



Development  
Progress

## Case Study Report

*Health*

A close-up photograph of a person's mouth, slightly open. A dark brown wooden spoon is held in the mouth, and three small, round, white pills are resting on the spoon's bowl. The background is blurred, showing more of the person's face and some indistinct shapes.

# NO LONGER NEGLECTED Tackling Sierra Leone's neglected tropical diseases

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Cover image: A community drug distributor in Sierra Leone prepares a dose of medication for a patient with elephantiasis. Photo: © Olivier Asselin, courtesy of the Sabin Vaccine Institute

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# Acknowledgements

This report was authored by Romina Rodríguez Pose (independent consultant) with Gideon Rabinowitz of the Overseas Development Institute (ODI). Oversight was provided by Fiona Samuels, also of ODI.

The authors gratefully acknowledge the helpful suggestions from Matt Geddes in preparing the field trip, the contributions to the background research from Amandine Poncin, the support received on the ground from Victor Kallon in Sierra Leone and the inputs from the more than 60 key stakeholders interviewed.

The authors would also like to acknowledge, with gratitude, the detailed comments on drafts from the three external peer reviewers: David Molyneux (Liverpool School of Tropical Medicine), Moses Bockarie (Liverpool School of tropical Medicine) and Lesong Conteh (School

of Public Health, Imperial College London). Extensive comments were also provided by Mary Hodges (Helen Keller International) and ODI colleagues: Katy Harris, Amanda Lenhardt, Andrew Rogerson and Susan Nicolai. Angela Hawke and Roo Griffiths provided editing support. All errors are our own.

The case study report was funded by the Bill & Melinda Gates Foundation as part of ‘Development Progress’, a four-year research project that aims to better understand, measure and communicate what has worked in development and why. The findings and conclusions contained within are those of the authors and do not necessarily reflect the positions or policies of the Bill & Melinda Gates Foundation.

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# Abbreviations and acronyms

<b>AIDS</b>	Acquired Immune Deficiency Syndrome	<b>NOCP</b>	National Onchocerciasis Control Programme
<b>APOC</b>	African Programme for Onchocerciasis Control	<b>NTD</b>	Neglected Tropical Disease
<b>CDD</b>	Community Drug Distributor	<b>NTDP</b>	Neglected Tropical Disease Programme
<b>DHMT</b>	District Health Management Team	<b>NTDCP</b>	Neglected Tropical Disease Control Programme
<b>DFID</b>	UK Department for International Development	<b>ODI</b>	Overseas Development Institute
<b>END</b>	END in Africa Programme	<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>FHCI</b>	Free Health Care Initiative	<b>Oncho</b>	Onchocerciasis
<b>GoSL</b>	Government of Sierra Leone	<b>PHU</b>	Peripheral Health Unit
<b>GDP</b>	Gross Domestic Product	<b>PreTAS</b>	Pre-transmission Assessment Survey
<b>GSK</b>	GlaxoSmithKline	<b>SAC</b>	School-aged Children
<b>HFAC</b>	Health for All Coalition	<b>SCH</b>	Schistosomiasis (or Schisto)
<b>HIV</b>	Human Immunodeficiency Virus	<b>SIZ</b>	Special Intervention Zone
<b>HKI</b>	Helen Keller International	<b>SSL</b>	Statistics Sierra Leone
<b>ICT</b>	Immunochromatographic Card Test	<b>STH</b>	Soil-transmitted helminths
<b>IMF</b>	International Monetary Fund	<b>TBA</b>	Traditional Birth Attendant
<b>LF</b>	Lymphatic Filariasis	<b>TDR</b>	Special Programme for Research and Training in Tropical Diseases
<b>MCHA</b>	Maternal and Child Health Aide	<b>UNDP</b>	UN Development Programme
<b>MCHP</b>	Maternal and Child Health Post	<b>UNFPA</b>	UN Population Fund
<b>MDA</b>	Mass Drug Administration	<b>UNICEF</b>	UN Children’s Fund
<b>MDG</b>	Millennium Development Goal	<b>USAID</b>	US Agency for International Development
<b>MEST</b>	Ministry of Education, Science and Technology	<b>WASH</b>	Water, Sanitation and Hygiene
<b>MoHS</b>	Ministry of Health and Sanitation	<b>WHO</b>	World Health Organization
<b>MRU</b>	Mano River Union		
<b>NGO</b>	Non-governmental Organisation		

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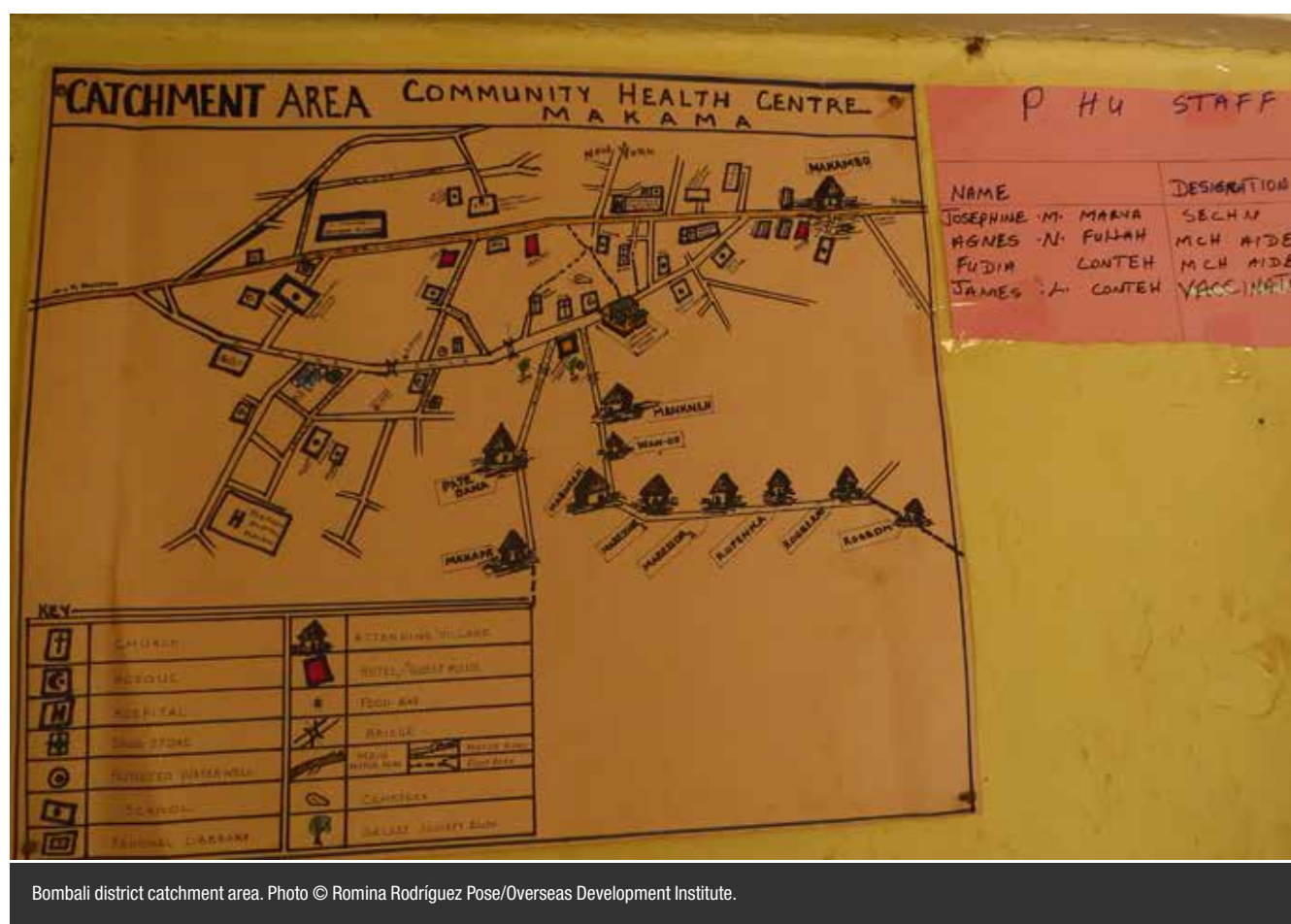
# Abstract

Taking advantage of growing global momentum on neglected tropical diseases (NTDs), Sierra Leone has established an integrated programme that has treated over five million of the country's estimated six million people each year for the past four years – a programme that has reduced prevalence for the four targeted NTDs dramatically. In spite of the brutal, decade-long civil war that ended in 2002, having caused extensive destruction to infrastructure and resources, the post-conflict country is now one of West Africa's leading performers on the control of NTDs and, in 2014, is expected to move its focus from control to elimination. Five drivers of progress explain this progress:

- a pioneering history of efforts to control NTDs
- an integrated approach to NTD control, delivered via a post-conflict reconstructed and scaled-up health sector
- government commitment, external funding and strong partnerships
- a bottom-up approach that has resulted in community ownership
- a broader context of progress leading to improved and scaled-up delivery.

Sierra Leone has demonstrated that NTDs can be controlled and potentially eliminated even by countries with limited resources and very fragile health system infrastructures. It provides a workable model for an integrated approach to tackling NTDs and offers lessons for many of the world's other low-income countries – every one of which faces endemic NTDs that blight their prospects for development. This is good news for the 17 African countries that are yet to start mass drug administration and this document recounts a story of real hope in development progress.

# 1. Introduction



Bombali district catchment area. Photo © Romina Rodríguez Pose/Overseas Development Institute.

Sierra Leone is making impressive progress against neglected tropical diseases (NTDs) in the aftermath of a brutal civil war that ran from 1991 until 2002. The integrated Neglected Tropical Disease Programme (NTDP) is rooted in strong post-conflict reconstruction efforts by the country and the donor community to decentralise and create 'good governance'. The NTDP has mounted mass drug administration (MDA) to treat over 5 million of the country's estimated 6 million people each year for the past four years – a therapeutic coverage rate of around 80%. The impact on Sierra Leone's four main NTDs is clear:

- Prevalence of onchocerciasis (oncho): down by more than 60% between 2007 and 2009 (MoHS 2010).
- Prevalence of lymphatic filariasis (LF): down by almost 90% between 2007 and 2011, with the number of endemic districts falling from all 14 in 2007 to just one in 2011 (Koroma et al, 2013).<sup>1</sup>
- Prevalence of schistosomiasis (SCH): down by more than 66%, and intensity down by more than 85% between 2009 and 2012 (Sesay et al, 2014).
- Soil-transmitted helminths (STH): remarkable progress towards control (<20%) in school-aged children (SAC) and pre-SAC.

**'Neglected tropical diseases are no longer neglected in this country' – a view shared by many donor and government officials interviewed for this case study**

1 Of 12 reassessed in 2011.



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How is it that such a poor country, scarred by conflict, is now one of West Africa's leaders in rolling back NTDs? This case study examines what has worked (and why) in Sierra Leone's fight against NTDs by asking three key questions.

- What are the key factors driving progress in Sierra Leone?
- Have those been internal or external to the NTDP and the health system?
- What role has finance played in this process?

It argues that Sierra Leone's progress has resonance for all low-income countries – every one of which has at least five endemic NTDs – and presents a workable model for an integrated approach to NTDs that could be replicated in other resource-poor countries with fragile health-system infrastructures.

The case study aims to inspire other countries where NTDs are endemic, particularly the 17 African countries that have not yet mounted similar MDA programmes. It also aims to contribute to broader development debates, including those on accelerating progress towards the Millennium Development Goals (MDGs: deadline – 2015) and the shape of the post-MDG agenda, given the close and cross-cutting links between NTDs and many other areas of development, such as education and productivity.

## 1.1 Why explore NTDs in Sierra Leone?

The Development Progress project decided to produce two case studies on NTDs<sup>2</sup> to make these diseases more visible and to raise awareness on the importance of their elimination. Even though the elimination of NTDs has the potential to accelerate progress in health overall – and progress towards the MDGs more generally (Molyneux, 2008; Samuels and Rodríguez Pose, 2013) – they have received little attention from policy-makers and/or researchers (Chagas, 2012; Ogden, 2012) and remain low on national and international health agendas.<sup>3</sup> Yet NTDs are endemic in 149 countries, including all low-income countries (WHO, 2010; Jannin and Savioli, 2011).

NTDs span 17 diseases that cause debilitating conditions, including blindness, chronic pain, severe disability, disfigurement and malnutrition. If left untreated they create a cycle of poverty and illness that, coupled with stigma and exclusion, threatens people's future prospects.

NTDs are also known as the 'diseases of the poor' because the 1 billion people affected are overwhelmingly

from marginalised communities, where poverty is high, access to clean water and proper sanitation is low, and where health care systems are absent or overwhelmed (WHO, 2010). Although its major impact is on morbidity rather than mortality, NTDs are thought to kill around half a million people each year. Children, women and those living in remote areas are most vulnerable to NTDs and their consequences: they have a negative impact on reproductive health and on nutritional status, as well as causing developmental delays, stunted growth in children and anaemia in pregnant women.

Despite the burden these diseases represent and their impact across other sectors that are crucial for social and economic development, their limited visibility stems from the fact that they affect the poorest people, who have little political voice or lobbying power; and because they are tied to specific geographical and environmental conditions and do not spread easily to industrialised countries. As a result, they are little known and poorly understood anywhere beyond the impoverished settings in which they thrive (WHO, 2010).

There is, however, a dawning realisation of their importance as a barrier to development. Following the initiative of some pharmaceutical companies to donate 'as much drugs as needed for as long as needed' to eliminate some NTDs,<sup>4</sup> the past decade has seen increasing global advocacy for their mainstreaming in the international agenda. From 2003 to 2007, bold steps were taken to develop a framework for tackling NTDs in a coordinated and integrated way, which crystallised in WHO's Global Plan to Combat Neglected Tropical Diseases 2008–2015 (WHO, 2007). In addition, the 2003 establishment of the Drugs for Neglected Diseases Initiative, the 2008 commitment by the G-8 to address tropical diseases and the launch of major NTD programmes by the US and UK Governments and the Bill and Melinda Gates Foundation, have all helped to incentivise national efforts to tackle NTDs as part of poverty alleviation and socio-economic development.

The emergence of drug donation programmes, dedicated funds and the development of inexpensive control strategies for how to administer the drugs, represent a breakthrough on NTDs. Preventive chemotherapy – the distribution of one dose of medication once or twice a year in affected communities via MDA – has become the main strategy to control or even eliminate the five NTDs that account for up to 90% of the global NTD burden (WHO, 2007):

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2 Several areas of research were explored (e.g. non-communicable diseases, mental health and adolescent health, among others).

3 NTDs have been sidelined in efforts to achieve MDG 6 on combating disease, which have focused on HIV/AIDS, tuberculosis and malaria, with NTDs receiving just 0.6% of ODA compared with 37% for HIV/AIDS (Liese and Schubert, 2009).

4 The pioneer being Merck & Co. Inc., which in 1987 created the Mectizan® Donation Programme by donating ivermectin for the treatment of oncho. Later, other companies became committed (among others, Pfizer started the donation of azithromycin for trachoma control (1997); GlaxoSmithKline (GSK), then SmithKline Beecham, of albendazole for LF (1998) and for STH treatment for school-age children, and Novartis for leprosy and fascioliasis; Johnson & Johnson for STH) (Bush and Hopkins, 2011; WHO, 2010).



- soil-transmitted helminthiasis (including hookworm, ascariasis, trichuriasis)
- schistosomiasis (known as snail fever or bilharzias)
- lymphatic filariasis (known as elephantiasis)
- onchocerciasis (known as river blindness)
- trachoma: the leading cause worldwide of infectious blindness.

Boosted by these renewed global initiatives, a number of countries – including Sierra Leone – have launched NTD control programmes and are making progress against NTDs. Normally, quantitative and cross-national comparisons of key indicators would have been undertaken to select a specific case study. The NTD story, however, does not allow for such cross-country comparison, as most countries have scanty or difficult-to-access data on the status of NTDs.<sup>5,6</sup> Therefore, the selection process for the NTDs case studies was based on interviews with several experts and a review of leading sources in this field. Once a shortlist was obtained through this process, a comparative analysis was carried out, taking into consideration: the number of endemic diseases being tackled; the availability of information; a balance between African and Asian countries; the possibility of conducting fieldwork; the country characteristics; and the context in which progress took place.

