health approach to survey for transmission of NTDs	30,000	36,504	44,418	54,048	65,765	230,735
SP2: - Integrate NTDs into BHI						

Delivery of NTD programme through the BHI	54,000	65,707	79,953	97,286	118,378	415,324
SP2: - Integrate supply chain management						
Develop integrated guidelines, SOPs and tools on supply chain management	35,000	42,588	51,821	63,056	76,726	269,191
Procure medicines for PC-NTDs	64,000	77,875	94,759	115,302	140,300	492,236
Procure anti-rabies vaccines, pain killers and antibiotics for humans and dogs and antivenoms for at risk IUs	553,235	673,176	819,121	996,706	1,212,792	4,255,030
Procure CM-NTD drugs - dewormers, taeniasis, and echinococcosis	45,000	54,756	0	0	0	99,756
Review and Update NTD supply chain management guidelines	62,000	75,442	91,797	111,699	135,915	476,853
SP2: - Establish NTD coordination platform						
Support National and State NTD taskforce meetings and other activities	32,000	38,938	47,379	57,651	70,150	246,118
SP2: - Enhance intersectoral collaboration at all levels						
Monitor implementation of NTD/WASH/one health and vector control SBCC strategy	25,000	30,420	37,015	45,040	54,805	192,280
Finalize, Disseminate and Monitor implementation of NTD/WASH/one health/vector control collaboration framework	15,000	18,252	22,209	27,024	32,883	115,368
SP2: - Incorporate NTD plans into National MOH annual plan						
Joint multi sectoral review of the annual plan including a focus on LNOB implementation and multi sectoral collaboration (Education, WASH, Youth, etc.)	26,400	32,124	39,088	47,562	57,874	203,047
SP2: - Build Capacity at various levels to implement NTD programme						
Conduct ToTs at national level on integrated NTD programme implementation	26,400	32,124	39,088	47,562	57,874	203,047
Conduct capacity building of M&E stakeholders at all levels (National, State and County)	95,000	115,596	140,657	171,152	208,257	730,662
Conduct ToTs at State level on integrated NTD programme implementation	534,504	650,384	791,388	962,961	1,171,731	4,110,968
Train Boma supervisors, CDDs and teachers on mass drug administration procedures	534,504	650,384	791,388	962,961	1,171,731	4,110,968
Capacity building for active case detection/screening - Health care workers	83,000	100,994	122,890	149,533	181,951	638,368
Capacity building of community in active case reporting	3,000	3,650	0	0	0	6,650
SP3: - Establish and strengthening NTD structure at all levels						
Update organogram for NTD department at national and states levels	6,000	0	0	0	0	6,000
Develop guidelines and ToRs for NTD department personnel at all levels	5,000	6,084	7,403	9,008	10,961	38,456
Conduct annual meetings of National and State NTD task forces	5,000	6,084	7,403	9,008	10,961	38,456

SP3: - Strengthen State-level NTD coordination mechanism.						
Hold bi-annual review meeting at national level	10,000	12,168	14,806	18,016	21,922	76,912
Hold bi-annual review meeting at State level	39,000	47,455	57,743	70,262	85,495	299,956
Hold bi-annual review meeting at County level	80,000	97,344	118,448	144,128	175,375	615,295
Integration of NTD treatment and surveillance at health facility level, inclusive of Hospital, PHCC & PHCU	117,000	142,366	173,230	210,787	256,485	899,868
Establish data for action forum at all levels for decision making	116,000	141,149	171,750	208,985	254,293	892,177
SP3: - Increase political engagement with NTDs & WASH /One health and vector control stakeholders to increase domestic resources for NTDs						
Meet with policy makers to sensitize and update on progress made, challenges and gaps; advocate for greater portion of annual allocation	15,000	0	0	0	0	15,000
SP3: - Strengthen linkages & enhance integration with other MoH departments as well as key ministries and the WASH sector						
Map all relevant stakeholders for collaboration	15,000	18,252	22,209	27,024	32,883	115,368
Establish contacts with representatives of programmes, conduct meetings and follow-up on recommendations	1,500	1,825	2,221	2,702	3,288	11,537
Integration of NTDs and WASH /one health and Vector control in planning and IEC	30,000	36,504	44,418	54,048	65,765	230,735
SP3: - Integrate NTDs programme with BHI and school programme						
Motivation/Allowance for NTD focal point persons at National, State and Count levels respectively	25,000	30,420	37,015	45,040	54,805	192,280
Provide orientation for NTD focal points and for local government and authorities on SBCC and integrated implementation approaches to ensure universal coverage	15,000	0	0	0	0	15,000
Set up monitoring system for integrated NTDs	100,000	121,680	148,060	180,160	219,218	769,118
SP3: - Engage religious based organization/communities and private sector in fight against NTDs						
Sensitize stakeholders on NTDs to ensure universal coverage	160,000	194,688	236,896	288,255	350,749	1,230,589
Engage stakeholders in social mobilization and behavior change communication at the local level	24,000	0	35,534	0	52,612	112,147
SP3: - Strengthen collaboration with youth orgs and NGOs working with youths						
Map Civil Society Organizations and National and International Organisations	30,000	36,504	44,418	54,048	65,765	230,735
Hold sensitization meetings and NTDs reporting with Civil Society Organizations, National and International Organizations	25,000	0	0	0	0	25,000
SP3: - Establish sustainable initiatives for youth in NTD programming						
Engage Civil Society Organisations in NTD Activities at all levels	3,400	0	0	0	0	3,400

SP3: - Form elimination committees (TAGs); SCH/STH, Trachoma, CM-NTDs						
Identify people with the technical expertise on each of NTDs	5,000	6,084	7,403	9,008	10,961	38,456
Holding disease specific TAG meetings but with cross-cutting agenda	40,000	48,672	59,224	72,064	87,687	307,647
SP3: - Improve communication and coordination at all levels						
Advocacy, sensitizations and information sharing on NTDs at all levels	16,000	19,469	23,690	28,826	35,075	123,059
Establish effective & efficient communication, feedback and complaint channels at all levels	56,000	68,141	82,914	100,889	122,762	430,706
Development & production of advocacy kits	25,000	30,420	37,015	45,040	54,805	192,280
SP3: - Conduct annual programme planning meeting						
Hold planning meeting at county level	15,000	18,252	22,209	27,024	32,883	115,368
Hold planning meeting at state level	10,000	12,168	14,806	18,016	21,922	76,912
Hold planning meeting at National level	60,000	73,008	88,836	108,096	131,531	461,471
Recruit a gender specialist/consultant	0	60,840	0	0	0	60,840
SP3: - Increase/ Improve gender representation in NTD programming and implementation						
Conduct operational research on improving gender sensitive NTD programming and implementation	50,000	60,840	74,030	90,080	109,609	384,559
Implement outcome of operational research to improve gender-sensitive NTD programming and implementation	32,000	38,938	47,379	57,651	70,150	246,118
SP4: - Improve community engagement and involvement in NTD Programme activities						
Hold quarterly advocacy, sensitization and information sharing meetings with relevant women groups/leaders and other key stakeholders (Chiefs, religious leaders, PLWD, pastoral communities) about NTDs at all levels	5,800	7,057	8,587	10,449	12,715	44,609
Develop and establish an effective communication strategy, feedback and complain channels at all levels	200,000	243,360	296,120	360,319	438,437	1,538,236
Develop & produce advocacy kits and IEC materials relevant for NTDs programs	8,000	9,734	11,845	14,413	17,537	61,529
Organize NTD annual review meetings with stakeholders at the community and Boma levels	8,000	9,734	11,845	14,413	17,537	61,529
Establish local Boma level NTD task force meetings for sharing knowledge and increasing collaboration among sectors (WASH/one health/vector control stakeholders (MOEST, MOA/MOE)	8,000	9,734	11,845	14,413	17,537	61,529
SP4: - Promote community level awareness of NTDs						
Meet with community leaders to sensitize and update on progress made, challenges/gaps and advocate for increased NTD financing in the annual fiscal year national budget.	20,000	24,336	29,612	36,032	43,844	153,824
Engage religious leaders in social mobilization and behavior change communication in NTD interventions	25,000	30,420	37,015	45,040	54,805	192,280

