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Neglected Tropical Diseases in the Africa Region

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Executive Summary

Though the burden of infectious disease has diminished globally, infectious diseases are still a major obstacle to development in Africa. These diseases continue to perpetuate inequality and poor health and development outcomes, especially for the marginalized, rural and urban poor.

Neglected tropical diseases (NTDs) comprise parasitic and bacterial infections that are easily spread through populations suffering from poverty, poor access to clean water and sanitation, and other health conditions, and they trap their victims in a cycle of poverty and disease. The NTDs most frequently found in Africa include Guinea worm disease, leprosy, lymphatic filariasis, onchocerciasis and trachoma. Others are Buruli ulcer, rabies, yaws and leishmaniasis. More than half of the global burden of NTDs is believed to be in Africa – and the proportion is rising. Infected individuals are unable to regularly attend work or school, and worker productivity and school performance is greatly hampered due to physical disability, blindness, anemia and poor nutrition caused by these diseases. NTDs place a huge, and largely preventable, burden on the health of individuals and on health systems in the African region.

The governments of many African countries and their partners have made significant progress in the control and elimination of some NTDs in endemic areas, most notably, Guinea worm and onchocerciasis. More recently, governments have begun in earnest to prioritize NTDs in national health agendas by scaling up existing programs and developing national integrated NTD control and elimination plans. These plans represent a comprehensive, sustainable, and integrated approach to addressing NTDs that is not only multi-sectoral, but also yields a great return on investment, with respect particularly to improved workforce productivity and educational gains. This positive momentum been growing at the international level, culminating in the January 2012 London Declaration signed by global health leaders including 13 pharmaceutical companies, the Bill & Melinda Gates Foundation, the World Health Organization, the World Bank, the U.S. Agency for International Development, the UK Department for International Development and several health ministers from NTD endemic countries, all of whom committed to support efforts to eliminate NTDs as global public health threats by 2020.

But, in the end, the success of these efforts depends on substantial political and resource commitments from endemic countries in Africa. The Africa Union Commission is ideally positioned to provide leadership to member states as they strive to control and eliminate NTDs in the African region by 2020. Addressing NTDs is the underlying issue upon which all efforts depend to improve the region’s health, education, development and economic growth prospects. This document summarizes the NTD situation in Africa detailing the impact these diseases have on the population in the region and the challenges and opportunities that exist for intervention.
Introduction

Neglected Tropical Diseases (NTDs) are a group of infectious diseases that are endemic in a number of developing countries including countries in the African Region. NTDs affect an estimated 1.4 billion people in the world and a disproportionately large burden of NTDs occurs in Africa.¹ The NTDs most frequently found in the African Region are Guinea worm disease, leprosy, lymphatic filariasis, onchocerciasis, human African trypanosomiasis, schistosomiasis, soil-transmitted helminthiasis, Buruli ulcer, yaws and other endemic treponematoses, leishmaniasis, and trachoma.

NTDs afflict the poorest and most marginalized people in Africa, with women and children being disproportionately burdened by these devastating diseases. NTDs also share a significant geographic overlap with HIV/AIDS, tuberculosis and malaria and similarly affect communities with limited access to healthcare, education, and other resources. Research indicates that NTD control can significantly improve maternal health, reduce neonatal mortality, improve childhood growth and development, and mitigate chronic, often irreversible disease at later stages in life. NTDs inhibit progress towards meeting many of the Millennium Development Goals (MDGs). Addressing NTDs would allow countries to accelerate their efforts and get on track to meet the MDG targets.

We are at a critical turning point in the fight against NTDs as endemic countries and the international community are taking important steps to address these diseases comprehensively. Many countries have already seen success in eliminating or reducing the prevalence of some NTDs such as Guinea worm and onchocerciasis. Other common NTDs are still endemic in many areas, however, and continue to decimate communities and undercut regional productivity.

These ongoing challenges have led more than 30 African countries to develop national, multi-year, integrated NTD control and elimination plans to accelerate the control and elimination of NTDs. In January 2012, WHO launched the global roadmap to eliminating NTDs by 2020. On January 30th, 2012, global health leaders—including 13 pharmaceutical companies, the Bill & Melinda Gates Foundation, the World Health Organization (WHO), the World Bank, the US Agency for International development, the UK Department for International Development and health ministers from NTD endemic countries— joined this fight and declared their commitment to see the end of NTDs by 2020 (see Annex 2).

Despite this recent momentum, there remain competing priorities in global health which impede the effective control of NTDs. In order to reach the ambitious 2020 goal, it is critical that the international community and endemic countries significantly step up their efforts and make NTD control and elimination a priority issue.

The Africa Union Commission can play a pivotal role in persuading member states to make the necessary commitments to meet the global NTD control and elimination targets by 2020.

A Situation Analysis of NTDs in the African Region

There are 17 NTDs that affect more than one billion of the world’s poorest people. Typically, NTDs are categorized in two groups, based on the interventions needed to control them:

- Preventive chemotherapy (PCT) NTDs can be prevented, controlled or eliminated through widespread treatment of populations at risk. Regular mass drug administrations (MDA) can prevent chronic infection and reduce the risk of transmission within communities by lowering the infectivity of the general population. Regular treatment with a proven combination of drugs is highly cost-efficient, safe and effective and can lower disease prevalence and severity and interrupt transmission.