For instance, while Ghana, which was identified as a leading country in the fight against NTDs in Africa, has achieved this within a general broader context of progress in many sectors, Sierra Leone's achievements stood out as a niche of tangible progress in an extremely challenging country context. Mali, the other African country shortlisted, was discarded because of political turmoil at the time of the research, which made it impossible to conduct in-country fieldwork. This left us with Sierra Leone, where the story emerged as one of progress in NTDs against the odds and in a very short period of time, an achievement that merits greater scrutiny, given that Sierra Leone lagged behind the rest of West African countries facing such challenges, as shown by previous efforts to control oncho in the region. Due to its recent history of conflict, by 2002, when the WHO's Onchocerciasis Control Programme finished its activities, Sierra Leone was the only country in the region that still had high levels of oncho prevalence.

## The national context

Sierra Leone remains one of the world's least developed countries (LDCs), ranking 177th out of 187 countries in 2013 (UNDP, 2013). In 2002, the country emerged from a decade-long civil war that killed an estimated 50,000 people, displaced around half of the country's population and destroyed most of its infrastructure. The legacy of the war included high levels of malnutrition, over 7,000 amputees, substance abuse challenges, many people suffering from depression and mental illnesses and large numbers of people uprooted from their homes, as well as crowded refugee camps that exposed people to a range of health hazards, including NTDs (De Jong et al., 1999; WHO, n/d).

The post-war reconstruction process began with significant support from the international community and had a strong focus on governance reforms and the restoration of peace and order. In the past decade, Sierra Leone has made real progress in transitioning from a post-conflict nation to a developing democracy, and economic gains sustained an average annual growth rate of 6% between 2003 and 2011.<sup>7</sup> But the benefits of this growth have not yet trickled down to the average Sierra Leonean, and more than half of the population still lives on less than \$1.25 a day (down only slightly from 53.4% in 2003 to 51.7% in 2011) – a major obstacle to future progress on NTDs as poverty is tied so closely to the conditions in which these diseases spread. Corruption is prevalent, and despite recent measures, such as the Anti-corruption Commission, it remains a key challenge.<sup>8</sup>

## The health context

While Sierra Leone's health care system has started to show signs of recovery in recent years, the country still has some of the highest maternal and child mortality rates worldwide. It also faces a chronic shortage of health workers and a health infrastructure that remains weak. The poor health of its people, particularly its mothers and children, has stemmed from a heavy burden of environment-related communicable diseases, coupled with (and fuelled by) poor nutrition.

Sierra Leone has improved its maternal mortality rate (MMR) and under-five mortality rate (U5MR) in recent years, but remains one of the worst performers worldwide (Figure 1 overleaf) – an indication of the inability of the health system to provide core health services to its population.

Environment-related communicable diseases, including NTDs, and poor nutrition are the two main factors that

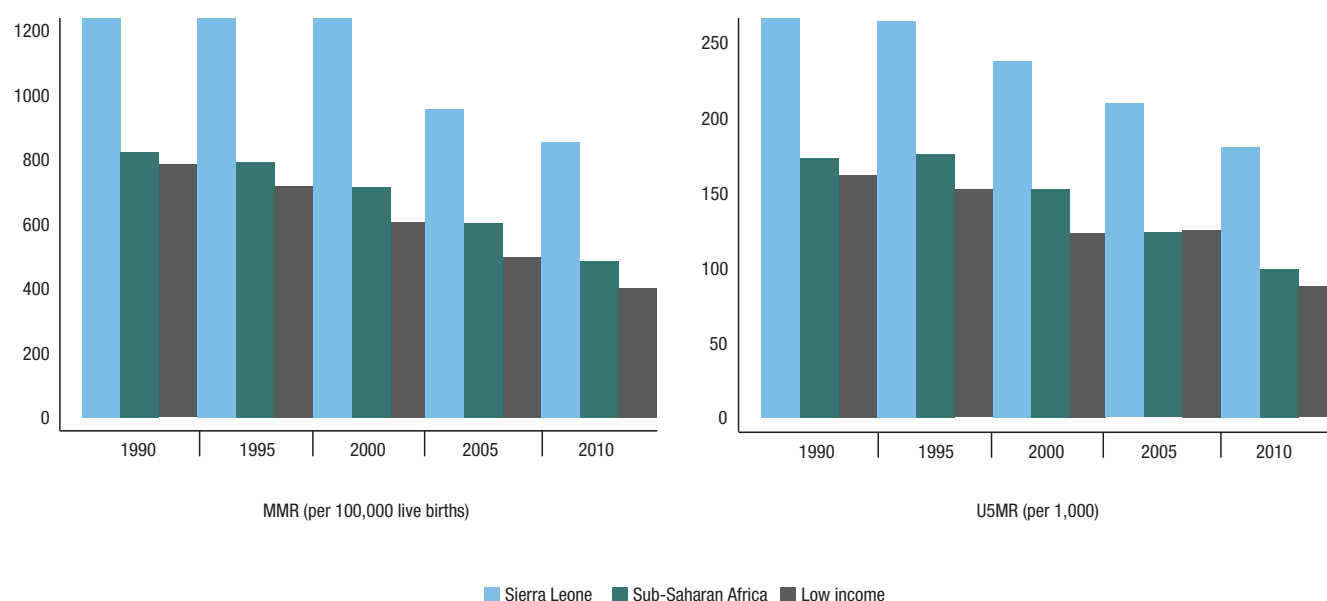
5 There is a need for the standardisation of data -management systems and common agreement on how to access this data (Molyneux, personal conversation/communication).

6 NTDs lag behind other areas of health, where internationally recognised indicators are collected routinely to measure progress (e.g. maternal mortality rate, for maternal health).

7 GDP growth rocketed to 16.7% in 2012, following the discovery of iron ore (OECD, 2013).

8 During the fieldwork, for example, some key actors within the MoHS were removed from their posts because of a corruption scandal involving GAVI Alliance funds.

**Figure 1: Comparison of selected indicators – Sierra Leone, low-income countries and sub-Saharan Africa**



Source: World Development Indicators, World Bank (2013)

explain the poor health status of Sierra Leone's people. Malnutrition is a key challenge, presenting a major threat to children: in 2008, one child in every five below the age of five was underweight and nearly 40% were stunted.<sup>9</sup> More than one-third of child deaths are attributable to malnutrition (Countdown, 2012), making the fight against NTDs even more important, given their detrimental effect on nutrition, physical growth and family income-generating capacity.

The health sector has been dogged by weak human and financial resourcing, poor provision of services to rural areas, overly centralised structures, and corruption. A health-sector reform process that began in 1991 and produced a national health policy in 1993 was brought to an abrupt end by the civil war (Harvard, 1995).

By the end of the war, there were only 79 functioning peripheral health units (PHUs) across the country, compared with the almost 1087 PHUs and 23 hospitals in 1990 (Gibril et al., 2004; Hodges et al., 2011a). And two years after the ceasefire in 2002, a health-sector review reported that: *'Many health centres, general hospitals and specialised institutions are in a state of disrepair or completely vandalised. Hospital beds are old and uncomfortable, bed linen a luxury. The toilets are*

*non-functioning, instruments barely exist or are rusty. All hospitals have inadequate budgets and this has led to the exodus of highly trained staff.'* (Gibril et al., 2004:3).

The post-war period focused on restoring peace and order, leaving relatively few resources for health, and it was not until the mid-late 2000s that more tangible measures were put in place that focused on the health sector (see Section 2.2). Ordinary citizens have tended to make up for the shortfall in health services with their own money: Sierra Leone's National Health Accounts show that out-of-pocket private expenditure at health facilities accounts for at least two-thirds<sup>10</sup> of total health expenditure (MoHS, 2007, 2012a). While increased government and donor spending on health – particularly on the Free Health Care Initiative – has reduced the share of such expenditures in total health expenditure in recent years, such expenditure has continued to rise overall (MoHS, 2012c).

In addition, certain country characteristics further jeopardise the efforts to control NTDs and to provide access to health services more broadly:

- the high proportion of people (around two-thirds of the population) who live in rural areas that are under-served by health services, and indeed other services more generally

<sup>9</sup> Underweight is low weight for age, while wasting is low weight for height: both are strong predictors of mortality among children under five and are usually caused by acute weight loss or significant food shortage and/or disease. Stunting is low height for age and is caused by long-term insufficient nutrient intake and frequent infections. It represents chronic malnutrition and its effects are largely irreversible.

<sup>10</sup> Figures from MoHS show that out-of-pocket private expenditure as a proportion of total health expenditure varies, from 64.1% in 2005 to 83% in 2007. However, there are concerns about data consistency and quality across the period covered (2004–2010).

- massive population movements within the country<sup>11</sup> and across its borders with Liberia and Guinea
- continued economic dependence on agriculture and mining, sectors that create favourable habitats for the transmission of NTDs<sup>12</sup>
- limited knowledge of basic health issues, with people often turning to traditional healers or self-treatment, and a number of deep-rooted habits and traditional beliefs
- Sierra Leone's hot and humid climate, coupled with its geographic position: around 60% of the country lies in the oncho belt of West Africa, which is drained by seven large rivers that provide breeding sites for blackflies, mosquitoes and other NTD vectors. These rivers are fed by Sierra Leone's rainfall: one of the highest in the world (World Bank, 2013).

## 1.2 Methodology and structure of the report

This study provides evidence of Sierra Leone's progress in tackling four key NTDs for which treatments are readily available: onchocerciasis (oncho), lymphatic filariasis (LF), schistosomiasis (SCH) and soil-transmitted helminths (STH). The other NTDs endemic in the country (leprosy, human African trypanosomiasis and buruliulcer) will not be discussed here.

It aims to answer three research questions:

- What are the key factors driving progress in Sierra Leone?
- Have those been internal or external to the Neglected Tropical Disease Programme (NTDP)?
- What was the role of financing in this process?

The case study builds on a background review of key documents, including government policies, surveys and the literature available on NTDs globally and in Sierra Leone, complemented by documentation collected during fieldwork. Qualitative research was conducted in Sierra Leone over three weeks during March 2013, with the research team carrying out key informant interviews with a wide range of stakeholders in Freetown and two provincial districts: Bo district (considered one of the strongest performers in NTDs) and Bombali district (identified as the weakest). In-depth interviews were held with more than 60 key informants and included two focus group discussions with community drug distributors (CDDs).

The report is structured as follows: Section 2 sets out the progress that has been made by Sierra Leone on preventing and treating NTD infection. Section 3 presents an overview of the main factors that have driven this progress, while Section 4 outlines the remaining challenges to progress in the future. Section 5 highlights the key lessons to be learnt from this case study.

<sup>11</sup> Population movements have grown as a result of the legacy of displacement during the war and the search for jobs, particularly in the mining industry.

<sup>12</sup> Fast-flowing rivers provide breeding sites for blackflies, which carry the parasite that causes oncho. Mosquitoes carry LF parasites and breed in the ruts created by heavy vehicles on unpaved roads. Diamond and gold pits harbour snails that host SCH. Mining settlements that are characterised by dense populations and poor housing and hygiene are ideal for STH (key informant interview).



Woman at a community health post. Photo: © Olivier Asselin, courtesy of Sabin Vaccine Institute

## 2. What progress has been achieved?

### SIERRA LEONE ACHIEVES NATIONWIDE DECLINE IN NTDs



Mass Drug Administration treated over 5 million of the country's estimated 6 million people each year for the past four years.

Sources: WHO (n.d.); Koroma et al. (2013); Sesay et al. (2014); Ministry of Health and Sanitation (2010)



This section looks at Sierra Leone's achievements in its efforts to combat four NTDs: lymphatic filariasis (LF), onchocerciasis (oncho), schistosomiasis (SCH) and soil-transmitted helminths (STH). It examines:

- its overall progress on NTDs in comparison with the rest of West Africa
- its progress on the rapid implementation of health policy frameworks
- its progress on each of the individual NTDs.

### 2.1 A regional performer against the odds

Sierra Leone's rapid achievements on tackling NTDs are nothing short of remarkable, given the difficult context outlined in Section 1. Not only does Sierra Leone stand out in West Africa, but it also provides a tangible model for the successful implementation of strategies to eliminate and control NTDs in other parts of the world.

**'At the beginning, the first and second round, it was a bit difficult to get people to accept the medicines, but when they started seeing results ... they started asking, "When are the drugs coming?"' – Donor key informant**

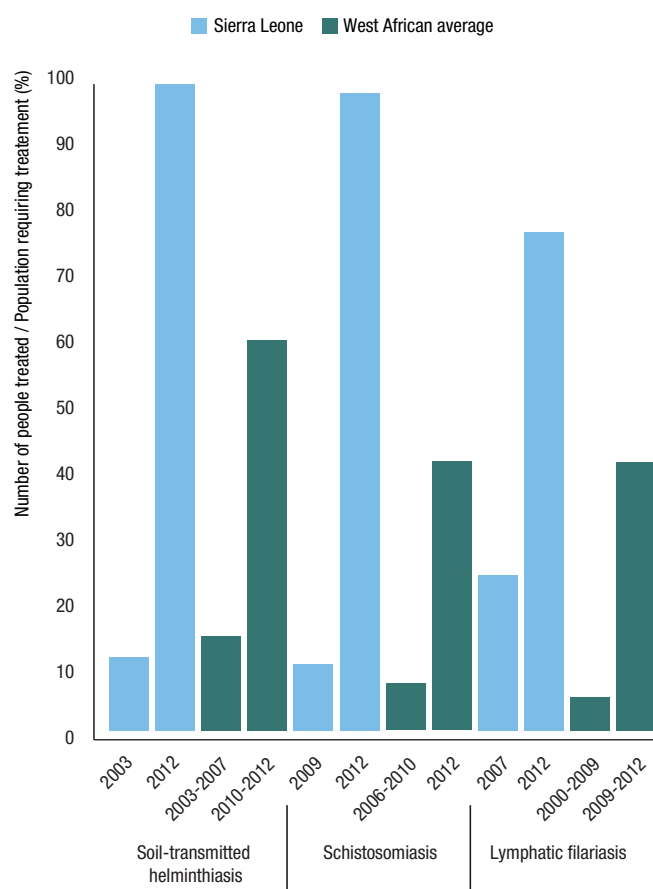
The country has managed to successfully implement the WHO recommendations and guidelines to control and eliminate LF, oncho, SCH and STH, using mass drug administration (MDA) as part of the National Onchocerciasis Control Programme (NOCP) starting in 2007. The NOCP became the NTD Control Programme (NTDCP) around 2010, which later changed its name to the NTD Programme (NTDP) to reflect an emerging focus on elimination. This effort to tackle NTDs has, against all the odds, progressed further and faster than expected, given that Sierra Leone emerged from civil war only 11 years ago.

Sierra Leone's control programme has, for example, outperformed that of every other country in West Africa in terms of its MDA coverage. Figure 2 (overleaf) compares progress on MDA coverage for LF, SCH and STH between 2000–2009 and 2009–2012 with that of the average West African country, revealing stark differences.<sup>13</sup>

<sup>13</sup> Figure 2 shows that Sierra Leone has a broader coverage of interventions than its neighbours, which is likely to translate into lower prevalence rates. However, data on prevalence for different countries between two points in time proved to be difficult to obtain (e.g. even when collecting data during the fieldwork in Sierra Leone, the team found it difficult to get the prevalence levels for STH). Therefore, while being conscious that coverage is an output rather than outcome indicator, it is presented here to give an idea of where Sierra Leone's progress is placed within the region.



**Figure 2: Mass drug administration national coverage for NTDs in Sierra Leone and in West Africa**



*Note: For STH, the average was made up of Burkina Faso, Cape Verde, Côte D'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo; For SCH – Benin, Burkina Faso, Côte D'Ivoire, Ghana, Guinea, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo; and for LF – Benin, Burkina Faso, Cote D'Ivoire, Ghana, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo.*

*Source: WHO (2013)*

As mentioned, Sierra Leone has made good use of a growing focus on NTDs over the past decade by the international community. It has also built on long-standing support and guidance from WHO, which helped to establish its NOCP (and its successors, the NTDCP and NTDP).

Between 2005 and 2009, Sierra Leone carried out its first comprehensive national mapping of all major NTDs,<sup>14</sup>

a major achievement in itself. This vital first step towards prevention and treatment identified where activities should be targeted and provided baselines against which to monitor progress.

The targeted MDA campaigns that have followed have significantly reduced transmission of the four target NTDs across the country, with the exception of Bombali district and some river basins.<sup>15</sup>

As a result, key informants interviewed for this case study believe that the NTDP will 'graduate' in 2014 from being a control programme to a programme of elimination.

## 2.2 Recent progress on the policy foundations for health service delivery

While there have been advances in the development of health policy frameworks since the war, their implementation has been relatively recent and rapid. The 2004 Local Government Act, for example, devolved the delivery of health (and other) services to district level, bringing health services closer to the rural population.<sup>16</sup> As a result, since the end of 2008, health delivery has been organised into three tiers: national level; 19 local councils; and 14 health districts, run by District Health Management Teams (DHMTs).