Provide orientation for NTD focal person, local government authorities on SBCC and integrated implementation approaches to ensure countrywide coverage	5,000	6,084	7,403	9,008	10,961	38,456
Integrate NTDs BCC packages in the planned MOH activities and interventions	30,000	36,504	44,418	54,048	65,765	230,735
SP4: - Establish MOH advocacy and public private partnership						
Develop MOH advocacy and public private partnership policy to enhance involvement of the private sector in supporting NTD programs	100,000	121,680	148,060	180,160	219,218	769,118
Ensure sustained advocacy for funding NTDs programs from both domestic and global institutions/stakeholders	100,000	121,680	148,060	180,160	219,218	769,118
Hold advocacy meeting with government and stakeholders to increase advocacy for NTDs financing and accountability for budgeting, strategic planning, and implementation	50,000	60,840	74,030	90,080	109,609	384,559
Procument of supliments (multivitamins,iron) intergrated in WASH/MDA inteventions	50,000	60,840	74,030	90,080	109,609	384,559
Case Management Drugs						
Procure anti-rabies vaccines, pain killers and antibiotics for humans and dogs and antivenoms for at risk IUs	553,235	673,176	819,121	996,706	1,212,792	4,255,031
Procure Post-exposure prophylaxis administered to all contacts of detected and consenting cases (single-dose rifampicin reduces the risk of leprosy among contacts	15,000	18,252	22,209	27,024	32,883	115,368
Purchase of drugs for treatment of leprosy , Buruli ulcer and other skin disease-(dapsone, rifampicin and clofazimine, steroids e.g. predmisolone and topical antibiotics)	110,646	134,634	163,823	199,339	242,556	850,999
Dewormers for dogs (praziquantel) and humans , Ivermectine for scabies, (albentazole/mebentazole for echinococcosis, praziquantel for taeniasis	930,000	1,131,624	1,376,960	1,675,485	2,038,730	7,152,799
Broad spectrum –Amoxylin -Antibiotics and painkillers for rabies and scabies, snake bites	130,000	158,184	192,478	234,208	284,984	999,854
HAT Drugs (NECT Fexinidazole, pentamidine)	900,000	1,095,120	1,332,542	1,621,437	1,972,965	6,922,064
VL Sodium stibogluconate, Paromomycin, Ambisom, Meltifosine)	1,500,000	1,825,200	2,220,903	2,702,395	3,288,274	11,536,773
Case Management interventions						
Mapping of Yaws/Buruli ulcer, scabies , rabies, snake bites in all couties, Leprosy (16IUs)	149,647	182,090	221,567	269,603	0	822,907
Leprosy mapping (16 counties)	120,000	0	0	0	0	120,000
Mapping of cutenious leishmianiasis (CL) along counties bordering Ethiopia(5), Kenya (2) and Sudan (4)	95,000	115,596	140,657	0	0	351,253
Conduct MDA for scabies using oral ivermectin and topical scabicides e.g. permethrin, benzyl benzoate, malathion and sulfur ointment	1,900,000	2,311,920	2,813,144	3,423,034	4,165,148	14,613,246

Conduct MDA for Yaws in 100% of the endemic counties	805,000	979,524	1,191,885	1,450,285	1,764,707	6,191,402
Screening CM-NTDs cysticercosis, Echinococcosis (imaging-ultrasound, X ray), including	101,641	123,676	0	0	0	225,317
Provide integrated counselling and psychological first aid for snake bites, rabies, LF, leprosy patients and famililies	81,581	99,268	120,790	146,977	178,841	627,457
Antistigmatization campaigns among youth /women, media	150,241	182,813	222,447	270,674	329,356	1,155,532
Rehabilitation/patient care to optimize functioning of the individual in the community LF, leprosy, snake bites	354,139	430,916	524,339	638,016	776,337	2,723,748
Contuct mass deworming of dogs (PZQ) echinococcosis together Veterinary department (MOH-sensitization)	755,000	918,684	1,117,855	1,360,206	1,655,098	5,806,842
Managing dog population-stray dog (together with vet department, local gov)	500,000	608,400	0	0	0	1,108,400

Inflation rate 21.68% Category: Implementation costs Operational costs

Table 20: Budgeting activities costing for five years

4.5 Financial Gap Analysis

The difference between the resource requirements and the available resource-based budgets provides a measure of the gap in funding which exists if the Master plan is to be fully implemented. The identification of the funding gap provides an opportunity for potential stakeholders to see when resources can be most useful.

The financing gap is usually estimated by generating the difference between the available resources from the government source and the cost of implementing the NTD Master plan. However, in this current circumstance, there is no data available on the availability of resources from donors, the government or the private sector. However, this tool can be used as an advocacy tool for the mobilization of resources towards the elimination of NTDs in South Sudan.

References

1. Abdallah T, Ali A, Mustafa ME, & Adam I (2012), Epidemiology of Dengue Infections in Kassala, Eastern Sudan, *Medical Virology,* 84, pp 500–503, DO - 10.1002/jmv.23218
2. Adam I, Jumaa AM, Elbashir HM, & Karsany MS (2010) Maternal and perinatal outcomes of dengue in PortSudan, Eastern Sudan. *Virol. J.* 7, 153.
3. Ahmed ME et al., (2018) Echinococcosis in Tambool, Central Sudan: a knowledge, attitude and practice (KAP) study, *Int Health,* 10: 490–494
4. Ali Khider AA, Mubarak SE (2006). Clinical presentations and laboratory findings in suspected cases of dengue virus." Saudi Med. J. 27(11):1711-1713
5. Ameen, M(2016) Scabies: a neglected tropical disease with significant public health implications, *Africa Health*, pgs 28 - 30, Available online: http://africa-health.com/wp-content/uploads/2016/01/10.-Clinical-Review.pdf
6. Azrag RS, Bakhiet SM, Almalik AM, Mohamed AH1, & Fahal AH (2019) Is Mycetoma a Vector-Borne Disease: The First Report on the Detection of 5 Madurella mycetomatis in Ticks, accessed online: https://doi.org/10.1101/775767.
7. Berger, S (2020) Infectious Diseases of Sudan and South Sudan By Gideon Informatics, Inc., p292, Available online https://books.google.com.ng/books?id=RPzVDwAAQBAJ&pg=PA292&lpg=PA292&dq=scabies+in+South+Sudan&source=bl&ots=-dM1ItWQbW&sig=ACfU3U0rfVz6BlGtrZNt4vNoBwi2LkDBJw&hl=en&sa=X&ved=2ahUKEwilwZuuwqLrAhV2QEEAHck3Cac4FBDoATAFegQIChAB#v=onepage&q=scabies%20in%20South%20Sudan&f=false
8. Bodimeade C, Marks M, and Mabey D (2019) Neglected tropical diseases: elimination and eradication, *Clinical Medicine Journal*, 19-2-157 DOI:https://doi.org/10.7861/clinmedicine.
9. Catholic Radio (2015) Scabies - South Sudan: (Wau) prison, Archive Number: 20150407.3282419, Communicated by: ProMED-MENA; accessed online: https://promedmail.org/promed-post/?id=20150407.3282419
10. CIA (2019) World Factbook. Available online: https://www.indexmundi.com/south_sudan/major_infectious_diseases.html
11. DABANGA TV (2017), At least 500 villagers stricken with scabies in Sudan's El Gedaref, Communicated by: Wikimedia Commons; Available online

https://www.dabangasudan.org/en/all-news/article/at-least-500-villagers-stricken-with-scabies-in-sudan-s-el-gedaref

12. Doctors with Africa CUUAM (2020), The Problem Of Snake-Bite In South Sudan. Available online: https://www.mediciconlafrica.org/en/our-voice/news/the-problem-of-snake-bite-in-south-sudan/
13. Drugs for Neglected Diseases *Initiative* (2019) Mycetoma: New Hope For Neglected Patients? Available online: https://dndi.org/wp-content/uploads/2019/02/DNDi_Mycetoma_2019.pdf
14. Engelman D, Martin DL, Hay RJ, et al. (2013) Opportunities to investigate the effects of ivermectin mass drug administration on scabies. *Parasit Vectors*; 6: 106.
15. Engelman D, Cantey PT, Marks M et al (2018),The public health control of scabies: priorities for research and action, Available online: https://researchonline.lshtm.ac.uk/id/eprint/4653773/1/2018%20Scabies%20review%20v12.pdf
16. Fahal AH (2011) Mycetoma, *Khartoum Medical Journal*. 4(1): 514–523
17. Fahal A, Mahgoub ES, EL Hassan AM, et al (2014) A New Model for Management of Mycetoma in the Sudan. *PLoS Negl Trop Dis*. 8(10). doi:10.1371/journal.pntd.0003271.
18. Gokhale BB (1981) Epidemiology of Mycetoma. *Hindustan Antibiot Bull* 23: 18– 24
19. Gubler, D.J. (2002) Epidemic dengue/dengue hemorrhagic fever as a public health, social and economic problem in the 21st century. *Trends Microbiol*, 10, 100–103.
20. Handley, B (2020) Progress towards Yaws eradication: successes and challenges; Available online: https://rstmh.org/progress-towards-yaws-eradication
21. Hewer, T.F. (1934) Some observations on yaws and syphilis in the Southern Sudan, *Transactions of The Royal Society of Tropical Medicine and Hygiene*, Volume 27, Issue 6, pgs 593–608, https://doi.org/10.1016/S0035-9203(34)90109-7
22. International Association for Medical Assistance for Travelers - IAMAT (2020) South Sudan General Health Risks. Available online: https://www.iamat.org/country/south-sudan/risk/dengue
23. Karimkhani, et al., (2017) The global burden of scabies: a cross-sectional analysis from the Global Burden of Disease Study, *The Lancet*, Vol 17, pgs 1247 - 1254
24. Kendall C, Hudelson P, Leontsini E, Winch P, Lloyd L & Cruz F (1991) Urbanization, Dengue, and the Health Transition: Anthropological Contributions to International Health. *Med. Anthropol*, 5, 257–268