- Integrated disease management (IDM) addresses comprehensively the NTDs that require long-term management of symptoms and extensive disease surveillance to identify cases. The primary objective of IDM is to prevent death and serious illness through early interventions and identification of cases, and to simultaneously reduce the risk of transmission by providing comprehensive and accessible care.

Africa suffers from the largest burden of NTDs in the world; for example, nearly all global schistosomiasis and onchocerciasis cases occur in Africa. The most prevalent disease in Africa is lymphatic filariasis, with an estimated 406 million people at risk, followed by soil-transmitted helminths (340 million at risk) and trachoma (232 million at risk) (see Annex 3)\(^2\). Combined, these diseases exert a tremendous burden on communities plagued by poverty and other health challenges.

Although countries vary by epidemiological situation and severity of endemicity, NTD co-infections occur in many of the poorest communities that have limited access to education, health care, good sanitation, and safe drinking water (see Figure 1). They persist in the poorest and hardest-to-reach populations, and are a major obstacle to health and development.

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Figure 1: Distribution of NTDs in Africa and countries with integrated NTD control programs in sub-Saharan Africa (Fenwick A et al. 2009).

Health and Economic Impact of NTDs

NTDs cause blindness, disfigurement and disability, and account for an estimated 534,000 global deaths annually. In infected individuals, untreated NTDs can impair physical and cognitive development and often result in discrimination against those who develop disfigurement or other disability. Considered together, NTDs are estimated to inflict a disease burden comparable to the burden of malaria or tuberculosis and are the fourth leading communicable cause of morbidity and mortality.

The best estimates of the burden of NTDs are expressed in terms of disability-adjusted life years (DALYs). DALYs are a measure of disability associated with disease expressed as the number of years lost due to ill health, disability or early death. It takes into consideration the number of people infected, the magnitude of the symptoms, and the duration of the illness or impairment.

Using this metric, one can begin to estimate the impact of these diseases. For example, lymphatic filariasis is estimated to result in the loss of 2.3 million DALYs annually in Africa. Human African trypanosomiasis and onchocerciasis account for the loss of 1.6 million and 1.6 million DALYs annually, respectively.

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almost 400 thousand DALYs, respectively, in Africa each year, and schistosomiasis and soil-transmitted helminths, which are widespread among children, each cost the continent 1.5 million annually in DALYs. In general, NTDs account for 25 percent of the DALYs lost from the global burden of infectious and parasitic diseases, which includes the devastation of AIDS, tuberculosis and malaria.

Moreover, NTDs are a serious obstacle to economic development in many low-income nations, resulting in billions of dollars lost as wages and decreased economic productivity. To better understand the economic impacts of NTDs, it is important to consider the low cost of treatment and the benefits of reduced disease burden on individuals and communities that create highly favorable cost-benefit ratios for treatment of NTDs. For example, nearly 600 million people have been treated since the creation of the Global Program to Eliminate Lymphatic Filariasis, resulting in an economic rate of return estimated at between US$20-60 for every dollar spent on treatment. US$21.8 billion has been saved by preventing or treating infections in the 31.4 million people who have or would have contracted lymphatic filariasis (LF) between 2000 and 2007, over US$2.3 billion of which derives from three million infections being prevented by local LF elimination.

Similarly, the African Programme for Onchocerciasis Programme (APOC) has prevented 8.9 million cases of onchocerciasis and the loss of one million DALYs annually. APOC covered 68.4 million people in 2009, or 71 percent of the total population at risk, and achieved 91 percent geographic coverage. The estimated economic rate of return for community-directed treatment with ivermectin over 21 years, including drug donations and increased labor productivity, was estimated at 24 percent and treatment with ivermectin is estimated to cost between $14 and $30 per DALY averted, making it a highly cost effective intervention. The economic viability of ivermectin is based almost entirely on drug donations, as the value of Merck’s donations far exceed program costs. Onchocerciasis control programs, in place since the 1970s, have improved health among the adult population and decreased its prevalence in many areas, leading to increased agricultural and labor productivity worth an estimated USD $3.7 billion over 39 years.

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Deworming studies have found a 30:1 rate of return for every dollar spent on deworming, and school-based programs have resulted in gains in school attendance and positive externalities on lifetime wage earning. School absenteeism was reduced by as much as 25 percent by annual deworming, amounting to a year of school gained for every US$4 invested in school-based treatment programs. Children who were not dewormed showed a 40 percent reduction in adult wage income due to decreased school attendance (20 percent less likely to be enrolled in school) and loss of productivity as an adult due to illness.

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Reducing the Burden of NTDs

Four types of interventions are needed to control and eliminate NTDs:

1. Preventive chemotherapy (PCT) through mass distribution administration (MDA) of medicines to select populations at regular intervals.\(^{21}\) MDA is recognized as a viable and cost-effective strategy for the control and elimination of NTDs.\(^{22}\) It relies on the utility of community health workers or teachers to serve as community drug distributors. In this way, treatments can be made available to even the most remote rural communities. Costs are also kept low by drug donations from major pharmaceutical companies, who have committed to donate 14 billion treatments for the most common PCT diseases over the next ten years.\(^{23}\) As a result, these seven NTDs can be controlled or eliminated at the cost of less than **US$0.50 per person per year** - making the elimination of these NTDs a feasible goal and indeed a ‘best buy’ in public health.\(^{24}\)