These DHMTs plan, manage, implement, monitor and supervise primary (and some elements of secondary) health care, including the oversight of peripheral health units (PHUs): the first port of call for most people seeking health care at the local level (Box 1, overleaf). As of 2009, there were 1,169 government PHUs and 30 government hospitals operating in the country (MoHS, 2009). This is more than there were immediately after, or indeed before, the war: in 1990 there were 1,087 PHUs and 23 hospitals (Gibril et al., 2004; Hodges et al., 2011a).

The first overarching plan agreed for the health sector was launched as recently as November 2009 – the National Health Sector Strategic Plan 2010–2015. This was followed by the Basic Package of Essential Health Services in March 2010, which put in place a package of high-impact and cost-effective primary care services, with a sharp focus on the reduction of mortality rates, particularly among infants and pregnant women. But perhaps the most significant reform has been the Free Health Care Initiative (FHCI), launched in April 2010, which introduced the provision of free health care services for all children under five and for pregnant and lactating women.

<sup>14</sup> Trachoma was mapped in five northern districts considered to be at risk in 2008. Prevalence was found to be below levels of public-health significance (less than 5%), therefore preventive chemotherapy for this disease is not justified, according to WHO recommendations (Hodges et al., 2011a).

<sup>15</sup> Bombali has had the greatest reduction in LF, but it started from a much higher baseline of disease prevalence and intensity. Likewise, the highly endemic river basins are also keeping up with expected declines in prevalence and intensity.

<sup>16</sup> While these government facilities serve the vast majority of rural people, private for-profit, mission and NGO health clinics are still important health care providers in Sierra Leone, especially in urban areas (in 2010, 37% of them were in Western Area alone) (MoHS, 2009).

### Box 1: Peripheral health units (PHUs) in Sierra Leone's public health sector

**Maternal and child health posts (MCHPs)** at village level serve populations of 5,000 or less. They are staffed by maternal and child health aides (MCHAs), who provide basic care and supervise the activities of traditional birth attendants (TBAs).

**Community health posts (CHPs)** are situated in small towns and cover populations of between 5,000 and 10,000. CHPs are run by state-enrolled community health nurses and MCHAs. They have similar functions to those of the MCHPs, with added curative functions.

**Community health centres (CHCs)** are situated at chiefdom level/larger towns and cover populations ranging from 10,000 to 20,000. CHCs are run by community health officers (CHOs) and have more staff than CHPs. They provide the same types of services as the MCHPs, as well as the prevention and control of communicable diseases and rehabilitation. They also deal with referrals from lower-level facilities.

Various community actors play important roles in rebuilding the health sector and provide vital support for the PHUs through outreach to communities, including TBAs, community vaccinators and the NTD community drug distributors (CDDs).<sup>i</sup>

- i They also differ in terms of their historical role, the training received and their formal integration into the sector (e.g. TBAs have a long-standing role and are becoming increasingly integrated into health services) and their remuneration (the malaria programme pays its distributors but the NTD programme does not).

Source: MoHS (2009)

### Box 2: Onchocerciasis (oncho)

Oncho is transmitted by blackflies which breed in fast-flowing water and bite during the day. When they bite an uninfected person they pass on microfilaria, which become the larvae of worms that infect only humans. An infected person develops itchy nodules under the skin, where an adult worm can live up to 14 years, releasing more microfilaria and causing complications that can end in blindness. WHO guidelines say that oncho becomes an important public health problem when the prevalence of microfilaria in the skin exceeds 40% of the total population of a community. A single dose of ivermectin kills 99% of microfilaria, stopping the itching and swelling three to five days after taking the drug, after which people start feeling 'better' than they did before MDA. In infected individuals these symptoms are often aggravated immediately after taking the drug, causing complaints in the early rounds of MDA. The drug does not kill adult worms, but reduces their reproduction, gradually reducing transmission year after year. With continuous treatment, transmission can be stopped and the disease eliminated when the adult worms die.

Source: APOC, 2010

Between 2003 and 2012, 10 rounds of MDA were administered to treat oncho with ivermectin.<sup>19</sup> The levels of therapeutic coverage achieved by these programmes have topped 70% for most of this period, increasing from just 28% in 2004 and 55% in 2005. The expansion of geographical coverage has also been impressive, from uncertain levels in 2003-2004, to 64% in 2005 and to 100% since 2007 (MoHS, 2010; Koroma et al., 2013).

The increased coverage of MDA has slashed the prevalence of oncho, as shown by the results of a 2010 impact assessment (Figure 3, overleaf). Prevalence has been reduced in 12 districts, with the overall microfilaria load prevalence dropping by at least 50% in two-thirds of the villages sampled. The intensity of the infection has also decreased, as has the potential for transmission, as shown by a reduction in the skin microfilaria load of more than 50% in 11 of the 12 districts surveyed (Koroma et al., 2013; MoHS, 2010).

It has been estimated that it would take 15 years of MDA rounds to stop transmission of oncho in Sierra Leone. Given that the comprehensive oncho MDA programme only began in 2005, Sierra Leone can start to think of scaling down the programme by 2020.

## 2.3 Progress on the four NTDs

### Onchocerciasis (oncho)<sup>17</sup>

Investigation of oncho in Sierra Leone dates back to 1920, when the Alfred Lewis-Jones Laboratory of the Liverpool School of Tropical Medicine opened in Freetown.<sup>18</sup> The first efforts to map its prevalence were undertaken in 1974 and the NOCP, supported by WHO, was underway from the late 1980s until it was disrupted by the civil war in the mid-1990s. However, it was only after the most recent mapping of the disease in 2005 – which found oncho to be endemic in all districts except Bonthe Island and the Western Area – that a sustained, comprehensive and well-resourced prevention programme was put in place.

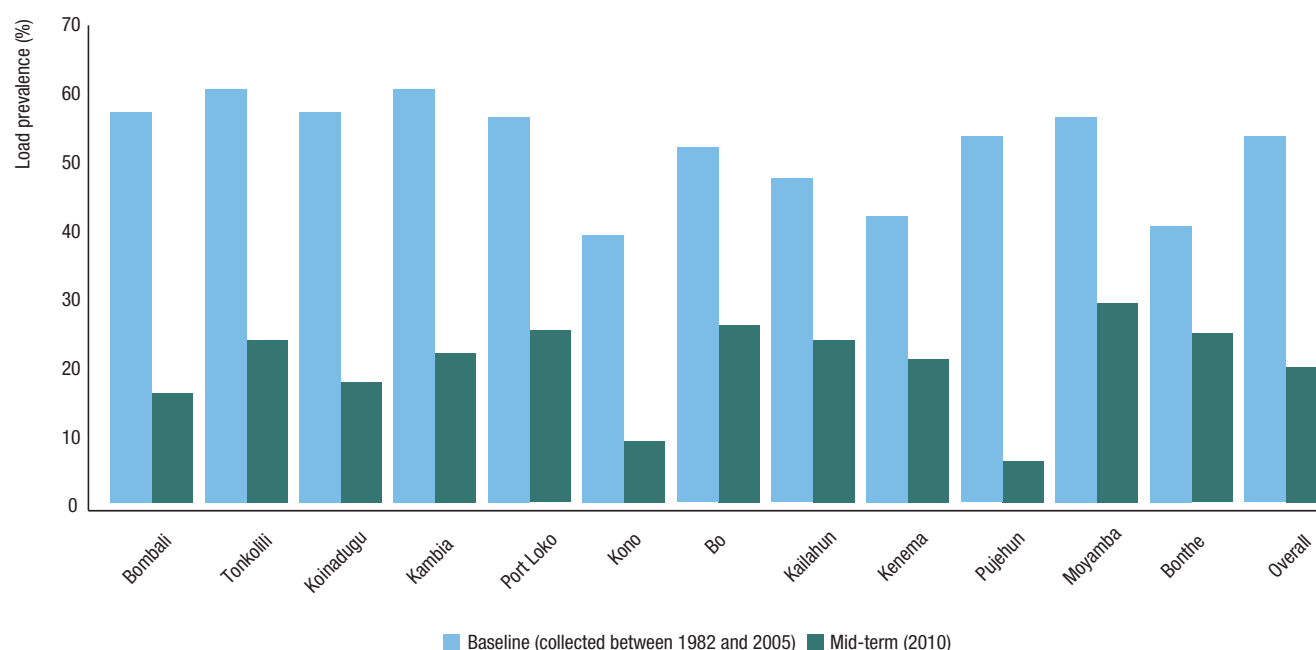
<sup>17</sup> Source: APOC (2010).

<sup>18</sup> The Alfred Lewis-Jones Laboratory, a field laboratory of the Liverpool School of Tropical Medicine, was opened at Tower Hill in Freetown in 1920 (key informant interview).

<sup>19</sup> The MDAs in 2003 and 2004 were administered by health staff and not CDDs and were not as well-resourced, monitored or strategic as those undertaken following the 2005 mapping; these rounds of MDA were therefore not as effective as those from 2005 onwards (key informant interview).



**Figure 3: Oncho microfilariae load prevalence at baseline and during mid-term review, by district**



Note: The mid-term survey was conducted in 39 villages in 12 oncho-endemic districts with the highest prevalence at baseline.

Source: MoHS (2010)

### Lymphatic filariasis (LF or elephantiasis)<sup>20</sup>

The first official mapping of the prevalence of LF across Sierra Leone was undertaken in 2005 using the immunochromatographic card test (ICT) method<sup>21</sup> (Koroma et al., 2012). The 2007-2008 microfilaria survey – the baseline for measuring programme impact – used the night blood smear examination method and found that LF was endemic in 10 out of 12 districts (Koroma et al., 2013). Two districts had moderate prevalence (5%–9.99%), eight had low levels of prevalence (< 5%) and two had reduced prevalence to the point at which LF was no longer endemic (< 1%).

An MDA for LF was integrated into the NTDP in 2007 by piloting six districts only and excluded the urban settings. It was later expanded to reach everyone in Sierra Leone over the age of five, adding albendazole to the ivermectin distribution. Since 2008, there have been six rounds of MDA in each of the six districts where the programme was piloted, plus five rounds in the remaining six districts. The MDA was scaled up to national level in 2010 to include Western Area,

with three rounds conducted in urban Western Area and four in rural Western Area to date.<sup>22</sup>

The impact assessment in 2011 found that four districts had reduced LF prevalence to zero and that only Bombali, which had the highest microfilaria prevalence at the baseline, was still endemic (Figure 4, overleaf). Overall microfilaria prevalence fell by 88.5% between 2007-2008 and 2011, while MDA therapeutic coverage rose from 70.1% in 2008 to 75.2% in 2010, with geographical coverage at 100% (Koroma et al., 2013).

The progress made so far suggests that it is possible to eliminate LF in Sierra Leone by 2020 (Koroma et al., 2013). The results of the 2011 impact assessment formed the basis for the August 2013 Pre-transmission Assessment Survey (PreTAS), which showed that eight out of 12 districts passed the PreTAS, demonstrating LF prevalence levels below 1%. These eight health districts were declared eligible for the Transmission Assessment Survey, while the four health districts that still showed more than 1% of positive cases will be treated with MDA for two more years, after which time the PreTAS will be repeated (END website).

20 Source: Adapted from WHO Fact sheet N°102 (updated March 2014).

21 ICT and night blood smear examinations are two different methods of detecting *Wuchereria bancrofti* (a human parasitic roundworm) microfilaria carriers.

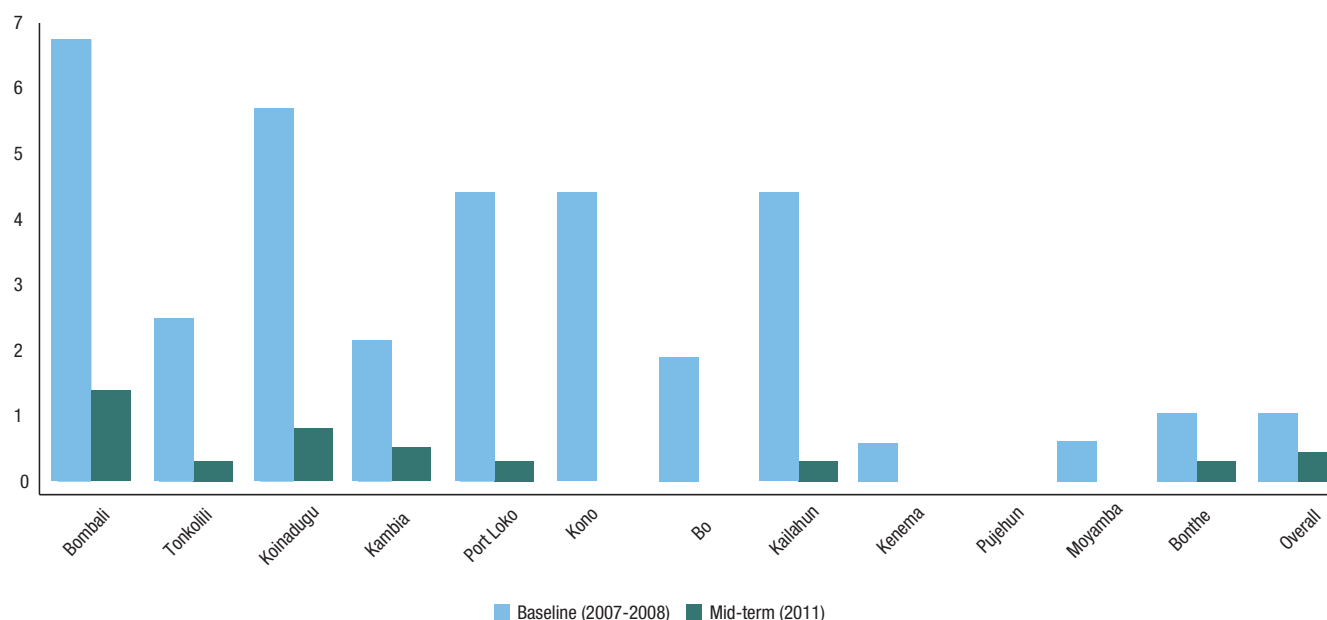
22 The mapping of LF with microfilaria test revealed an overall prevalence of 23.3% in Sierra Leone and 11.7% in Freetown, but no evidence of active/ongoing transmission of the disease was found in the capital (Professor Moses Bockarie, personal communication). In spite of this, based on an antigen positive rate of more than 1%, based upon ICT tests that found all 14 districts to be endemic and following the recommended WHO guidelines, the MoHS decided on an MDA campaign for the whole of Western Area, which meant treatment for an additional 1 million people. The decision to implement MDA in the Western Area was based upon the knowledge that there is large-scale migration of people in and out of the Western Area from other parts of Sierra Leone and failing to treat the Western Area would jeopardise control in the other districts. 'We found we treat many people during MDA-WA that are from the other districts and have been missed during MDAs there since 2008' (Mary Hodges, personal communication).

### Box 3: Lymphatic filariasis (LF or elephantiasis)

LF is transmitted by mosquitoes, which pass microscopic, thread-like nematodes worms (roundworms) into a person's skin. The larvae then migrate to the lymphatic vessels, where they develop as adult worms that live only in the human lymphatic system. Adult worms live six to eight years, producing millions of microfilaria that circulate in the blood, reaching their peak numbers at night, when mosquitoes bite. Infection usually occurs during childhood, but its painful and disfiguring manifestations emerge later in life. WHO recommends treating the entire at-risk population with an annual dose of two medicines: albendazole plus either ivermectin (in areas with oncho) or diethylcarbamazine citrate (where only LF is endemic). These clear microfilaria from the bloodstream, reducing the chances of transmission. With consistent treatment, the disease can be eventually eliminated – the cycle of infection is broken when the adult worms in the entire population die when prevalence is < 1%, when transmission by mosquitoes is no longer viable. Mosquito control can also be used to suppress transmission, with long-lasting insecticide-treated nets or indoor residual spraying helping to protect people in endemic regions.

*Source: Adapted from WHO Factsheet No. 102 (updated March 2014)*

**Figure 4: Lymphatic filariasis prevalence at baseline and during mid-term review, by district**



*Source: Koroma et al. (2013)*

### Schistosomiasis (SCH)<sup>23</sup>

Sierra Leone's first national survey on SCH took place in 2008. The disease was found to be moderately/highly endemic in seven districts, with high prevalence in five (more than 50%) and moderate prevalence in two (20%–50%).<sup>24</sup> These results supported the administration of praziquantel for school-age children and at-risk adults every year in high-risk communities in five districts, and

every two years in moderate-risk communities in one more district (Koroma et al., 2010).<sup>25</sup>

Preventive chemotherapy for SCH was mounted for the first time in June 2009, treating only school-going children in high-risk districts (including district cities) in the pilot round. The target population was expanded in 2010 to include rural adults and all school children in high-risk districts (Koroma et al., 2010). Four rounds were rolled across the six endemic districts and three rounds in one

<sup>23</sup> Source: Adapted from WHO Factsheet No. 115 (updated February 2014).