25. Kwaje A (2018, unpublished) Third GF-TADs Regional Roadmap Meeting for Eastern Africa with regard to the FMD, PVS. Available online: https://rr-africa.oie.int/wp-content/uploads/2018/07/10-alor-kwaje-south-sudan-country-presentation-2.pdf
26. Lado DK (2008) Cystic Hydatid Disease in Southern Sudan, *The Annals of African Surgery*; Vol. 2, pp 19 - 24
27. Magambo JK, Hall C, Zeyhle E et al. (1996) Prevalence of human hydatid disease in Southern Sudan, *Afr. J. Health Sci,* 34: 154-156
28. Magambo JK, Zeyhle E, and Wachira T (1998) Hydatid disease in Taposaland, *Southern Sudan. Afr. J. Health Sci.,* 5: 129-132
29. Malik A et al (2011) A. Dengue hemorrhagic fever outbreak in children in Port Sudan. *J. Infect. Public Health*, 4, 1–6.
30. Médecins Sans Frontières (2019) South Sudan: Reaching victims of snakebite before it's too late, posted 24 May 2019, Originally published 24 May 2019. Available online: https://reliefweb.int/report/south-sudan/south-sudan-reaching-victims-snakebite-it-s-too-late
31. Mohamed H. A. A (1985) Endemic Treponematoses in the Sudan, *Review of Infectious Diseases*, Vol 7, Supplement 2, S239-S241
32. Mohamed HT, Fahal A, & van de Sande WWJ (2015) Mycetoma: epidemiology, treatment challenges, and progress, *Research and Reports in Tropical Medicine*, 6 31–36
33. Mohammed KA, Deb RM, Stanton MC, Molyneux DH (2012) Soil transmitted helminths and scabies in Zanzibar, Tanzania following mass drug administration for lymphatic filariasis--a rapid assessment methodology to assess impact. *Parasit Vectors*; 5: 299.
34. Müller GJ, Modler H, Wium CA, Veale DJH, & Marks CJ (2012) Snake bite in southern Africa: diagnosis and management, *CME*, 30 (10), pp 362-381
35. OCHA (2013) Scabies cases reach over 7,700 in West Darfur, *Humanitarian Bulletin Sudan*, Issue 52. Available online: https://reliefweb.int/sites/reliefweb.int/files/resources/OCHA%20Sudan%20Weekly%20Humanitarian%20Bulletin%20Issue%2052%20%2823%20-%2029%20December%202013%29.pdf
36. OCHA (2019) EASTERN AFRICA REGION: Regional Flood Snapshot Available online:

https://reliefweb.int/sites/reliefweb.int/files/resources/ROSEA_20191101_EasternAfrica_Flood_Snapshot_October2019.pdf

37. Ochi EB, Akol DA, & Augustino SM (2015) Prevalence and Economic Loss due to Hydatidosis in Slaughtered Animals in Juba South Sudan, *International Journal of Research Studies in Biosciences (IJRSB)* 3 (3), pp 177-182
38. Ochi EB, Akol DA, & Lukaw YS (2016) A Review on Epidemiology of Hydatidosis in Livestock and Humans in South Sudan, *International Journal of Research Studies in Biosciences (IJRSB)* 4 (10), pp 4-10
39. Patti J et al. (2018) Outbreak of rabies in S Sudan, Presented at Médecins Sans Frontières (MSF) Scientific Day 2018. Available online: https://f1000research.com/posters/7-568
40. Potet J (2018) Snakebites in Africa: a humanitarian and political fight, *Humanitarian Alternatives*, n°7, March 2018, p. 100-109. Available online: http://alternatives-humanitaires.org/en/2018/03/15/snakebites-in-africa-a-humanitarian-and-political-fight/ ISBN of the article (PDF): 978-2-37704-345-3
41. Potet, J (2019) Snakebites – it's time to solve the world's biggest hidden health crisis**,** Press release, 16 May 2019, for Médecins Sans Frontières' Access Campaign through *Wellcome.* Available online: https://wellcome.ac.uk/press-release/snakebites-%E2%80%93-its-time-solve-worlds-biggest-hidden-health-crisis
42. Radio Tamazuj (2014) Available through https://radiotamazuj.org/en/news/article/scabies-outbreak-in-sennar-sudan
43. Radio Tamazu - News - 10th January 2020, Snake bite victims at risk over lack of drugs in Gogrial, Available online: https://radiotamazuj.org/en/news/article/snake-bite-victims-at-risk-over-lack-of-drugs-in-gogrial
44. Roser M, Ochmann S, Behrens H, Ritchie H and Dadonaite B (2018) - "Eradication of Diseases". Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/eradication-of-diseases'
45. Samy AM, Van de Sande WWJ, Fahal AH & Peterson AT (2014) Mapping the Potential Risk of Mycetoma Infection in Sudan and South Sudan Using Ecological Niche Modeling, *PLOS Neglected Tropical Diseases*. 8(10), pgs E3250
46. Seidahmed OM et al., (2012) S.M. Spatial and temporal patterns of dengue transmission along a Red Sea coastline: A longitudinal entomological and serological survey in Port Sudan city, *PLoS Negl. Trop. Dis*, 6, e1821.

47. Soghaier MA et al., (2013) Dengue fever in a border state between Sudan and Republic of South Sudan: Epidemiological perspectives, *Journal of Public Health and Epidemiology*, Vol. 5(8), pp. 319-324.
48. Soghaier MA et al (2015) Cross-sectional community-based study of the socio-demographic factors associated with the prevalence of dengue in the eastern part of Sudan in 2011, *BMC Public Health*, 15, 558.
49. Stewart BT et al., (2013) Cystic echinococcosis in Mundari tribe members of South Sudan, *Pathogens and Global Health*, 107 (6), pp 293 - 298
50. Stoddard ST et al., (2009) The Role of Human Movement in the Transmission of Vector-Borne Pathogens. *PLoS Negl. Trop. Dis*, 3, e481.
51. Taban TY (2018) Presentation at 2018 World Rabies Day Commemoration Related Meeting to South Sudan Veterinary Association (SSVA) and Partners, 20th September, 2018. Available online: https://fscluster.org/sites/default/files/documents/world_rabies_day_20_09_2018.pdf
52. Tatem AJ, Hay SI, & Rogers DJ (2006) Global traffic and disease vector dispersal. *Proc. Natl. Acad. Sci*. 103, 6242–6247
53. Thomson, M.C. (1995) *Major Vector Borne Diseases and their Control* in Disease Prevention Through Vector Control: Guidelines for Relief Organisations; Available online https://books.google.com.ng/books?id=dMTBSz6aa_QC&pg=PA49&lpg=PA49&dq=scabies+in+South+Sudan&source=bl&ots=BTXAQw5BUl&sig=ACfU3U1C6ZNM-l4ZbooKiBw5tjyAz4JXOw&hl=en&sa=X&ved=2ahUKEwilwZuuwqLrAhV2QEEAHck3Cac4FBDoATAHegQICRAB#v=onepage&q=scabies%20in%20South%20Sudan&f=false
54. Thomas RW, Ellis-Owen R & Winson D (2015) Secondary peritoneal hydatidosis, the challenges of echinococcal disease in South Sudan: a case report, *Pan African Medical Journal*, 20:15
55. University of Kansas/KU News Service through EurekAlert, Risk Map showing the geographic distribution of mycetoma cases and Acacia trees across Sudan and South Sudan. Available online: https://www.eurekalert.org/multimedia/pub/86181.php
56. Van de Sande WWJ et al., (2018), Closing the mycetoma knowledge gap, *Medical Mycology*, 56, S153–S164 doi: 10.1093/mmy/myx061

