



Sightsavers

Elimination of onchocerciasis

Ten-year strategic fast tracking plan in Sightsavers supported countries 2011 – 2021





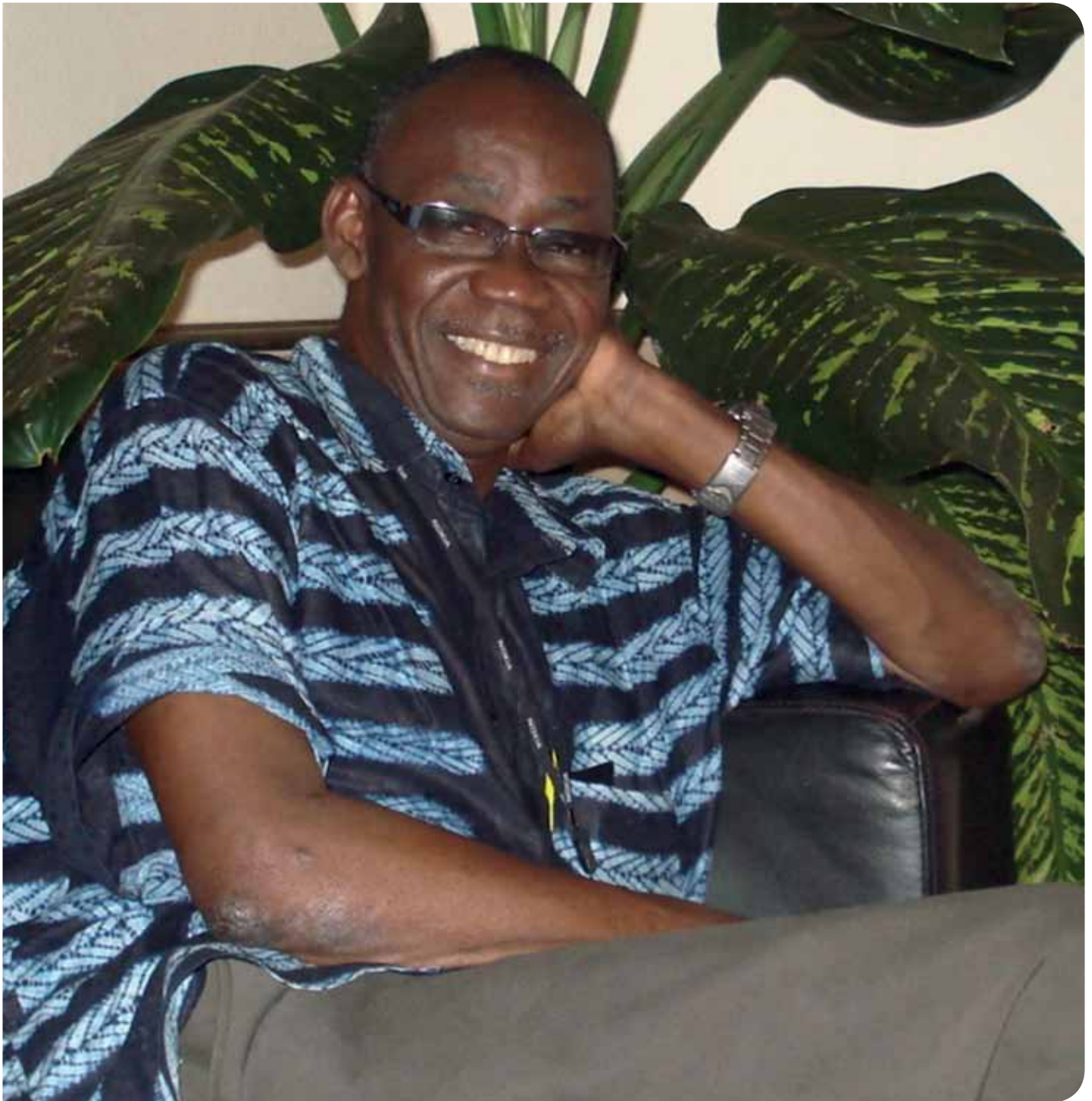
15 November 2011

**Draft written by Johnson Ngorok
with strategic direction and final
review, write up and edit provided
by Simon Bush.**

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Dedication

The Sightsavers Fast Track Initiative for Onchocerciasis is dedicated to Aboubacar Ouattara, 1st January 1953 – 19th July 2011.



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Quote from APOC

“The plan is realistic, well focused, and has very clear objectives. It is particularly interesting to note the move from control to elimination for most of the projects supported by Sightsavers. This document should inspire all individuals and organizations involved in the fight against onchocerciasis and other NTDs.”

Dr Paul-Samson Lusumba-Dikassa, Director APOC, 27 August 2011.



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Acknowledgements



This document could not have been written without Johnson Ngorok having taken on the challenge to undertake the first draft. The format was based on the trachoma fast track initiative document written and developed by Agatha Aboe and myself.

Many people contributed to the review of the document including Dr Paul-Samson Lusamba-Dikassa (Director APOC), Dr Evariste Mutabarukae (Director Multi Disease Surveillance Centre), Mr Kenneth Gustavsen (Merck), Dr Adrian Hopkins (Mectizan Donation Programme), Dr Uche Amazigo (former Director of APOC and Consultant to Sightsavers) and Professor Ekanem Braide (Vice Chancellor, Federal University, Lafia, Nigeria and Trustee of Sightsavers).

To Sightsavers staff: I thank everyone who has contributed to the document particularly Country Directors for providing the essential country data. I also thank Hannah Faal, Elizabeth Elhassan, Archana Patel, Elie Kamate, Marthe Damina, Nick Bell and Amaoudou Dare for their time spent in reviewing and contributing to the document. Sarah Wilson kindly wrote the communications strategy– a vital element of the project both aimed at internal and external communications and advocacy and I am pleased this is included in the strategy from the start.

To my line manager, Adelaide Addo-Fening, and other members of the SMT, especially Caroline Harper, Chief Executive of Sightsavers: the move from control of onchocerciasis to elimination in Sightsavers-supported countries is a bold move to make. I thank you for your trust and support as we achieve this.

To Rose Sedjro, Team Administrator for Advocacy and African Alliances: I thank you for your excellent support and back-up. Without it I would be unable to function.

The late Aboubacar (Baba) Ouattara contributed in the early days of the development of this fast track concept. This programme is dedicated to his memory.

Any errors or omissions are my responsibility.

A handwritten signature in black ink that reads "Simon Bush".

Simon Bush
15 November 2011

Contents

DEDICATION	1
QUOTE FROM APOC	2
ACKNOWLEDGEMENTS.....	3
ABBREVIATIONS AND ACRONYMS.....	6
SIGHTSAVERS CURRENT AND PLANNED ONCHOCERCIASIS PROGRAMME COUNTRIES	8
EXECUTIVE SUMMARY	9
1.0 INTRODUCTION.....	12
1.1 Background.....	12
1.2 Onchocerciasis: the disease	12
1.3. Past and present control programmes.....	14
2.0 RATIONALE AND CONCEPTUAL FRAMEWORK FOR ELIMINATION.....	16
2.1 Feasibility of elimination	16
2.2. Conceptual framework for elimination.....	17
2.3 Evaluation procedures to determine when to stop treatment.....	18
2.4 Where to stop treatment	18
3.0 CURRENT SITUATION AND INTERVENTION STRATEGY.....	19
3.1 Current situation in Sightsavers- supported countries.....	19
3.2 Control/elimination strategy: shrinking of onchocerciasis map in Sightsavers' supported countries.....	24
4.0 DEVELOPMENT POLICY ENVIRONMENT.....	25
4.1 African Programme on Onchocerciasis Control (APOC).	25
4.2 Mectizan Donation Programme (MDP).....	28
4.3 Yaoundé Declaration	28
5.0 VISION, GOAL, DRIVERS AND STRATEGIC OBJECTIVES.....	29
5.1 Vision	29
5.2 Goal.....	29
5.3 Drivers and strategic objectives	29

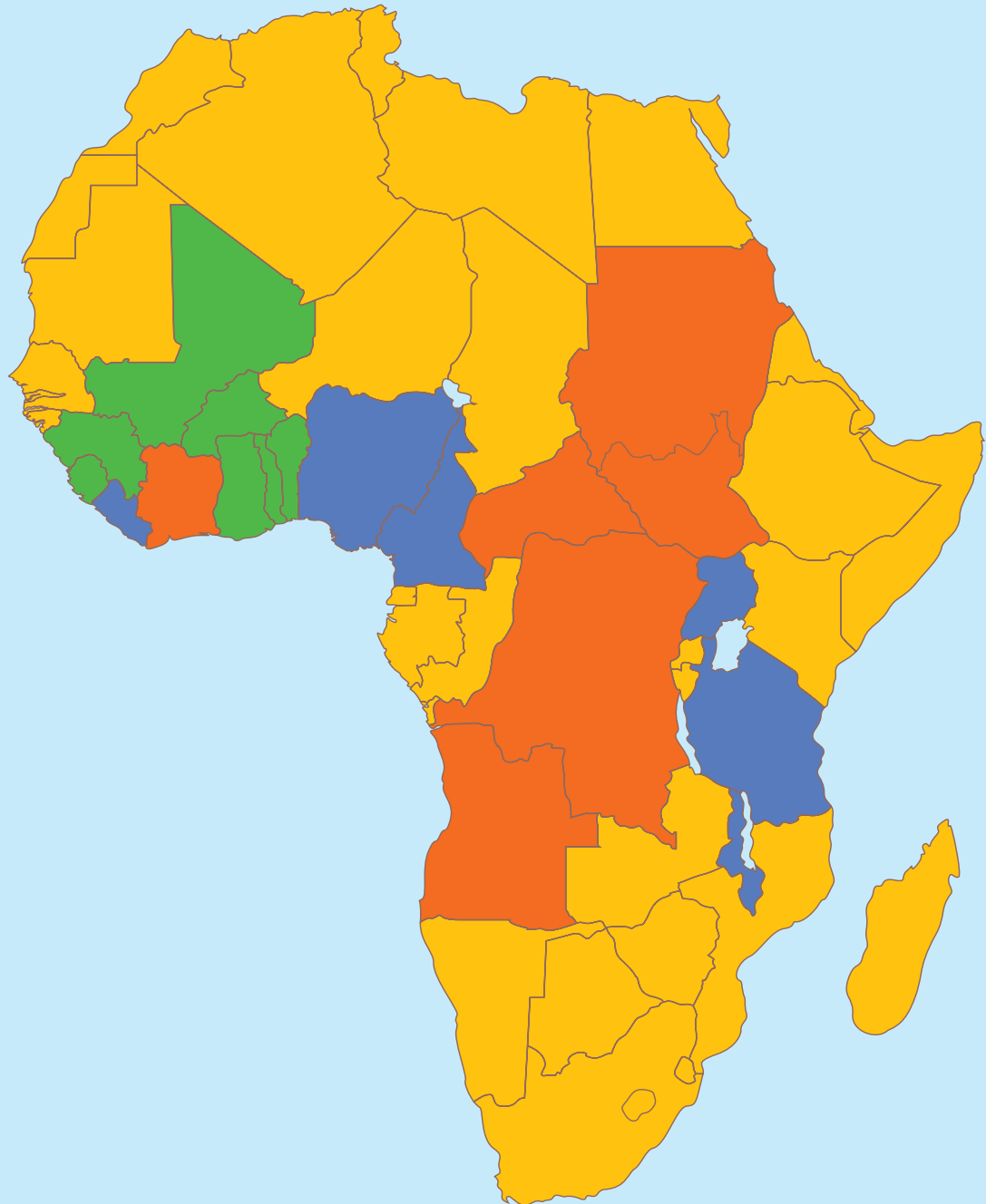
6.0 IMPLEMENTATION STRATEGY/APPROACHES	39
6.1 Health system strengthening.....	39
6.2 Integrated NTD control.....	41
6.3 Gender mainstreaming.....	42
6.4 Disability mainstreaming.....	42
6.5 Cross-border collaboration.....	43
6.6 Social determinants of health.....	43
6.7 Critical pathways and milestones	44
7.0 PARTNERSHIP	45
7.1 International partnerships.....	45
7.2 Neglected Tropical Diseases (NTDs)	45
7.3 Vision 2020, “Right to Sight”	46
7.4 Local partnerships	46
8.0 IMPLEMENTATION, COMMUNICATION STRATEGY, MONITORING AND EVALUATION.....	48
8.1 Implementation.....	48
8.2 Communications strategy	49
8.3 Monitoring and evaluation	50
9.0 TRANSITIONAL ARRANGEMENTS	53
10.0 CERTIFICATION FOR ELIMINATION	54
11.0 RISK ASSESSMENT AND MITIGATION STRATEGIES	55
12.0 BUDGET.....	56
APPENDIX 1: COUNTRY SITUATION SUMMARIES AS BY 2011	57
APPENDIX 2: 2010 PERFORMANCE DATA.....	66
APPENDIX 3: 10 YEAR DETAIL BUDGET	67
REFERENCES.....	69




Abbreviations and acronyms

AOP	Annual Operational Plan
APOC	African Programme for Onchocerciasis Control
APR	Annual Project Report
ATP	Annual Transmission Potential
CAR	Central African Republic
CBM	Christoffel Blind Mission
CBO	Community Based Organisation
CBR	Community Based Rehabilitation
CDD	Community Directed Distributor
CDI	Community Directed Intervention
CDTI	Community Directed Treatment with Ivermectin
CRS	Catholic Relief Services
CSA	Committee of Sponsoring Agencies
CSM	Community Self Monitoring
DALYs	Disability Adjusted Life Years
DfID	Department for International Development
DRC	Democratic Republic of Congo
EBEG	Eastern Bar El Gazaal
EEQ	Eastern Equatoria
FLHF	Front Line Health Facility
FTI	Fast Track Initiative
GAELF	Global Alliance to Eliminate Lymphatic Filariasis
GCR	Geographical Coverage Rate
GHI	Global Health Initiative
HKI	Helen Keller International
HR	Human Resources
HSAM	Health Education, Sensitisation, Advocacy & Mobilisation
IAPB	International Agency for the Prevention of Blindness
ICTC	International Coalition for Trachoma Control
IFESH	International Foundation for Education & Self Help
IMA	Inter-church Medical Association
JAF	Joint Action Forum
LCIF	Lions Club International Foundation
LF	Lymphatic Filariasis
MCH	Maternal & Child Health
MDG	Millennium Development Goal
MDA	Mass Drug Administration
MDP	Mectizan Donation Programme

MDSC	Multi Disease Surveillance Centre
MITOSATH	Mission to Save the Helpless
M&E	Monitoring & Evaluation
mf	microfilaria
MOH	Ministry of Health
NGDO	Non Governmental Development Organisation
NGO	Non Governmental Organisation
NOCP	National Onchocerciasis Control Programme
NOTF	National Onchocerciasis Task Force
NTD	Neglected Tropical Disease
OCP	Onchocerciasis Control Programme
OEPA	Onchocerciasis Elimination Programme for the Americas
OPC	Onchocerciasis Control Programme (French version)
PHC	Primary Health Care
RAPLOA	Rapid Assessment of Loa
REMO	Rapid Epidemiological Mapping of Onchocerciasis
RGRO	Regional Government Relations Officer
SAE	Severe Adverse Effects
SHM	Stake Holders Meetings
SMT	Senior Management Team
SSOTF	South Sudan Onchocerciasis Task Force
STH	Soil Transmitted Helminths
SWOT	Strength, Weaknesses, Opportunities, Threats
TCC	Technical Consultative Committee
TCR	Therapeutic Coverage Rate
TDR	Research & Training in Tropical Diseases
TT	Trachomatous Trichiasis
UFAR	United Front Against River Blindness
UN	United Nations
UNICEF	United Nations Children's Fund
U/NILE	Upper Nile
UNOEP	Uganda National Onchocerciasis Elimination Programme
UNOETF	Uganda National Onchocerciasis Elimination Task Force
USAID	United States Agency for International Development
UTG	Ultimate Treatment Goal
WBEG	Western Bar El Gazaar
WEQ	Western Equatoria
WHO	World Health Organisation

Sightsavers current and planned onchocerciasis programme countries



-  Current APOC supported countries
-  Current ex – OCP supported countries
-  Planned countries for expansion

Executive summary

In 2010, Sightsavers Board of Trustees and Strategic Management Team (SMT) approved an approach to 'fast track' onchocerciasis as one intervention that Sightsavers can have long lasting impact. The proof of principle of the elimination of transmission of the disease has been confirmed and the African Programme for Onchocerciasis Control (APOC) has been able to categorise most Sightsavers-supported projects as meeting elimination potential. Sightsavers is a leading player in onchocerciasis control in Africa. This support can now change, given the proof of concept being confirmed, from control to elimination and thereby ensuring a lasting legacy of our support to onchocerciasis to date.