<sup>24</sup> For instance, unexpectedly high prevalence was found in MacDonald village, Waterloo, Western Area. This was initially attributed to the presence there of many internally displaced people as a result of the civil war. A camp for those displaced had accommodated many thousands of people nearby and many had settled in Western Area after the camp was disbanded (Koroma et al., 2010).

<sup>25</sup> The north-east part of the country was found to be more heavily affected. High-risk districts were Kono (range 63.8%–78.3%), Koinadugu (21.6%–82.1%), Kailahun (43.5%–52.6%), part of Kenema (6.1%–68.9%) and Tonkolili (0%–57.3%), with Bombali (2.1%–42.6%) showing moderate risk of SCH (Koroma et al., 2010).

#### Box 4: Schistosomiasis (SCH)

This chronic, parasitic disease is caused by blood flukes. People become infected by larval forms of the parasite that penetrate the skin when they come into contact with water that has been contaminated with eggs from the urine or faeces of people already infected. The eggs hatch and the larvae multiply inside particular freshwater snails. They then enter the water, surviving for about 48 hours. After penetrating human skin, they become adult worms that live in blood vessels, where the females lay their eggs. Some eggs pass from the body in faeces or urine; others are trapped in body tissues, causing an immune reaction and progressive damage to organs. There are two major forms of SCH – intestinal and urogenital.

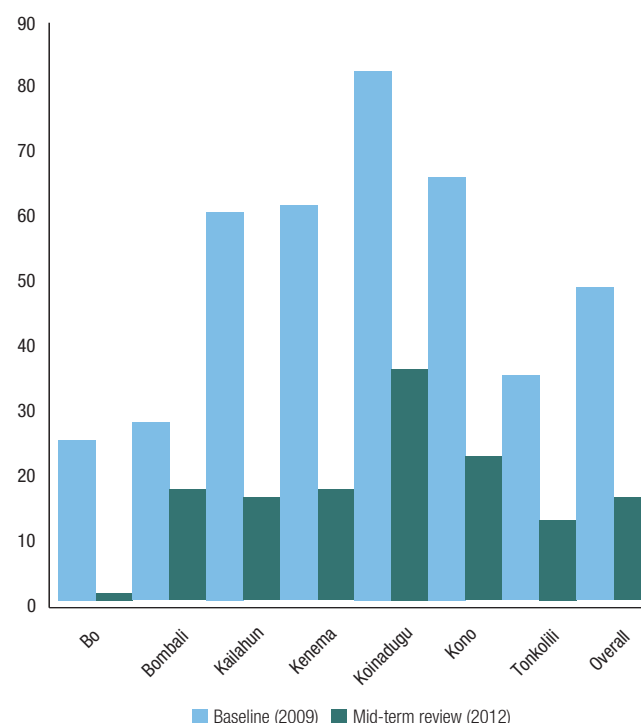
The WHO strategy aims to reduce SCH through periodic, targeted treatment with praziquantel. The frequency of treatment is determined by the prevalence of infection in school-age children. Periodic treatment of at-risk populations will cure mild symptoms and prevent infected people from developing severe, late-stage chronic disease. While re-infection may occur after treatment, the risk of severe disease is diminished and even reversed if treatment is initiated and repeated in childhood.

additional district. The number of people treated for SCH soared from 562,980 during the pilot MDA round in 2009 to 1,781,037 in 2011 (Sesay et al., 2014).

The mid-term survey to assess programme impact conducted in 26 sentinel sites after three rounds of MDA showed that only two sites remained highly endemic in 2012, compared with 12 in 2009 (Figure 5). It also found that prevalence fell by 67% between 2009 and 2012, and that the proportion of children carrying a heavy load of parasites fell from 8.8% to 1.2% over the same period (Sesay et al., 2014).

While targeted MDA needs to continue to achieve the national objective of SCH control, key informants for this case study believe that Sierra Leone has started to move from control to the interruption of SCH transmission, which will require a shift in focus from endemic areas to national coverage.

**Figure 5: Schistosomiasis prevalence at baseline and during mid-term review, by district**



*Note: The mid-term survey was conducted in 26 sentinel sites in 2012 (nine months after the third MDA round).*

*Source: Sesay et al. (2014)*

#### Soil-transmitted helminths (STH)<sup>26</sup>

Mapping for STH was conducted alongside mapping for SCH in 2008,<sup>27</sup> revealing widespread infections throughout the country. These results, coupled with prevalent anaemia, justified the administration of MDA-STH twice a year for school-age children (SAC) and pre-SAC which commenced in 2004 and 2006 respectively (Koroma et al., 2010).<sup>28</sup> Since 2004, MDA-STH has been scaling up on a subnational level implemented by either the World Food Programme or a local NGO (St Andrew's Clinics for Children), supported by Glasgow University, WHO Collaborating Centre for Ascariasis and Njala University (key informant interview). In 2009, MDA-STH for SAC was included in the programme for MDA-SCH by adding mebendazole to the praziquantel.<sup>29</sup> However, given that albendazole, used for the LF MDA is a broad spectrum anthelmintic and that ivermectin also has anti-STH

<sup>26</sup> Source: WHO webpage on STH.

<sup>27</sup> More detailed mapping and spatial predictions to guide integrated control were performed in 2009 (Hodges, et al., 2011c, 2012a)

<sup>28</sup> MDA-STH was justified and implemented annually in four highly endemic districts and in some chiefdoms in a further three districts. MDA-STH was justified and implemented biennially in the remaining chiefdoms of these districts.

<sup>29</sup> Albendazole and mebendazole are effective in the management of intestinal parasites, but albendazole tends to work better in cases where the organisms have formed cysts in muscles and organs. Patients can also tolerate therapy with albendazole better, which may be a consideration in some cases. The best treatment option for intestinal nematode infections can depend on the specific organisms involved, the patient's age and their medical history, all of which can influence the choice of medication (<http://www.wisegEEK.org/what-is-the-difference-between-albendazole-and-mebendazole.htm>).

### Box 5: Soil-transmitted helminths (STH)

STH are intestinal worms transmitted by eggs in human faeces, which, in turn, contaminate areas where sanitation is poor. The major STH that infect people include roundworm, whipworm and hookworms. Eggs are deposited on soil when infected people defecate in the open or if their faeces are used as fertiliser. People are infected with roundworm and whipworm when eggs are ingested, usually when they touch contaminated soil, when their hands are not properly washed or when they eat vegetables/fruits that are not properly cooked, washed or peeled and that are contaminated with eggs. Hookworm infection occurs when eggs in the soil release larvae that penetrate human skin when people walk barefoot.

WHO recommends the periodic administration of anthelmintics medicines to preschool and school-age children, women of reproductive age and adults who are particularly exposed (e.g. farmers and miners), backed by improved sanitation and health education. WHO also recommends annual treatment in areas where the STH prevalence rate is 20%–50%, and biannual treatment in areas with prevalence over 50%, to protect individuals from morbidity. A proper sanitation infrastructure would interrupt transmission of STH, but few endemic countries have the resources to sustain such infrastructure and the elimination of morbidity remains the most feasible strategy at present.

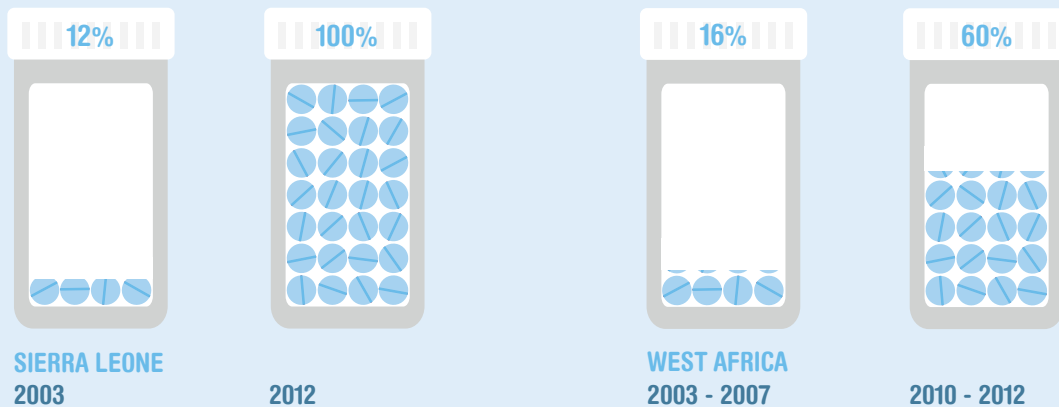
properties, the 2007 round for LF was also an additional round for MDA-STH. Four national/semi-national rounds have been conducted to date to treat STH in addition to and six months after the MDA-LF for maximum benefit and cost-efficiency. In addition, the biannual deworming of pre-SAC (12–59 months) has been integrated into Sierra Leone's Mother and Child Health Weeks since 2006 (Koroma et al., 2010). Coverage has not been validated as yet (a publication is in preparation), but according to NTDP staff it would be over 80% based upon coverage of the associated MDA for vitamin A supplementation that has been validated by repeated post-event coverage surveys since 2005 (key informant interview).

STH is on the verge of being controlled (prevalence in SAC <20%) in Sierra Leone, according to key informant interviews with NTDP staff. As one informant said: *'Most of the country was highly or moderately endemic and no district remains highly endemic any longer. There are some communities that are still meso-endemic but very few individuals are heavily infected. However, we don't expect to eliminate STH since we need changes in behaviour for this.'*

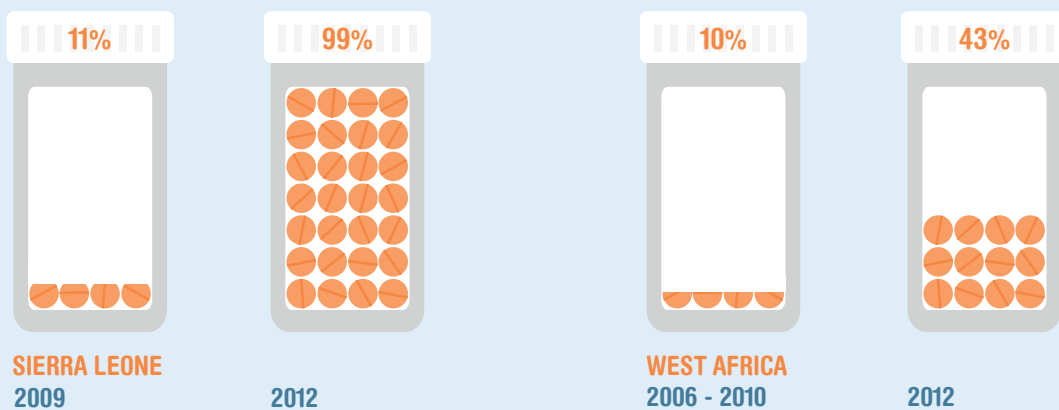
## SIERRA LEONE OUTPERFORMS NEIGHBOURS IN NATIONAL COVERAGE FOR TREATMENT OF NTDS

Source: WHO (n.d.)

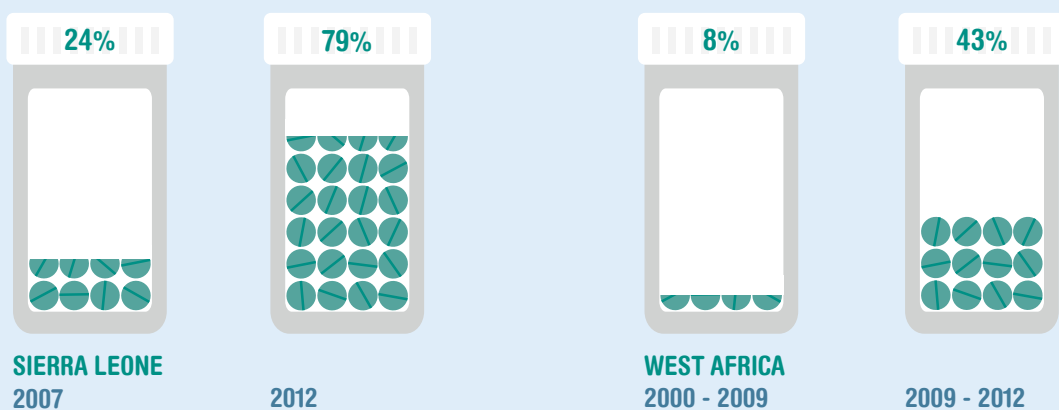
### INTESTINAL WORMS (SCHOOL-AGED CHILDREN)



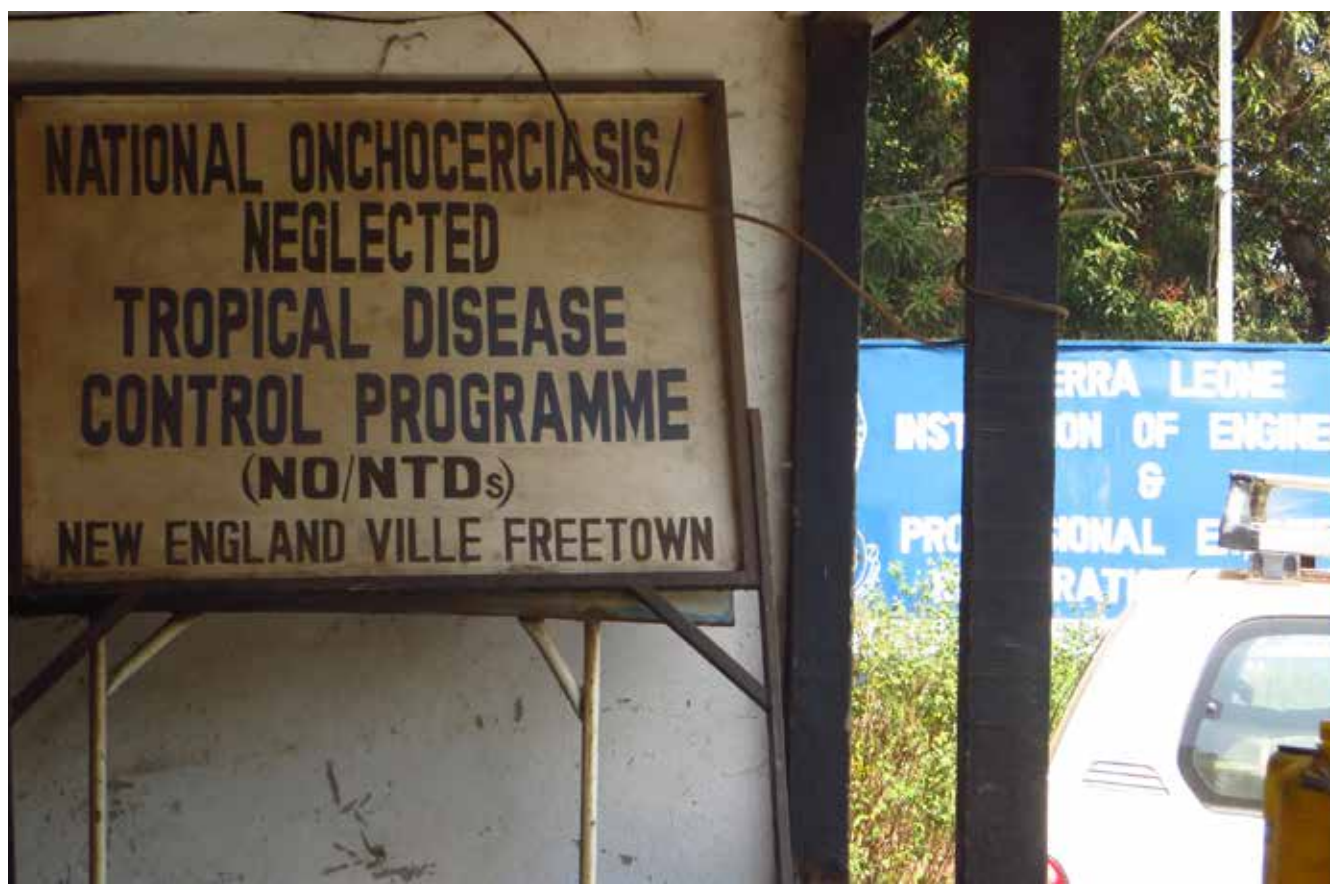
### SNAIL FEVER



### ELEPHANTIASIS



# 3. What are the factors driving change?



NTD Programme office in Freetown. Photo: © Romina Rodríguez Pose/Overseas Development Institute.