57. Van de Sande WWJ (2013). Global burden of human mycetoma: a systematic review and meta-analysis. *PLoS Negl. Trop. Dis,* 7: e2550
58. WHO (2018), Results of the 2017 global WHO survey on yaws, *Weekly epidemiological record*, 33, 93, 417–428, Available online: https://apps.who.int/iris/bitstream/handle/10665/274016/WER9333.pdf?ua=1
59. WHO (2019) Dengue fever – Republic of the Sudan, Disease outbreak news. **Available** online: https://www.who.int/csr/don/22-november-2019-dengue-sudan/en/
60. WHO (2020) Scabies and other ectoparasites, Health Topics, Available online https://www.who.int/neglected_diseases/diseases/scabies-and-other-ectoparasites/en/
61. WHO (2020) Available online: https://www.afro.who.int/health-topics/mycetoma
62. WHO (2020) Available online: https://www.afro.who.int/health-topics/rabies
63. WHO (2020) Health topics/Echinococcosis Available online: https://www.who.int/health-topics/echinococcosis/#tab=tab_1
64. WORLDHEALTHRANKINGS, Available online: https://www.worldlifeexpectancy.com/south-sudan-dengue
65. Wilder-Smith A & Gubler DJ (2008) Geographic Expansion of Dengue: The Impact of International Travel. *Med. Clin*, 92, 1377–1390
66. Wumbiya SD, Francis M, Wilfred E, Nasinyama GW, Eystein S (2017) Knowledge Attitude and Practices towards Cystic Echinococcosis among Pastoral Communities in Greater Kapoeta South Sudan. *J Vet Med Res,* 4(5): 1086

Annexes

Annexe 1: Annual work plan matrix and timeline - FY 2023

Activities - Sub-activities – Districts	Timeline for implementation												Estimated cost
	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24	Mar 24	Apr 24	May 24	Jun 24	USD
SP1: - Complete country-wide mapping of NTDs and implement surveillance mechanisms													**406,000**
Review of current NTD prevalence maps in South Sudan & Identify gaps/ priority areas for mapping (onchocerciasis 31 IUs, trachoma 27 IUs, loiasis 4 IUs)													15,000
Conduct NTD mapping including morbidity mapping where there are gaps (Mapping to be carried out in an integrated way where possible (LF morbidity 50 IUs and trachoma)													60,000
Include LNOB aspects in NTD data collection													46,000
Set up and build capacity for NTD surveillance systems (PTS for PC-NTDs) sentinel sites.													75,000
Set up and build capacity for surveillance CM-NTDs													60,000
Conduct integrated mapping for CM-NTDs in all IUs (Visceral leishmaniasis, Cutaneous leishmaniasis, Leprosy, Buruli ulcers, Yaws, Taeniasis, Echinococcosis, Snake bites and Tungiasis)													100,000
conduct active case screening for CM-NTDs													50,000
SP1: - Ensure Universal health coverage (i.e. Improve the 'Leave no one behind' strategy)													**8,302,901**
Conduct training for health workers on PC-NTDs													73,691
Scale up MDA for all 5 PC-NTDs implementation to achieve effective treatment coverage.													5,772,494
Conduct twice per year MDA in hyper-endemic IUs													803,765
Conduct training for CDDs on drug delivery and reporting of any SAEs													629,914
Provide MMDP services to endemic IUs (Hydrocele, Trachoma and Lymphoedema, Leprosy).													243,719
Implement active surveillance and coverage evaluation surveys													144,000
Design and implement interventions that are inclusive to special population groups (pastoralists, refugees, IDPs, PLWDs, etc.).													400,000
Develop a beneficiary feedback mechanism.													54,000
Integrate PC-NTDs with the BHI structures to implement NTD interventions.													30,000
Improve surveillance and case management for CM NTDs.													1,318
Develop SAE guidelines for health workers													25,000

Develop MMDP management guidelines for health workers (to cover also co-morbidities strongly associated with NTDs, such as Onchocerciasis Associated Epilepsy (OAE)/ Nodding Syndrome.													25,000
Conduct training of health workers on laboratory diagnosis and treatment.													50,000
Conduct community sensitization and awareness													50,000
SP1: - Establish an M&E system													**256,880**
Develop an M&E framework for NTDs.													30,000
Integrate and customize NTD indicators into National HMIS (DHIS2).													30,000
Establish an electronic data collection and transfer systems to improve the quality and timeliness of NTD data.													20,000
Develop a tool for data merge/link between NTD and WASH.													15,000
Develop SOP/manual for routine data quality assessment, data analysis and dissemination.													45,000
Strengthen data management procedures including process for collecting beneficiary feedback													98,880
Conduct periodic review of LNOB, beneficiary feedback and key KAP analysis for informed decision making													3,000
Conduct review of WASH data in NTD hotspots.													15,000
SP1: - Strengthen coordination													**57,000**
Convene NTD partners to provide regular reviews on progress towards achieving set targets.													45,000
Hold quarterly NTD taskforce meeting at National level to provide update on activity progress and challenges. Implement periodic disease specific assessments to assess impact.													12,000
SP1: - Strengthen the NTD Supply Chain Management (integrated into the overall MoH Supply Chain System).													**632,605**
Reactivate and operationalize the NTD Supply chain forum.													8,000
Review NTD Supply Chain Management (SCM) Guidelines, and SOPs.													25,000
Develop quality control guidelines for NTD medicines.													570,000
Capacity building for SCM staff on management of NTD drugs.													10,605
Clearance of NTD medicines and supplies													9,000
Establish NTD supply database in Central Medical Store (CMS)													10,000
SP1: - Reinforce /Strengthen National NTD Taskforce													**149,500**
Review ToRs for taskforce, to include increased advocacy and visibility of NTDs (members of taskforce should be representatives from key stakeholders involved in NTD elimination interventions such as Min. of Education, key WASH , one health and vector control partners, e.g. youth groups, LNOB, MARF etc.)													5,000

Advocacy with MWRI and WASH stakeholders to increase investment of WASH services in NTD endemic counties.													104,500
Collaborate with relevant ministries (Annual Review and Planning meetings, Taskforce meetings etc.).													10,000
Develop a National NTD Policy.													30,000
SP1: - Advocate for incorporation of NTDs into the school curriculum and in health promotion activities of WASH interventions.													**37,500**
Establish a working group for incorporation of NTDs into primary school curriculum and in health promotion activities of WASH													7,500
Strengthen the coordination mechanisms between the MoH, MoE, MWRI and other WASH stakeholders.													15,000
Establish a working group for the incorporation of NTDs into secondary and university (medical/veterinary college) curriculum -One health, vector control and WASH													15,000
SP1: - Develop a Marketing Strategy for NTD Elimination Programming in South Sudan													**103,000**
Launch and disseminate the NTD Master Plan.													8,000
Conduct an advocacy analysis for NTD interventions; MDA, WASH and MMDP uptake													85,000
Develop and implement a resource mobilization strategy for NTDs and WASH interventions.													5,000
Document and disseminate success stories (including successful collaboration) of the NTD programmes as well as publish a quarterly bulletin on NTDs and NTD annual report.													5,000
SP1: - Advocate for opportunities for funded operational research													**136,000**
Engage with donor agencies to fund identified priority operational research areas;													45,000
Create a repository for operational research on NTDs conducted within the country													45,000
Conduct desk review of past research in supporting NTD activities to identify advocacy strategies for stakeholders													5,000
Identify priority research themes and knowledge gaps on NTDs													3,000
Publication of scientific papers on NTDs in international Journals in collaboration with research institutions and universities													2,000
Engage National Universities and other research institutes to conduct more research on NTDs. Develop simple guidelines (MoU/ToR) on how to collaborate with the Directorate of Policy, Planning, Budgeting and Research to obtain endorsement for research initiatives.													36,000
SP2: - Integrate delivery of services													**978,000**
Develop integrated MDA protocols, guidelines/ SoPs for annual and twice per year Rxs and review reporting tools													798,000
Capacity building to enable health care workers to deliver MDA for PC NTDs													20,000

Capacity building to enable health care workers to screen, diagnosis of relevant PC-NTDs and/or referral for subsequent clinical examination and relevant treatment													25,000
Capacity building to enable health care workers to screen, diagnosis of CM-NTDs and/or referral for subsequent clinical examination and relevant treatment													25,000
Training of health workers on self-care for relevant NTDs													65,000
Community awareness on self-care and referrals for relevant NTDs													30,000
Inclusion of NTDs in the training curriculum in schools and institutions													15,000
SP2: - Integrate WASH/NTD													**855,500**
Review integrated WASH and BCC protocols, tools and IEC including tools to collect beneficiary feedback													5,000
Disseminate the NTD-WASH Framework and the NTD-BCC Strategy													1,000
Implement the integrated WASH/NTD Framework													2,500
NTD programme to share micro-mapping data on endemicity of WASH-related NTDs with the MWRI, MoEF, MoGEI and Ministry of Agriculture and Natural Resources													75,000
Advocacy and Fundraising for WASH/NTDs													672,000
Social mobilization to implement WASH/NTD social behaviour change in endemic IUs													3,000
Procurement of supplements (multivitamins, iron) integrated in WASH/MDA interventions													50,000
SP2: - Implement Vector control intervention													**50,000**
Integrate relevant NTD activities with Malaria programme e.g. distribution of mosquito nets in LF endemic IUs													8,000
Develop and implement strategies for vector control; breeding sites/reservoirs													33,000
NTD programmes to manage human health related to vector-borne NTDs													6,000
Develop a surveillance system for case finding, laboratory confirmation and vector surveillance through established integrated sentinel sites													36,000
SP2: - Establish One Health strategy for NTDs													**283,000**
Develop a One Health strategy for NTDs, including case definition, common targets and mechanisms for collaboration with other ministries													40,000
Create one health platforms in collaboration with relevant stakeholders													15,000
Create national operational work plans to deliver interventions for NTDs with a human–animal–environment interface, with clear attribution of roles and responsibilities													15,000
Conduct joint awareness raising and behavioral change promotion with specific messages for targeted groups such as livestock keepers													112,000
Advocate for meat inspection at slaughter houses/homes in collaboration with the veterinary department													20,000