Schistosomiasis and soil-transmitted helminths are two of the most common NTDs, affecting hundreds of millions of people globally. High prevalence and low cost of treatment have made schistosomiasis and soil-transmitted helminths model targets for NTD control through mass drug administration. In Cambodia, a long-term drug administration program for schistosomiasis was found to be extremely cost effective. The program provided treatment to the entire population in two endemic regions and reduced the prevalence from 77% to 0.5%.\(^{25}\) At a cost of roughly $1 per beneficiary per year, the program increased worker productivity by an estimated $2.7 million at a total program cost of $750,000.\(^{26}\)

The major costs of mass drug administration are in training, health education, drug procurement and distribution, media campaigns, supervision and monitoring, and campaigns that can achieve sufficient economies of scale at the national or regional level and that integrate multiple interventions (multiple NTDs, bed nets, vitamin A or immunizations) can reduce the costs of

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NTD control even further.\textsuperscript{27} Even assuming no integration (see table), controlling NTDs in Africa can be considered highly cost effective.\textsuperscript{28}

**Table 1.** Cost-effectiveness of neglected tropical disease control (Conteh et al., 2010)

<table>
<thead>
<tr>
<th>Disease</th>
<th>Intervention</th>
<th>Cost per DALY averted (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphatic filariasis</td>
<td>In implementation units (districts) where prevalence is higher than 1%, annual mass drug administration to treat the entire population at risk for 5-7 years: ivermectin and albendazole in Africa and diethylcarbamazine and albendazole in onchocerciasis-free countries: to interrupt transmission and achieve elimination of public health problem to initiate morbidity control, surgery, and lymphoedema management Fortified salt with diethylcarbamazine (China) Vector control</td>
<td>5-10 35 1-4 59-370</td>
</tr>
<tr>
<td>Schistosomiasis</td>
<td>Mass school-based treatment with praziquantel and albendazole to combine with schistosomiasis treatment Mass school-based treatment with praziquantel alone</td>
<td>10-23 410-844</td>
</tr>
<tr>
<td>Trachoma</td>
<td>Surgery to repair eyelids, trachoma control based on SAFE strategy: Surgery, Antibiotic treatment, Face washing, and Environmental control</td>
<td>5-100</td>
</tr>
<tr>
<td>Onchocerciasis</td>
<td>Community-directed treatment programmes with ivermectin</td>
<td>9</td>
</tr>
<tr>
<td>Soil-transmitted helminths</td>
<td>Mass school-based treatment with albendazole or mebendazole</td>
<td>2-11</td>
</tr>
<tr>
<td>Human African trypanosomias</td>
<td>Case finding and treatment: with melarsoprol with eflornithine</td>
<td>&lt;12  &lt;24</td>
</tr>
</tbody>
</table>

2. **Intensified disease management (IDM)** is used to treat complex cases of human African trypanosomiasis, leishmaniasis, leprosy and Buruli ulcer. IDM focuses on improving access to specialized care through disease surveillance and case-finding, and helps to reduce the burden of mortality and morbidity associated with these illnesses. Though these diseases cannot be prevented through chemotherapy, better disease management can interrupt transmission.


\textsuperscript{28} An intervention is highly cost effective if it does not exceed the GDP per capita. According to most current World Bank data, this threshold was US$1424 for Sub-Saharan Africa in 2011. “Cost-effectiveness thresholds” WHO-Commission on Macroeconomics and Health. http://www.who.int/choice/costs/CER_thresholds/en/index.html
3. **Vector control** applies cross-cutting inter-sectoral solutions to help interrupt transmission of NTDs through vectors and intermediate hosts. Often involving Ministries of Agriculture, Livestock, Forestry and Water and Sanitation, vector control can enhance population-based interventions to control NTDs. Since some of these diseases occur in both humans and animals and can persist in soils and water, coordination with other sectors is necessary to lower infection rates.

4. **Environmental factors**: Measures to improve sanitation, food and water safety, and personal hygiene have a profound impact on infectious disease control, and should be integrated into NTD programs in order to limit exposure and minimize the risk of transmission from person to person.

The African region has significantly reduced the burden of poliomyelitis and Guinea worm disease throughout the region and has nearly eliminated both diseases. Massive immunization campaigns and case-finding efforts were essential to controlling these communicable diseases and the same infrastructure and political will can be harnessed to control and eliminate other NTDs in Africa. Already, the incidence of leprosy and human African trypanosomiasis have dropped in some areas and intensive preventive chemotherapy campaigns have reduced the prevalence of lymphatic filariasis.²⁹ Elimination is a feasible goal, with 28 countries having reported controlling or eliminating one or more NTD.³⁰

Many global partners have been part of the response to controlling NTDs and have been active in the region. In addition to various NGOs, faith-based groups, and others working to eliminate NTDs, the World Bank has long supported programs to eliminate sources of poverty. The World Bank funds the African Programme for Onchocerciasis Control, which was created in 1995 and took over for an existing regional ivermectin distribution and vector control program. Through the years, APOC has orchestrated the distribution of over 1.8 billion treatments since 1997.³¹ APOC has averted the loss of about one million DALYs, prevented 800 thousand cases of blindness, and reduced the prevalence of onchocerciasis about 73 percent in the 19 countries in which it is active.³²

In order to scale up the operational interventions, it is important to strengthen national NTD programmes. Most countries in region have developed national multi-year plans (also called NTD Master Plans) for the control and elimination of targeted NTDs. The major strategic priorities of these country NTD Master Plans, in alignment with the guidelines of WHO Regional Office for Africa include the following:

a. Strengthening government leadership, advocacy, coordination and partnerships for NTD control and elimination
b. Enhancing planning for results, resource mobilization and financial sustainability of national NTD programmes
c. Intensifying access to interventions, treatment and system capacity building
d. Enhancing NTD monitoring and evaluation, surveillance and operational research

Challenges for NTD Control in Africa

While the global momentum for NTDs has led to an increase in number of partners supporting African countries in the implementation of NTD control and elimination programs, this has also led to multiple, parallel funding mechanisms and programs for each country. In addition, coordination among these partners is still weak and this particularly affects capacity to track implementation and achievements of programs.