This document outlines our current work; the potential for the elimination of transmission of the disease where feasible; tracks and approach to move from control to elimination and; provides a data set of information to those in the organisation working on or raising the funds for onchocerciasis.

Sightsavers currently supports onchocerciasis control programmes in 14 African countries. These include six countries (Nigeria, Cameroon, Liberia, Uganda, Tanzania and Malawi) within the African Programme for Onchocerciasis Control (APOC), and eight ex-Onchocerciasis Control Programme (OCP) countries (Ghana, Togo, Benin, Mali, Guinea Bissau, Sierra Leone Burkina Faso and Guinea). Sightsavers involvement in the programmes is summarised as follows.

- A total at risk population of 25,877,019 in Sightsavers supported countries (90 million people are at risk in Africa which is APOC's overall target for treatment).
- In 2010 Sightsavers assisted governments in 45,855 communities (34% of 133,000 endemic communities in Africa) with an Ultimate Treatment Goal (UTG) of 21,810,069 people¹.
- Community directed treatment with Ivermectin (CDTI) is established in all Sightsavers-supported projects and was in 2010² supported by a total of 107,207 CDDs (26% of the 420,327 total for APOC) and 13,633 health workers (35% of 38,908 the total) trained in the CDTI strategy and supervision.
- In 2010, Sightsavers supported 22,267,681 Mectizan® treatments³ representing 38% of the over 68 million total treatments administered in Africa.

Full national scale-up of the onchocerciasis programme has been achieved in most Sightsavers-supported countries. This means that most projects have maintained very high >80% of therapeutic and 100% of geographical coverage. In addition, pre-control endemicity levels have been recorded, and are available, along with a high number of years of treatment. This means that the majority of programmes supported by Sightsavers can move from control to elimination of transmission.

1 Sightsavers data, subject to verification by APOC at the Joint Action Forum in December 2011

2 Sightsavers data, subject to verification by APOC at the Joint Action Forum in December 2011

3 Sightsavers data as of August 2011 updated data likely, subject to verification by APOC at the Joint Action Forum in December 2011.

Epidemiological studies have not been a priority in APOC country programmes. This is because the programmes were in the control stage until recently when it embarked on elimination programmes where this is feasible. However, limited studies have been carried out by APOC including:

- Epidemiological surveys carried out in the Tanga project in 2010 in Tanzania showed zero positive case status in all but one village where few positives were observed in parasite infection rates.
- Uganda and Chad, are some other examples where zero to near zero case status was observed.
- Epidemiological surveys conducted in Kaduna and Zamfara, Ebonyi, projects, Nigeria, all of which showed no positive cases.
- Epidemiological surveys conducted in Sierra Leone in 2010 which showed a reduction in microfilaria prevalence rates (mf).

Sightsavers' current spend on onchocerciasis programmes is \$2,731,000 (2010).⁴ The 'Gift-in-Kind' of Mectizan, as donated by Merck and the Mectizan Donation Programme to Sightsavers, is worth over \$200 million (2010).

The Fast Track Initiative for Onchocerciasis will, in 18 supported countries:

- Ensure onchocerciasis has a high priority in all Sightsavers country programmes where the disease is endemic and expand to new countries where we are needed.
- Ensure achieving high therapeutic and geographical coverage in all Sightsavers-supported projects.
- Ensure support for country programmes in the implementation of projects with CDTI at the heart of the mass drug administration programmes.

- Ensure support to disease surveillance to ensure the elimination of transmission is been achieved, maintained and certified.

Through the development and implementation of the Fast Track Initiative for onchocerciasis Sightsavers will:

- Contribute to the elimination of infection and interruption of transmission of onchocerciasis in Africa and make a major contribution to 'shrinking the onchocerciasis map in Africa.
- Strengthen surveillance activities in ex-OCP countries and expand to APOC countries in line with the Regional Onchocerciasis Surveillance Towards Elimination Strategy (ROSE) strategy through a partnership with the Multi-Disease Surveillance Centre.
- Promote research and generation of evidence for programme planning, policy development and strengthening of the health system.
- Promote the delivery of onchocerciasis control activities with other health interventions (co-implementation) in CDTI project areas.
- Engage with NTD networks to advocate for increased funding for NTDs by international donors and by national governments.
- Will reach a maximum/peak of 28-30 million treatments annually with new supported programmes in the Democratic Republic of the Congo, Angola, Côte d'Ivoire and Central African Republic.
- Support the training of 150,000 community directed distributors annually.
- Support the training of 20,000 health workers annually (supervision).
- Reinforce health education, sensitisation activities in 18 supported countries to reach all target districts.
- Support disease surveillance systems to ensure that elimination of transmission is reached and recrudescence does not occur.

⁴ Gareth Roberts to WHO Onchocerciasis Coordinator, July 2011 which covers direct field costs, direct supervisory costs and overhead costs. \$ rate as of 1 August 2011.

- Start to reflect the work Sightsavers undertakes to support health systems strengthening by building our evidence base to demonstrate the impact of onchocerciasis elimination on community health systems.
- **Elimination not feasible for the foreseeable future:** Control objective not met in Cameroon (North West) and Liberia (Northwest and Southeast).

Project by project Sightsavers will reach the elimination of transmission as follows⁵⁶:

- **Elimination very likely before 2012:** transmission close to elimination (parasite numbers too low to matter) in Nigeria (Kaduna, Zamfara), Uganda (Phase 1 – Masindi, Hoima, Buliisa), Mali*, Guinea*.
- **Elimination possible by end 2012:** transmission reduced to very low levels (parasite currently low but does matter) in Nigeria (Kwara, Zamfara) Cameroon (South West I, South West II), Uganda (Phase IV – Kibaale) Malawi (Thyolo Mwanza) Tanzania (Tukuyu).
- **Elimination feasible by end of APOC ‘phase out’ in 2015:** Control objective currently (as of 2010) not met as yet in Nigeria (Kebbi, Kogi), Malawi (Extension), Tanzania (Ruvuma, Morogoro, Tunduru, Kilosa, Mahenge), Liberia (South West) Ghana*, Guinea Bissau*, Togo* and Benin*.

When the above programme is achieved, by 2021, the elimination of infection and interruption of transmission of onchocerciasis in Sightsavers’ currently supported projects in 14 African countries would have been achieved with the majority reaching this status by 2016. This means that distribution of Mectizan in majority of Sightsavers supported projects (apart from new country programmes) against onchocerciasis will stop.

The Fast Track Initiative for Onchocerciasis has been costed out and an additional (i.e. additional to the current spend) requirement of \$15 million over ten years – i.e. an average additional spend of \$1.5 million a year to our current spend (2010) of \$2.7 million. These extra resources will bring about the elimination of onchocerciasis in our current Sightsavers-supported projects in 14 countries and lead to the same in the long-term in four newly supported countries.

Simon Bush

Director Advocacy and African Alliances
9 September 2011

5 A great caution should be taken in this classification and the basis of the classification. APOC used the reported treatment & geographic coverage level, number of years of treatment to come up with the potential of elimination. APOC did not take into account a very important decisive factor which is the pre-control endemicity levels. So when communicating this information this needs to be taken into consideration.

6 Onchocerciasis Control Programme countries are shown with a * – the classification of their elimination of transmission criteria will be confirmed by APOC.

1.0 Introduction

1.1 Background

Sightsavers aims to work with endemic communities and partners in developing countries to eliminate avoidable blindness, including the control and elimination of onchocerciasis. A key organisational value is that people should not go blind unnecessarily and in pursuit of this, the organisation strives to develop and support interventions that prevent, treat and cure avoidable blindness and promote eye health. The current programme of work outlined in the organisation's Strategic Framework, 2009-2013, includes prioritising investment in scalable cost-effective approaches to eye health, social inclusion, promoting rootedness in community development, developing effective partnerships, ensuring quality programmes, establishing strong strategic alliances and networks, ensuring adequate technical expertise and gathering sound research and evidence; all of which are relevant for the onchocerciasis programme (Sightsavers Strategic Framework, 2009-2013).

In 2010, Sightsavers Board of Trustees and Strategic Management Team (SMT) approved an approach to fast track onchocerciasis as one intervention that will enable Sightsavers to have long lasting impact, given that the proof of principle of elimination of transmission of the disease has been confirmed.

According to the WHO report (2002), the global burden of onchocerciasis was estimated to be 987,000 disability-adjusted-life years (DALYs). Africa carries almost the entire global burden of the disease. Out of a total of 37 onchocerciasis endemic countries in the world, 30 are in Africa and account for more than 99% of all cases of onchocerciasis and onchocerciasis related blindness. Isolated foci of the disease found in Yemen and six countries in Central and South America account for the remaining 1% of the global burden of onchocerciasis (Ibid, 2003).

Although onchocerciasis is not a cause of mortality, the disease reduces the human host's immunity and resistance to other diseases which is estimated to reduce life expectancy by 13 years. The World Health Organisation (WHO) estimates that more than 120 million people are at risk of infection with onchocerciasis. Of these, 37 million are already infected; 300,000 of whom are blinded and another 500,000 are suffering from some form of visual impairment (WHO, 2006).

The disease constitutes a serious obstacle to socio-economic development. Without a significant reduction of the burden of onchocerciasis, the achievement of a number of MDGs will be jeopardised; including MDG 1 (due to abandonment of fertile riverine agricultural areas for fear of the disease, now reoccupied with evidence of increased food production); MDG 2 (severe skin disease and blindness of adult victims of onchocerciasis lead to school absenteeism of children); MDG 5 (skin condition impacting on maternal health and breastfeeding), MDG 6 (onchocerciasis is one of the neglected tropical diseases to be controlled/eliminated) and MDG 6 (APOC programme operates one of the most successful community-private-public partnership). (*WHO, Report of the External Mid-Term Evaluation of the African Programme for Onchocerciasis Control, 2010*).

Sightsavers currently supports the treatment of 22 million people in 13 African countries (Nigeria, Cameroon, Sierra Leone, Liberia, Uganda, Tanzania, Malawi, Ghana, Togo, Benin, Mali, Guinea, Guinea Bissau) and as such, we are the lead NGDO supporting work in Africa.

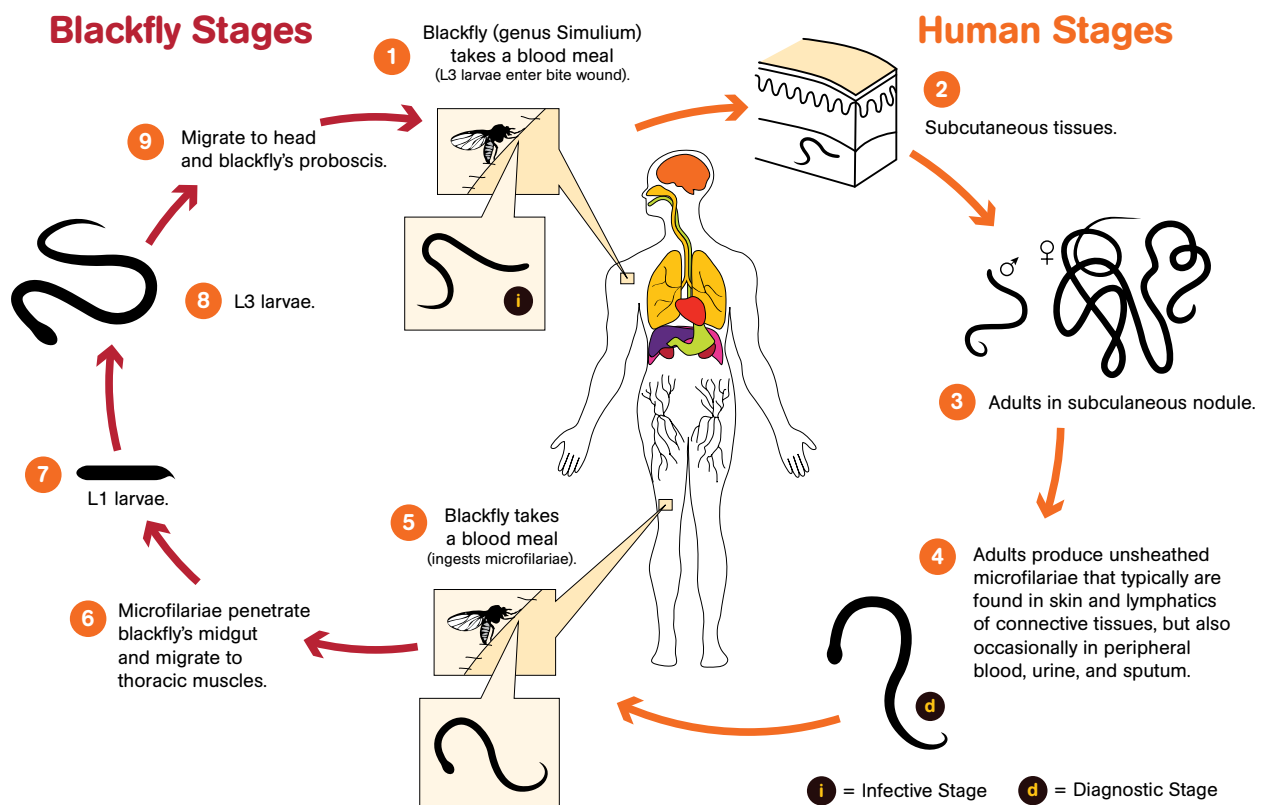
1.2 Onchocerciasis: the disease

Onchocerciasis, the world's second-leading infectious cause of blindness, is a parasitic disease caused by infection by a parasite *Onchocerca Volvulus*. The parasite is transmitted to humans through the bite of a black fly which injects immature larval forms of the parasite

(infective larvae) into their human host. The larvae migrate to the subcutaneous tissue where they undergo further development and form skin nodules as they mature into adult worms (macrofilaria). The adult worms mate and produce millions of microscopic larvae (microfilaria); this continues for 10-15 years of the adult worm's life. The microfilariae migrate to the whole body and trigger intense inflammatory reaction. Its resultant morbidity includes skin symptoms, ocular involvement and general debilitation. The black

flies, which feed during the day, ingest the microfilaria which further undergo development within the black flies into infective larvae; ready for transmission to the next human victim. The disease tends to be severe in western and central Africa where it causes both skin disease and blindness with decreasing severity towards the eastern and southern parts of the continent where it manifests mainly as skin disease. The life cycle of *Onchocerca* is illustrated below.

Picture 1: The life cycle of Onchocerca (CDC)

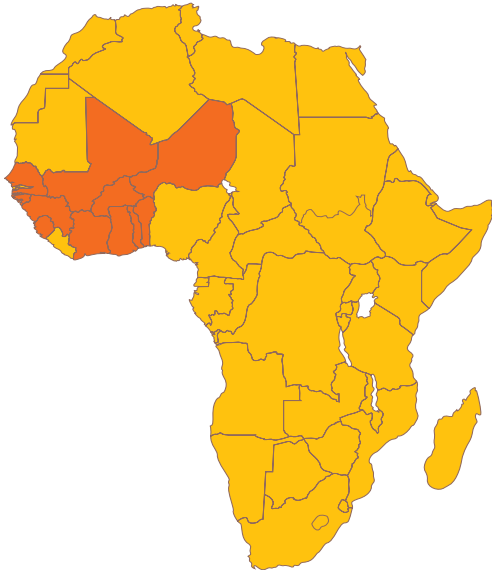


In Africa, there are two dominant species of the black fly vector; *Simulium Damnosum* and *Simulium Naevi*. The black flies deposit their eggs in fast flowing rivers where water is highly oxygenated from where young adult flies emerge. *S. Damnosum*, found mainly in west and central Africa, is known to fly distances as long as 400 km and can thereby carry infection to distant locations. A study conducted by Baker et al (1990), for example, found out that *S. damnosum* and *S. Sirbanum*, which had been eliminated in

the Onchocerciasis Control Programme (OCP) countries had reinvaded Guinea, Sierra Leone, western Mali, Senegal and Guinea Bissau; a finding which lead to a resumption of larviciding of potential sources of breeding sites. On the other hand, *S. Naevi*, found mainly in Eastern and Southern Africa, flies short distances of up to 4 km and causes mainly the skin form of the disease.