Support mass dog vaccination against rabies with VETs department													45,000
Use one health approach to survey for transmission of NTDs													30,000
SP2: - Integrate NTDs into BHI													**30,000**
Conduct training on integrated delivery of NTD services including management of morbidities													0
Conduct supervision of NTD-related activities within BHI													0
Delivery of NTD programme through the BHI													54,000
SP2: - Integrate supply chain management													**751,235**
Develop integrated guidelines, SOPs and tools on supply chain management													35,000
Procure medicines for PC-NTDs													64,000
Procure anti-rabies vaccines, pain killers and antibiotics for humans and dogs and antivenoms for at risk IUs													553,235
Procure CM-NTD drugs - dewormers, taeniasis, and echinococcosis													45,000
Review and Update NTD supply chain management guidelines													62,000
SP2: - Establish NTD coordination platform													**62,000**
Support National and State NTD taskforce meetings and other activities													32,000
SP2: - Enhance intersectoral collaboration at all levels													**57,000**
Monitor implementation of NTD/WASH/one health and vector control SBCC strategy													25,000
Finalize, Disseminate and Monitor implementation of NTD/WASH/one health/vector control collaboration framework													15,000
SP2: - Incorporate NTD plans into National MOH annual plan													**15,000**
Joint multi sectoral review of the annual plan including a focus on LNOB implementation and multi sectoral collaboration (Education, WASH, Youth, etc.)													26,400
SP2: - Build Capacity at various levels to implement NTD programme													**1,299,808**
Conduct ToTs at national level on integrated NTD programme implementation													26,400
Conduct capacity building of M&E stakeholders at all levels (National, State and County)													95,000
Conduct ToTs at State level on integrated NTD programme implementation													534,504
Train Boma supervisors, CDDs and teachers on mass drug administration procedures													534,504
Capacity building for active case detection/screening - Health care workers													83,000
Capacity building of community in active case reporting													3,000
SP3: - Establish and strengthening NTD structure at all levels													**19,000**
Update organogram for NTD department at national and states levels													6,000
Develop guidelines and ToRs for NTD department personnel at all levels													5,000

Conduct annual meetings of National and State NTD task forces													5,000
Conduct NTD programme stakeholders meeting													0
SP3: - Strengthen State-level NTD coordination mechanism.													**357,000**
Hold bi-annual review meeting at national level													10,000
Hold bi-annual review meeting at State level													39,000
Hold bi-annual review meeting at County level													80,000
Integration of NTD treatment and surveillance at health facility level, inclusive of Hospital, PHCC & PHCU													117,000
Establish data for action forum at all levels for decision making													116,000
SP3: - Increase political engagement with NTDs & WASH /One health and vector control stakeholders to increase domestic resources for NTDs													**5,000**
Meet with policy makers to sensitize and update on progress made, challenges and gaps; advocate for greater portion of annual allocation													15,000
SP3: - Strengthen linkages & enhance integration with other MoH departments as well as key ministries and the WASH sector													**31,500**
Map all relevant stakeholders for collaboration													15,000
Establish contacts with representatives of programmes, conduct meetings and follow-up on recommendations													1,500
Integration of NTDs and WASH /one health and Vector control in planning and IEC													30,000
SP3: - Integrate NTDs programme with BHI and school programme													**70,000**
Motivation/Allowance for NTD focal point persons at National, State and Count levels respectively													25,000
Provide orientation for NTD focal points and for local government and authorities on SBCC and integrated implementation approaches to ensure universal coverage													15,000
Set up monitoring system for integrated NTDs													100,000
SP3: - Engage religious based organization/communities and private sector in fight against NTDs													**260,000**
Sensitize stakeholders on NTDs to ensure universal coverage													160,000
Engage stakeholders in social mobilization and behavior change communication at the local level													24,000
SP3: - Strengthen collaboration with youth orgs and NGOs working with youths													**54,000**
Map Civil Society Organizations and National and International Organisations													30,000
Hold sensitization meetings and NTDs reporting with Civil Society Organizations, National and International Organizations													25,000
SP3: - Establish sustainable initiatives for youth in NTD programming													**25,000**
Engage Civil Society Organisations in NTD Activities at all levels													3,400

SP3: - Form elimination committees (TAGs); SCH/STH, Trachoma, CM-NTDs													**8,400**
Identify people with the technical expertise on each of NTDs													5,000
Holding disease-specific TAG meetings but with cross-cutting agenda													40,000
SP3: - Improve communication and coordination at all levels													**112,000**
Advocacy, sensitization and information sharing on NTDs at all levels													16,000
Establish effective & efficient communication, feedback and complaint channels at all levels													56,000
Development & production of advocacy kits													25,000
SP3: - Conduct annual programme planning meeting													**50,000**
Hold planning meetings at the county level													15,000
Hold planning meetings at the state level													10,000
Hold planning meetings at the National level													60,000
SP3: - Increase/ Improve gender representation in NTD programming and implementation													**110,000**
Conduct operational research on improving gender-sensitive NTD programming and implementation													50,000
Implement the outcome of operational research to improve gender-sensitive NTD programming and implementation													32,000
SP4: - Improve community engagement and involvement in NTD Programme activities													**253,800**
Hold quarterly advocacy, sensitization and information-sharing meetings with relevant women groups/leaders and other key stakeholders (Chiefs, religious leaders, PLWD, pastoral communities) about NTDs at all levels													5,800
Develop and establish an effective communication strategy, feedback and complaint channels at all levels													200,000
Develop & produce advocacy kits and IEC materials relevant to NTDs programs													8,000
Organize NTD annual review meetings with stakeholders at the community and Boma levels													8,000
Establish local Boma level NTD task force meetings for sharing knowledge and increasing collaboration among sectors (WASH/one health/vector control stakeholders (MOEST, MOA/MOE)													8,000
SP4: - Promote community-level awareness of NTDs													**58,000**
Meet with community leaders to sensitize and update on progress made, and challenges/gaps, and advocate for increased NTD financing in the annual fiscal year national budget.													20,000
Engage religious leaders in social mobilization and behaviour change communication in NTD interventions													25,000
Provide orientation for NTD focal person, local government authorities on SBCC and integrated implementation approaches to ensure countrywide coverage													5,000
Integrate NTDs BCC packages in the planned MOH activities and interventions													30,000

SP4: - Establish MOH advocacy and public-private partnership													**230,000**
Develop MOH advocacy and public private partnership policy to enhance involvement of the private sector in supporting NTD programs													100,000
Ensure sustained advocacy for funding NTDs programs from both domestic and global institutions/stakeholders													100,000
Hold advocacy meeting with government and stakeholders to increase advocacy for NTDs financing and accountability for budgeting, strategic planning, and implementation													50,000

Annex 2: NTD Endemicity Statuses and Five-year target population projections by county