This section looks at five factors that have worked in combination to drive Sierra Leone's progress on the control of NTDs:

- A pioneering history of research and first worldwide attempts to control NTDs that paved the way for progress.
- An integrated and cost-effective approach to NTD control.
- Political will, external funds and strong partnerships.
- A bottom-up approach that creates community ownership.
- A broader context of progress, with delivery via a scaled-up health sector.

## 3.1 A pioneering history of research and first worldwide attempts to control NTDs that paved the way for progress

While not 'replicable' for other countries, early exploration and research have played a critical role in today's efforts to control NTDs in Sierra Leone. The world's first attempts to control malaria and LF vectors, for example, took place in the country as far back as 1899. These were followed by the establishment in 1920 of a field laboratory by the Liverpool School of Tropical Medicine (Bockarie et al., 1999) to find out the 'why, where and how' of NTDs. There

**'I was reluctant to take the medicine. We were suspicious, but the CDDs [community drug distributors] explained to us why it was important. After taking the medicine, my itching stopped and I could see much better' – Woman interviewed in Bo district**



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**‘It has been commended as one of the best programmes in the Ministry and is being used as best practice for other programmes [and] serves as a model for programmes pursuing full integration like Malaria and Tuberculosis control’ – Gondoe et al., 2012:10**

were other institutions also doing extensive operational research on NTDs, resulting in many publications: Njala University, which under Prof. Gbakima published many papers on LF and schisto/STH between the 1970s and 1990s; the MRC Centre for Virus Research, University of Glasgow, which also conducted pioneering research and capacity building; and the WHO Collaborating Centre for Ascariasis (later for STH), under Prof. DWT Crompton (from 1986 to 1997), who from 1999 onwards has continued researching the prevalence, intensity and impact on child/foetal growth of STH through a local NGO (founded by him in 1992), St Andrew’s Clinics for Children, in collaboration with the University of Sierra Leone and Njala University. Studies on SCH are thought to date back to 1924, on oncho to 1926 and on LF to 1932.<sup>30</sup> This pioneering history has helped to build the local knowledge and expertise that has enhanced the implementation of WHO strategies in more recent years.

The first control programme to tackle NTDs, the National Onchocerciasis Control Programme (NOCP), was established in 1988, following Sierra Leone’s inclusion in WHO’s Onchocerciasis Control Programme (OCP) in West Africa.<sup>31, 32</sup> This vertical programme, which used vector-control methods,<sup>33</sup> reduced the disease load significantly until 1994, but it was expensive and was finally interrupted in 1995 by the scaling up of the civil war. The distribution of drugs by community members<sup>34</sup> began in 1996, with support from SightSavers, but by 1998 the spiralling conflict also put an end to these activities (Koroma, 2011).

Immediately after the war the NOCP was re-established under the Special Intervention Zones programme.<sup>35, 36</sup> The first

nationwide annual MDA-oncho took place in 2003 and the second in 2004<sup>37</sup> (Hodges et al., 2011a; Koroma et al., n.d).

Control efforts for STH and SCH were not part of the NOCP, but MDA-STH activities for school-age children were carried out by the World Food Programme, the NGOs St Andrew’s Clinics for Children-Sierra Leone and World Vision-SL, and the Medical Research Centre from 2004; and for preschool were implemented by the Ministry of Health and Sanitation (MoHS) funded by UNICEF from 2006. St Andrew’s Clinics for Children-Sierra Leone provided a model for school-based MDA for STH from 2004 onwards and a model for pre-service training of community health officers and community health officers’ assistants at Njala University in 2005-2006.

## **3.2 An integrated and cost-effective approach to NTD control**

The integration of all targeted diseases under one programme manager has been crucial for Sierra Leone’s progress on NTDs. In 2006, the MoHS, in consultation with WHO, integrated the management of all targeted NTDs under one umbrella, NTDCP (later the NTDP), using the existing former NOCP as a platform.

A successful pilot in 2007 that incorporated LF treatment into the MDA campaigns in six districts, with support from the African Programme for Onchocerciasis Control (APOC), WHO and SightSavers,<sup>38</sup> convinced the Government to expand the programme to include SCH and STH (see Box 6, overleaf, for the key elements of the NTDP). With technical assistance from Helen Keller

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30 Since then, several studies have researched different aspects of these diseases throughout the country, covering entomology aspects as well as epidemiology.

31 Control efforts for oncho, however, date back to as early as 1957.

32 Launched in 1974/1975, the regional programme aimed to interrupt the transmission of oncho by controlling larval populations in their river breeding sites. The programme was extended in 1985 to include Sierra Leone, among other West African countries. The OCP was officially closed in December 2002 after virtually stopping transmission in all of the participating countries except Sierra Leone, where operations were undermined and eventually interrupted by the civil war.

33 At that time, vector control was the only method of control available; ivermectin started to be used at scale in 1989/1990.

34 The global strategy to combat oncho changed in 1987 with the emergence of the Mectizan Donation Programme supported by Merck & Co. Inc., shifting from exclusive vector control to add ivermectin treatment. A community strategy for its distribution known as Community-directed Treatment with Ivermectin (CTDI) was also developed.

35 The Special Intervention Zones programme was launched in December 2002, following the closure of the OCP, to sustain the momentum that had been gained through Ivermectin distribution and vector control (Yaméogo, 2008).

36 Results of epidemiological evaluations conducted after the war showed oncho had spread to other areas and prevalence had significantly increased in 12 districts (Koroma, 2011).

37 In 2004, Helen Keller International (HKI) started working in collaboration with the Government to provide technical assistance; and since then it has remained a key partner in the Government’s fight against NTDs.

38 In the global scene, the addition of albendazole to treat LF in the distribution of drugs gave way to what is known as CDTI+.



### Box 6: Key elements of the Neglected Tropical Diseases Programme (NTDP)

Under the NTDP, MDA and deworming campaigns are the main intervention to control NTDs, taking place once and twice each year, respectively. But their implementation requires activities throughout the year, such as training, sensitisation and advocacy at district level with local opinion leaders, to prepare the ground for successful MDA implementation.

**The implementation of MDA (for LF and oncho)** follows two distribution strategies: one for rural areas and the other for major urban settings. In rural areas, a house-to-house strategy is used: community drug distributors (CDDs) visit houses at least twice for each MDA round. On their first visit, CDDs update the household census, which determines the amount of drugs needed and is used to monitor MDA coverage. These visits also sensitise communities before the drug distribution. Once the campaign starts, CDDs have three months to distribute the drugs in their catchment areas, working in pairs (Hodges et al., 2012c).

In urban areas (mainly Western Area), the strategy is street-to-street and the public are expected to turn out when the community health workers (CHWs) are around. MDA campaigns are designed as a five-day campaign, where CHWs are paid to work alongside staff from PHUs. The drugs are distributed street-to-street, at PHUs and in key public spaces.

**Deworming (for SCH and STH):** the main targets for SCH and STH programming are children because they harbour the most parasites and are most affected by their infections (e.g. growth, cognitive development and eventually wage-earning capacity, life expectancy and GDP). Therefore, targeting SAC is the most cost-effective means of delivering MDA for SCH and STH. Drug distribution happens at schools twice each year for STH and once for SCH, with another round of drugs integrated into the package delivered during Mother and Child Health Weeks.

**Other key activities include:** planning and coordination at different levels; social mobilisation and the training of a range of stakeholders; information, education and communication activities; regular and end-process monitoring; and supervision and reporting.

**Regional coordination:** which involves annual meetings with Liberia, Guinea and Côte d'Ivoire to harmonise control strategies and synchronise MDA activities in the border areas. By 2012, seven annual meetings had been held to ensure coordination of planning across the countries' ministries of health and their partners. Synchronisation of treatment in border areas has been identified as a key element, given the continuous cross-border movements between all four countries. These countries, though at different stages in the fight against NTDs, are working towards synchronising the distribution of drugs to take place simultaneously in order to minimise the risk of missing cases. This regional coordination is key to the control of NTDs across this subregion, and makes the elimination of NTDs an achievable goal.

International (HKI), Sierra Leone secured funding from the United States Agency for International Development (USAID) in 2008. This gave the NTDCP the leverage it needed to scale up implementation (Koroma et al., 2010; Hodges et al., 2011a; Key informant interviews).

One of the most significant gains of integrating the distribution of drugs for LF into the MDA in 2007 was the knock-on impact on other endemic NTDs. For instance, because LF is endemic in all 14 districts, rolling-out the MDA for LF allowed the expansion of oncho treatment to include hypo-endemic areas, rather than including

only hyper-endemic areas,<sup>39</sup> making the goal of oncho elimination a real possibility. In addition, the drugs that treat LF are also effective against STH, so an extra round of STH treatment was a collateral benefit resulting from the integration of drugs for LF into the MDA.<sup>40</sup>

The cost-effectiveness of such integrated NTD programmes has been highlighted in studies suggesting that they can cost as little as \$0.40–\$0.79 per person per year in sub-Saharan Africa, while generating an economic return of 15%–30% (Hotez et al., 2007; Brady et al., 2006; Molyneux et al., 2005; Lammie et al., 2006). There has

**‘When they brought the other diseases to the programme, then it leveraged’ – Government official**

<sup>39</sup> Hyper-endemic refer to those areas where microfilariasis prevalence is greater than 40%, whereas meso-endemic ones are those where microfilariasis prevalence stands between 20% and 40% as measured by nodule prevalence. A nodule prevalence below 20% was regarded as hypo-endemic and not of sufficient public health significance.

<sup>40</sup> LF elimination involves the distribution of ivermectin and albendazole to ≥80% of the eligible at-risk population in endemic areas annually for at least five years. Therefore, the additional benefits are that people in oncho hypo-endemic areas (<20% microfilariasis prevalence) receive ivermectin. Second, eligible persons under five years of age receive ivermectin and albendazole annually to treat STHs.

been limited specific analysis of the cost-effectiveness of Sierra Leone's NTDP, but the five-day LF MDA campaign targeting Western Area in 2010 was reported to have cost just \$0.12 per person treated, excluding standing costs for the NTDP and local government officials involved and the cost of the drugs (Hodges et al., 2011b).

As a result of geographic overlaps in the target areas, a common target population and a common technical approach, the NTDP has enhanced its cost-effectiveness by:

- treating four NTDs at the same time using a combination of three or four drugs
- leveraging drug donations from pharmaceutical companies, and
- achieving economies of scale by tapping into existing national distribution systems.

This has been achieved by embedding the NTDP into national structures. This is a vertical programme that is fully embedded within the existing structures of the MoHS alongside other core health programmes (such as the National School and Adolescent Health Programme and the National Malaria Control Programme).

At the national level, the programme's Core Technical Team<sup>41</sup> works with key partners to design the broad strategies and provide training and guidance. At district level, the programme is implemented via the primary health care structure for oncho, LF, STH and SCH and via the education system structure for and the second round of STH.

Within the health system structure, each of the country's 14 health districts (including rural and urban Western Areas) is staffed by an NTD focal person, who runs the programme at district level, supervising the 'in-charges' of the country's 1,169 PHUs (as of 2011). In turn, the PHUs' health workers oversee an estimated 29,000 community drug distributors (CDDs). CDDs distribute the drugs during MDA campaigns, covering more than 14,400 villages with populations of between 100 and 500 people (HKI and MoHS, 2011).

Deworming activities in schools are carried out in collaboration with the National School and Adolescent Health Programme at the MoHS and implemented through the Ministry of Education, Science and Technology (MEST). The vertical chain of command runs through deputy directors of education, chiefdom supervisors and head teachers, with teachers spreading information to

community-teacher associations, children in the classroom to children and, health workers administering the drugs.<sup>42</sup> This is done with technical support from the NTDP from the MoHS, the NTD focal points within DHMTs, and Helen Keller International (HKI).

As shown in Figure 6, most NTDP activities take full advantage of government structures. The figure illustrates the interaction of government bodies with the full range of stakeholders involved in the programme, showing how planning, training, reporting channels, monitoring and evaluation, multi-layered social mobilisation and advocacy activities work within those structures. A cascade model of training backed by diligent monitoring, supervision and reporting is used:

- **Cascade training:**<sup>43</sup> Key partners train NTDP management on the specifics of the MDA. They, in turn, train DHMT staff, who train PHU staff, who then train the CDDs/CHWs. The same cascade model is used for the educational branch of implementation, with HKI, NSAHP and NTDP staff training District Directors of Education and school health focal persons. These focal points then train chiefdom supervisors, who train head teachers who, in turn, train teachers participating in school deworming. Training also goes far beyond those most directly concerned with NTD control to include all DHMT focal points, maternal and child health aides (MCHA) coordinators, principals of nursing schools, people from other key institutions and, in recent years, private health care providers. All of these (except the latter group) attended training courses, including the 'training of trainers' workshops.
- **Monitoring, supervision and reporting:** Following the same cascade model, monitoring and supervision are conducted regularly to ensure compliance with standards and appropriate reporting of all NTDP activities. These activities are carried out at all levels by NTDP staff, with DHMTs and PHU staff making frequent visits to CDDs to offer encouragement and support. Monitoring and supervision activities intensify during the drug distribution period, when staff from the NTDP and HKI work with DHMTs to support the process, backed by independent monitors who carry out in-process and end-process phases.<sup>44</sup>

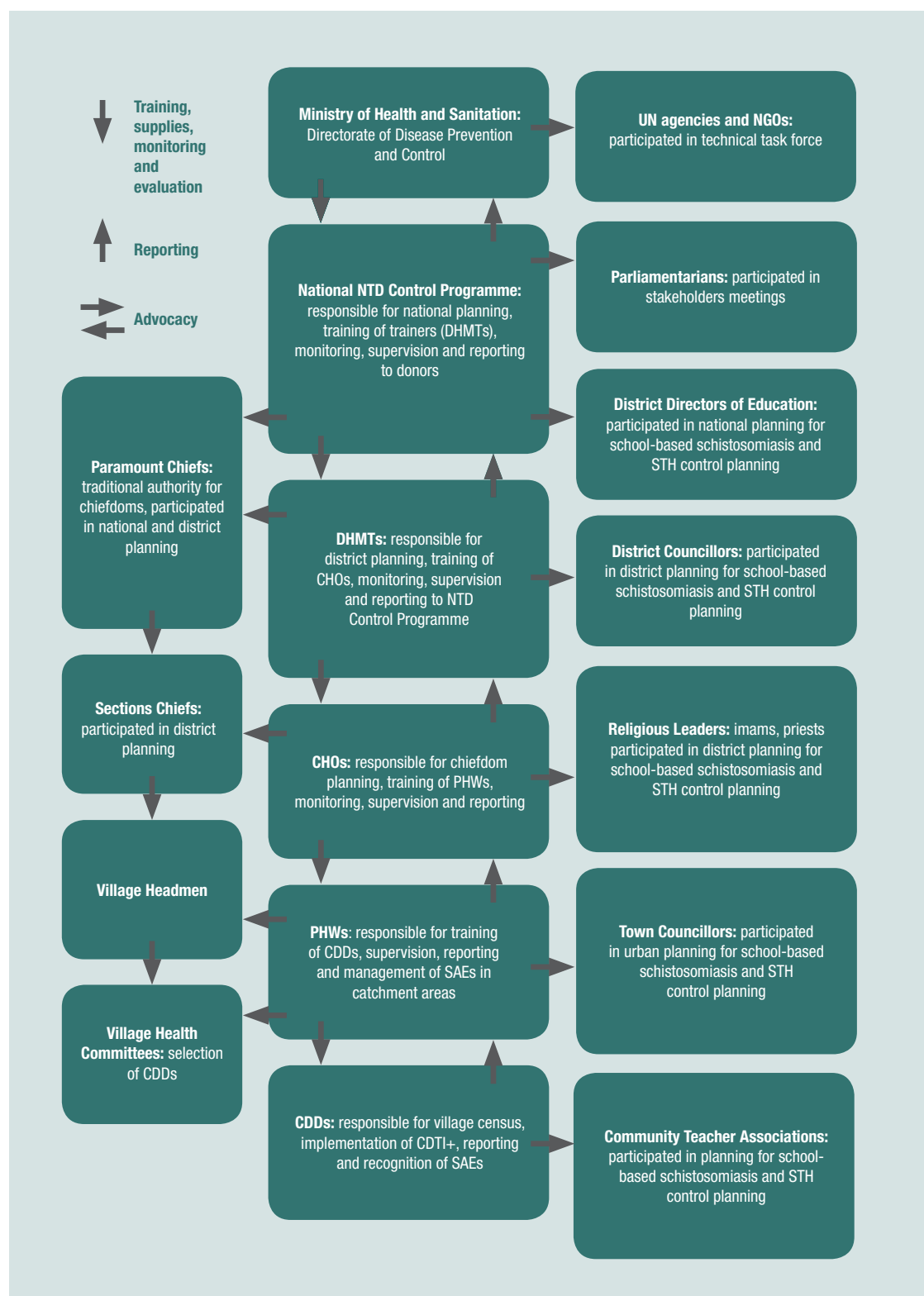
41 Comprising the programme manager, a monitoring and evaluation officer, a national supervisor, an administrative and finance officer and three NTD laboratory technicians.