Other key constraints and challenges include following:

- The need to scale up advocacy and visibility of NTD programs at regional, national and sub-national levels;
- Weak government ownership and national program capacity. NTD programs still do not receive the required priority in government funding allocations;
- The need to direct more funds to high burden countries and villages, which are not always the priorities of many partner and donors;
- Effectively and rapidly scaling up interventions; and
- Weak government systems and NTD program management capacities.\(^{33}\)

Opportunities to Control and Eliminate NTDs in Africa

More than 30 African countries have developed multi-year, national integrated plans to control and eliminate NTDs. These plans represent a comprehensive and sustainable approach to addressing NTDs. Across the region, countries such as Kenya, Burundi, Nigeria, Mozambique and many others are launching these plans and starting in earnest to implement them. Other countries such as Ghana have already made financial commitments towards the implementation of their plan.

Internationally, NTDs have been the subject of increased attention in recent years and have been recognized as a critical factor in addressing global development initiatives. In 2008, the Group of Eight (G8) reviewed literature on ongoing challenges in infectious disease control and pledged their commitment to the support the control or elimination of high-burden NTDs. These commitments were restated at the 2009, 2010 and 2011 Summits in the ongoing fight against infectious diseases, including HIV/AIDS, malaria, tuberculosis, and polio. In fiscal year (FY) 2006 the United States Agency for International Development (USAID) launched its first Neglected Tropical Disease Control program. The U.S. government subsequently pledged US$350 million in FY 2008 over five years to deliver integrated NTD treatments to 300 million people globally.\(^{34}\) African countries have been a particular focus, with 13 countries\(^ {35}\) receiving USAID assistance.\(^ {36}\)

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\(^{35}\) Burkina Faso, Cameroon, Democratic Republic of the Congo, Ghana, Mali, Mozambique, Niger, Senegal, Sierra Leone, Tanzania, Togo, Uganda

\(^{36}\) Countries Supported by USAID’s NTD Program. http://www.neglecteddiseases.gov/countries/index.html
Commitments made at the London Declaration event totaled $785 million, which will support efforts to sustain the supply of drugs, accelerate research and development for new tools, and improve delivery and implementation programs. To date, the U.S. has allocated $301 million towards NTD control through the USAID NTD Program, including US$89 million in FY 2012 alone. Similarly, the British government’s Department for International Development (DFID) launched NTD programs in select African countries beginning in 2006 and recently announced that it will increase its commitment to £245 million between 2011 and 2015. The World Bank, philanthropic organizations, non-profits, the Drugs for Neglected Disease Initiative and 13 major pharmaceutical companies, also pledged their increased commitment to NTD elimination by 2020 and to investing in research and development for NTDs37 (see Annex 2).

Despite this momentum, there remains a need to commit to ensure strong programs to eliminate NTDs across the region by 2020. The time has come for African countries to incorporate NTDs strengthen integrated national NTD programmes and ensure financial sustainabilility of key interventions for eliminating targeted NTDs.

**Conclusion**

All health and economic development efforts grapple with the issue of sustainability. Yet if individuals, countries and populations are healthy and productive, they offer the strongest case for local sustainability of growth. NTDs pose a clear threat to development in Africa by trapping the most vulnerable populations in a cycle of poverty and disease. They severely undercut our efforts to achieve the Millennium Development Goals by perpetuating poverty and causing deleterious effects on maternal and child health, education, nutrition, and economic development. They must be addressed to ensure sustainable economic progress can be achieved. There is a need to provide leadership on this issue by playing a pivotal role in persuading Member States to make the necessary commitments to control and eliminate NTDs in the African region by 2020.

Member States should be encouraged to commit and to provide adequate resources for the implementation of national integrated NTD control and elimination programme.

Development partners should also be encouraged to make or scale up commitments towards NTD control and elimination programme.

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## MDG 1: Eradicating extreme poverty and hunger

### Progress in Africa

**Halve the proportion of people whose income is less than $1 a day.** Poverty and chronic illness are part of the same cycle. Although African economies are growing, the proportion of people living on less than US$1.25 per day has remained relatively constant, down from 56 percent in 1990 to 47 percent in 2008. Although this MDG target will be reached on the global scale, the highest rates of poverty in the world persist in sub-Saharan Africa and contribute to the conditions that allow NTDs to thrive.

### Impact of NTDs

NTDs perpetuate poverty by limiting people’s ability to lead productive lives. Chronic illness and disability prevent people from working, and prevent children from attending school, limiting their future prospects. Treating a single group of NTDs can have profound effects on both school absenteeism and lifetime earning capacity. Historically, NTD outbreaks in Africa have been extremely costly, forcing people to abandon their homes and livelihoods. Lost profits and the lingering effects of displacement on the economy have resulted in tens of millions in losses annually, and cycles of poverty and illness continue.