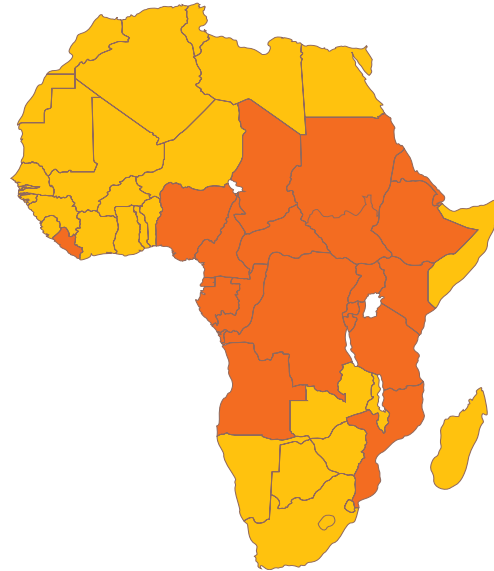
1.3. Past and present control programmes

Map 2: Ex- OCP countries



The first international effort to control onchocerciasis was the Onchocerciasis Control Programme (OCP), implemented from 1974 to 2002. At its peak, OCP was implemented in 11 countries in West Africa and covered an area inhabited by over 30 million people. The control strategy used by the OCP was aerial spraying of insecticides over fast-flowing rivers and streams; the breeding sites of the black fly. This continued for 14 years. In 1989, ivermectin treatment was introduced into the programme to supplement vector control. When OCP ended in 2002, it had succeeded in eliminating onchocerciasis as a public health problem in 10 out of the 11 OCP countries; the exception being Sierra Leone where years of armed conflict had prevented programme operations. During the 28 years of its operation, OCP had prevented 600,000 people from becoming blind, significantly reduced the social stigma associated with the disease and reclaimed 250 million hectares of agricultural land for resettlement and cultivation. Surveillance activities, usually supported by the ministry of health, continue in these countries aimed at ensuring that re-invasion with onchocerciasis does not occur.

Map 3: APOC countries



OCP was succeeded by the African Programme for Onchocerciasis Control (APOC), a partnership of Ministries of Health, local NGOs, International NGOs, the private sector (Merck and co Inc.), donor countries, UN agencies and the beneficiary communities, which was launched in 1995 based on mass drug treatment with ivermectin as its control strategy. APOC's mandate covers 19 countries outside the OCP. Three countries; Kenya, Mozambique and Rwanda, earlier included in APOC countries, were de-prioritised following the Rapid Epidemiological Mapping of Onchocerciasis (REMO) studies which found out that they were onchocerciasis hypo-endemic. In four foci in Uganda (Itwara and Mpamba-Kusi foci), Tanzania and Equatorial Guinea (Bioko island focus), ivermectin treatment was supplemented with vector control using ground larviciding. This continued until 2005 when vector control activities were discontinued. Monitoring and entomological surveillance of these foci to detect reinvasion with the blackfly is ongoing and the findings so far do confirm that elimination of the vector has been achieved. In all the other APOC countries, vector control was considered to be neither feasible nor cost-effective (*Africa REMO map is presented under section on control/elimination strategy*).

In 2007, APOC's mandate was expanded to include support to four former OCP countries (also referred to as Special Intervention Zones or SIZ countries) i.e. Cote d'Ivoire, Ghana, Guinea Bissau and Sierra Leone. In these countries, APOC engages with national coordinators and supports cross border meetings in order to strengthen surveillance activities.

The core of APOC's operational strategy is Community Directed Treatment with Ivermectin (CDTI), a strategy that relies on the communities themselves to decide on mode and time of distribution as well as select community distributors and supervisors. APOC has over the years built a network of community directed distributors (CDDs). According to APOC's 2009 Progress Report, there were 420,327 CDDs trained. Support to CDTI projects to increase the number of CDDs and the knowledge and capacity of communities to manage mass drug

administration will continue to be an important activity. These networks of CDDs have also been found to be a useful vehicle for delivery of other health interventions to poor and remote rural communities through an integrated approach. In 2008, more than eleven other health interventions had been delivered along with ivermectin in 18 projects in 7 countries (WHO, 2009) delivering services to 38 million other people.

According to the APOC's Progress Report (2010), the programme reached 68.4 million people, in 133,000 communities, in 15 countries with ivermectin treatment. The report concludes that the programme has achieved the control of onchocerciasis as a public health problem in the majority of counties and that with accelerated effort; all countries could be moved to control targets by 2015, the year that APOC officially comes to the end.

2.0 Rationale and conceptual framework for elimination

WHO has researched a great deal on the feasibility of elimination of onchocerciasis using current tools and has consulted widely with onchocerciasis experts. The recommendations from these studies and consultations are contained in the following documents:

- WHO 2009. Informal Consultation on Onchocerciasis Transmission with Current Tools in Africa – *Shrinking the Map*.
- WHO 2010. Conceptual and Operational Framework of Onchocerciasis Elimination with Ivermectin Treatment.
- WHO 2010. Moving from Control to Elimination Where Feasible: *forecasting and categorisation of APOC projects*.
- Diawara, L et al. (2009). Feasibility of Onchocerciasis with Ivermectin Treatment in Endemic Foci in Africa: First Evidence from Studies in Mali and Senegal, *PLoS Negl Trop Dis*.
- Afework H T, Elhassan E., Isiyaku S., Amazigo UV., Bush S., Noma M., Cousens S., Abiose A., Remme H (2011 – in draft for publication) (including Sightsavers staff). Impact of long-term treatment of onchocerciasis with ivermectin in Kaduna State, Nigeria: First Evidence of potential for elimination of infection in an APOC supported Country.

The rationale and framework for elimination that this Sightsavers Fast Track Initiative adopts is drawn from these documents and may be viewed from this link <http://www.who.int/apoc/publications/en/>

2.1 Feasibility of elimination

Although ivermectin is known to be an effective micro-filaricide that kills 99% of microfilaria in a single treatment, there is insufficient information on the long-term effect of repeated use of ivermectin on the viability and reproductivity of the adult worms⁷. Previously it was thought that ivermectin had no effect on adult worms, but recent findings – in particular, the epidemiological results from the field seems to debunk this earlier assumption. The drug however reduces parasite (microfilarial) load and the rate of transmission and according to the predictions made in the 1990's, it was envisaged that long term treatment with ivermectin would interrupt transmission and elimination of the disease might be possible.

The first empirical evidence on the feasibility of elimination of onchocerciasis in some settings in Africa with ivermectin treatment alone emerged from the Senegal & Mali studies (Diawara et al, 2009). The studies showed that after 15-17 years of treatment, the prevalence of infection and intensity of transmission had fallen below threshold levels for elimination. This finding was further corroborated by a multi-country study conducted in 5 African countries -this study, however, requires validation and the entomology studies are not yet completed. The proof of principle that elimination of onchocerciasis with ivermectin treatment is feasible is now established.

7 Viability and fertility of adult *Onchocerca volvulus* after 6 years of treatment with ivermectin S. L. Klager¹, J. A. G. Whitworth² and M. D. Downhad Lancet Infect Dis. 2008 May;8(5):310-22.Effect of single-dose ivermectin on *Onchocerca volvulus*: a systematic review and meta-analysis.Basáñez MG, Pion SD, Boakes E, Filipe JA, Churcher TS, Boussinesq M. Trop Med Parasitol. 1992 Dec;43(4):256-62. The effect of repeated doses of ivermectin on adult female *Onchocerca volvulus* in Sierra Leone.Chavasse DC, Post RJ, Lemoh PA, Whitworth JA.

2.2. Conceptual framework for elimination

An international group of experts convened in Ouagadougou in 2009 to review the status of onchocerciasis elimination in Africa using current tools and identify critical issues for the feasibility of elimination. The expert group provided a definition that was subsequently refined by the Technical Consultative Committee (TCC).

Definition of onchocerciasis elimination

The reduction of infection and transmission to the extent that interventions can be stopped, but post-intervention surveillance is still necessary.

Operational definition

- i. Interventions have reduced *O. volvulus* infection and transmission below the point where the parasite is believed to be irreversibly moving to its demise/extinction in a defined geographical area.
- ii. Interventions have been stopped.
- iii. Post-intervention surveillance for an appropriate period has demonstrated no recrudescence of transmission to a level suggesting recovery of *O. volvulus* population.
- iv. Additional surveillance is still necessary for timely detection of recurrent infection, if a risk of reintroduction of infection from the other areas remains.

The conceptual framework identifies three phases:-

Phase 1: During the intervention period of treatment with ivermectin, the microfilarial load and annual transmission rate continues decreasing with each round of treatment. The adult worm population also declines due to natural causes or sterilization of old worms without replenishment. This continues until the adult worm population has been reduced to such low levels that it will move irreversibly to extinction even without treatment. The parasite density is said to have fallen below “breakpoint” i.e. elimination has been achieved. During this stage, monitoring and evaluation of progress towards elimination is required.

Phase 2: The parasite numbers are so low that any residual transmission is insufficient for the parasite to survive. Eventually, the parasite population becomes extinct. During this phase, which lasts three years, active surveillance using both epidemiological and entomological studies are carried out and if there is no re-emergence of parasite population or transmission, elimination is confirmed.

Phase 3: Routine surveillance is continued for timely detection of re-introduction of infection from other areas. This phase continues until continent-wide elimination has been achieved.

Sightsavers adopts this conceptual framework to support evidence based decision making through the control, elimination to the post-elimination surveillance stages of the programme.

2.3 Evaluation procedures to determine when to stop treatment

In each endemic focus, there will be a need to evaluate the progress towards elimination, generate evidence to support decision making on stopping treatment and ensure that there is no recrudescence of transmission after stopping treatment. Four steps are recommended:

- Epidemiological surveys to assess the decline of infection and compare the results with pre-control levels to assess trends towards the break point level.
- Epidemiological and entomological surveys to assess that the breakpoint has been reached and that treatments can be stopped.
- Entomological evaluations during phase two to monitor possible recrudescence of infections and transmissions therefore confirm that the decision to stop was correct.
- Phase three routine surveillance needs to be undertaken within the overall contexts of the national disease surveillance system in order to timely detect any possible recrudescence of onchocerciasis infections and transmissions.

The system in use in the ex-OCP countries is a model for entomological surveillance with the results analysed centrally by Multi Disease Surveillance Centre [MDSC] in Ouagadougou. Sightsavers will therefore support the MDSC to extend this model to the APOC supported programme countries.

2.4 Where to stop treatment

During its meeting in 2009, the onchocerciasis expert group introduced the concept of transmission zones which was defined as “a geographical area where treatment of *O. volvulus* occurs by locally breeding vectors and which can be regarded as a natural ecological and epidemiological unit for transmission”. Operationally, a transmission zone is a river basin where onchocerciasis is endemic, with communities (hyper endemic) with the highest prevalence of infection located close to the river with prevalence levels falling with increasing distance from the rivers. A transmission zone can be “open” or “closed” depending on whether there is migration of flies or humans from neighbouring areas. To eliminate onchocerciasis from open transmission zones, interventions should also be carried out in the source area of infection. The final decision on when to stop treatment will take into account the risk of reintroduction of the parasite through human or vector migration. This will entail studies on vector and human migration into the transmission zones.

In 2010, APOC began working on delineation of transmission zones which form the basis of decision on where to stop treatment. Delineation of transmission zones is a challenging area that requires professional input and may require alignment to government administrative divisions.

Sightsavers support will follow transmission zones as defined by APOC. We will support studies on human and vector migration into its supported projects. Human migration from onchocerciasis endemic areas however has to be large to have an effect on onchocerciasis transmission.

3.0 Current situation and intervention strategy

3.1 Current situation in Sightsavers-supported countries

The current situation described in this section is based on feedback to a questionnaire circulated to Sightsavers onchocerciasis programme countries which all of the 13 supported countries responded to.

- Sightsavers currently supports onchocerciasis programmes in six APOC countries (Nigeria, Cameroon, Sierra Leone, Uganda, Tanzania and Malawi) and eight ex-OCP countries (Ghana, Togo, Benin, Mali, Guinea Bissau, Liberia Burkina Faso and Guinea).
- A total of an at risk population of 25,877,019 in Sightsavers supported areas (90 million are at risk in Africa) is targeted. Sightsavers assists governments in 45,855 communities (34% of 133,000 endemic communities in Africa)⁸ A REMO conducted in Ghana in 2009 identified additional meso and hyper-endemic communities raising the question on whether the same situation could exist in other countries.
- CDTI is established in all supported projects and was in 2010 supported by a total of 107,207 CDDs (26% of the 420,327 total for APOC) and 13,633 health workers (35% of 38,908 the total) trained in the CDTI strategy.⁹ In 2010, Sightsavers supported 22,267,681 Mectizan® treatments representing 38% of over 68 million total treatments administered in Africa.¹⁰

Full national scale-up¹¹ of the onchocerciasis programme has been achieved in all Sightsavers supported projects/countries except Tanzania where treatment for two endemic districts, Njome and Mufindi of Iringa region, had not started treatment; treatment was however planned to start in 2011. There are gaps in NGDO support in Uganda (Arua, Maracha, Koboko, Yumbe districts) and Tanzania (Mahenge and Tanga CDTI projects).

The major contributors to the low GCRs and TCRs were Malawi, Liberia, Tanzania and Guinea Bissau all of which had a slow start of the programme either because of management issues (Malawi & Tanzania) or political instability/ civil strife (Guinea Bissau & Liberia). The situation in these countries has however since improved with most projects now achieving GCRs of 100% and TCRs of 80% required to achieve elimination.

There are no ongoing vector control activities in all Sightsavers supported countries. The ground larviciding that was originally carried out in selected sites in Uganda, Tanzania and Malawi was discontinued in line with APOC's strategy of promoting ivermectin MDAs as the key control strategy , although monitoring of vector control activities in Uganda is on-going and supported by APOC.

Epidemiological studies have not been a priority in APOC country programmes since the programmes are still in the control stage. However, limited studies have been carried out by APOC including.

8 Sightsavers data, to be verified at the APOC Joint Action Forum December 2011

9 Sightsavers data, to be verified at the APOC Joint Action Forum December 2011.

10 Sightsavers preliminary data , update currently being compiled, to be verified at the APOC Joint Action Forum December 2011.

11 This means that most projects have maintained very high >80% of therapeutic and 100% of geographical coverage. In addition pre-control endemicity levels have been recorded along with a high number of years of treatment. This means the majority of our supported programmes can move from control to elimination of transmission.

- Epidemiological surveys carried out in the Tanga project in 2010 in Tanzania showed zero positive case status in all but one village where few positives were observed in parasite infection rates.
- Uganda and Chad, are some other examples where zero to near zero case status was observed.
- Epidemiological surveys conducted in Kaduna and Zamfara, Ebonyi, projects, Nigeria, all of which showed no positive cases.
- Epidemiological surveys conducted in Sierra Leone in 2010 which showed a reduction in microfilaria prevalence rates (mf).

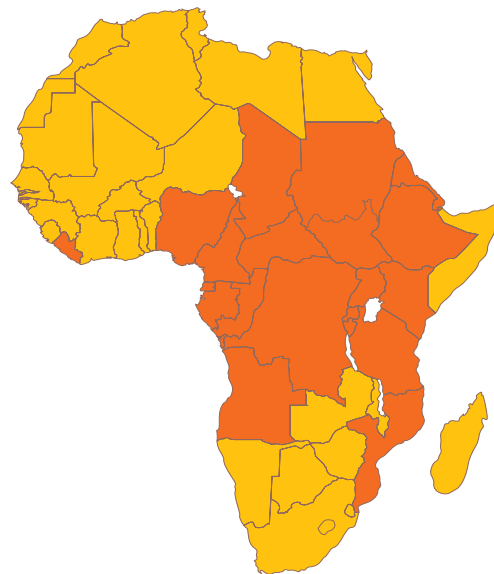
Entomological studies have similarly not been a regular activity in APOC countries during the control phase of the programme (except in Uganda) although again these activities are well established in the ex-OCP countries. The following have since been carried out in Sightsavers supported countries.