42 It was intended that teachers administer the drugs; however, findings during the fieldwork suggested teachers do not always play this role.

43 Training components include mapping; budgeting; planning; stock control; development, production and dissemination of information, education and communication materials; monitoring; evaluation; and reporting. The training of CDDs focuses on NTD recognition, census-taking, record-keeping and recognition of and response to serious adverse side-effects (Hodges et al., 2011a). According to accounts collected in the field, refresher training takes place two or three times a year.

44 The in-process monitoring aims to ascertain whether people have received the drugs, focuses on challenging areas (such as the fringes of catchment areas), and takes place during the campaign. Monitors carry out their work and report their results on a daily basis to assist with the rapid response. End-process monitoring is carried out 12 weeks after the drug distribution is completed. This phase of the monitoring allows programme management to test and verify the accuracy of the reported MDA coverage figures.

**Figure 6: NTDP organisational chart**



Source: Hodges et al. (2011a)

Key notes: NGOs: non-governmental organisations; DHMTs: District Health Management Teams; STH: soil-transmitted helminths; CHOs: community health officers/In-charges; PHWs: primary health workers; CDDs: community drug distributors; SAEs: severe adverse effects; CDTI+: community-directed treatment with ivermectin plus albendazole.

### Box 7: The positive ‘spillover’ impacts of the NTDP

**Health system strengthening:** The NTDP training component has had a particularly marked impact on the health system, with the continued training of MoHS staff helping to strengthen its human resource capacity. NTD training modules boost knowledge of data management, record keeping, advocacy and the administration of free drugs (including their proper storage) as well as monitoring and supervision.

**Use of CDDs for other activities:** CDDs form a vast cadre of trained people who know how to read and write, who already know how to deliver and report on health interventions, who know their catchment areas and who are well-known within their communities. As a result, they are usually involved in activities run at DHMT level that go beyond NTD control. Managers of other health programmes have stressed the advantage of using CDDs for other health interventions and activities (e.g. polio immunisation, vitamin A supplementation, etc.). In addition, they can step in to help in the event of an epidemic or other specific intervention (for example, they put blue flags on their houses so people know where to go to get help and treatment if they need it).

**Census:** CDDs carry out a census before each round of MDA. This census has proven to be very accurate as it includes (as well as full names) information about the age, gender and number of people living in each household and other crucial demographic data. For districts with high levels of population movement (such as Kono and Bombali, which experience employment-seeking migration of people into the mining sector), this census is particularly important, as it provides yearly up-to-date data on the population. According to interviews with government officials for this case study, they use this CDD-generated census information as a platform for many other programmes.

The way in which NTDP activities have been integrated into government structures has clear advantages.

- The programme is implemented by DHMT, PHU and education staff (all of whom are already on the government payroll) and by CDDs (who are volunteers), so there are no additional personnel costs for the programme. This helps to make the most efficient use of the relatively limited resources allocated to NTD control, enhancing the cost-efficiency of the NTDP.
- Working through existing government structures helps to ensure long-term programme sustainability, not only in terms of implementation, but also because planning and budgeting take place within the national system of funding and accountability. This ‘know-how’ is embedded in the system, maximising the chances of maintaining activities if external funding were not available.
- It has fostered the commitment and ownership of government staff. From the NTDP management and

HKI personnel to CDDs, the interviews carried out for this case study revealed that the commitment of staff to the NTDP is work has been crucial for its success. This commitment sometimes goes far beyond the job descriptions, with reports that DHMT staff and in-charges have dipped into their own pockets to keep activities running. This commitment seems to stem from the way in which the NTDP has passed ownership of NTD control to each level of the health delivery system.

In addition, the embedding of the NTDP within public structures has had positive ‘spillover’ impacts on the health sector as a whole, helping to build capacity and strengthen the health system in general and gathering key information to enhance planning in general (Box 7).

**‘Because CDDs are doing yearly headcounts, the information they provide is more reliable than the actual stats based on projected population from the 2004 National Census’ – Government key informant**

**Table 1: Government spending on health**

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total government spending on health from domestic resources (billion leones)	29.3	42.3	48	26.2	47.7	75	128.9	164.5	174.2
Government spending on health as % of total government spending	5.3%	6.0%	6.0%	3.6%	5.8%	7.5%	8.7%	9.6%	7.9%

Sources: Ensor *et al.* (2008) for total government spend on health and as % of total government spend for 2004–2007; MFED (2007, 2009a, 2009b, 2011) for spending for 2008–2012.

### 3.3 Political will, external funds and strong partnerships<sup>45</sup>

Three ingredients have been a constant in the story of NTDs in Sierra Leone: the political will to build a dedicated programme to fight the burden of these diseases (even during the first years of the civil conflict); the continuous presence of key partners, who have provided the resources that have allowed NTD activities to become a reality; and strong partnerships which, through effective planning and coordination, have not only allowed for the local knowledge-base to be built, but have also stimulated and enhanced national ownership of the NTD programme more broadly.

#### Political commitment to health and willingness to fight NTDs

Government spending on health has increased year on year (apart from a fall in 2007), from Le29.3 billion in 2004 (around \$11 million) to Le174.2 billion in 2012 (around \$41 million). This increase has been driven in part by increases in total government revenue, but also by an increasing share of government spending that is focused on health (Table 1), a trend that has been stimulated by the introduction of the FHCI.

Given Sierra Leone's developmental and health sector challenges, the increase in government health spending has focused on rebuilding the health infrastructure, addressing the sector's weak human and financial resourcing and its poor provision of services to rural areas. The ultimate aim is to

reduce mortality rates – especially among children and pregnant women, which are still among the worst in the world – and the disease burden of communicable diseases (MoHS, 2009).

While NTDs are among the communicable diseases that afflict the country's people, diseases with a higher impact on mortality rather than morbidity, such as malaria, still receive the most attention. However, and despite not being a top priority – maternal and child health being in the spotlight of government health priorities – the Government has shown its commitment to tackling NTDs, without which the NTDP would not exist. Ever since the very early research activities in Sierra Leone, its Governments have been receptive to, and taken up, external initiatives to tackle NTDs, and have built partnerships with those development partners working on this specific field of health since the 1920s.

In the past decade, taking advantage of the growing momentum on NTDs, the MoHS has been proactive in securing the necessary funds to set up the NTDP. It has also put in place the necessary policy framework through two five-year national strategic plans (NTD Master Plans 2006–2011 and 2011–2015), which provide the basis for annual work plans, and for the establishment of a National NTD Task Force that is the central planning, coordinating and decision-making forum for NTD activities in Sierra Leone.<sup>46</sup>

However, competing government priorities (e.g. mortality rates for mothers and children under the age of

<sup>45</sup> Key informants identified a renewed high-level political commitment to health more broadly, with the current President leading and attending health stakeholder meetings. Interviews with the donor community attributed to this renewed commitment the fact that development partners, who were not necessarily working together before, had to start doing so: 'This was the third time that Sierra Leone wanted to establish a FHCI (1997 to 2007), I think that what was different this time was political will combined with cash.' (Key informant interview with development partner officer)

<sup>46</sup> The NTD National Task Force comprises the director of disease prevention and control in MoHS, the NTD programme manager, WHO's NTD advisor and the country directors of HKI and SightSavers.

# THE KEY ACTORS AND INITIATIVES SUPPORTING SIERRA LEONE'S FIGHT AGAINST NTDS

## GLOBAL AGREEMENTS AND INITIATIVES

Private-public partnerships with pharmaceutical companies: global pledge to donate drugs worth \$1billion - the largest drug donation in history

Guidelines and recommendations for tackling NTDS developed by WHO (2008-2015)

2012 London Declaration on NTDS: increased profile of NTDS and political commitment to eliminate 10 of the 17 NTDS by 2020



## DEVELOPMENT AGENCIES IN SIERRA LEONE

USAID, Helen Keller International WHO-APOC and Sightsavers provided technical assistance and funds

**\$27** million in drug donations  
2008 to 2011

**\$1** million per year for  
operational activities



## SIERRA LEONE GOVERNMENT

Pioneer in NTD research since 1920s

Provided staff and institutional structures  
(creating an NTD focal point in every district  
and a National NTD Task Force Group)

Launched two five-year National Strategic  
plans on NTDS (2006-2011 and 2011-2015)



## COLLABORATION BETWEEN GOVERNMENT AND DEVELOPMENT AGENCIES LEADING TO...

Evidence-based planning  
Adaptation of international guidelines to local context  
Gradual transfer of knowledge leading to government ownership



## CREATION OF BOTTOM-UP PROGRAMME TO TACKLE NTDS

Planning and advocacy meetings with community members  
Social mobilisation with community leaders  
Creation of 29,000 community drug distributors



## REDUCE BARRIERS IN TREATMENT UPTAKE

Community ownership  
Local and national commitment  
Self-worth and pride among  
community drug distributors



Sources: Global Network for Neglected Tropical Diseases (2014); IFPMA (2014); END (2008 - 2011)



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## **‘Many initiatives come from development partners but the government takes over quite a lot of activities, avoiding becoming donor-dependent. Even if at the beginning it was donor-driven, ideas fell in a fertile ground’ – Government key informant interview**

five) and limited resources mean that the NTDP itself is not yet mirrored in domestic budget allocations. Current government funding for the NTDP is minimal, but the programme itself relies on existing government structures, staff who are already on the payroll and volunteers. The costs consist mainly of salaries for the central and local government staff implementing the programme,<sup>47</sup> which amounted to \$167,483 in 2011<sup>48</sup> (END, 2011). Annual non-salary expenses for these activities are even lower (typically \$30,000 to \$40,000 for the period 2009–2012) and are either not disbursed (as in 2009 and 2010) or disbursed at a very low rate (31% in 2011 and 60% in 2012) (MFED, 2009b, 2010, 2011b, 2012b).<sup>49</sup>

### **External funding: major support for health, modest but targeted support on NTDs**

External donors have supported Sierra Leone’s public health sector for decades and were, by the early 1990s, funding 90% of its development budget, including investment in health infrastructure (Harvard, 1995). Since the end of the civil war in 2002, donors have helped to rebuild and resource the public health sector, especially in the immediate post-war years. In 2004, external donors funded 83.2% of public health-sector spending, a figure that fell to 68.9% in 2006 and rose again to 78.1% in 2007 (Ensor et al., 2008) as government disbursements to the sector fluctuated ahead of the August 2007 elections. By 2010, this figure had settled at an estimated 73%, with donor disbursements for the FHCI helping to keep it high.<sup>50</sup>

When it comes to NTDs, the donor resource story is one of relatively modest (in comparison with other sectors) but

strategically focused contributions. Nonetheless, donors still provide the majority of finance for NTD control in Sierra Leone, and have done so since the establishment of the NOCP back in the late 1980s.

Although it was not possible to acquire accurate data on the evolution of donor contributions over the years, reports from the field confirmed that funds had grown markedly with the incorporation of Sierra Leone into USAID’s NTD Programme, with the latter and APOC becoming the main donors to the NTDP.<sup>51</sup> According to the NTDP, since 2006 the bulk of the funds have come from USAID through HKI to cover all activities to support the NTDP and some to support the NSAHP (such as: mapping; mid-term impact assessments; advocacy; social mobilisation; information, education and communication materials; and in- and end-process monitoring). Funds from APOC are earmarked mainly for oncho and LF. Funding for deworming activities came from the World Food Programme (WFP) in 2010 and the World Bank Fast Track Initiative in 2011 and 2012, with the drugs donated by Deworming the World and World Vision via HKI. Table 2 outlines the main donors and the type of resourcing they provide.<sup>52</sup>

In-kind funding is provided by the private sector through private–public partnerships established at global level with key pharmaceutical companies. In Sierra Leone, based on the standard pricing of these drugs reported by the NTDP, these donations are equivalent to around \$26.4 million in the case of Merck & Co. Inc and \$420,000 in the case of GlaxoSmithKline (GSK) (Table 3, overleaf). Without these donations the treatment of NTDs would not be possible for resource-constrained countries such as Sierra Leone.

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47 Salaries are paid directly into the staff accounts and represent the largest element of the Government’s financial support to the NTDP.

48 \$120,672 for the central level and \$46,811 for the district level.

49 According to a financial gap analysis in 2011. It is also important to recognise that the Government is financing the treatment of some NTD-related curative services. However, morbidity control is not included in the Basic Packages of Essential Health Services and only two of its components relate to NTDs: eyecare provision and environmental health interventions (hygiene promotion and water and sanitation interventions).

50 The Global Fund is currently the largest external financier of health in Sierra Leone; its funding is predominantly delivered outside of government; however, in 2010, about 20% of funding was provided as support to the Government’s efforts to increase salaries for health workers (Global Fund, 2013). The UK Department for International Development (DFID) is currently the second largest external financier of health in Sierra Leone; its funding is currently focused on supporting the FHCI, for which it provided 29% of total funding in 2010; this funding is currently focused on drug purchases and supporting the recent scale-up in health worker recruitment and salaries, delivered through budget support to the Government (MoHS, 2012b). The GAVI Alliance provided \$3 million of funding to support immunisation in 2011, an area that was also supported by the WHO (\$2.6 million in 2011) and the UN Children’s Fund (UNICEF) (\$1.9 million) (GAVI, 2012). The African Development Bank (AfDB) provided 5% of the FHCI’s funding in 2010, the World Bank provided 5%, the UN Population Fund (UNFPA) 4% and UNICEF 3% all important contributions to the FHCI (MoHS, 2012b).

51 Both are vertical programmes that provide earmarked funding.

52 Among those development agencies providing resourcing, a number require specific emphasis: SightSavers and the African Programme for Onchocerciasis Control for pioneering work on NTDs; WHO, given its role in providing the technical guidance to control activities; and the significant financial resources from USAID (through Helen Keller International), which have helped to scale up MDA programmes dramatically. In recent years, organisations supporting school deworming programmes have also become more prominent.



**Table 2: Donors supporting the NTDP and deworming activities**

Organisation	Type of support
USAID, through HKI	Manages USAID's NTD Programme in Sierra Leone – the largest direct source of financial resources for work on NTDs HKI receives approximately \$800,000 annually, which is used to resource the NTDP, provide technical support and carry out monitoring (key informant interview)
World Bank Fast Track Initiative	Provided \$160,000 and \$250,000 for school deworming in 2011/12 and 2012/13 respectively (END, 2013)
WHO (including APOC)	APOC provides financial resources to support MDA – generally \$100,000-\$150,000 annually (END, 2010, 2013) WHO is the lead authority on programme standards and reporting and provides technical support; it also supports regional cooperation (\$24,000 grant in 2012/13) (END, 2013)
SightSavers	Provides financial support to MDA activities – generally \$10,000–\$20,000 annually Provides treatment to oncho sufferers within government facilities (END, 2010, 2013)
DFID	Supports research collaborations between the Liverpool School of Tropical Medicine and local medical research on NTDs; supports the Mano River Union NTD meeting
Deworming the World, Feed the Children, UNICEF and World Vision	Provide drugs for deworming programmes; some deliver programmes themselves (END, 2013)
Canadian International Development Agency (now known as DFATD)	Supports the pre-SAC deworming through a different channel to the NTDP
Medical Research Council	Provided drugs for deworming once in 2009
St. Andrew's Clinics for Children-Sierra Leone	Supported the early stages of the programme (Glasgow University) and early MDA capacity building, plus the provision of drugs

Source: HKI (2014) (personal correspondence)

**Table 3: Drugs received from donors and value, April 2008 to September 2011**

Donor	Drug	Number of drugs received April 2008-September 2011	Value (\$)
Merck & Co. Inc	Ivermectin	17,606,000 for MDA-Oncho and LF	26,409,000
GSK	Albendazole	8,369,800 for MDA-LF (and STH)	418,490
Deworm the World-Feed the Children,	MBD	2,000,000 for MDA-STH-SAC	N/A
World Vision	ALB	1,000,000 for MDA-STH-SAC	N/A
DFATD-UNICEF	ALB/MBD	4,000,000 for MDA-STH-pre-SAC	N/A
STACC-SL	ALB	100,000 for MDA-SAC and LF in the Western Area	N/A
MRC	MBD	600,000 for MDA-SAC	N/A

Source: END (2008, 2009, 2010, 2011), HKI (2014) (personal correspondence).