### Halve the proportion of people who suffer from hunger.

Hunger and NTDs go hand in hand in their relation to poverty. The African region has made small gains in lowering the proportion of children under 5 who are underweight. Between 1990 and 2010, the percentage of children who were underweight dropped from 29 to 22 percent. Unfortunately, Africa has faced severe food shortages in the last few years, and the number of undernourished people has increased.

Intestinal worms impact more than 340 million people in Africa, 283 million of them children. Worm infections can cause or exacerbate malnutrition by preventing the body from absorbing nutrients. Chronic, severe infections can cause bowel obstructions, anemia and stunting and impair cognitive development. Where there are food shortages, widespread helminth infections can undermine the impacts of food aid and nutritional supplements if the body is prevented from absorbing nutrients by intestinal worms.

## MDG 2: Achieving universal primary education

### Progress in Africa

**Ensure that children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.** School enrolment in sub-Saharan Africa has reached over 75 percent, rising from 58 percent in 1999. The region still lags significantly behind every other region in both school enrolment and literacy rates. NTDs have been shown to have a large impact on school attendance.

### Impact of NTDs

Children face an especially high burden of NTDs and symptoms can keep children out of school or keep them from paying attention or participating fully. In at least one documented case, deworming has been shown to decrease school absenteeism by 25 percent. Preventing chronic infection is also important for growth: side effects of NTDs like anemia and malnutrition have been shown to impair childrens’ cognitive development.

## MDG 3: Promote gender equality and empower women

### Progress in Africa

Gender disparities in school enrollment are

### Impact of NTDs

NTDs are particularly devastating to women
tied to poverty and impact the ability of women to achieve their economic potential and care for themselves and their families. Africa has made gains in achieving gender parity in primary school enrollment, but lags substantially in secondary and tertiary education. Women are making gains in employment in sub-Saharan Africa in terms of percentage of non-agricultural wage earners who are female, but NTD control will be essential to increase opportunities for growth.

**MDG 4: Reducing child mortality**

<table>
<thead>
<tr>
<th>Progress in Africa</th>
<th>Impact of NTDs</th>
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<tbody>
<tr>
<td>Reduce by two thirds the under-five mortality rate. Children living in rural areas and in poverty are at greatly increased risk for death in childhood and these conditions are also conducive to widespread NTD infections, although NTDs also persist in urban slums. Sub-Saharan Africa, which faces the highest rates of child mortality in the world, will not reach its target to reduce child mortality by two thirds. In 2010, the under-five mortality rate was still 121 per 1000 live births. However, the rate of reduction of under-five mortality has increased in sub-Saharan Africa, showing that progress is accelerating. Neonatal mortality has been one of the most difficult challenges to combat, and Africa’s neonatal rate remains especially high.</td>
<td>NTDs are especially debilitating to children, and effects can begin even before birth. NTDs can cause anemia during pregnancy, leading to lower birth weights and increased risk of neonatal and child mortality. There is growing evidence to suggest that chronic antenatal exposure to some NTDs may blunt immune response to standard childhood vaccinations, decreasing their effectiveness. This places children at increased risk for vaccine-preventable illnesses like measles, meningitis, pneumonia and rotavirus, major sources of childhood mortality in Africa. NTDs in childhood burden the immune system and restrict growth, and combined with side effects like anemia, increase the risk of contracting more serious conditions in childhood.</td>
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**MDG 5: Improving maternal health**

<table>
<thead>
<tr>
<th>Progress in Africa</th>
<th>Impact of NTDs</th>
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<tbody>
<tr>
<td>Reduce by three quarters the maternal mortality ratio. Maternal mortality has dropped from 850 to 500 deaths per 100,000 live births between 1990 and 2010, and although progress has accelerated in the last ten years, sub-Saharan Africa still faces significant challenges to combat maternal mortality. Antenatal care visits present a good opportunity to treat NTDs in pregnant women and further integrate healthcare services. In some countries of Africa, up to 94 percent of women are attended at least once by skilled health personnel during pregnancy, but the majority of women in sub- and girls, and they therefore face additional barriers to education and employment. As primary caregivers, women are at increased risk for some NTDs, like trachoma, which can be transmitted by their children. Certain NTDs also increase female-specific health risks, like intestinal worms, which raise the risk of anemia-related complications during pregnancy, and genital schistosomiasis, which increases susceptibility to HIV infection and other STIs, for which women are already at increased risk.</td>
<td></td>
</tr>
<tr>
<td>The effects of NTDs, including anemia, can result in increased rates of maternal morbidity and mortality. NTDs such as hookworm infection are leading causes of anemia, a condition that has serious implications for pregnant women and their newborns, even though deworming medicine is safe to use after the first trimester. Anemia can cause low birth weight, infection, miscarriage and even the death of the mother.</td>
<td>Women shoulder an especially heavy burden from NTDs (see MDG 3). Some</td>
</tr>
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</table>
Saharan Africa do not receive antenatal care with the recommended frequency and may not be receiving all recommended interventions. NTDs, like female genital schistosomiasis (FGS), have specific consequences for women’s reproductive health. FGS makes women more susceptible to HIV and other sexually transmitted infections.