- In Uganda, entomological studies are an established activity under Uganda National Onchocerciasis Elimination Programme (UNOEP).
- In Malawi, a study to map *Simulium* species was ongoing in 2010/2011.
- In Nigeria, an entomological study is planned in 2011 to confirm elimination in Kaduna, Cross river, Ebonyi and Zamfara states.
- Annual entomological surveillance studies are conducted in sentinel villages in Mali, Ghana, Togo, Guinea Conakry and Guinea Bissau. The studies have to date showed zero infectivity rates in Mali and Guinea Conakry, a low fly infectivity rate in Guinea Bissau and parasite prevalence rates and fly infectivity rates greater than the threshold those required for elimination in Togo.

Capacity for epidemiological and entomological studies is reported to be low in all APOC countries except Uganda where the GTZ and

APOC built the capacity for epidemiological evaluations and Carter Centre joined more recently. Carter Centre has continued to build and support this capacity. The situation is comparatively better in the ex-OCP countries although this too need capacity strengthening. Ghana has developed a multi-year surveillance plan which needs to be supported.

Map 4: Sightsavers supported countries/ projects that are co-implementing with lymphatic filariasis

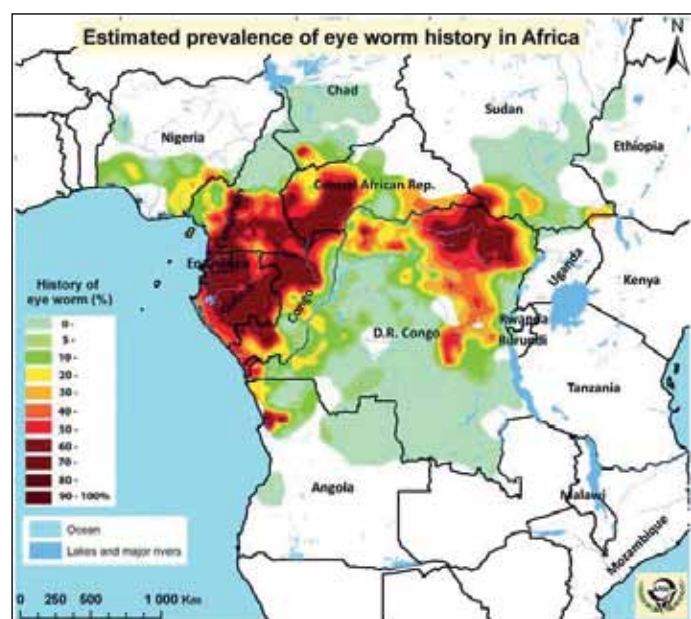


Where lymphatic filariasis (LF) is co-endemic with onchocerciasis, Sightsavers supports the co-administration of ivermectin and albendazole. In 2010, we supported 17 million LF treatments as part of integrated NTD programme. Of the 13 supported countries, ten have LF co-endemicity in the onchocerciasis supported projects (Malawi, Tanzania, Mali, Ghana, Guinea Bissau, Cameroon, Liberia, Benin Nigeria and Sierra Leone). The co-administration of ivermectin and albendazole (used to control and eliminate the transmission of the disease in Africa) is ongoing in Malawi, Sierra Leone Tanzania, Mali, Ghana, Nigeria and Cameroon but is yet to be started in Guinea Bissau and Liberia¹². In Togo, LF was

¹² Because of the slow or late integration of LF into CDTI programmes supported by Sightsavers where the disease is co-endemic with onchocerciasis we may find ourselves in a situation whereby elimination of transmission of onchocerciasis has been reached but treatments with ivermectin/Mectizan and albendazole will be continued to achieve elimination of LF.

co-endemic with onchocerciasis in 7 districts of its 28 districts but has since been eliminated and is now in the surveillance stages. There is no LF co-endemicity in projects in Uganda.

Map 5: Estimated Prevalence of Loa loa in Africa. (APOC)



In 2010, APOC completed mapping of Loa loa¹³ using the Rapid Procedure for Loa loa (RAPLOA) in 11 onchocerciasis endemic and non-onchocerciasis endemic countries. The findings of the survey will be outlined in an article in PLOS NTDs which has been accepted for publication. Loa loa endemicity is now confirmed in two current Sightsavers supported countries (Nigeria and Cameroon) and is a significant public health problem in four of the planned countries for expansion (South Sudan, DRC, Angola and CAR). In Nigeria the Loa loa endemic areas (Taraba, Benue, Cross-River and others)

13 According to WHO (2010) Loa loa filariasis (also known as loiasis, loaiasis, Calabar swellings, Fugitive swelling, Tropical swelling] and African eyeworm) is a skin and eye disease caused by the nematode worm, loa loa. Humans contract this disease through the bite of a Deer fly or Mango fly (*Chrysops* spp), the vectors for Loa loa. The adult Loa loa filarial worm migrates throughout the subcutaneous tissues of humans, occasionally crossing into subconjunctival tissues where it can be easily observed. Loa loa does not normally affect one's vision but can be painful when moving about the eyeball or across the bridge of the nose. The disease can cause red itchy swellings below the skin called "Calabar swellings". The disease is treated with the drug diethylcarbamazine, and when appropriate, surgical methods may be employed to remove adult worms from the conjunctiva. Human loiasis geographical distribution is restricted to the rain forest and swamp forest areas of West Africa, being especially common in Cameroon and on the Ogooué River. Humans are the only known natural reservoir. It is estimated that 12-13 million humans are infected with the Loa loa larvae.

are outside of Sightsavers supported projects while in Cameroon SW1 and SW2 projects are within the Loa loa belt. Loa loa co-endemicity with onchocerciasis is important as the administration of ivermectin in Onchocerciasis – Loa loa co-endemic communities can cause serious drug adverse effects and require the implementation of an agreed protocol to manage the MDA effectively.

There is a move towards integrated Neglected Tropical Disease (NTD) control in all countries. This necessitated the restructuring of NTD disease stand alone projects to an integrated approach. All of the onchocerciasis supported countries, except Guinea and Liberia, have a national integrated NTD control programme; Liberia had completed a national NTD plan. Of these, three have USAID funding (Uganda, Mali, Cameroon), one has DFID funding (Malawi), one APOC/USAID funding (Tanzania) while two have currently not got dedicated funding for NTDs (Nigeria, Guinea Bissau). There is therefore a move away from disease specific stand alone programmes to an integrated approach. Although MDA is currently the main activity that has been integrated, progress is being made to integrate other aspects of the programme that are amiable to integration. Presently, the show case country for integrated NTD control is Tanzania where an integrated NTD control programme is being implemented in 5 of its 21 regions. In Nigeria, Sightsavers is supporting integrated NTD control in Zamfara state and plans to extend this to its six supported states.

In all countries, except Guinea Bissau and Guinea (Conakry), the onchocerciasis programme is coordinated by the NTD Task Force/Steering Committee/structures/programme. National Onchocerciasis Task Forces (NOTFs) are still in place in most countries and do coordinate activities that are specific to onchocerciasis. In Guinea Bissau, coordination is mainly by the National Eye care Programme to which onchocerciasis programme is integrated. In Uganda, where a Uganda National Onchocerciasis Elimination

Task Force (UNOETF) is established, UNOETF oversees the implementation of the national elimination strategy.

Human Resource Development – Sightsavers staff

Sightsavers has over the years accumulated substantial internal human resource experience in onchocerciasis programming. Two of its current employees have served as APOC Technical Consultative Committee members (Elizabeth Elhassan and Johnson Ngorok) and a number of

others regularly participate in APOC's evaluations, research, trainings and other activities. One member of staff (Simon Bush) has been Chair of the NGDO Group for Onchocerciasis Control. Additionally, the organisation has strong networks and partnership at all levels of programme implementation including at country level (with Mali, Cameroon, Nigeria, Togo, Benin and Uganda having experienced country teams with extensive knowledge of onchocerciasis and community directed approaches). This enormous capacity and knowledge will be pivotal in the implementation of this strategy.

A SWOT analysis of countries revealed the following.

Opportunities/strength	Challenges/weaknesses
<ul style="list-style-type: none"> • Integration into PHC. • Integration into NTDs. • Increasing profile of NTDs. • Elimination strategy in Uganda and Nigeria. • Government funded Health Surveillance Assistants in Malawi. • Swap funding. • Devolution of projects technical Reviews from APOC/TCC to countries in Nigeria, Cameroon and Uganda. • Strong NGDO partnership. • National Research Institute on filariae in Cameroon. • Liberia Institute of Biomedical Research. • Deployment of Technical Advisors in Sierra Leone, Liberia and Tanzania. • Experienced oncho teams in some countries; especially the ex-OCP countries. 	<ul style="list-style-type: none"> • Risk of cross-border infection in (i) Sierra Leone, Guinea Bissau, Guinea Conakry, Liberia, (ii) Uganda with DRC and South Sudan. • Migratory population in Malawi. • High CDD to population ratio in Malawi. • Low capacity for epidemiological and entomological studies. • CDD incentives and conflicting programme approaches. • Inadequate M&E system in Tanzania. • External donor dependence for integrated NTD control programmes. • Conflicting approaches of NTD programme vs the CDTI approach. • Inadequate drugs for other NTDs in Ghana. • Timing of donor funding flow constraints implementation of integrated activities. • Political instability in Guinea Bissau. • Difficult terrain in Cameroon, Guinea Bissau and Liberia. • Low community participation in Sierra Leone and Guinea Bissau.

Each country, working with its partners, will develop strategies to build on the opportunities and strength and to mitigate challenges and weaknesses. Possible mitigation strategies would include:

- Integration into the health system structures, processes and decision making while avoiding parallel processes.
- Stakeholder meetings to harmonise approaches and processes.
- Use of data from established community information system.
- Cost-effective approaches to implementation of MDAs outside of the onchocerciasis project area.
- Meeting with community leaders to increase geographic and treatment coverage and to determine ways of maintaining high treatment coverage.

Table 1: Key indicators from the 2010 performance data – Sightsavers supported countries and projects

Country	No of meso and hyper endemic communities	Total Population	UTG	No of people treated	No. of CDDs trained	No of health workers trained
Nigeria	6,707	5,097,761	4,326,779	4,099,359	23,240	5,851
Cameroon	1,738	1,404,387	1,179,686	1,153,919	6,931	953
Uganda	553	373,877	314,057	588,152	4,516	130
Malawi	2,186	2,017,712	1,661,780	1,638,355	14,147	2,787
Tanzania	4,233	1,694,971	1,423,776	1,372,026	8,609	915
Liberia	3,247	2,056,316	1,727,306	1,601,573	8,511	709
Ghana	3,265	2,177,734	1,851,074	1,727,250	8,309	886
Togo	2,884	2,768,920	2,325,868	2,371,834	954	48
Benin	4,619	2,606,385	2,189,363	2,227,808	1,720	70
Sierra Leone	8,451	1,498,310	1,258,580	1,134,958	16,902	785
Mali	1,892	2,835,037	2,049,781	1,928,443	6,324	359
Guinea-Bissau	2,098	175,000	147,000	83,986	538	12
Guinea (Conakry)	3,992	1,213,780	1,031,713	979,584	6,506	128
TOTAL	45,855	25,877,019	21,810,067	22,267,681	107,207	13,633

Detailed project level information per country is attached as Appendix 2.

From the analysis of the current situation, the wider programme review and a literature review, the following issues and challenges stand out:

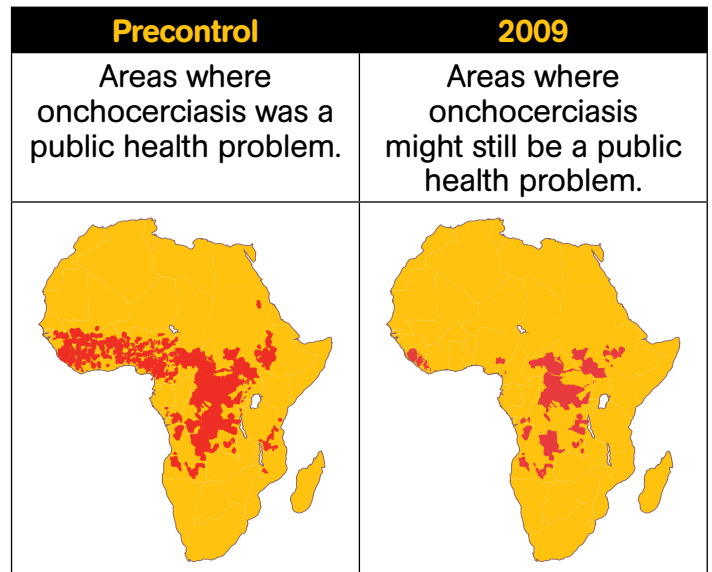
- Recent findings show that sustaining a GCR of 100% and a TCR of at least 80% in all supported projects for a period of additional 10-15 required to achieve elimination in many of the sites.
- Improving the CDD: population ratio in most countries to 1:100 and addressing issues of CDD motivation.
- Engaging communities, leaders and members to increase and maintain high coverage rates.
- Scale-up of the programme to the two endemic districts in Tanzania (Njome and Mufindi of Iringa region) where treatment has not been started and to projects with no NGDO partners in Uganda (Arua, Maracha, Koboko, Yumbe districts).

- Refining the transmission zones in countries identified for elimination.
- Strengthening capacity for epidemiological and entomological studies as the onchocerciasis programmes transition from control to elimination.
- Integration into NTDs and promoting co-implementation of multiple health intervention.
- Maintaining a watching brief on LF (Malawi, Tanzania, Mali, Ghana, Guinea Bissau, Cameroon, Liberia, Togo and Sierra Leone) and loa loa.
- APOC APOC Management released the Loa loa map in March 2010 .APOC Management was asked by PLOS NTD during review of the article on Loa loa to release the detailed maps to countries and this is being done.
- Expanding programme support to new countries especially post-conflict countries where the need is still great and where there are gaps in NGDO support.

3.2 Control/elimination strategy: shrinking of onchocerciasis map in Sightsavers' supported countries

The implementation strategy will continue to be annual ivermectin mass drug administration delivered using Community Directed Treatment with Ivermectin (CDTI) in line with the conclusions of the Senegal and Mali study. Depending on the pre-control endemicity levels and treatment coverage, treatment may be continued for 10 to 15 years i.e. until elimination of onchocerciasis transmission is achieved. The aim is to “shrink the map” of onchocerciasis in each of the countries and in Africa as shown by the maps below. Recent evidence from Ethiopia and the recommendations of the CSA committee on elimination indicate that projects that maintain treatment coverage of 80% and above will be able to significantly shrink the map by 2020 in several sites. This is why 10-15 years is being suggested. A longer timeline may, however, discourage donors. We know, for example, there are countries we may not be able even in 2035 to eliminate (e.g. DRC, CAR).

Map 6: Illustrating the ‘shrinking of the onchocerciasis map for Africa (APOC 2009)



CDTI is now established in most endemic countries. By 2010, APOC was implementing a total of 107 CDTI projects. In rural populations of sub-Saharan Africa where health systems are weak and under resourced, CDTI has proved to be one of Africa’s most successful health innovations in reducing the burden of disease at a lower cost. CDTI depends on a network of CDDs who are supported by their communities to distribute ivermectin. To carry out their duties effectively, CDDs are trained and retrained every year or every two years by Front Line Health Facility (FLHF) workers who also provide support supervision. In its 2009 Annual Report, for example, APOC reported having trained 420,327 CDDs and 38,908 FLHF workers.

It is often assumed that if treatment is provided more frequently than once a year, elimination may be achieved within a shorter period, even though there is currently no empirical evidence from Africa to support this. Until this issue has been clarified, we will only support semi-annual treatment in special cases e.g. for mopping up of residual foci.