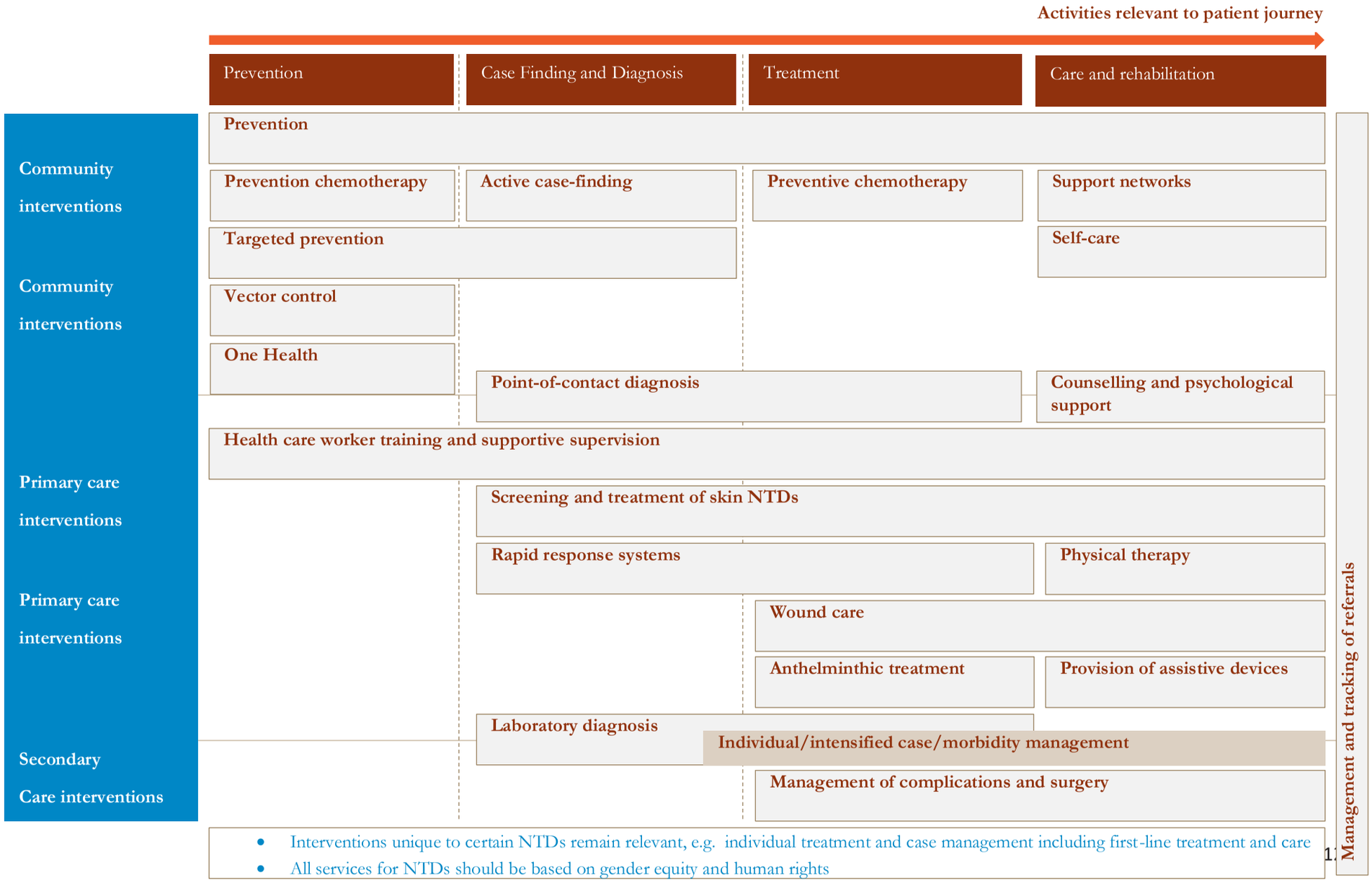
County	LF	ONC	SCH	STH	Tra	LOA	HAT	Leish	Lep	Rabies	2023	2024	2025	2026	2027
Total	**50**	**48**	**67**	**53**	**44**	**57**	**16**	**28**	**57**	**79**	**9,478,982**	**9,763,351**	**10,056,252**	**10,357,939**	**10,357,939**
Central Equatoria: Terekeka	1	1	3	2	2	1	0	0	1	1	257,697	265,428	273,391	281,592	290,040
Central Equatoria: Juba	1	1	3	2	2	1	1	0	1	1	657,025	676,736	697,038	717,949	739,487
Central Equatoria: Lainya	1	1	3	3	M	1	1	0	1	1	152,965	157,554	162,281	167,149	172,164
Central Equatoria: Yei	1	1	3	2	M	1	1	0	1	1	345,588	355,956	366,635	377,634	388,963
Central Equatoria: Morobo	1	1	2	3	M	1	1	0	1	1	177,515	182,840	188,325	193,975	199,794
Central Equatoria: Kajo Keji	1	1	2	2	M	1	1	0	1	1	336,145	346,229	356,616	367,315	378,334
Eastern Equatoria: Torit	1	1	2	1	M	1	0	M	1	1	154,634	159,273	164,051	168,973	174,042
Eastern Equatoria: Lopa/Lafon	0	1	2	0	2	1	0	M	M	1	208,197	214,443	220,876	227,502	234,328
Eastern Equatoria: Kapoeta North	0	M	1	0	2	1	0	M	1	1	202,858	208,944	215,212	221,668	228,318
Eastern Equatoria: Kapoeta East	1	M	1	1	2	1	0	1	1	1	322,081	331,743	341,696	351,947	362,505
Eastern Equatoria: Kapoeta South	1	M	1	1	2	1	0	1	1	1	156,591	161,289	166,127	171,111	176,245
Eastern Equatoria: Budi	1	M	1	1	2	1	0	M	M	1	195,739	201,611	207,660	213,889	220,306
Eastern Equatoria: Ikotos	1	1	1	1	M	1	0	M	1	1	130,738	134,660	138,700	142,861	147,147
Eastern Equatoria: Magwi	1	1	2	1	M	1	1	M	1	1	262,879	270,765	278,888	287,255	295,872
Jonglei: Fangak	1	M	3	0	2	1	0	1	M	1	187,978	193,617	199,426	205,409	211,571
Jonglei: Pigi/Khorfulus	1	M	2	1	M	0	0	1	1	1	133,835	137,850	141,985	146,245	150,632
Jonglei: Ayod	0	M	3	0	2	1	0	1	M	1	239,034	246,205	253,591	261,199	269,035
Jonglei: Duk	0	M	2	0	2	0	0	1	1	1	111,394	114,736	118,178	121,723	125,375
Jonglei: Uror	0	M	3	1	2	1	0	1	M	1	304,013	313,133	322,527	332,203	342,169

County	LF	ONC	SCH	STH	Tra	LOA	HAT	Leish	Lep	Rabies	2023	2024	2025	2026	2027
Jonglei: Nyirol	0	M	1	1	2	0	0	1	M	1	185,656	191,226	196,962	202,871	208,957
Jonglei: Akobo	0	1	1	1	2	0	0	1	1	1	239,034	246,205	253,591	261,199	269,035
Jonglei: Pochala	1	1	0	0	2	M	0	M	0	1	113,716	117,127	120,641	124,261	127,988
Jonglei: Pibor	1	1	0	0	2	M	0	1	1	1	252,958	260,547	268,363	276,414	284,706
Jonglei: Twic East	0	M	2	1	2	0	0	M	1	1	146,206	150,592	155,110	159,763	164,556
Jonglei: Bor South	0	M	3	0	2	1	0	M	1	1	378,276	389,624	401,313	413,352	425,753
Lakes: Cueibet	0	1	0	1	M	1	0	0	1	1	178,885	184,252	189,779	195,472	201,337
Lakes: Rumbek North	1	1	0	1	M	1	0	0	1	1	65,852	67,828	69,862	71,958	74,117
Lakes: Rumbek Centre	1	1	1	1	M	1	0	0	1	1	234,730	241,771	249,025	256,495	264,190
Lakes: Wulu	1	1	0	1	M	1	0	0	1	1	61,603	63,452	65,355	67,316	69,335
Lakes: Rumbek East	0	1	1	1	M	1	0	0	1	1	187,352	192,973	198,762	204,725	210,866
Lakes: Yirol West	0	1	2	1	2	1	0	0	1	1	198,980	204,949	211,098	217,431	223,954
Lakes: Yirol East	0	1	2	1	2	1	0	0	1	1	130,414	134,326	138,356	142,507	146,782
Lakes: Awerial	1	1	3	1	2	1	0	0	1	1	91,423	94,166	96,991	99,900	102,897
Northern Bahr el Ghazal: Awiel North	0	1	0	1	M	1	0	0	1	1	179,502	184,887	190,434	196,147	202,031
Northern Bahr el Ghazal: Awiel East	1	1	1	1	M	1	0	0	1	1	432,687	445,668	459,038	472,809	486,993
Northern Bahr el Ghazal: Awiel South	0	1	1	1	M	1	0	0	1	1	102,286	105,355	108,515	111,771	115,124
Northern Bahr el Ghazal: Awiel West	1	1	1	1	M	1	0	0	1	1	232,443	239,417	246,599	253,997	261,617
Northern Bahr el Ghazal: Awiel Centre	1	1	1	1	M	1	0	0	1	1	58,363	60,114	61,917	63,775	65,688
Unity: Pariang	0	M	3	0	2	1	0	1	M	1	157,052	161,764	166,616	171,615	176,763
Unity: Abiemnhom	0	M	3	0	2	1	0	M	M	1	32,300	33,269	34,267	35,295	36,354
Unity: Mayom	0	M	3	1	2	1	0	M	1	1	229,450	236,334	243,424	250,726	258,248
Unity: Rubkona	1	M	3	1	2	1	0	M	1	1	190,467	196,181	202,066	208,128	214,372