<table>
<thead>
<tr>
<th>MDG 6: Combat HIV/AIDS, malaria and other diseases</th>
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<tbody>
<tr>
<td><strong>Progress in Africa</strong></td>
</tr>
<tr>
<td>Have halted and begun to reverse the spread of HIV/AIDS. Africa is making progress on reversing the spread of HIV and has also reduced the incidence of malaria and tuberculosis (TB). Deaths associated with TB and HIV are also on the decline, and the proportion of HIV+ people on ART is increasing. All three diseases (HIV, TB and malaria) share geographic overlap with NTDs, and integrated strategies can produce benefits on all fronts while combining resources.</td>
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</table>

Vector control strategies are an important part of continuing progress and ensuring long-term success against malaria and some NTDs. In some African countries, between 50 and 75 percent of the under 5 population sleeps under insecticide-treated bed nets. Health infrastructure for HIV/AIDS, TB and malaria may also be strong in otherwise neglected populations, making it a good entry point for NTD treatment, especially among patients who may be immunosuppressed. Additionally, vector control is important to combat several insect-borne NTDs.

<table>
<thead>
<tr>
<th>MDG 7: Ensure environmental sustainability (including access to safe drinking water and basic sanitation)</th>
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</thead>
<tbody>
<tr>
<td><strong>Progress in Africa</strong></td>
</tr>
<tr>
<td>Halve the proportion of the population without sustainable access to safe drinking water and basic sanitation. In 1990, less than half the population in sub-Saharan Africa had access to an improved water source; that proportion has climbed to 61 percent, but Africa will still fall short of its 2015 targets, lagging behind most other regions. The majority of people in rural areas use unimproved water sources, especially those who are poorer, exposing them to opportunities for infection by several NTDs. Only 30 percent of the population had access to improved sanitation in 2010, up only 4 percent since 1990. One quarter of the population still has no access to any sanitation facility.</td>
</tr>
</tbody>
</table>
Annex 2: London Declaration on Neglected Tropical Diseases


For decades, partners including pharmaceutical companies, donors, endemic countries and non-government organisations have contributed technical knowledge, drugs, research, funding and other resources to treat and prevent Neglected Tropical Diseases (NTDs) among the world’s poorest populations. Great progress has been made, and we are committed to build on these efforts.

Inspired by the World Health Organization’s 2020 Roadmap on NTDs, we believe there is a tremendous opportunity to control or eliminate at least 10 of these devastating diseases by the end of the decade. But no one company, organization or government can do it alone. With the right commitment, coordination and collaboration, the public and private sectors will work together to enable the more than a billion people suffering from NTDs to lead healthier and more productive lives – helping the world’s poorest build self-sufficiency. As partners, with our varied skills and contributions, **we commit to doing our part to:**

- Sustain, expand and extend programmes that ensure the necessary supply of drugs and other interventions to help eradicate Guinea worm disease, and help eliminate by 2020 lymphatic filariasis, leprosy, sleeping sickness (human African trypanosomiasis) and blinding trachoma.

- Sustain, expand and extend drug access programmes to ensure the necessary supply of drugs and other interventions to help control by 2020 schistosomiasis, soil-transmitted helminthes, Chagas disease, visceral leishmaniasis and river blindness (onchocerciasis).

- Advance R&D through partnerships and provision of funding to find next-generation treatments and interventions for neglected diseases.

- Enhance collaboration and coordination on NTDs at national and international levels through public and private multilateral organisations to work more efficiently and effectively together.

- Enable adequate funding with endemic countries to implement NTD programmes necessary to achieve these goals, supported by strong and committed health systems at the national level.

- Provide technical support, tools and resources to support NTD-endemic countries to evaluate and monitor NTD programmes.

- Provide regular updates on the progress in reaching the 2020 goals and identify remaining gaps.

To achieve this ambitious 2020 vision, we call on all endemic countries and the international community to join us in the above commitments to provide the resources necessary across sectors to remove the primary risk factors for NTDs—poverty and exposure—by ensuring...
access to clean water and basic sanitation, improved living conditions, vector control, health education, and stronger health systems in endemic areas.

We believe that, working together, we can meet our goals by 2020 and chart a new course toward health and sustainability among the world’s poorest communities to a stronger, healthier future.
**Annex 3: Disease Specific Situational Analysis of NTDs in the Africa Region**

- **Lymphatic filariasis** is prevalent in at least 39 member countries of the WHO African Region and 406 million people are estimated to be at risk for infection, mostly living in poor rural communities. Mapping of the disease is still ongoing in twelve countries. Eighteen countries are implementing preventive chemotherapy, reaching approximately 80 million people by 2010, but reaching coverage targets are still proving challenging as more remote areas are incorporated under scale-up initiatives. There is little capacity to manage advanced cases and morbidity caused by chronic infection in most countries.\(^{38}\)

- Approximately 90 percent of the global **schistosomiasis** ("bilharzia") burden occurs in Africa; most countries are endemic for schistosomiasis. Eighteen African countries have completed mapping and 32 countries have national control programs. More than 27 million people were treated in 2010, but this is only 13% of the estimated number of people in need.

- 42 African countries are endemic for **soil-transmitted helminths**, with prevalence exceeding 50 percent in 20 countries. Nineteen countries have completed mapping and many more have deworming programs in place. Nine countries met 100% geographic coverage in recent years. 283 million school and preschool age children received treatment in 2010; this is still only 46% and 26%, respectively, of the population in need of treatment.