Sightsavers will continue supporting CDTI as a backbone for the delivery of ivermectin.

4.0 Development policy environment

There are a number of international policies, guidelines and agreements that have influenced the decision of Sightsavers to prioritise the elimination of onchocerciasis as one of its Fast Track Initiatives (FTIs). Key among these are: APOC's transition from a control to an elimination programme, MDP, NTDs, Vision 2020, "The Right to Sight" and the Yaoundé Declaration.

4.1 African Programme on Onchocerciasis Control (APOC).

After more than fifteen years of programme operation, APOC is making a transition from a control to an elimination programme where feasible. APOC estimates that elimination of transmission of onchocerciasis in Africa can be achieved in 70 of the 108 projects by 2015; the aim of the elimination being to "shrink the map" of onchocerciasis.

Given the approval of the Joint Action Forum (JAF) to continue in the coming years to evaluate progress towards elimination, and in response to the decision of the 128th session of the Committee of Sponsoring Agencies (CSA), the management of APOC has categorised countries and projects into four groups (WHO/ APOC, 2010).

- Group 1: Elimination eminent (very likely) before 2012.
- Group 2: Elimination possible by phase II end of 2012.
- Group 3: Elimination feasible by end of 2015.
- Group 4 Elimination not envisaged for the foreseeable future.

Sightsavers supported projects have been categorised as follows (Adopted from WHO: moving from Control to Elimination: forecasting and categorisation of APOC programmes). The categorisation for ex-OCP countries are estimates and are subject to agreement by APOC and other partners. Sightsavers will work closely with APOC management and assist countries in 2011 and 2012 to undertake epidemiological evaluations of Sightsavers supported projects to determine quickly the current level of infection. This will accelerate and improve the categorization of projects. The colours depict past and present organisational colours, lighter versions used for clarity, and will be referred to as, "the Sightsavers Onchocerciasis Flag".

Table 2: Sightsavers supported projects categorised as adopted from WHO: moving from Control to Elimination: forecasting and categorisation of APOC programmes.

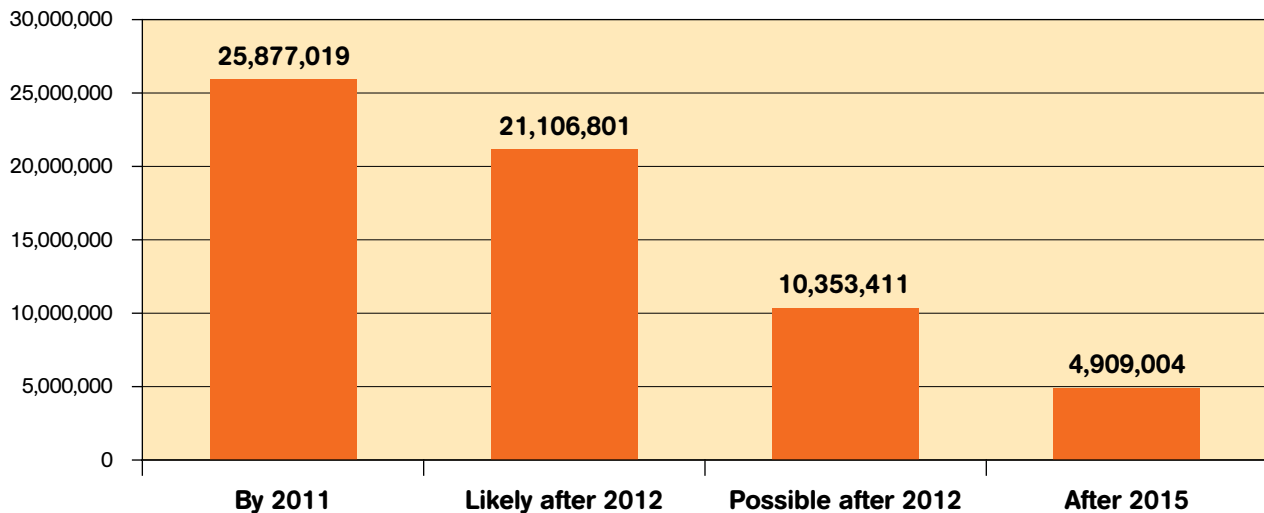
Category		Characteristic	Project
1	Elimination very likely before 2012.	Transmission close to elimination. Parasite numbers too low to matter.	Nigeria (Kaduna) Uganda (Phase 1 – Masindi, Hoima, Buliisa) Mali* Guinea*
2	Elimination possible by end of phase II in 2012.	Transmission reduced to very low levels. Parasite low but do matter.	Nigeria (Kwara, Zamfara) Cameroon (SW1, SW2) Uganda (Phase IV – Kibaale) Malawi (Thyolo Mwanza) Tanzania (Tukuyu) Ghana* Guinea* Togo* Benin*
3	Elimination feasible by end of phase out in 2015.	Control objective not met.	Nigeria (Kebi, Kogi) Malawi (Extension) Tanzania (Ruvuma, Morogoro, Tunduru,, Kilosa, Mahenge) Liberia (South West)
4	Elimination not feasible for the foreseeable future.	Control objective not met.	Cameroon (NW) Liberia (Northwest and Southeast)

*Ex-OCP countries estimates by Sightsavers/subject to agreement with APOC

If treatment for the project were to be stopped as per above projections, the target population eligible for treatment in Sightsavers supported projects would decrease over the years as follows as per graph 2.

Graph 2: Target populations (estimates) decreasing as eliminations status reached

Total Population in Meso & Hyperendemic Communities in Sightsavers Supported Projects (APOC & ex-OCP)

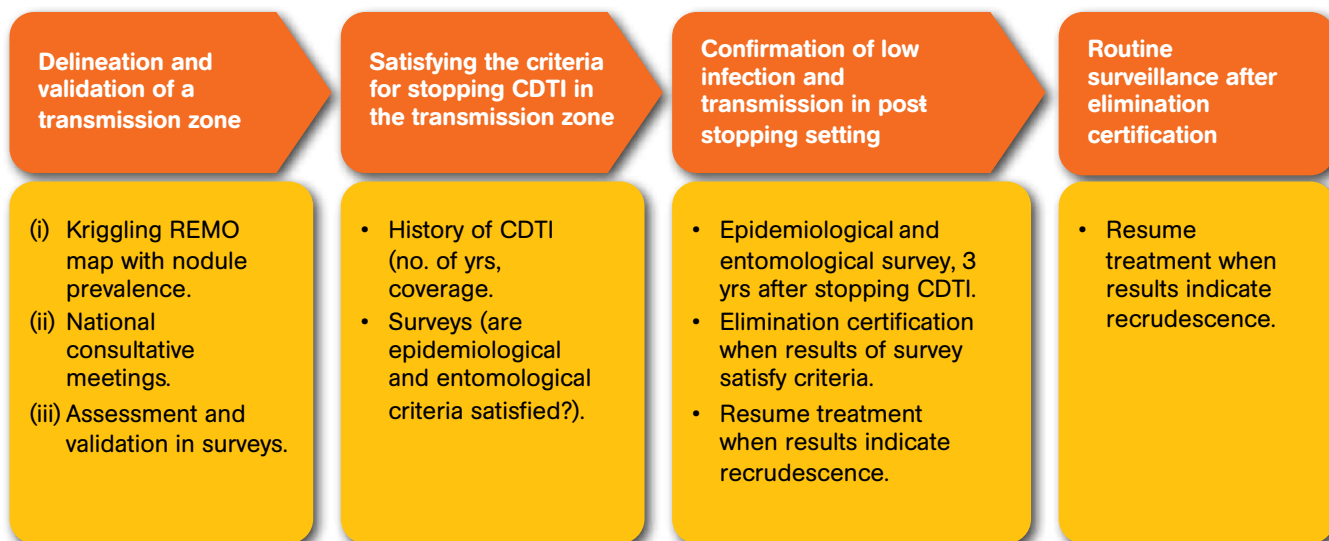


The target population figures will however increase with expansion of support to projects in new countries.

The external mid-term evaluation of APOC recommended that activities targeting elimination should be limited to localised project areas that

have had long periods of treatment with high treatment coverage while all the other projects should continue with control activities.

The following are the recommended steps towards certifying and maintaining elimination status (adopted from APOC's Mid-term Evaluation Report).



4.2 Mectizan Donation Programme (MDP)

The launch of the Mectizan Donation Programme (MDP) in 1987, by Merck and Co. created a number of new opportunities for onchocerciasis control. Merck's unprecedented offer to donate the drug in quantities needed for as long as required marked a hall mark in the control of onchocerciasis. In 1998, Merck expanded the mandate of the programme to include lymphatic filariasis elimination through the co-administration of Mectizan and albendazole in countries where lymphatic filariasis and onchocerciasis are co-endemic. Currently, more than 70 million treatments are approved for onchocerciasis in Africa and Latin America and 80 million for lymphatic filariasis in Africa and Yemen each year. The development of a broad partnership around the MDP played a very important role, including non-governmental development organisations collaborating with the ministries of health in endemic countries.

Sightsavers will continue to work in the broader partnerships to ensure that the drug so generously donated, continues to reach the people who need it.

4.3 Yaoundé Declaration

The African ministers of health, in a summit of partners held in 2006 in Yaoundé, Cameroon to discuss the future of onchocerciasis in Africa expressed commitment to accelerate elimination of onchocerciasis in all endemic countries in the region. They affirmed country leadership and the need to establish sustainable CDTI projects in all onchocerciasis endemic countries in the region.

The declaration is a key document of commitment of national governments to the elimination of onchocerciasis and provides for a good basis for advocacy with countries. Other declarations of significance are the Ouagadougou declaration on PHC and the Algiers declaration on research.

5.0 Vision, goal, drivers and strategic objectives

5.1 Vision

The Onchocerciasis FTI Strategic Plan will contribute to the overall organisational vision, i.e:

“No one is blind from avoidable causes and visually impaired people participate equally in society”

5.2 Goal

Elimination of infection and transmission of onchocerciasis in Sightsavers supported countries by 2015 for categories 1 to 3 projects and by 2021 for category 4 projects as classified by WHO/APOC.¹⁴

5.3 Drivers and strategic objectives

Driver 1: Onchocerciasis control is an unfinished business.

Although there is a move towards elimination, onchocerciasis control is still an unfinished business. The onchocerciasis partnership

can neither afford to allow onchocerciasis to recrudescence nor allow the reversal of the impressive improvements in health, agriculture and the spectacular developmental returns made over the past four decades. Ivermectin mass drug administration must therefore continue, using the CDTI strategy, to protect these gains until localised elimination of infection and interruption of transmission in transmission zones has been achieved; which according to recent research may require up to 15 to 20 years of treatment. The arrival to the decision to stop treatment is complicated and can only be made after epidemiological and entomological studies have confirmed elimination of infection and interruption of transmission.

Sightsavers will continue working with other partners to support ivermectin mass drug administration in supported projects for as long as it will be required to achieve elimination. The organisation will support the following strategy.

¹⁴ See section 4.1 for the elimination criteria and ranking of projects

Strategic objective 1: Continue to strengthen the CDTI strategy to treat 26 million people annually with ivermectin; the target to below the threshold where treatment has been stopped.	
Expected outcome Annual GCRs of 100% and TCRs of 80% is achieved in all supported projects.	Action 1. Strengthen capacities of communities to undertake CDTI activities through support of training of 150,000 CDDs annually.
	Action 2. Strengthen the capacities of district and FLHF staff to support communities implement CDTI activities through support of training of 15,000 health workers annually.
	Action 3. Support 11 APOC programme countries implement sustainability plans developed after fifth year sustainability evaluation.
	Action 4. Reinforce health education, sensitisation, advocacy and mobilisation (HSAM) activities in all the 18 supported countries to reach a target population of 30 million in the endemic districts which will strengthen the capacity of community leaders and members to maintain over 80% treatment coverage through training of leaders and members.
	Action 5. Monitor the ordering, storage and delivery of ivermectin ensuring that the people who need to get it.
	Action 6. Provide management and technical support to supported programmes through visits by country and regional staff.
	Action 7. Strengthen the M & E system at all levels ensuring that learning is fed back into programme operation.

Driver 2: The risk of cross border re-infection into ex-OCP countries remains a reality.

A number of ex-OCP countries are in the surveillance phase following the elimination achievement of interruption of transmission by the time the programme was stopped in 2002. However, the risk of cross border re-invasion by the black fly remains a reality; this has already happened in some foci such as in Guinea Bissau where low fly infectivity rates have been detected. In some of the countries, such as Guinea

Bissau and Sierra Leone, civil strife and political instability interrupted control activities which led to recrudescence of the disease. Ivermectin treatment that are ongoing in certain foci and surveillance activities will need to be continued until sustained interruption of transmission has been achieved.

Sightsavers will support the work of MDSC in active surveillance (objective 4) and continue supporting MDA in the supported ex-OCP countries. The following strategy will be adopted.

Strategic objective 2: Protect the gains of the seven ex-OCP supported countries and achieve or maintain interruption of onchocerciasis transmission.

Expected outcome

Epidemiological and entomological surveillance in sentinel villages show evidence of interruption of transmission in the seven supported ex-OCP countries.

Action 1. Carry out all the actions of Objective 1.

Action 2. Support epidemiological and entomological surveillance activities through MDSC including:-

- Strengthening capacity in epidemiological and entomological studies.
- Carrying out surveys in sentinel and additional villages.
- Application of findings in programme operations.

Action 3. Work with APOC and the NGDO Group to support cross-border collaboration and review meetings where there are risks of cross-border re-infection.

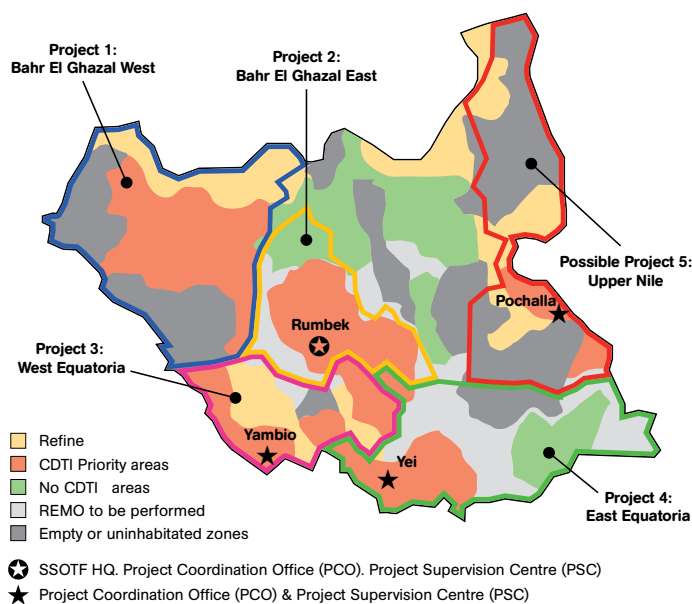
Driver 3: Low GCR and TCRs in post-conflict countries/fragile states delaying the achievement of elimination in Africa.

The situation of the programme in two of the proposed post conflict/fragile states countries for programme expansion i.e. South Sudan and DRC is discussed below; Information for Angola, CAR and Ivory Coast will be compiled prior to initiating activities.

(i) South Sudan

All the ten states of South Sudan are onchocerciasis endemic, with the main foci of infection located in Western Equatoria, Northern Bahr Al-Ghazal and Western Bahr Al-Ghazal states. In these areas, over 80% of individuals in some villages have palpable nodules and blindness exceeds 12% (Mukhtar *et al.* 1998). REMO carried out in 2003 classified communities into three categories: priority areas requiring CDTI; areas not requiring treatment; and possible endemic areas that need further investigation as shown in the figure below.

Map 7: REMO Map of South Sudan (APOC 2010)



Based on the results of the REMO, the programme was divided into five CDTI projects. Defining the targeted population in this post-conflict country is complicated by a dynamic population as people continue to return and by the pastoralist life style of several communities. The data below was reported in the SSOTF 2009 Annual Technical Report submitted to APOC TCC.