County	LF	ONC	SCH	STH	Tra	LOA	HAT	Leish	Lep	Rabies	2023	2024	2025	2026	2027
Unity: Guit	0	M	3	1	2	1	0	1	1	1	62,374	64,245	66,173	68,158	70,202
Unity: Koch	0	M	3	0	2	1	0	1	1	1	142,571	146,848	151,254	155,791	160,465
Unity: Leer	1	M	3	1	2	1	0	1	1	1	101,359	104,400	107,532	110,758	114,080
Unity: Mayendit	0	M	3	1	2	1	0	M	1	1	102,473	105,547	108,714	111,975	115,334
Unity: Panyijiar	0	M	2	1	2	1	0	1	M	1	96,903	99,810	102,804	105,889	109,065
Upper Nile: Renk	1	M	2	0	2	0	0	1	1	1	249,285	256,764	264,466	272,400	280,572
Upper Nile: Manyo	1	M	2	0	2	0	0	1	M	1	67,986	70,026	72,126	74,290	76,519
Upper Nile: Fashoda	1	M	2	0	2	0	0	1	M	1	66,244	68,231	70,278	72,387	74,558
Upper Nile: Melut	1	M	2	0	2	0	0	1	1	1	88,906	91,573	94,320	97,150	100,064
Upper Nile: Maban	1	1	0	0	2	0	0	1	M	1	81,933	84,391	86,923	89,530	92,216
Upper Nile: Maiwut	0	1	0	1	2	0	0	1	M	1	142,947	147,235	151,652	156,202	160,888
Upper Nile: Luakpiny/Nasir	1	M	0	1	2	0	0	1	1	1	380,030	391,431	403,174	415,269	427,727
Upper Nile: Longochuk	0	1	1	1	2	0	0	1	M	1	115,055	118,507	122,062	125,724	129,495
Upper Nile: Akoka	1	M	0	1	2		0	1	M	1	153,406	158,008	162,748	167,631	172,660
Upper Nile: Ulang	1	M	2	1	2	0	0	1	M	1	69,294	71,373	73,514	75,719	77,991
Upper Nile: Baliet	1	M	1	0	2	0	0	1	1	1	228,368	235,219	242,276	249,544	257,030
Upper Nile: Malakal	1	M	1	1	2	0	0	1	1	1	81,933	84,391	86,923	89,530	92,216
Upper Nile: Panyikang	0	M	2	0	M	0	0	1	1	1	8,292	8,541	8,797	9,061	9,333
Warrap: Abyei	1	1	1	0	M	M	0	M	M	1	287,124	295,738	304,610	313,748	323,161
Warrap: Twic	1	1	1	0	M	1	0	M	1	1	341,557	351,803	362,357	373,228	384,425
Warrap: Gogrial West	1	1	1	0	M	1	0	0	1	1	144,243	148,570	153,027	157,618	162,347
Warrap: Gogrial East	0	1	3	0	M	1	0	0	1	1	230,540	237,456	244,580	251,917	259,475
Warrap: Tonj North	0	1	2	1	M	1	0	0	1	1	161,379	166,220	171,207	176,343	181,633
Warrap: Tonj East	1	1	3	0	M	1	0	0	1	1	121,109	124,742	128,484	132,339	136,309

County	LF	ONC	SCH	STH	Tra	LOA	HAT	Leish	Lep	Rabies	2023	2024	2025	2026	2027
Warrap: Tonj South	1	1	2	1	M	1	0	0	1	1	68,764	70,827	72,952	75,140	77,394
Westtern Equatoria: Tambura	1	1	1	1	M	0	1	0	M	1	12,363	12,734	13,116	13,509	13,914
Westtern Equatoria: Nagero	1	1	0	0	M	1	1	0	M	1	81,898	84,355	86,885	89,492	92,177
Westtern Equatoria: Nzara	1	1	2	1	M	1	1	0	1	1	101,212	104,249	107,376	110,598	113,915
Westtern Equatoria: Ezo	1	1	1	1	M	1	1	0	1	1	190,065	195,766	201,639	207,689	213,919
Westtern Equatoria: Yambio	1	1	2	1	M	1	1	0	1	1	52,539	54,115	55,739	57,411	59,133
Westtern Equatoria: Ibba	1	1	2	1	2	1	1	0	1	1	130,074	133,976	137,996	142,135	146,399
Westtern Equatoria: Maridi	1	1	1	1	M	1	1	0	1	1	60,264	62,072	63,934	65,852	67,828
Westtern Equatoria: Mvolo	1	1	2	1	2	1	1	0	1	1	53,790	55,404	57,066	58,778	60,541
Westtern Equatoria: Mundri West	1	1	2	1	2	1	1	0	0	1	76,284	78,573	80,930	83,358	85,858
Westtern Equatoria: Mundri East	0	1	1	1	M	1	1	0	0	1	75,969	78,248	80,596	83,013	85,504
Western Bahr el Ghazal: Raga	1	1	1	0	M	1	0	0	1	1	179,118	184,492	190,027	195,727	201,599
Western Bahr el Ghazal: Jur River	0	1	0	0	M	1	0	0	1	1	211,597	217,945	224,483	231,218	238,154
Western Bahr el Ghazal: Wau					M	1	0	0	1	1	0	0	0	0	0