- **Onchocerciasis** ("river blindness") is endemic in 19 African countries, and over 100 million people are estimated to be at risk and in need of preventive chemotherapy. APOC currently covers all 19 countries, and treats more than 75 million people annually\(^{39}\).

- **Trachoma** is endemic in 29 African countries, and 232 million people are at risk. Fewer than 40 million people were treated in 2009, and there is need for surgeries to correct advanced cases of blindness.

- Foci of **human African trypanosomiasis** (HAT) exist in 36 African countries. Affected countries have increased surveillance efforts drastically and with improved case-finding and treatment, the number of new cases has fallen dramatically, from 37,991 cases in 1998 to 17,696 in 2004 to 9,878 in 2009, the first time the incidence of HAT dropped below 10,000 in 50 years. In 2011, 6743 new cases were reported. Situational analyses must still be completed in 7 countries.

- **Leprosy** continues to remain a challenge in the African region despite a 95% decrease in prevalence since the early 1900s. 25,739 new cases were reported in 2010 across 18 countries, with 66 percent constituting severe cases. One and a half million cases of leprosy have been treated in Africa in the last 20 years.

\(^{38}\) All data from from “Priorities for Neglected Tropical Diseases in the WHO African Region” unless otherwise noted. WHO-AFRO. Elements of the Roadmap for Neglected Tropical Diseases in the WHO African Region. Priorities for Neglected Tropical Diseases in the WHO African Region. WHO-AFRO, 2012.

\(^{39}\) African Programme for Onchocerciasis Control. http://www.who.int/apoc/about/en/
• **Buruli ulcer** is estimated to affect 5000 people annually in 15 African countries, with over 56.6 thousand cases reported since 1998. Though treatment with antibiotics is easy to implement in most situations, diagnosis remains a challenge in the field.

• **Dracunculiasis (“Guinea worm disease”)** is targeted for eradication in Africa by 2015. Incidence has been cut nearly 99% since 1989 to only 1058 confirmed cases in 2011. 97% of cases occurred in South Sudan in 2011. Major challenges to eradication include instability and the movement of refugees, leading to recontamination of countries.

• **Leishmaniasis (“kala azar”)** is endemic in many African countries, with only Ethiopia having established a national control program. Very little data is available on the prevalence of the cutaneous and visceral forms of the disease, with 20 countries suspected to be endemic and 11 countries with confirmed cases. Like Buruli ulcer, there is need for better diagnostics and easier-to-administer oral antibiotic regimens. Co-infection with HIV and leishmaniasis has led to increasing numbers of severe cases.

• **Yaws** primarily affect children living in tropical regions with poor sanitation and widespread poverty. Nine African countries are confirmed endemic, with the situation unknown in 37 others. Only Ghana has a national control program and has completed disease mapping. There is need for oral antibiotics and better field diagnostic technologies.

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### Annex 4: WHO Regional Targets for NTD Control and Elimination by 2020

<table>
<thead>
<tr>
<th>Disease programme</th>
<th>Regional goal</th>
<th>Objective and Key Performance Indicator</th>
</tr>
</thead>
</table>
| Lymphatic filariasis | Elimination of LF by 2020 | Achieve at least 80% therapeutic coverage to populations at risk in all countries  
- Negative antigenemia in children under 3 years old achieved in all implementation units |
| Trachoma | Elimination of blinding trachoma by 2020 | Achieve zero reporting of cases blindness due to trachoma  
- TF/TT prevalence fewer than 5% in children aged 1-9 years. |
| Onchocerciasis | Control and elimination of Onchocerciasis where feasible by 2020 | Achieve at least 80% therapeutic coverage to populations at risk in all countries  
- Reduce to 0 the number of cases of blindness due to Onchocerciasis  
- Nodular prevalence under 20% |
| Schistosomiasis | Reduction of Schistosomiasis morbidity to a level where it is no longer of public health importance | Achieve at least 75% coverage of regular preventive chemotherapy in school-age children.  
- Less than under 10% prevalence (low burden of disease levels)  
- Reduce burden of SCH to light intensity infections only.  
- Reduce to 0 the number of cases with gross morbidity |
| Soil-transmitted helminths | Reduction of STH morbidity to a level where it is no longer of public health importance | Achieve at least 75% coverage of regular preventive chemotherapy in school-age children.  
- Less than under 20% prevalence (low burden of disease levels)  
- Reduce burden of STH to light intensity infections only. |
| Buruli ulcer | Control of Buruli ulcer | Obtain a decreasing trend of BU annual number of new cases  
- Annual number of BU cases  
- Percentage of new cases confirmed by a laboratory test  
- Percentage of new cases with category III lesions  
- Percentage of cases cured without limitation of joint movement or disability |
| Dracunculiasis ("Guinea worm disease") | World-wide Eradication of GWD by 2015. | Eradicate the disease in humans at global level  
- Reduction in annual incidence  
- % of cases contained  
- % of endemic villages reporting |
<table>
<thead>
<tr>
<th>Disease</th>
<th>Objective</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human African trypanosomiasis</td>
<td>Reduction of the morbidity and mortality</td>
<td>- Annual numbers of HAT cases</td>
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<tr>
<td>(“sleeping sickness”)</td>
<td>attributed to sleeping sickness.</td>
<td>- Percentage of cases confirmed by laboratory tests</td>
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<tr>
<td></td>
<td></td>
<td>- Cure rate</td>
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<tr>
<td></td>
<td></td>
<td>- Annual number of deaths due to HAT</td>
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<tr>
<td>Leishmaniasis</td>
<td>Control of Leishmaniasis</td>
<td>Reduce the burden of Leishmaniasis through surveillance and control activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Annual numbers of CL and VL cases</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Percentage of cases confirmed by laboratory tests</td>
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<tr>
<td></td>
<td></td>
<td>- Annual number of deaths due to Visceral Leishmaniasis (VL)</td>
</tr>
<tr>
<td>Leprosy</td>
<td>Elimination of Leprosy as a public health problem</td>
<td>Reduce Leprosy prevalence rate to less than 1 case per 10,000 inhabitants at health district level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Prevalence rate per 10 000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Detection rate per 100 000</td>
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<tr>
<td></td>
<td></td>
<td>- Prevalence/detection ratio</td>
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<tr>
<td></td>
<td></td>
<td>- Percentage of grade 2 disabled new cases of Leprosy</td>
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</tbody>
</table>
Annex 5: Previous G8 Commitment to Neglected Tropical Diseases