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## ‘Involving the community in the process is making all the difference’ – Key informant interview with donor representative

### Strong partnerships with NGOs leading to national ownership

Collaboration between the NTDP, which provides local expertise, and development partners, who provide technical assistance, has boosted the programme’s performance, while at the same time building capacity within the country, leading in turn to a gradual transfer of ownership.

While the MoHS has taken the leading role and is responsible for the NTDP, its work would have been impossible without a range of partners that have provided funding and, more importantly, technical assistance.<sup>53</sup> This has characterised the Government’s partnership with NGOs, and particularly with Helen Keller International. HKI has been instrumental in providing technical assistance to scale up the early NOCP to become the NTDP, in advancing the NTD agenda, links with national and international universities and drug donations and in advocacy at all levels, including many publications and presentations in international and national meetings.

Much of the success of the programme relates to the way in which the NTDP and HKI work together. While HKI contributes its experience in tackling NTDs by developing, piloting and testing new community models, building on the St Andrew’s Clinics for Children-Sierra Leone connection with Njala and Glasgow universities,<sup>54</sup> the MoHS, through the NTDP, contributes its experience in fighting NTDs and its essential local knowledge plus human resources and infrastructure. The partners sit together to develop every aspect of the strategy applied by the programme.<sup>55</sup> It is important to note that the roles and responsibilities are clear, with MoHS firmly in the lead<sup>56</sup> and HKI remaining accountable to the ministry, and

the donors, promoting the Government’s ownership and leadership of the programme.

While the international community may provide guidelines and finance, the way in which the NTDP works seems to have achieved a successful transfer of ownership over time. According to key informants, the latter has been facilitated by the way in which the NTDP and HKI work together, sitting side-by-side as true partners and using a learning-by-doing approach, which gradually built the know-how within the country.

The NTDP’s emphasis on planning has been a major driver of its success. Planning is evidence-based, and adapts and improves elements of the campaign year after year.

This has been crucial, particularly for four elements of progress:

- **The gradual integration of all targeted diseases under one structure.** Before nationwide scaling-up, MDA and deworming campaigns for each NTD were piloted at a scale that would allow assessment of the delivery capacity of the system. This made it possible to identify obstacles or bottlenecks and develop possible solutions.<sup>57</sup>
- **The decision to legitimise the use of community members as distributors.** This followed the analysis of the results of the first two MDA rounds for oncho, which showed poor coverage (reaching 35% in 2003 and 28% in 2004). The low coverage was attributed to the use of PHU staff to distribute drugs rather than CDDs, after which the MoHS and its partners made administrative changes in the NOCP to reorganise the distribution (MoHS, 2006).

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## ‘With lots of sensitisation and advocacy, the message of communities being responsible for their own health spreads well in communities’ – Key informant interview with donor community

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53 Partners include SightSavers International (later on transformed into SightSavers Sierra Leone), HKI, World Vision Sierra Leone, the National Eye Care Programme, APOC-SIZ, the World Bank, WHO and UNICEF, among others (MoHS, 2006).

54 Working in 22 countries around the world to eradicate preventable blindness and ensure children and adults no longer suffer the debilitating effects of poor nutrition, HKI has vast experience in developing, piloting and testing new community models.

55 The practice of ‘working together’ as partners spreads across all administrative levels, with HKI liaising with the national NTD Task Force (NTDTF) members, the NTDP manager and his team, 13 DHMTs, the 13 district-level NTD focal points and other NTD partners at all stages of programme activities.

56 A memorandum of understanding with the MoHS establishes the roles and responsibilities of the Government of Sierra Leone, including ownership and commitment to the NTDP, as well as HKI’s supportive role.

57 For example, in peri-urban areas, the non-rural population is highly mobile and transient, so the number of targeted people between census (pre-MDA) and implementation differs. Importantly, however, more people than expected qualify to get the drugs. Therefore, the programme learnt to ask, on occasion, for up to three times more drug treatments than foreseen in the initial census.

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## 'I was sick with worms in the past and then I took the drugs and they relieved me, so I want to pass the message and contribute' – Interview with community drug distributor

- **The development of a different strategy for MDA campaign in urban settings.** Following disappointing results in the first MDA for LF in Western Area (2009), it was found that people were not willing to volunteer to distribute NTD drugs in urban settings. The NTDP and partners rethought the strategy and developed the rapid campaign approach, which proved to be more effective for an urban context.
- **The incorporation of independent in-process and end-process monitoring in MDA campaigns.** This addressed the need to respond to gaps in distribution in 'real time', allowing DHMTs to identify gaps in the distribution and fill them while the activity is ongoing. End-process monitoring allows programme management to verify the accuracy of the reported MDA coverage figures and to recommend ways to improve coverage in the next round.

### 3.4 A bottom-up approach that creates local ownership

#### Involvement of all stakeholders at all stages of MDA campaigns

The NTDP has ensured 'buy in' from a wide range of key stakeholders, including communities themselves. The involvement of these stakeholders in most NTDP activities has been vital for the successful implementation of MDA campaigns. Stakeholders, including decision-makers at the MoHS, parliamentarians, UN agencies, medical professionals, researchers, NGOs, mayors, paramount chiefs, religious leaders and community groups, are all encouraged to take part in MDA campaigns, from the planning stages to the monitoring of drug distribution (i.e. local councillors and traditional leaders are asked to intervene by CDDs or DHMT staff to convince those who refuse to take the drugs).

This bottom-up approach has included advocacy meetings that provide the space for discussion and engage key stakeholders so that they will sensitise their own communities on NTDs. For example, it has been reported

that both Christian and Muslim leaders talk about NTDs after mass or prayer meetings. Even traditional healers have been reached, and some have collaborated by referring people at risk of NTDs to the health system.

The involvement of a range of stakeholders has supported sensitisation, which has increased knowledge of NTDs and clarified the myths surrounding them and raised awareness of MDA campaigns. Celebrities, comedians, radio presenters and many others have taken part in radio jingles and TV adverts produced in the four main local languages (Krio, Mende, Themne and Limba); radio discussions have also fostered debate and gathered feedback from communities.

Health staff, school teachers and CDDs also play a crucial role in sensitisation. CDDs, for example, go house-to-house explaining the purpose of the campaign and answering questions – an awareness-raising approach supported by the production of information, education and communication materials. The impact of this ongoing sensitisation was confirmed by the knowledge displayed by local people during the fieldwork for this case study: everyone from the hotel receptionist to children selling goods by the side of the road in remote areas could identify the diseases and knew the basics of how to deal with them, i.e. taking medicine, washing hands and the proper use of toilets.

#### Community involvement in drug distribution

The almost complete destruction of the health system's physical infrastructure and the acute shortage of human resources, coupled with the tremendous health needs of the population, meant the involvement of the community was required in the delivery of services. According to key informants, this was facilitated by Sierra Leonean experience in training people at community level to provide health services in refugee camps and internally-displaced person settings, including the early use of CDDs during the war. Sierra Leone's NOCP was one of the first programmes involving community members in the country.<sup>58</sup> After its re-establishment at the end of the war, and building on the strong emphasis on governance<sup>59, 60</sup> and the critical need to involve community actors in the expansion of the health

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58 Interventions using community members for the distribution of drugs were first tested by APOC in the mid-1990s and later on were adopted as its official strategy (CDTI). Since then, they have been used very successfully for oncho control in Africa (TDR, 2008).

59 In the post-war scenario, huge efforts have been made to reform the governance structures, applying a bottom-up approach to the development of policies. Among other things, this approach has been institutionalised in planning and budgeting processes that aim to set priorities according to people's needs: 'During the budgeting period all PHUs are engaged in a needs assessment. We give the common man the opportunity to participate, to decide what they want for their health. We get stones, draw pills, pumps, toilets, etc.; the flip charts are for illiterate people to be able to participate, so everyone has stones to vote. We do this at ward level' [key informant interview with local government]. 'You can't do anything that excludes the community, the ward committees have to be aware [...] District development plans start with consultation with the committees [key informant interview with local government]. For the health sector, people's participation is ensured through community development committees and subcommittees (i.e. village health committees).

60 According to key informants, this may have contributed to building cohesion in the war-torn country: 'People had to sit down together and reach consensus. This was not happening before the war.'

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## ‘Key to progress in the health sector is the anti-corruption programme’ – Key informant interview with local government

system, the programme created a nationwide network of volunteers to distribute NTD drugs on a large scale.

CDDs are now at the very heart of the programme,<sup>61</sup> ensuring the distribution of drugs throughout the entire country and making it possible to reach the most remote areas. They are volunteers selected by their communities and backed up by their village leaders, which provides significant motivation for CDDs to participate. Although they receive some basic incentives, they are not paid for their work.<sup>62</sup>

Such community involvement has been instrumental in the success of Sierra Leone’s MDA campaigns in two ways:

- **It has generated a sense of ownership and pride among the CDDs themselves.** Because they determine how best to implement MDA within their catchment areas, the programme has instilled a feeling of importance and stature in and for their communities.
- **It has helped to reduce barriers in treatment uptake.** Because CDDs belong to the community in which they distribute the drugs, people feel confident about receiving medicines from them.

Community involvement in direct interventions ‘recognizes the inherent relationship between the infusion of individuals with a sense of their own self-worth and their empowerment to tackle problems within their communities’ (TDR, 2008:5). This was confirmed during interviews with CDDs for this case study, who claimed to keep doing their job, despite a lack of incentives, because of its importance for their communities.

### 3.5 A broader context of progress, with delivery via a scaled-up health sector

#### Scaled-up and strengthened health sector investment and capacity

The progress achieved in Sierra Leone on NTDs over the past decade has taken place amid a rapidly changing political and institutional context in the health sector and

beyond – a context that has enhanced efforts to address NTDs. Some key changes have helped to drive NTD-control efforts.

First and foremost, significant increases in government and external donor investment in the health sector have helped to rebuild its human, physical and technical capacity since the end of the civil war in 2002. These efforts were given a further boost by the launch of the Free Health Care Initiative (FHCI) in 2010, which was based on an extensive process to assess the needs of the sector, led by President Koroma (Scharff, 2012). The FHCI encouraged both the donors and the Government to commit major new resources to the sector.

As Table 4 (overleaf) shows, as a result of these resourcing efforts, around 5,800 additional health workers have been recruited since 2010, drug supplies and their availability have been scaled up and health facility infrastructure has been developed and/or restored and upgraded (MoHS, 2011).

While it is difficult to link these developments directly to the progress made on NTDs specifically, logic dictates that they must have helped, given that the NTDP relies on the health system as a whole.

#### Accountability

Corruption and weaknesses in accountability in Sierra Leone’s health sector have been identified as impediments to its development and effectiveness throughout its history. The most obvious symptoms have been the leakage of drugs (Ensor et al., 2008), informal payments demanded by health staff, staff absenteeism (HFAC, 2012) and ‘ghost workers’: health staff who appear on the payroll but who are not actually working (Stevenson et al., 2012).

Although there are still significant problems, there are concrete signs that accountability in the health sector has improved in recent years, particularly with the introduction of the FHCI.

There has been a high-level political push to address corruption in general, and drug leakages in particular, with the enforcement of the Anti-corruption Commission fostered by President Koroma after coming to power in 2007 (Scharff, 2012). More recently, alongside funding

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## ‘The intervention of civil society has reduced corruption [...] we check staff attendance, the referral system, follow the drugs and check their prices [...] we tell people how much they cost so they can’t be charged more’ – Interview with civil society monitor

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61 CDDs do not distribute in the urban setting: that is done by CHWs.

62 All of them receive t-shirts that identify them as CDDs. On occasions, CDDs have received certificates, bicycles and food during training activities (see Section 4.2).

**Table 4: Major health sector developments in recent years and impacts on NTD control efforts**

Intervention	Progress	Likely impacts on NTD control efforts
Drug distribution	Improvements were made to the national medical store infrastructure and logistical systems; following some leakages of drugs, UNICEF introduced a risk control matrix to better track their flow; civil society monitors were also given greater access to the drug delivery process (key informant interview).	Although the NTDP has its own drug distribution system and NTD store in Makeni, civil-society monitors suggested their efforts strengthened accountability for drugs across all health areas.
Health worker numbers and performance	To implement the FHCI, an additional 5,800 health workers were recruited with significant support from donors; health worker pay was increased substantially with donor support, largely in response to fears about how lower levels of user-fee collection and higher workloads might affect the facilities and their staff; an audit of the health payroll reduced 'ghost worker' numbers and an attendance system with sanctions has been introduced (Stevenson et al., 2012).	Increased health worker capacity may have helped oversight and support of the MDA programme; some stakeholders did suggest, however, that FHCI responsibilities and incentives were distracting health staff from NTDP responsibilities.
Health facility capacity	A system to track facility readiness for delivering maternal health services was initiated in 2010, focusing on a range of facility characteristics, including equipment, water and sanitation services and electricity access; funding has been provided to support facility upgrading (MoHS, 2008).	Improved facilities have helped to increase the provision and quality of NTD-related services.
Service access	The number of consultations for children under five increased from 0.93 million in 2009-2010 to 2.93 million in 2010-2011 (the first year of FHCI implementation); consultation numbers levelled off towards the end of 2010-2011, although the monthly total remained more than 60% above the equivalent 2009-2010 figures (MoHS, 2011).	Children under five are one of the groups at increased risk of NTDs; access to consultations to address emerging infection and general health issues would have been beneficial; when women receive information on general health issues, including NTDs, they share it with their families and communities.

for scaling up drugs provision and health worker numbers and salaries, donors have also pushed for stronger accountability mechanisms through the introduction of new procedures and tools.

Ahead of the scale-up and the increase in salaries, an extensive audit of the health sector payroll resulted in the removal of at least 300 ghost workers from the payroll. A formal attendance monitoring system has also been introduced, together with sanctions for non-attendance.

Another element of accountability emerging from the FHCI is the increasing engagement of civil society in the independent monitoring of health sector performance. This has been led by civil society networks, such as the Health for All Coalition<sup>63</sup> and Health Poverty Action, as well as individual organisations, which are becoming increasingly embedded into health systems to provide independent scrutiny.

Civil society monitors complement the monitoring and supervision carried out by the Government. At DHMT level, monitors are informed when the drugs are arriving and in what number, and they must be there to check that all the drugs are in place, reporting any discrepancies. They inform the monitors in the field at PHU level so they can also check the drugs at the point of arrival. People suspected of any act of corruption can be charged in court; but our key informants commented that, given the shortage of personnel in the sector, the usual approach is to talk to the person in question to try and change their behaviour. Although NTDP supplies are completely separate from the rest of the drugs stock, less corruption within the health system may well have benefited the good performance of the NTDP.

<sup>63</sup> The Health for All Coalition coordinates the work of independent health sector monitors working in each chiefdom; 300 monitors in all. It also has two monitors based at the Central Medical Store and one in each district medical store and secondary hospital.





## Decentralisation

The 2004 Local Government Act decentralised public services, allowing community participation in local policy-making through ward development committees. The results included an overall increase from 48.4% to 53.7% of the population having access to a clinic within 60 minutes walking distance; satisfaction with clinics also increased from 81.2% to 90.9% over the same period (Foster and Glennerster, 2009).

Decentralisation of the health sector has established clear tiers in health service provision. This tiered structure has supported NTDP implementation, which takes place at district level and deals with only three levels: national, DHMT and PHUs (without involving the council level).

The functions and relationships of support and oversight at each level of the health system have also supported the

NTDP's cascade process of information sharing, training and monitoring throughout the system – an approach that has been vital to making effective use of relatively limited resources to tackle NTDs. In addition, messages spread easily through the tiers from top to bottom, as does feedback from implementation, which returns fast enough to inform strategies and make changes if needed.

Decentralisation also seems to have helped to strengthen programme ownership and responsiveness among DHMT focal points, as it has provided them with room to adjust their activities and deal with implementation in a more flexible way. This is best illustrated, among other things, by the role devolved to the DHMT during the five-day MDA campaign in Western Area, which includes responding quickly to requests for drugs<sup>64</sup> and mobilising local leaders to help tackle programme constraints.