CDTI Project	Endemic Communities	Total Population	UTG	GCR	TCR
WBEG CDTI	2,522	2,702,724	2,270,288	83.7%	38.7%
EBEG CDTI	1,963	761,917	640,010	88.4%	70.9%
EEQ CDTI	560	963,727	809,531	87.3%	67.2%
WEQ CDTI	903	689,419	579,112	93.1%	67.8%
U/NILE CDTI	525	487,939	409,869	99.1%	56.1%
Total	6,473	5,605,726	4,708,810	88%	53.7%

Therefore, by 2009, it was estimated that 5,605,726 people were at risk of infection in 6,473 meso and hyper-endemic communities in 24 counties. The Ultimate Treatment Goal (UTG) was 4,708,810 persons. Although with the support of APOC and CBM the GCR has been improving over time, peaking 88% in 2009, the TCR has remained low at 53.7%. These are still below thresholds required for elimination.

MDA with ivermectin was first initiated in 1995. The SSOTF coordinates the procurement and ivermectin treatment by all partners. CBM is currently the only NGDO partner.

A major concern in the West Equatoria zone is the co-existence of *Loa loa* in specific areas, which can precipitate serious adverse events (SAEs) in those who are given ivermectin.

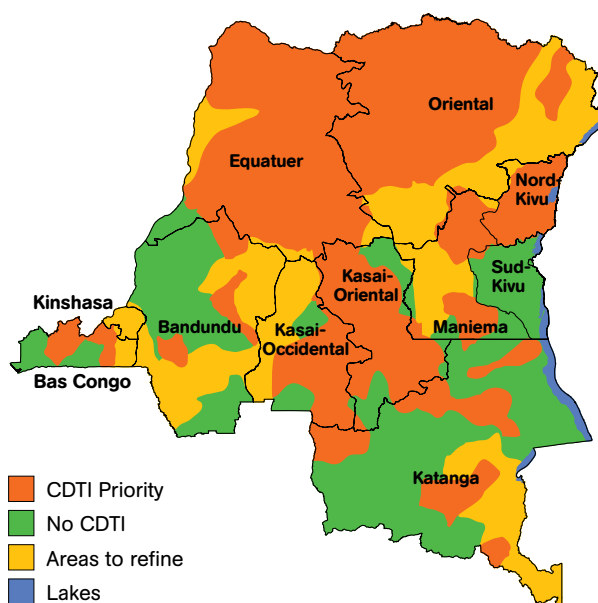
Given that there are major partnerships with NGOs in South Sudan, it is likely that Sightsavers support would go to support the SSOTF and the Ministry of Health. Additional support will also go to the NGOs already in place as partners of APOC to ensure increased and sustained coverage.

ii) Democratic Republic of Congo (DRC)

Onchocerciasis is endemic across the DRC. According to REMO carried out in 2006, it is estimated that 19,360,676 people living in meso and hyper-endemic communities are at risk of infection, representing 32% of the total population of 60,644,000 of the DRC. (WHO, 2006). The

onchocerciasis programme in DRC is organised into 20 CDTI projects. There are no vector control activities. The NOTF secretariat, based at the national level, is responsible for overseeing the implementation of all CDTI projects in the country. The REMO map below shows priority CDTI areas and areas that need further refinement.

Map 8: REMO map for DRC (APOC)



Ivermectin treatment was started in 2000 but due to the post-conflict situation and logistical challenges in the DRC, two CDTI projects are to be launched to achieve full national coverage. In 2009, the programme achieved a GCR of 72% and a TCR of 44%. These are still below thresholds required for elimination.

NOTF reports a number of gaps in NGDO partner project support. For example, three projects (Lubutu CDTI, Bas-Congo CDTI and Bandundu CDTI) previously supported by HKI and IMA no longer receive support. Similarly, there are funding challenges being faced by two projects (Beni-Butembo and Ituri-Nord CDTI) being supported by LCIF.

Sightsavers will support UFAR in two of the CDTI projects which currently do not have an NGDO partner. According to discussions with UFAR these projects are in Ituri Nord and Lubutu in Oriental and Maniema provinces. A five year agreement with UFAR to fund these projects was signed in August 2011.

Sightsavers will implement the following strategy:-

Strategic Objective 3: Expand supported onchocerciasis programmes to five countries; three within the first two years (South Sudan, DRC and Ivory Coast*) and a further two within the following two years (Angola and Central African Republic).	
<p>Expected Outcome</p> <p>Increased capacity of SSOTF to manage the onchocerciasis programmes and two onchocerciasis projects initiated in DRC.</p> <p>The new projects supported attain annual GCRs and TCRs required to progress towards elimination.</p>	Action 1. Establish partnership with South Sudan Onchocerciasis Task Force (SSOTF) and NGOs already in place to support the South Sudan onchocerciasis programme.
	Action 2. Establish partnership with UFAR/DRC NOTF to support two projects in the DRC.
	Action 3. Develop detailed project proposals outlining the need, interventions to be supported and the financial requirement.
	Action 4. Mobilise and disburse resources to finance priority interventions.
	Action 5. Support partner(s) implement the project and scale-up operations to achieve GCR of 100% and TCR of 80% of eligible population.

*Expansion to Ivory Coast will be dependent on improvement in the security situation

Driver 4: CDI as a proven cost-effective approach to extending the health system beyond the front line health facility (FLHF).

A multi-country study conducted by TDR (WHO, 2006) provided the evidence of the effectiveness and efficiency of using the Community Directed Intervention (CDI) approach for the integrated delivery of multiple health interventions where CDTI for onchocerciasis control is already established. It is now acknowledged that the network of community distributors established in CDTI projects can provide a delivery mechanism for the provision of multiple health interventions. The CDI strategy is especially important in rural Africa, and particularly in post-conflict countries, where health infrastructure is either poor, has been destroyed during conflict or

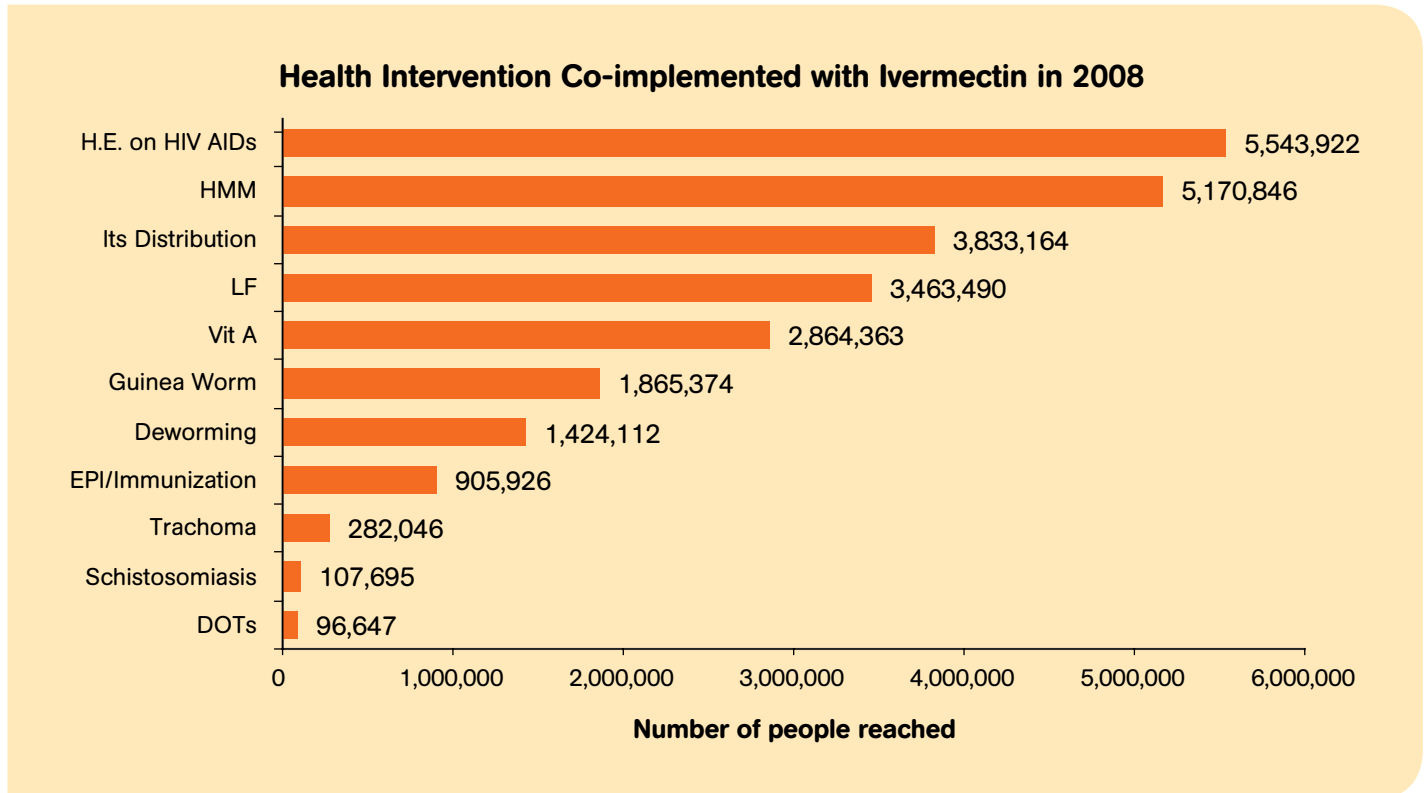
has suffered prolonged periods of neglect; therefore reducing access to mainstream health services. In these situations, the network of CDDs provides an extension of the health system to remote and underserved communities. Through co-implementation of ivermectin with other interventions, these communities are enabled to access health service and therefore achieve greater improvement in their health status.

Co-implementation will promote synergy and streamline operations which will in turn improve efficiency, lead to cost-effectiveness of interventions and avoid fragmentation. Sightsavers supported country programmes including: Nigeria, Cameroon, Uganda, Malawi and Tanzania are already implementing

co-implementation using the CDI strategy. Examples of good practice can be found in Sokoto and Zamfara projects of Nigeria.

In its Addendum for the Plan of Action, 2008-2015, APOC reported the most frequent health interventions co-implemented with ivermectin using CDI. This is presented in the graph below.

Graph 3: Health Interventions Co-implemented with CDTI (APOC 2009)



Sightsavers will promote the co-implementation of onchocerciasis with the other priority NTDs. The organisation will however take into account the fact that NTD disease control measures do go beyond MDAs. The use of CDI for the delivery of Sightsavers other supported interventions including cataract, trachoma, childhood blindness and community based rehabilitation will similarly

be promoted. The organisation will, in addition, work with other agencies to promote the co-implementation of ivermectin with other health interventions that are amiable to CDI.

Sightsavers therefore adopts the following strategy to promote the co-implementation of multiple-health interventions using CDI.

Strategic Objective 4: Promote the delivery of onchocerciasis control activities with other health interventions and achieve co-implementation of at least four other health interventions with onchocerciasis in each programme country.	
Expected Outcome Increased availability of additional health interventions delivered through CDI in onchocerciasis endemic communities.	Action 1. Work with other disease specific control programmes to map out areas of overlap with CDTI projects.
	Action 2. Integrate into CDI the delivery of NTD interventions including mass drug administration (MDA), training, health education, sensitisation, advocacy and mobilisation (HSAM) and other interventions that can be integrated.
	Action 3. Work with the network of CDDs to carry out cataract case detection, trachoma TT case detection and the detection and referral of childhood blindness cases in Sightsavers supported eye health projects.
	Action 4. Work with the network of CDDs to identify and train people who are blind in CBR.
	Action 5. Work with other agencies to promote the co-implementation of ivermectin with other health interventions that are amiable to CDI.
	Action 6. Start to reflect the work we will do to support health systems strengthening by building our evidence base to demonstrate the impact of onchocerciasis elimination on community health systems.
	Action 7. To commission team of consultants to track the development of CDTI (and the role of NGOs in this process). Product will be two peer reviewed articles and an information resource for Sightsavers to produce a booklet on the development of CDTI during MDPs 25 th anniversary in 2012.

Driver 5: Data is required for elimination decision making and to sustain surveillance during the post-treatment period to avoid any recrudescence.

Onchocerciasis disease surveillance is required: to establish if the “break point” has been reached i.e. the adult worm population has been reduced to such low levels that it will irreversibly move towards extinction even without treatment; for post-treatment surveillance to monitor recrudescence of the disease; and for continued disease surveillance until onchocerciasis is eliminated from the whole country and from the African continent.

The Multi-Disease Surveillance Centre (MDSC), based in Ouagadougou, is mandated to assist countries plan and implement an

integrated disease surveillance system. Initially established for onchocerciasis surveillance in the OCP countries, MDSC has extended the same service to the APOC countries. To do this MDSC has developed a proposal for “Regional Onchocerciasis Surveillance Towards Elimination (ROSE)”.

While the role of WHO/MDSC in the entomological surveillance is to provide technical support including establishing/strengthening a functional entomological surveillance system through reference laboratory services, capacity building and research, country teams are in-charge of implementation of operational surveillance activities within the overall national surveillance system.

Sightsavers will work with APOC to support the MDSC lead on onchocerciasis surveillance in the ex OCP and APOC countries in line with the Regional Onchocerciasis Surveillance Towards Elimination (ROSE) Plan.

The organisation will support the implementation of the following strategy.

Strategic objective 5: Strengthen surveillance activities in seven ex-OCP supported countries and expand to eleven APOC countries in line with the Regional Onchocerciasis Surveillance Towards Elimination Strategy (ROSE) through a partnership with the Multi-Disease Surveillance Centre.	
Expected outcome Evidence based decision making on when to stop treatment, monitoring disease recrudescence and on certification of elimination.	Action 1. Strengthen institutional capacity for onchocerciasis laboratory based surveillance.
	Action 2. Conduct active laboratory-based surveillance to give evidence of elimination where feasible.
	Action 3. Build in-country capacity for the management of onchocerciasis laboratory surveillance.
	Action 4. Link the activities of Sightsaver’s epidemiologist with that of MDSC.
	Action 5. Conduct operational research that re-enforce surveillance.
	Action 6 Monitor progress and evaluate results of control activities in countries.

Driver 6: The need for scientific information to support programme planning, policy development and health system strengthening.

Research has an important role to play in improving the delivery and equitable distribution of quality health services. The generation of evidence based knowledge and its application to improve the effectiveness of the health system is therefore an important aspect of any health intervention. This has been the case for the onchocerciasis programme which has, over the years, been built on a strong foundation of research and evidence, to a great extent, contributed to the success of the programme.

A key strategic objective of Sightsavers is to support learning through generation and dissemination of sound research and evidence. The organisation will collaborate with other stakeholders to continue promoting evidence based programming. This becomes even more critical as the onchocerciasis programme transitions into the elimination stage where, for example, evidence will be required to

determine the “break point”, the effects of human and fly migrations into transmission zones, post-elimination surveillance among others. Health system research on wider policy implications of onchocerciasis interventions remains at the heart of the onchocerciasis programme. Sightsavers will seek opportunities to collaborate with the WHO Special Programme for Research and Training in Tropical Diseases (TDR) where feasible.

Collaboration and support for research will be developed at three research domains as discussed in a paper by Remme et al (WHO, 2009):

- Operational research focusing on operational issues specific to the local onchocerciasis programme. The outputs of this research domain will be used to improve on local programme operations.
- Implementation research focusing on implementation strategies and how best to scale up interventions. The outputs of this

research domain will be used to develop strategies to improve access to and utilisation of interventions. The research findings may have a local or broader programme application.

domain will have a broader application in policy development and in strengthening the health system.

- Health system research with a focus on issues affecting some or all of the building blocks of the health system. The outputs of this research

Sightsavers therefore adopts the following strategy to promote research and the generation of evidence:

Strategic objective 6: Promote research and the generation of evidence for programme planning, policy development and strengthening of the health system.	
Expected outcome Evidence based decision making at the programme operational and policy development levels.	Action 1. Country offices to work with implementing partners and local research institutes to develop research plans and explore funding opportunities; including opportunities with:- <ul style="list-style-type: none"> • APOC’s operational research fund (APOC provides grant of up to \$20,000 per operational research proposal). • Implementation Research Platform (awards research grants). • Sightsavers research grants through the Head of Research.
	Action 2. Working with the research unit, feed into the organisation’s strategic research plans.
	Action 3. Collaborate with APOC on epidemiological and entomological research required for decision making on progress towards elimination, especially:- <ul style="list-style-type: none"> • Studies to determine if the “break point” has been reached. • Studies on the impact of human and flies migration into transmission zones. • Post-surveillance sentinel surveys.
	Action 4. Seek opportunities for collaboration with WHO/TDR on operational and implementation research.
	Action 5. Work with partners to implement research findings to improve on programme operations and the delivery of interventions.