Annexe 3: Main streaming NTDs into national health systems

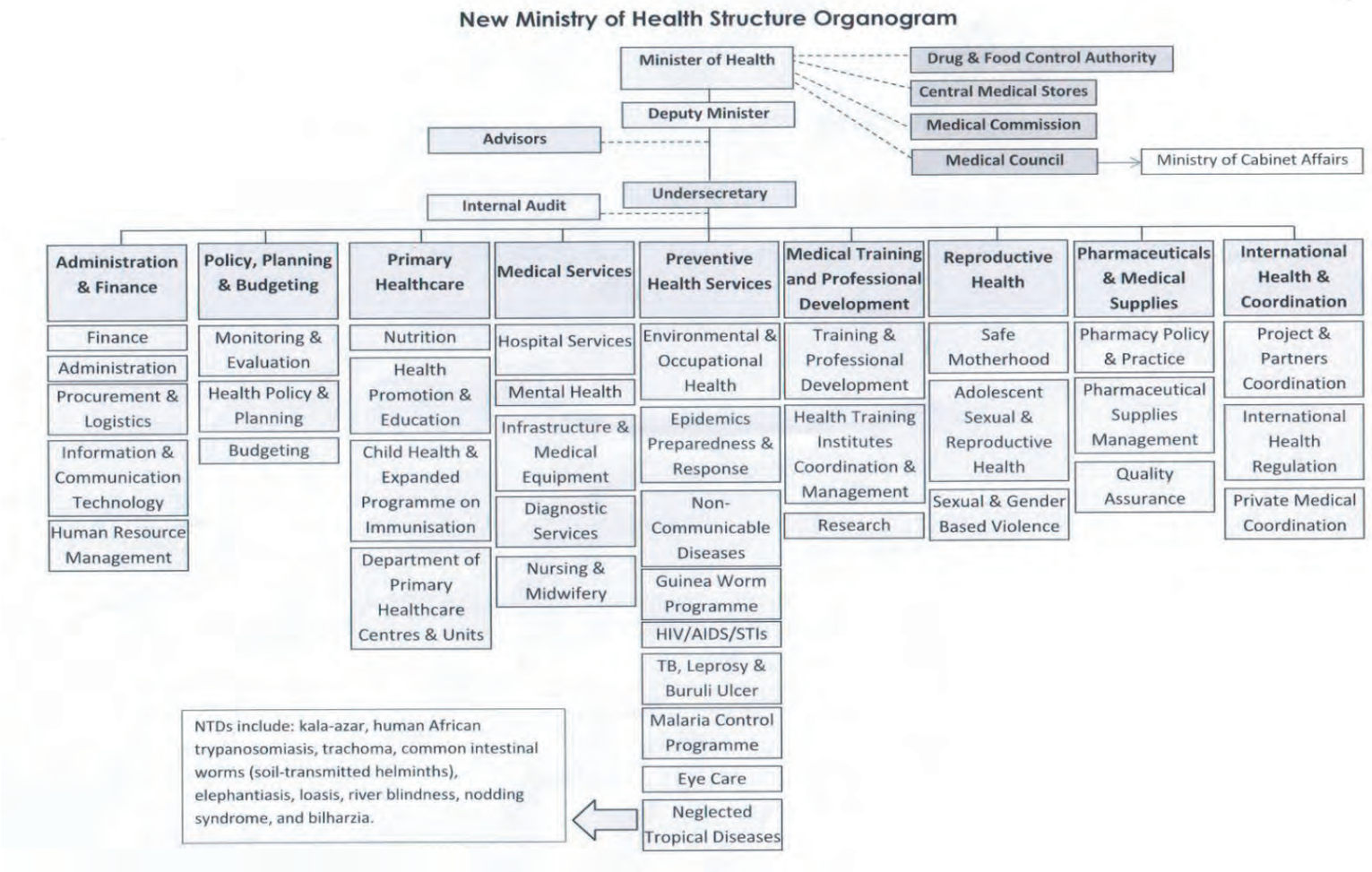


Annex 4: Coordination with MoH and other Ministries and Departments/Divisions

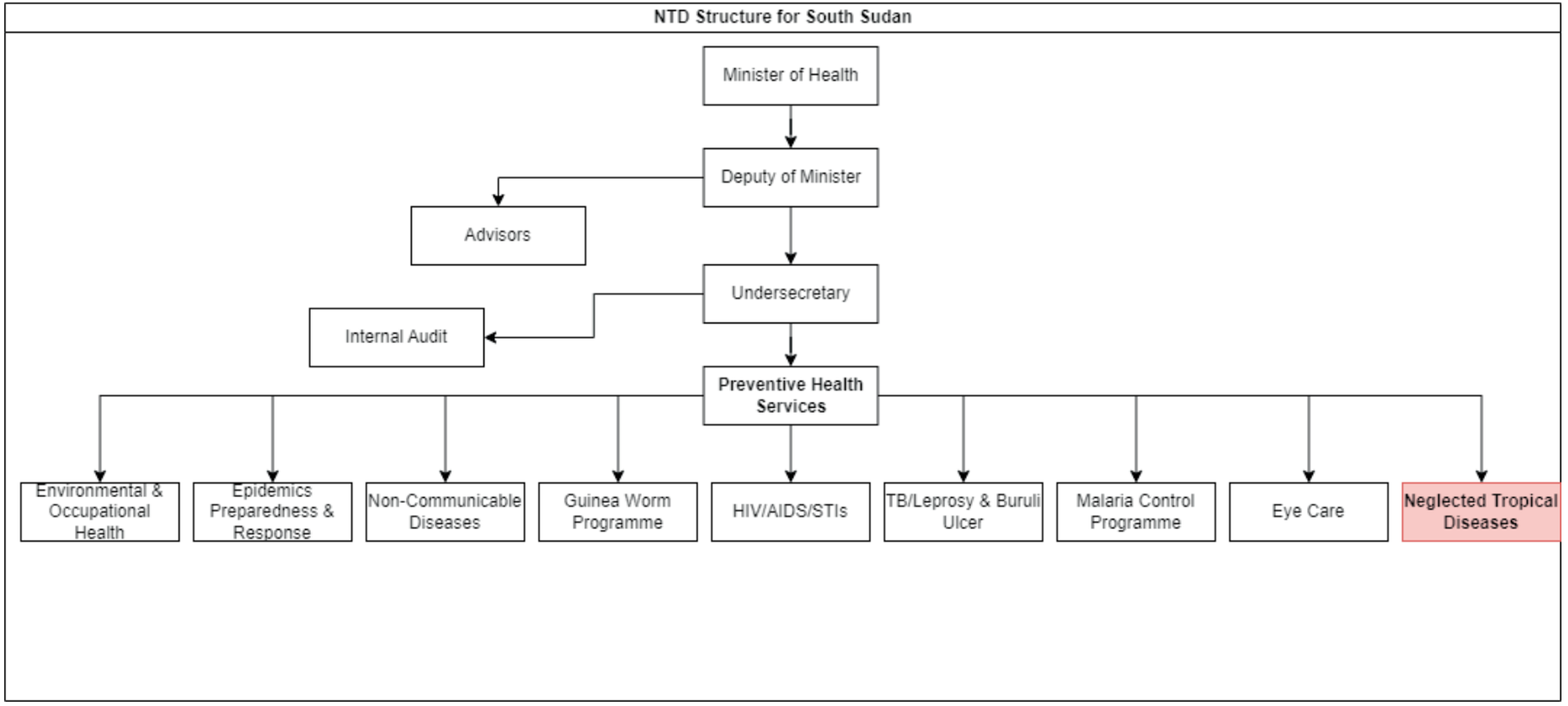
Activities of MOH that are relevant for NTDs

Global vector control response		ITNs, Insect repellents, screens molluscicides Environmental management to minimize mosquito habitats (Housing improvements, safe storage of water, sanitation, window screens), Container management includes covering, emptying, cleaning and disposing of containers, Draining or treating stagnant water, Behavioural change, and other innovative approaches.
Mental Health		Psychological support and counselling services for NTD patients Routine assessment of mental health for patients with specific NTDs, particularly those with chronic conditions
Disability and inclusion		Treatment of disability and morbidity management, Provision of support services (e.g., walking devices and prosthetics) and Training for self-management of disability and self-care
Women's and child health		Awareness-building about diseases for which women and children are disproportionately at risk Use of maternal health clinics, to deliver interventions (e.g., deworming tablets, supplements (e.g., iron) for pregnant women and children to prevent anaemia)
Pharmacovigilance		Develop and use standard tools for reporting, investigation and management of ADRs Monitor drug efficacy for NTDs
Eye Health		Promotion of eye care, e.g. face-washing, protecting eyes and eye examinations Provision of treatment for eye conditions related to NTDs, including surgery when required
Nutrition		**Access to better nutrition** to strengthen immune systems and reduce susceptibility to infection, e.g. for visceral leishmaniasis for which malnutrition is a risk factor **Provision of food and supplements** (e.g. iron and vitamin A) to combat common side effects of NTDs, such as anaemia and nutritional impairment
Other disease programmes		**Immunization programmes**: joint delivery of preventive chemotherapy to pre-school-age children Tuberculosis: joint detection of paragonimiasis (foodborne trematodes), leprosy and other mycobacterial diseases, **Malaria**: vector control against *Anopheles* mosquitoes HIV/AIDs: education about risks, e.g. of coinfection with certain NTDs

Annex 5a: MoH Organizational Chart



Annex 5b: Organization chart of the National NTD Programme



Annexe 6: NTD Commodities Forecasting Dashboard

Five-year PC-drug forecast

	2023	2024	2025	2026	2027	Total
DEC - Diethylcarbamizine	0	0	0	0	0	**0**
IVM - Ivermectin	26,714,896	27,516,343	28,341,833	29,192,088	30,067,851	**141,833,012**
ALB - Albendazole (with IVM or DEC)	7,602,093	7,830,156	8,065,061	8,307,013	8,556,223	**40,360,546**
ALB/MBD (alone or with PZQ)	482,776	497,260	512,177	527,543	543,369	**2,563,125**
PZQ - Praziquantel	9,042,557	7,741,026	7,973,257	8,212,454	8,458,828	**41,428,121**
TEO - Tetracycline eye ointment	307,190	316,406	325,898	335,675	345,745	**1,630,914**
ZMAX POS bottles	486,384	500,976	516,005	531,485	547,430	**2,582,281**
Zmax TABS - Zithromax tablets	18,201,017	18,747,047	19,309,459	19,888,743	20,485,405	**96,631,671**

Annexe 7: NTD Target County summary

Target population summary

Disease	Number of endemic counties	Target group	Target population FY2023	Target population FY2024	Target population FY2025	Target population FY2026	Target population FY2027	Number of counties targeted FY2023	Number of counties targeted FY2024	Number of counties targeted FY2025	Number of counties targeted FY2026	Number of counties targeted FY2027
LF	50	≥ 5 years	7,602,093	7,830,156	8,065,061	8,307,013	8,556,223	50	50	50	50	50
		Lymphoedema cases	0	0	0	0	0	50	50	50	50	50
		Hydrocele cases	0	0	0	0	0	50	50	50	50	50
Oncho 1	48	≥ 5 years	7,382,154	7,603,619	7,831,727	8,066,679	8,308,679	48	48	48	48	48
Oncho 2		≥ 5 years	0	0	0	0	0	48	48	48	48	48
SCH	67	School-aged	1,531,336	1,577,276	1,624,594	1,673,332	1,723,532	43	43	43	43	43
		High-risk adults	1,229,073	1,265,945	1,303,924	1,343,041	1,383,332	43	43	43	43	43
STH Round 1	6	Pre-school age	334,749	344,791	355,135	365,789	376,763	6	6	6	6	6
		School-aged	511,969	527,328	543,148	559,442	576,225	6	6	6	6	6
		High-risk adults	0	0	0	0	0	6	6	6	6	6
STH Round 2			148,028	152,468	157,042	161,754	166,606	2	2	2	2	2
Trachoma	44	< 6 months	153,595	158,203	162,949	167,837	172,873	44	44	44	44	44
		6-59 months	1,459,153	1,502,928	1,548,016	1,594,456	1,642,290	44	44	44	44	44
		≥ 5 years	6,067,006	6,249,016	6,436,486	6,629,581	6,828,468	44	44	44	44	44
		Surgeries	0	0	0	0	0	44	44	44	44	44