<sup>64</sup> In cases in which MDA campaigns underestimated the drugs needed due to the uncertainty of population figures and new catchment areas (key informant interview).

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# 4. What are the challenges?

**‘We have so many constraints but we are doing it for the love for our country and for our communities. We are helping our mothers, our siblings, our friends’ – Community drug distributor**

Although progress in tackling NTDs has been remarkable, there are still four key challenges that need to be addressed to eliminate the transmission of all targeted NTDs:

- Financial sustainability and diminishing returns as ‘low-hanging fruit’ are reached.
- Retention of community drug distributors (CDDs).
- Population movement and proximity to countries with less advanced NTD control.
- Limited progress on water, sanitation and hygiene (WASH).

## 4.1 Financial sustainability and diminishing returns

Sierra Leone has made the greatest progress on those NTDs that have attracted donor funding. Indeed, the current NTDP is almost fully funded by external sources, which represents a challenge in terms of its financial sustainability. It seems unlikely that donors will suddenly pull the plug, given that NTDs are moving up the international development agenda and key players are setting up NTD-specific programmes (e.g. USAID) and committing major resources (e.g. Bill & Melinda Gates Foundation). However, Sierra Leone still needs to mobilise domestic resources to support the programme. Here, the involvement of the private sector, particularly mining companies, might be a viable option for the Government in terms of increasing/supplementing funds for NTDs (Box 8).

Another key challenge is that, according to our key informants, diseases that have failed to attract significant

funding remain largely neglected within the Government’s priorities (i.e. there is no programme in place to tackle rabies, although it seems to be an important issue).<sup>65</sup> In addition, the limited focus on NTD morbidity is linked directly to a lack of external funding to tackle this important aspect of NTDs. Although exceeding the scope of this case study, this poses a big question on the role of donors (via funding) in influencing a country’s actual priorities.

With the NTDP having already achieved high coverage levels (ranging from 75% to 85%), increasing efforts are likely to yield lower returns for each person reached. As Sierra Leone edges towards its goal of eliminating transmission, the NTDP will have to find new ways to deal with two main challenges:

- **Accessing remote and hard-to-reach communities.** While the NTDP has already had strategies to address this (i.e. focusing monitoring on hard-to-reach areas and using targeted sensitisation), this continues to be a challenge and needs a sharper focus in the future. In particular, cross-border areas are a concern; as most hard-to-reach communities are already being reached reasonably well, the main issue involves those communities that move back and forth across the border and jeopardise control.
- **Maintaining community compliance.** As treatment uptake increases and symptoms start to decline, people may feel less motivated to take the treatment. In addition, if SCH is to be eliminated, MDA for SCH – currently rolled out in the seven endemic districts – will have to cover the entire country to address random cases in those areas where it is not endemic.

**‘In highly endemic areas, such as Kono, where over 50% of people have SCH, it is easy to explain to people that after taking the drug you may feel bad for two to three days, before seeing the improvement, but if you want to distribute in Western Area, where prevalence is lower than 1%, people would not be so willing to bear side-effects’ – Key informant interview with HKI staff**

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<sup>65</sup> Health personnel might not know about rabies as there is no training in place to identify symptoms. This leads to cases of misdiagnosis, with some fatal cases of rabies having been recorded as malaria casualties (key informant interview). Without donor funds to pursue this NTD, measures against rabies are scattered and rely mostly on the private sector and altruistic individuals.



### Box 8: Corporate social responsibility and NTDs

Some mining companies are starting to invest in NTD control. In October 2012, a diverse private sector consortium in Mali rallied around the NTD cause during a time of political turmoil that had diverted resources and attention from these diseases. The mining companies Randgold Resources, AngloGold Ashanti, IAMGOLD, Resolute Mining LTD, Gold Fields, AVION Gold Corporation, Forbes & Manhattan and African Mining & Exploration provided funding resources to fill the gap, so people could receive the medicine they needed to treat NTDs.

*Source: Randgold Resources, 2012.*

There is also the risk that as Sierra Leone comes close to the real prospect of elimination, it is likely that fewer and fewer funders will be willing to stick with interventions that appear to cost a lot for each active case still treated. The high costs of treating each remaining case in the pursuit of total elimination could affect not only donor funding, but also the prospects of domestic funding being allocated to achieve that final push. Although the total cost of the NTDP (excluding donated drugs) is relatively small, Sierra Leone's more pressing and urgent health problems, such as maternal and child mortality rates, which remain among the highest worldwide, may be a serious obstacle for the Government to overcome.

A pro-poor intervention strategy used to fight NTDs requires an efficient treatment delivery system supported by a well-functioning health sector. However, many countries that are NTD-endemic have limited technical capacity and lack the infrastructure to deliver public health interventions. As the Mali example shows (Box 8), mining companies operating in NTD-endemic countries such as Sierra Leone can complement the efforts of the pharmaceutical companies, supporting free treatment by strengthening the health system infrastructure for the effective delivery of drugs.

## 4.2 Retention of CDDs

Retaining the CDDs, who are the 'engine' of the programme, is a major challenge for the NTDP. Although the vast majority are highly motivated and want to make this contribution to their communities, they are starting to feel exhausted after several years of MDA campaigns and many are, understandably, demanding some material compensation for their hard work.

CDDs are supposed to get support from their community – those who are farmers, for example, should get help from community members on their farms. However, this is rare, according to testimonies collected by the team, supposedly because communities find it difficult to believe that CDDs would keep coming, year after year, without being paid.

The programme has explored different ways to keep CDDs engaged by setting up small incentives. Certificates have been provided in some districts and chiefdoms, but this proved to be complicated;<sup>66</sup> bicycles have sometimes been provided in the past, but resources have proved too limited.<sup>67</sup>

In-charges and DHMT focal points are aware of the difficulty of keeping CDDs motivated, and are using their own initiative to apply a variety of strategies to tackle this problem. According to our interviews with key informants, these range from positive approaches, such as providing food for CDDs during training activities and giving them extra responsibilities within the PHU (e.g. vaccination campaigns, data entry, etc.), to more negative methods, such as warning them that they would have to take care of a relative if she/he goes blind.

The NTDP management is also aware of this challenge. However, paying CDDs for their work has been ruled out as a viable option, not only because of resource constraints,<sup>68</sup> but also because this would distort the all-important community ownership of the programme. This issue has been discussed in both formal meetings and village meetings, with other options being put forward, such as concessions to exempt CDDs from local taxes, and rewards of training certificates or basic consumables that are relevant to their role (e.g. bags and sturdy shoes) (Sesay and Gondoe, 2010).

**'CDDs are very committed; they are doing an amazing job but it is not easy to keep them motivated' – PHU in-charge key informant interview**

<sup>66</sup> NTDP staff explained that the idea had been abandoned because of logistical issues, not only because of the scale of the programme, but also because many CDDs have exactly the same names and certificates would get lost in the process, etc.

<sup>67</sup> T-shirts were the most popular incentive given, then CDD shoulder bags. Most recently, TOMS shoes have started being provided.

<sup>68</sup> Paying volunteers is not allowed under USAID rules.

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## ‘Breaking transmission will be challenged by neighbouring countries; they will represent a challenge in terms of sustainability’ – Key informant interview with HKI staff

### 4.3 Population movement and proximity to countries with less advanced NTD control activities

The movement of people within Sierra Leone and across its borders is another important challenge – one linked closely to the transmission of NTDs.

- **Job-seeking migration.** This is particularly relevant to mining areas (i.e. Bombali District) and to Freetown, and it has been increasing since the end of the war. According to the Sierra Leone Labour Market Profile (Ulandssekretariatet, 2013), the country is undergoing significant internal migration as a consequence of the civil war as refugees and internally displaced people continue to return to their homes. Migration has also been fuelled by rapid urbanisation (the urban population has grown at almost 4% per year since the end of the war (World Bank, 2013), with many young people moving into the cities seeking better livelihoods but ending up living in substandard conditions. As a result, there is always a large discrepancy between the pre-MDA census and actual MDA delivery, which is a challenge for the accurate calculation of the number of people who need treatment and the proportion who receive treatment. While previous MDA campaigns, in particular those conducted in Western Area, have been quick and efficient in addressing drug shortages, the fluctuation in population levels means that care is needed when monitoring the coverage of the population and assessing the progress of control by district.
- **The porous nature of Sierra Leone’s borders.** Progress on the transmission of NTDs in Sierra Leone could be jeopardised by the less advanced NTD-control activities in neighbouring countries. For example, Liberia only rolled out integrated MDA (using albendazole and ivermectin) for the first time ever in 2012. Similarly, at the time of our research, the NTD programme in Guinea was in the scale-up phase, with mapping underway for LF, SCH, STH and trachoma, and activities planned to take place during 2013. As such, the chances of scaling down MDA for oncho from 2020

will depend on progress being made in neighbouring countries (especially Guinea, whose rivers provide breeding grounds for oncho vectors). The Mano River Union (MRU) countries (Côte D’Ivoire, Guinea, Liberia and Sierra Leone) are already taking measures to coordinate efforts in the region, with plans to limit cross-border transmission being discussed in districts near borders and regular cross-border meetings of village or community leaders. The NTDP and its NGO partners will continue to be part of the MRU efforts to control cross-border transmission of NTDs: an essential component of the post-elimination strategy.

### 4.4 Limited progress on water, sanitation and hygiene (WASH)

As already noted, NTDs are linked closely to poor water, sanitation and hygiene conditions. Unfortunately, there has been too little progress to date on these areas in Sierra Leone in recent years. Only an estimated 57% of households in Sierra Leone have access to improved sources of water: 76% in urban areas and just 48% in rural areas.<sup>69</sup> By 2010, only 40% of households used improved sanitation facilities (58% urban and 32% rural) (SSL and UNICEF-SL, 2011) and national MDG targets will not be achieved as a result of insufficient funding and a lack of capacity among implementing agencies (AMCOW, 2006).

One reason for the dismal state of the country’s water and sanitation is the absence of leadership in this sector within the Government, with a whole array of partners trying to coordinate efforts over the years. According to the African Ministers’ Council on Water (AMCOW, 2006), ‘Programmatic approaches are not in place’, and ‘Donor-driven projects remain the main route for implementation.’

The main strategies applied to date have been based on the chlorination of wells and rehabilitation of toilets, and, more recently, Community-led Total Sanitation (CLTS) and School-led Total Sanitation approaches have been rolled out in rural areas in some districts (GoSL and UNICEF, 2010).<sup>70</sup> In urban areas, where ever-increasing

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## ‘We don’t expect to eliminate STH because for doing so we need to improve the sanitation and hygiene conditions, and this will take time’ – Key informant interview with HKI staff

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<sup>69</sup> However, key informants interviewed stated that these figures might be overestimates.

<sup>70</sup> Supported by UNICEF and several NGOs, CLTS relies on community behaviour change, using community facilitators to help communities analyse their sanitation situation and find innovative ways to use local knowledge and cheap and available material. See Kar and Chambers (2008) for further information.

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urbanisation poses a significant challenge, the Freetown WASH Consortium aims to build communal latrines and explore the possibility of scaling up sanitation marketing (key informant interviews).

Given the lack of improvements in WASH, the elimination of STH is not feasible, and MDA remains the only control option for the time being. Increasing cooperation between the NTDP and the WASH sector is needed to ensure that

they complement and reinforce each other's community capacity-building and awareness-raising activities.

Sector reform is ongoing, with the first strategy for the sector launched recently, and a new Ministry of Water Resources has been created. The sector is expected to go through significant changes in the near future, as it has been established as a national priority for the next five years (key informant interviews) – a very encouraging move.



Woman with elephantiasis. Photo: © Olivier Asselin, courtesy of the Sabin Vaccine Institute.



# 5. What lessons can we learn?

Not every country facing endemic NTDs can draw on a pioneering history of NTD mapping and control similar to that seen in Sierra Leone. However, this case study has illuminated five key lessons for the creation of an integrated, cost-effective and locally owned model that could be replicated in other countries that need to confront NTDs:

- Political commitment is needed to end the ‘neglect’ of neglected tropical diseases, both at international and national levels.
- Integrated NTD control can be rolled out via existing systems for cost-effective impact.
- Strong partnerships are needed at every level and with a range of stakeholders.
- A bottom-up approach builds a strong sense of national and community ownership.
- NTD control works best as part of a decentralised, scaled up and strengthened health sector.

## **A commitment to take the ‘neglect’ out of NTDs**

One recurring theme emerging during the interviews carried out for this case study was that ‘neglected tropical diseases are no longer neglected in Sierra Leone’ – a vital first step to their control and eventual elimination.

Nearly two decades of collaborative work between WHO and its partners have produced the drugs and tools necessary to help countries fight the burden of NTDs. And a range of global partners and initiatives, including WHO, DFID, universities, the World Bank and major pharmaceutical companies, have committed to sustain and expand programmes to control or eliminate NTDs. The contributions of development partners in terms of funds, drugs and technical assistance are essential for most NTD-endemic countries, all of which have to tackle competing priorities with limited resources.

To some extent, progress on NTDs in endemic countries now depends on whether national governments decide to take up the growing momentum on NTDs at global level and move them up the national agenda, alongside their ability to tailor the international guidelines to the local context. In the case of Sierra Leone, we have a country that has made a clear decision to tackle NTDs, using these new opportunities to control its disease burden and make progress towards their eventual elimination. Despite its limited resources and its fragile health

system infrastructure, Sierra Leone’s Government has demonstrated the capacity to deliver a massive health intervention at national scale.

## **Integrated NTD control via existing systems for cost-effective impact**

Another key aspect of Sierra Leone’s progress has been the successful integration of all NTD interventions under one umbrella: the Neglected Tropical Disease Programme (NTDP). This approach has made it possible to minimise costs by achieving economies of scale while expanding programme coverage, propelling the country closer towards NTD elimination.

The NTDP has not created any new or parallel systems. Instead, this vertical programme has worked strictly through existing national health and education structures, relying on government workers who are already on the payroll (teachers and local health workers) as well as an army of volunteer community drug distributors (CDDs), to get the job done. Not only does this mean that there have been no additional personnel costs, but such an approach also helps to ensure sustainability as well as a sense of ownership and commitment among staff and has had positive spillover effects in terms of strengthening the health system.

## **Strong partnerships at every level with a range of stakeholders**

Well-functioning partnerships between the Government (through NTDP staff), donors and key NGO partners (i.e. HKI) have created a strong team that combines resources, technical assistance and local knowledge. Above all, this strong working relationship has resulted in a shift in ownership, with the NTDP gradually moving from being donor-driven to being owned and managed by the Government of Sierra Leone. All stakeholders have benefited from the programme’s ‘learning by doing’ approach, coming together to develop innovations year-on-year to improve its impact and to address any bottlenecks and obstacles.

The partnership with communities has been critical for every stage of the NTDP, from the mobilisation of community and religious leaders to prepare the ground – spreading messages on the importance of NTD control – to the actual delivery of the necessary drugs.

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## **A bottom-up approach to build national and community ownership**

The bottom-up approach followed by the NTDP has instilled a sense of national and community ownership of the programme. Community involvement is prioritised in MDA implementation – a major contribution to this success story. This sense of ownership – indeed, pride – has been fostered through the community distribution of drugs. This has been essential to reach the majority of Sierra Leone’s people, particularly those living in the most remote areas. In addition, however, it has given CDDs responsibility and room for manoeuvre to manage drug distribution on their own terms (within certain protocols). By doing so, it has embedded their sense of ownership and their commitment to the programme – a factor that has proved crucial for Sierra Leone’s impressive progress on NTDs.

## **NTD control as part of a decentralised, scaled up and strengthened health sector**

NTD control in Sierra Leone has been embedded in a broader country context characterised by an increasingly

decentralised system for the provision of public services. This makes it relatively straightforward to spread vital message on NTDs and gather feedback on NTD-control efforts at the local level. It has also benefited from increasing efforts put into reconstruction and rehabilitation in the post-conflict setting and the improvements of the health system overall, particularly the Free Health Care Initiative (FHCI), with a rapid expansion in the number and quality of peripheral health units (PHUs) and their staff. The large influx of funding attached to the FHCI has resulted in stronger accountability mechanisms to ensure transparency in the use of funds and more robust monitoring and supervision practices (i.e. staff attendance), allowing for better overall results.

A decentralised structure for public services has also benefited the NTDP. At district level, where implementation actually takes place, local government officials have room to manoeuvre, allowing them to adapt national policies to the local context. This has, in turn, reinforced commitment and ownership.



# **BIG FOOT** **CAN BE PREVENTED** **IF YOU TAKE TREATMENT**



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are being treated once a year for Big Foot.  
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This publication is based on research funded by the Bill & Melinda Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

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