Driver 7: Low funding for NTDs by international donors and by national governments.

- Twice the disease burden caused by tuberculosis.

The disease burden of NTDs as compared with the “big three” is estimated to be:

- One half of the disease burden of Malaria.
- Two thirds the disease burden caused by HIV/AIDS.

NTDs are therefore a formidable public health challenge especially in sub-Saharan Africa. However, compared with the big three, the funding commitment by donors for NTDs is a drop in the ocean.

There have been a number of declarations and commitments to fund NTDs including:-

- UN MDG Summit ‘Keeping the Promise’ Outcome Document, 2010.
- G8 Summit, Muskoka 2010.
- UK Department for International Development (DFID) £50million investment in NTDs, 2009.
- President Obama’s US Global Health Initiative, 2009.

- G8 Summit, L’Aquila 2009.
- G8 Summit, Hokkaido Toyako, 2008.
- Bamako Call to Action on Research for Health (Article 14), 2008.

The NTD partnership needs to follow up these and other commitments to ensure increased resource allocation for NTDs.

Sightsavers will pursue the following strategy:

Strategic objective 7: Advocate for increased funding for NTDs by international donors and by national governments and aim to triple funding currently available for NTDs.	
Expected outcome Increased funding for NTDs.	Action 1: Engage with NTD networks in international advocacy spear headed by the Global Advocacy Team.
	Action 2: National Advocacy led by country offices.

6.0 Implementation strategy/approaches

6.1 Health system strengthening.

WHO has called for greater investment in the health system. This involves harnessing and focusing the energies of communities, NGOs and the private sector to bring them to bear in achieving better health outcomes. In order to strengthen the health system, it is essential to be clear about the problems, where and

why investment is needed, what will happen as a result, and by what means change can be monitored. The study carried out by Cavalli et al (2007) on the interaction of Global Health Initiatives (GHIs) and the country health system provides an analysis of the potential positive and negative effects of the interaction of GHIs such as NTDs and the health system as analysed below:

Positive effects of the interaction of NTDs with the health system building blocks	Negative effects of the interaction of NTDs with the health system building blocks
Health services	
<ul style="list-style-type: none"> The NTD programmes ensure universal access to ivermectin/NTD drugs. Vector control where necessary contributes to elimination. Health education, Sensitisation, Advocacy and mobilisation (HSAM) activities leads to increased knowledge and promotes the participation of communities. 	<ul style="list-style-type: none"> Campaign-related workload interferes with routine health care delivery. The focus on MDAs has the risk of de-emphasizing other related control strategies. Use of community volunteers, in spite of training, has limitation as errors in population census, drug dosages and in managing side effects do occur.
Health workforce	
<ul style="list-style-type: none"> Trainings conducted at national, district and FLHF level lead to increased capacity. Allowances associated with MDA campaigns contribute to motivation and retention of staff. Training of community volunteers and community leaders leads to strengthening of the health system at community level. 	<ul style="list-style-type: none"> Allowances paid to staff during MDA campaigns distract attention from core activities. Allowances paid to community volunteers jeopardize the spirit of volunteerism. Inconsistencies in allowances paid by various donors generate growing demand.
Health system building block: Health Information System	
<ul style="list-style-type: none"> Census records and data records can be used for other health programmes. Information generated by the oncho/NTD programmes contributed to the national HIS:- <ul style="list-style-type: none"> REMO maps. Annual Technical Project Reports. Sustainability evaluation reports. 	<ul style="list-style-type: none"> Introduction of a parallel monitoring and evaluation system.

Positive effects of the interaction of NTDs with the health system building blocks	Negative effects of the interaction of NTDs with the health system building blocks
Medical products and technologies	
<ul style="list-style-type: none"> Systems to increase the availability of ivermectin/NTD drugs that ensures that the drug reaches all those who need it. 	<ul style="list-style-type: none"> Establishment of a parallel procurement system rapid distribution of drugs. Drugs not available outside the campaign period and outside the project targeted communities.
Health system building block: Health financing	
<ul style="list-style-type: none"> Significant funding available through APOC financing mechanism coordinated by the CSAs. Funding available in some countries through USAID, DFID and Bill & Melinda Gates Foundation NTD grants. Contributions by governments. 	<ul style="list-style-type: none"> Concern about long term financing for sustainable campaigns. Financing of increased storage capacity needs is often not provided for in budgets.
Health system building block: leadership and governance	
<ul style="list-style-type: none"> National Onchocerciasis Task Forces (NOTFs) improve coordination. NTD Strategic Plans developed in some countries facilitate coordination between previously stand alone NTD programmes and provides for policy guidelines. 	<ul style="list-style-type: none"> Decisions tend to be taken at the supranational level by donors and their grantees. Financing through intermediaries rather than directly to MoH creates parallel financing mechanisms. Risk of coordinating committees created for the purpose of the programme becoming parallel to existing ones. Risk of national strategic plans adapting to donor defined strategies without adequate adoption to national situations. Distorting effects to national priorities as governments try to fulfil donor requirements. Top-down implementation process compromises the local district leadership roles.

Each country office will study the interaction of Sightsavers supported Onchocerciasis/NTD programmes with the national health system in their respective country and adopt strategies that re-enforce the positive effects of the interaction while minimising the impact of the negative effects. National strategies to include some of the following mitigation strategies:

- Integrate into the health system structures, processes and decision making.

- Harmonise approaches with other stakeholders.
- Explore cost-effective approaches to implementation of MDA outside of onchocerciasis project areas.
- Engage with governments on the principles espoused by the Paris Declaration on Aid Effectiveness i.e. Ownership, Alignment, Harmonisation, Results and Mutual Accountability; and the principles espoused

by the Accra Agenda for Action (2008) i.e. predictability, country systems, conditionality, Untying Aid.

- Align to the onchocerciasis quality standards of either the national governments, APOC or Sightsavers. Sightsavers quality standards will be the minimum requirements for all supported projects.

The organisation's onchocerciasis policy, developed in 1995, has been overtaken by events especially the evidence on the feasibility of onchocerciasis elimination using current tools. The policy will be reviewed to align it with developments since then.

6.2 Integrated NTD control

The overlap of geographical areas of endemicity of the five targeted NTD diseases i.e. trachoma, onchocerciasis, schistosomiasis, lymphatic filariasis (LF) and soil transmitted helminths (STH) makes it possible for integrating NTD control measures.

Operational integration of disease specific control activities should be done where feasible and should where necessary include: integrating MDAs using the Community Directed Intervention strategy and Health Education, Sensitisation Advocacy and Mobilisation (HSAM) activities. Other operational aspects with potential for integration are behaviour change activities and materials, advocacy activities and materials, integrated census and mapping, monitoring and reporting tools.

It is worth distinguishing between integration on the operational level, and integration in management and coordination structures, systems and processes – e.g. ensuring integrated and joint-up programme planning and monitoring, ensuring there is an effective forum for overall NTDs management and programme oversight, with a focus on cost-effectiveness and avoiding duplication of effort and resourcing, as well as a wider stakeholders forum that brings together all actors in NTDs in the country for coordination

within a government lead framework or strategy; coordination of fundraising/resource mobilisation efforts, etc.

There is adequate evidence on the safety and efficacy of integrated mass drug administration (MDA) of drugs used for the control of the five priority NTDs. This includes the triple combination of albendazole, ivermectin and praziquantel. However, there is currently no adequate evidence for adding azithromycin to the triple combination and so azithromycin will continue to be administered separately; often two weeks following the triple therapy.

It has further been proven that community directed intervention (CDI) strategy can be used to deliver MDA of NTD drugs in an integrated manner and that collaboration between national disease specific programmes can be achieved. Consequently, large scale financing mechanisms are being established to support national programmes for NTD control through the Global Network for NTDs with the intention to scale up access to NTD drugs, expand coverage and integrate partnerships among the major stakeholders.

Sightsavers will promote an integrated approach to the control of NTDs. It is hoped that by leaving strong CDTI structures in place after the elimination of transmission has been reached, a strong network of CDDs will be available to continue with the mass drug administration for a range of NTDs. Integration will not only be limited to MDAs but will include integration of other operational processes e.g. training, health education, advocacy and mobilisation (HSAM), census, monitoring and reporting tools and integration of management and coordination structures, systems and processes including coordination of fund raising and resource mobilisation efforts. This will take place at all stages of programme management, within a coordination framework led by government with the aim of avoiding duplication and maximising the specific strength brought by different stakeholders.

Integration should therefore be an attitude adopted during all stages of programme management, within a coordination framework lead by government, and aimed at avoiding duplication and maximising the specific strengths brought by different stakeholders.

6.3 Gender mainstreaming

Gender has a particular significance as a social issue with potential impact on health. Society assigns different roles to men and women, and as a result, transmission dynamics of infectious diseases may disproportionately affect women or men or lead to differential impact of diseases according to gender.

A study by Yumkella (1996) on “ Women, Onchocerciasis and Ivermectin in Sierra Leone” which sought, among other things, to describe the socio-cultural context of women’s lives in order to identify factors influencing health seeking behaviour found out that as many as 30% of women had never received ivermectin treatment. This was partly because of the drug treatment exclusion criteria for pregnant and lactating mothers besides other socio-cultural factors such as the low status of women, child care and domestic responsibilities, men’s control of family resources and religious and cultural beliefs that restricted the participation of women in society as some of the reasons negatively affecting women’s mobility and treatment seeking behaviour. The study proposes the following strategies to increase treatment coverage among women.

- Adopting community distribution approaches that promote the participation of women community leaders in drug distribution.
- Integrating ivermectin treatment in maternal and child health (MCH) activities in order that women may have access to drugs during ante-natal and post-natal visits.
- Ensuring that women who frequently utilised health services for other reasons get the opportunity to receive ivermectin treatment.

In addition, a study conducted in Kaduna on how to reach women in Purdah culture with ivermectin recommended the use of loud hailers which has since been found to be effective.

Sightsavers will promote gender mainstreaming in its onchocerciasis and NTD programmes in line with the organisation’s gender policy. In particular, we will investigate the role of gender and gender related opportunities in strengthening equitable delivery of interventions.

6.4 Disability mainstreaming

Onchocerciasis, as with many other NTDs, is a disease that causes a range of impairments. As with other persons with disabilities, it incurs economic costs in lost productivity, providing rehabilitation services and in occupying other people, usually children, in the care and assistance of those with onchocerciasis.

According to the WHO/UNESCO/ILO CBR Guidelines (2010) poverty is both a cause and consequence of disability. Often people with disabilities are neglected, discriminated against, and excluded from mainstream development initiatives including difficulties to access health, education, and livelihood opportunities. This results in greater poverty, isolation and even premature death. The Guidelines therefore recommend approaches that ensure that health, education and livelihood opportunities are accessible to people with disabilities.

Sightsavers will bring to bear its experience in CBR and social inclusion. The organisation will seek to establish linkages with its supported CBR and social inclusion programmes and will further explore opportunities of working with other partners in the disability sector such as Handicap International, Action for Disability and Development etc to ensure the full inclusion of persons with disabilities in all onchocerciasis programme activities.

6.5 Cross-border collaboration

The need for cross-border collaboration for the control/elimination of onchocerciasis arises where there is a risk of cross-border transmission of infection. This can be due to a number of factors including: transmission zones traversing international borders, long fly flying range and the movement of large populations from endemic areas.

The potential for cross-border transmission of infection exists in the following Sightsavers supported countries:

- Mano River Union countries i.e. Liberia, Guinea, Sierra Leone, Ivory Coast.
- Nigeria-Benin Republic.
- Nigeria-Cameroon (on the Cross River and Taraba States – Sightsavers involved on the Cameroon side of the border).
- Uganda-South Sudan.
- Uganda – DRC.
- Ghana-Togo.
- Togo-Benin.

The risk of cross border transmission of disease is currently not a problem in Malawi, Tanzania, Guinea Bissau and Mali.

Cross border collaboration becomes even more critical as the programme transitions to the elimination stage. Sightsavers will support cross border collaboration on onchocerciasis elimination where there is a risk of cross-country transmission of infection.

6.6 Social determinants of health

The importance of non-medical determinants of health in influencing health outcomes and in ensuring sustainability of control or elimination strategies of NTDs and other diseases has been highlighted by the Commission on Social Determinants of Health. It is known, for example,

that nearly half of the health improvement in sub-Saharan Africa which occurred in the 1990's was a result of improvement in the social environment.

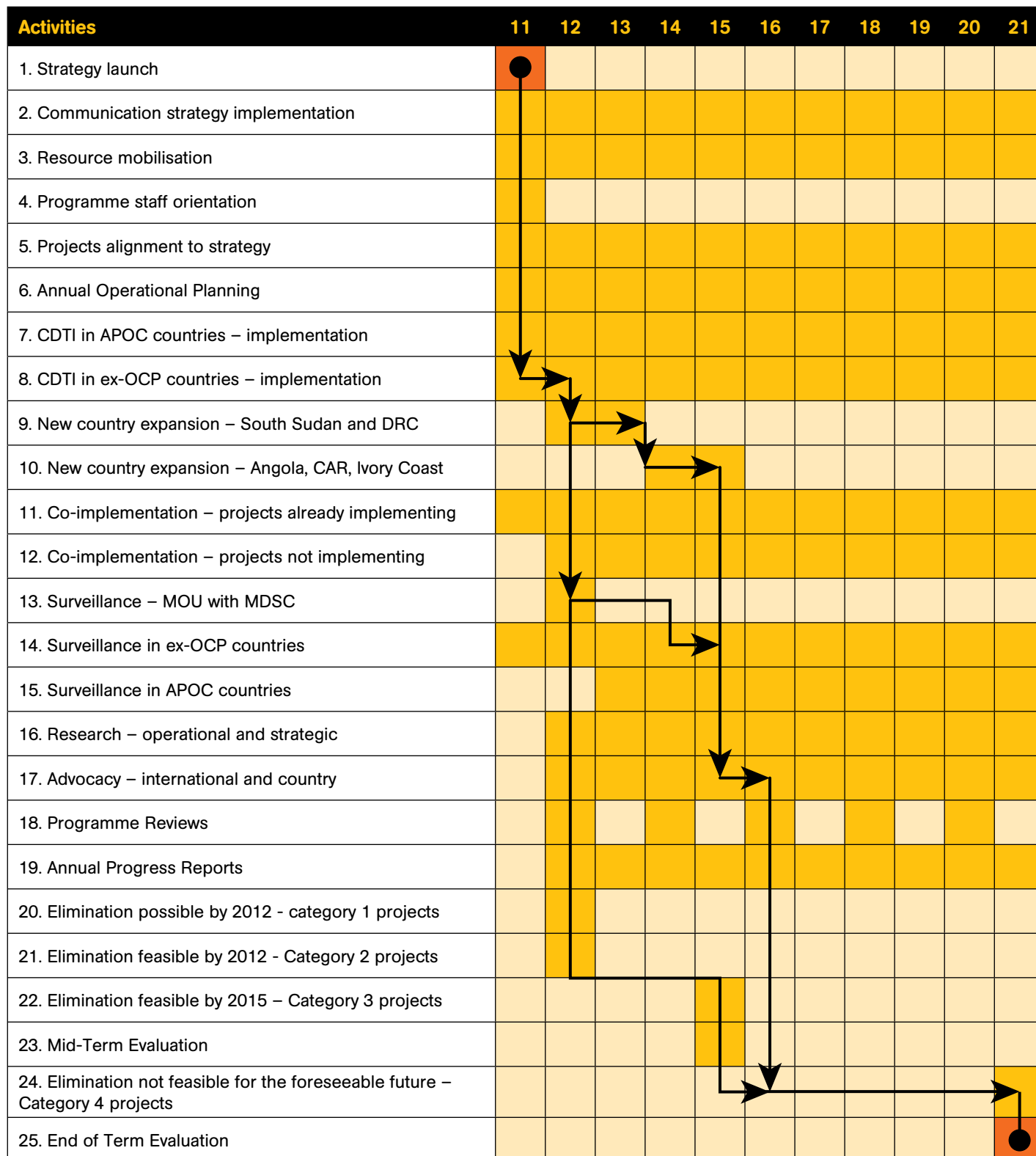
It has been argued that the current approach to NTD control puts too much focus on drug development and treatment at the expense of the social determinants of NTDs and that this represents another example of “over medicalisation” of disease control programmes.