**Hokkaido Tokyo Summit Leaders Declaration, July 8, 2008:**

"46.(f) To build on our commitments made on neglected tropical diseases at St Petersburg, we will work to support the control or elimination of diseases listed by the WHO [World Health Organization] through such measures as research, diagnostics and treatment, prevention, awareness-raising and enhancing access to safe water and sanitation. In this regard, by expanding health system coverage, alleviating poverty and social exclusion as well as promoting adequate integrated public health approaches, including through the mass administration of drugs, we will be able to reach at least 75% of the people affected by certain major neglected tropical diseases in the most affected countries in Africa, Asia, and Latin America, bearing in mind the WHO Plan. With sustained action for 3-5 years, this would enable a very significant reduction of the current burden with the elimination of some of these diseases."

**G8 L’Aquila Leaders Declaration, July 8, 2009:**

"122. We promote a comprehensive and integrated approach to the achievement of the health-related MDGs, also maximizing synergies between global health initiatives and health systems. We will accelerate progress on combating child mortality, including through intensifying support for immunization and micronutrient supplementation, and on maternal health, including through sexual and reproductive health care and services and voluntary family planning. We warmly support building a global consensus on maternal, newborn and child health as a way to accelerate progress on the Millennium Development Goals for both maternal and child health, through (i) political and community leadership and engagement; (ii) a quality package of evidence-based interventions through effective health systems; (iii) the removal of barriers to access for all women and children, free at the point of use where countries chose to provide it; (iv) skilled health workers; (v) accountability for results. We encourage the work of the WHO, WB, UNICEF and UNFPA are doing to renew international efforts on maternal and child health. We will implement further efforts towards universal access to HIV/AIDS prevention, treatment, care and support by 2010, with particular focus on prevention and integration of services for HIV/TB. We will combine this with actions to: combat TB and Malaria; address the spread of Neglected Tropical Diseases and work towards completing the task of polio eradication; improve monitoring of emerging infectious diseases. In this regard, we stress the importance of addressing gender inequality. We commend the strong African leadership in addressing health challenges and welcome the launch of the African Leaders Malaria Alliance on the occasion of the 64th UNGA in September 2009."

**G8 Muskoka Declaration: Recovery and New Beginnings, June 25-26, 2010**

"15. We reaffirm our commitment to come as close as possible to universal access to prevention, treatment, care, and support with respect to HIV/AIDS. We will support country-led efforts to achieve this objective by making the third voluntary replenishment conference of the Global Fund to Fight AIDS, TB and Malaria in October 2010 a success. We encourage other national and private sector donors to provide financial support for the Global Fund. We commit to promote integration of HIV and sexual and reproductive health, rights and services within the broader context of strengthening health systems. G8 donors also remain steadfast in their support for polio eradication and remain committed to a polio-free world. We continue to support the control or elimination of high-burden Neglected Tropical Diseases (NTDs)."
Deauville G8 Declaration: Renewed Commitment to Freedom and Democracy, May 26-27, 2011

“57. We remain strongly committed to meeting our commitments and to tracking their implementation in a fully transparent and consistent manner. We endorse the Deauville Accountability Report: “G8 Commitments on Health and Food Security: State of Delivery and Results*” which documents G8 action on health and food security…”


“The G8 also made several commitments to fight against specific diseases: neglected tropical diseases (NTDs), HIV/AIDS, polio, malaria, tuberculosis, and measles. Collective action including G8’s support has led to substantial results. The G8 strives to ensure its efforts are carried out in a manner consistent with aid effectiveness principles.”

2012 G8 Camp David Summit Accountability Report, May 19, 2012

“G-8 health commitments supplement and reinforce international health-related development goals, such as Millennium Development Goals (MDGs) 4, 5 and 6. Health issues have been on the agenda of every G-8 meeting since 1996, and the G-8 continues to work toward its health commitments and key targets associated with HIV/AIDS, malaria and maternal, newborn and child health. The G-8 has also committed to fighting the spread of other diseases, including polio, measles, tuberculosis (TB) and neglected tropical diseases (NTDs).”

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This report was written in collaboration with the Sabin Vaccine Institute/Global Network for Neglected Tropical Diseases and edited by WHO