The new WHO publication on, “inequalities and social determinants of NTDs” discusses the social determinants of NTDs and proposes the following actions:-

- Addressing water, sanitation and household-related factors.
- Reducing environmental risk factors through planning based on health impact assessments for new projects and mitigating revisions of existing schemes.
- Improving health of mitigating populations who are often vulnerable to NTDs and have reduced access to health care.
- Reducing inequity due to socio-cultural factors which can interact with NTDs in various ways.
- Reducing poverty, the single most conspicuous social determinant in NTD endemic populations as part of general poverty alleviation programmes and by ensuring affordable treatment.
- Setting up risk assessment and surveillance systems to address inequity and identify “hot spots”.

Sightsavers will, in addition to supporting MDAs, adopt inter-sectoral and inter-programmatic approaches that address the social determinants of health as they apply to NTDs. The organisation will further support research to increase understanding and facilitate the development of appropriate strategies to address the social determinants of NTDs in supported programmes.

6.7 Critical pathways and milestones



7.0 Partnership

Sightsavers considers partnership to be vital and of fundamental importance in the way it works towards achieving its mission. At the programme level, the purpose of working in partnership is to create synergy and increase the positive effects of interventions on beneficiaries while at the strategic level the intention is to build networks and alliances to promote joint action in policy formulation, advocacy and raising awareness on issues of blindness and development. The engagement with onchocerciasis partners will continue to be both at the international and local (country) levels.

7.1 International partnerships

Firstly, the African Programme for Onchocerciasis control (APOC); a broad partnership that includes participating countries, International Non Governmental Development Organisations (INGDOs), local Non Governmental Development Organisations, the private sector (Merck & Co Inc), donor countries and UN agencies. The APOC partnership through the Joint Action Forum (JAF), the NGDO Coordination Group and the Committee for Sponsoring Agencies (CSA) coordinate international efforts for the control and elimination of onchocerciasis. Sightsavers participates in these fora and will continue playing an active role. We will also link up with the NTD units in WHO-AFRO and at the WHO Headquarters.

Secondly, the Onchocerciasis NGDO Coordination Group consisting of 11 international and 2 national NGDO partners coordinates and facilitates interventions for onchocerciasis supported by NGDOs. The NGDO Group has played a key role in the governance of international onchocerciasis control effort in partnership with APOC. The onchocerciasis NGDO Group merged with NTD disease specific NGDO alliances i.e. the Global Alliance to Eliminate Lymphatic Filariasis (GAELF) and the International Coalition for Trachoma Control (ICTC) to form the NTD NGDO Network; a global

forum of NGDOs working to control the targeted priority NTDs. The network aims to work towards the integration of NTD interventions, promote collaboration and ensures a strong NGDO voice while the individual disease specific networks remain as technical working groups for their respective targeted diseases. Sightsavers is an active member of both the onchocerciasis NGDO Group and the NTD NGDO Network. The organisation will continue engaging in these networks through the office of Global Advocacy and African Alliances.

Thirdly, the Global Network for Neglected Tropical Diseases; a platform for the broad NTD community dedicated to raising awareness, political will and funding needed to control and eliminate the most common NTDs. Through the platform, the network highlights the work of the NTDs at local, national and international levels. Sightsavers supports the work of the platform and will seek opportunities to work together with the broader NTD community under the platform to promote issues that are pertinent for the control and elimination of NTDs.

7.2 Neglected Tropical Diseases (NTDs)

There is recognition that the control of NTDs is a largely untapped development opportunity to alleviate poverty in the world's poorest populations. This development need is now articulated in the WHO Global Plan to Combat NTDs, 2008-2015. Due to increased awareness of NTDs worldwide, a number of donors have committed themselves to supporting NTD control; key among these are the US announcement of US\$ 450 million for Neglected Tropical Disease control, the department for international development (DFID) pledge of £50 million and the grant of US\$ 34 million from the Bill & Melinda Gates Foundation. Together with pharmaceutical donations, these contributions are adding great force to the ongoing efforts in countries.

The WHO Global Plan to combat NTDs aims to promote an integrated approach and multi-intervention packages for NTD control. This is because most NTDs share many features that make an integrated approach both feasible and advantageous. Additionally, an integrated approach will streamline operational activities, improve efficiencies and ensure cost-effectiveness.

Sightsavers will promote the integration of its supported onchocerciasis interventions into NTDs and national health systems and we feel the NTD approach raises the visibility of the NTDs we are primarily working in (onchocerciasis and trachoma) and offers a platform for elimination.

7.3 Vision 2020, “Right to Sight”

Vision 2020 “The Right to Sight” is the Global Initiative for the Elimination of Avoidable blindness, a partnership between WHO and the international partners represented by the International Agency for the Prevention of Blindness (IAPB), aims to prevent the main causes of avoidable blindness which includes onchocerciasis. Primary Health Care (PHC)/ community health is common to both CDTI and Vision 2020. The Ministries of Health of most countries have developed National Plans for the Prevention of Blindness in line with the aspirations of Vision 2020 “The Right to Sight”.

Sightsavers is a key player of IAPB and will continue to work in global partnerships to address major causes of avoidable blindness including onchocerciasis.

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7.4 Local partnerships

Partnerships at country level are organised around two fora under the leadership of the Ministries of Health; the National Onchocerciasis Task Forces (NOTFs) and in some countries, the national NTD Task Forces.

The NOTFs bring together MOH, WHO, NGDOs and the district local governments and is supported by a secretariat based at the national level. NOTF is responsible for overseeing the implementation of CDTI projects and for ensuring the availability of ivermectin.

In countries where the NTD programme is established, national NTD Task Forces are being established to promote integration and coordinate the work of disease specific NTD programmes. The NTD Task Forces also bring together MOH, NGDOs and the communities.

The following table shows the NGDO partners in the APOC, ex-OCP and planned new countries where Sightsavers operates in.

NGDO	Countries with supported programmes
Sightsavers	Nigeria, Cameroon, Uganda, Malawi, Tanzania, Liberia, Togo, Mali, Guinea, Guinea Bissau, Sierra Leone, Ghana, Benin
Christoffel-Blindmission CBM)	Nigeria, DRC, Sudan, CAR
Mission to Save the Helpless (MITOSATH)	Nigeria, Cameroon,
Hellen Keller International (HKI)	Nigeria, Cameroon, Sierra Leone, Ivory Coast
UNICEF	Nigeria
The Carter Centre	Nigeria, Cameroon, Uganda, Sudan
International Foundation for Education and Self Help (IFESH)/ UNIVA	Nigeria
International Eye Foundation	Cameroon
Perpectives/Health for Humanity	Cameroon
CRS	DRC
LCIF	DRC, Cameroon
UFAR	DRC
World Vision	Angola
OPC	Mali, Guinea, CAR, Chad, Ivory Coast

It is expected that for the purpose of integration, the Ministries of Health will take the lead role in overall coordination of partners. Sightsavers country offices will actively participate in the NOTFs and national NTD fora to coordinate activities and promote joint action. Collaboration will be promoted with NGDOs as well as partnership with local NGOs and CBOs. In particular, linkages with trachoma¹⁵, the other NTDs that Sightsavers is actively involved in, will be promoted.

Beyond onchocerciasis and NTDs, partnerships will be broadened to general development agencies and to the private sector where such partnership adds value to the implementation of this strategy. Indeed the APOC/onchocerciasis programme is the most successful partnership in Africa and is a good example of public private partnership. Sightsavers will build on the success of this partnership.

15 Fast Track Initiative for Trachoma 2011

8.0 Implementation, communication strategy, monitoring and evaluation

8.1 Implementation

The plan will be implemented within the broader structures of the APOC partnership; APOC secretariat, JAF, TCC & NGDO coordination Group at the international level and NOTFs and NTDs coordination bodies in-country.

In line with Sightsavers structures, country offices will take the lead in the implementation of the strategy. Technical and programme support will be provided by the Directorate of Advocacy and African Alliances (also referred to as Team

Africa). The organisation will consider either recruiting or designating a focal person to coordinate the implementation of the plan. This will take into account the fact the WHO/APOC is a strong partner and that support from NGDO's is complementary to the work that APOC does. In addition, a Sightsavers NTD Task Force will be set up to plan and coordinate the implementation of the onchocerciasis and trachoma FTI strategies.

The country offices, regional teams and Team Africa team will be responsible for the following:-

Country Offices	Regional Offices	Team Africa
<ul style="list-style-type: none"> • Realign oncho project documents to the strategy when these come-up for renewal. Oncho stand alone project documents are recommended. • Support partners implement strategies presented in the plan. • Engage in in-country networks – NOTFs, NTD Task Forces, NPBCs. • Engage in in-country activities relevant to oncho/NTD programme. • In-country advocacy for increased funding for NTDs. • Report on progress being made in implementing the strategy. 	<ul style="list-style-type: none"> • Provide strategic support to countries to implement the plan. • Support resource mobilisation efforts (RGROs). • Manage oncho projects in new countries (South Sudan, DRC, CAR, Angola, Ivory Coast) where there is no Country Director. 	<ul style="list-style-type: none"> • Coordinate the implementation of the overall strategy. • Provide technical and programme development support to countries. • Coordinate learning within and outside of the organisation. • Engage in international partnerships and networks – APOC, NGDO Coordination Group, NTD Group, and WHO NTD Programme. • Engage in international advocacy for greater inclusion of NTDs into programmes and policies of major donors.

A detailed Annual Operational Plan (AOP) will be developed each year in line with this strategy. The AOP will also take into account critical changes in the operating environment that are relevant

to this strategy. This is important for continuous alignment to the operating environment in the present era of fast change.

Annual or bi-annual programme review meetings will be conducted to provide a forum for coordination, programme and technical support and interaction of programme teams with the external audience. This will be coordinated with the other FTIs.

8.2 Communications strategy¹⁶

This document outlines a communications strategy to support the Sightsavers Onchocerciasis Fast Track Initiative. Plans for different communications streams will be developed to support this strategy.

Aims:

- Position Sightsavers as a global leader in the treatment and prevention of NTDs and as an organisation with the expertise and global reach to eliminate onchocerciasis.
- Support the implementation of the FTI in countries with a prevalence of onchocerciasis.

Objectives:

- Increase awareness of the onchocerciasis FTI to key audiences through increased media coverage, web content (UK and international), event presence and internal communications.
- Ensure F&M and Government fundraising teams have high-quality information to support fundraising activity for the FTI.
- Showcase Sightsavers' successes in this area through publication of results and case studies.
- Country / MoH buy-in to support the Sightsavers plan of action. Development of a communications plan for country programmes to work with and gain support of MoH in country.
- Development of key messages from oncho FTI which can be used to support Sightsavers policy work within the wider health and development arenas.

Target audiences:

- UK and in-country government officials and policy makers.
- Potential donors (and to define if there a particular focus e.g. trusts or individuals).
- Sightsavers country office staff.

Key Messages:

- Why Sightsavers is fast tracking the disease (elimination is possible, cost effective approach etc).
- How it will be done.
- The urgency of the need and the impact on communities.
- What is needed from government/companies/NGOs to make this happen.
- The link with the Development MDGs.

Timeline and activity:

- Late 2011/early 2012 – formal launch (although work would start with the issue of the final document).
- Communications activity will be planned to mark the launch of the onchocerciasis FTI in September and then on an annual basis thereafter.
- Communications plans for each of the following strands of activity will be developed between August-December 2011 covering:
 - Media and PR (including conference and event attendance).
 - Marketing (including web content and social media).
 - Internal communications.
 - Advocacy (linking with the Global Advocacy Teams theme f=group on eye health and NTDs).

¹⁶ With thanks to Sarah Wilson for the section on the communications strategy

Evaluation:

Communications activity will be evaluated based on:

- The amount and quality of media coverage including key messages.
- The amount and quality of web content (including user numbers) including key messages.
- Feedback from target audiences.
- Feedback from Sightsavers staff.

8.3 Monitoring and evaluation

The Report of the External Mid-Term Evaluation of the African Programme for Onchocerciasis Control (APOC), carried out in 2010, provides the baseline situation for assessing future progress of implementing this plan; a baseline study will therefore not be necessary.

Monitoring of progress will be carried out through the Annual Project Technical Reports submitted by countries to APOC management and the Annual Project Reports (APRs) for oncho projects prepared by countries and submitted to Sightsavers headquarters. Periodic monitoring will also be conducted through country visits by regional and team Africa staff.

An evaluation of the plan will be conducted at mid-term (2016) and the end of term (2021). However, since APOC's end of term evaluation is likely to take place in 2015, there may be the possibility of requesting some of Sightsavers specific objectives to be included in the evaluation objectives so that another evaluation need not be carried out one year later.

The following indicators will be used to monitor performance.

Objective	Indicator	Targets
Goal: Elimination of infection and transmission of oncho where feasible in Sightsavers supported countries.	Number of transmission zones/ oncho projects where the parasite mf load has fallen below breakpoint i.e. below 0.1%.	9 APOC supported projects out of 21 by 2015. All the 21 APOC supported projects by 2021.
	Number of transmission zones/ oncho projects where fly infectivity rates meet the elimination criterion i.e. - L3 in flies < 0.05%. - ATP lower than 5-20 L3 season.	9 APOC supported projects out of 21 by 2015. All the 21 APOC supported projects by 2021.
Strategic objective 1: Continue to strengthen the implementation of the CDTI strategy.	Number of ivermectin treatments supported by Sightsavers.	26 million treatments decreasing as treatment is stopped where elimination has been achieved.
	Number of supported projects attaining an annual GCR of 100% and TCR of 80%.	All supported projects.
	Increase in the number of counties attaining a CDD: population ratio of 1:100 or better.	80% of the projects achieve this by 2015.
	Number of countries conducting community self monitoring (CSM) and stakeholders meetings (SHM).	50% by 2015.
	Supported countries implementing an effective HSAM strategy.	All countries implementing effective HSAM activities.
Strategic objective 2: Protect the gains of seven ex-OCP countries and achieve or maintain interruption of onchocerciasis transmission.	Enhanced HR and laboratory capacity for epidemiological and entomological surveillance.	All ex-OCP countries by 2015. All APOC countries by 2021.
	Parasite mf loads and fly infectivity rates demonstrate trends towards elimination.	All projects showing positive trends towards elimination.
	Extent of implementation of recommendations of cross-border meetings.	All recommendations of cross border meetings implemented.
Objective 3 Expand supported onchocerciasis programme to five new countries.	Number of new countries and partners supported to scale up onchocerciasis programme activities.	2 new countries supported by 2012 and additional three by 2014.
	All the indicators of strategic objective 1.	As in objective 1.

Objective	Indicator	Targets
Objective 4 Promote the delivery of onchocerciasis control activities with other health interventions.	Level of engagement of country offices with the national NTD control programmes.	All countries engage with national NTD programmes.
	No. of interventions delivered using the CDI strategy.	At least four in each country.
	Number of integrated NTD control programmes developed and supported.	At least one NTD programme in 50% of the countries.
Objective 5 Strengthen surveillance activities in seven ex-OCP supported countries and expand to eleven APOC countries.	Functional laboratory-based surveillance teams existing in the countries.	All ex-OCP countries by 2015. All APOC countries by 2021.
	Number of countries carrying out annual laboratory based surveillance activities to provide evidence for progress.	All ex-OCP countries by 2015. All APOC countries by 2021.
	Outcome of the evaluation of the transmission of <i>O. volvulus</i> in areas under DTI (impact indicator).	Positive trends towards elimination (as compared to pre-control levels).
	Progress on research activities aimed at assessing the incidence of trans-border control activities.	One study carried out per years in potential cross-border transmission zones as in 6.5.
	Integration of onchocerciasis surveillance into national disease surveillance systems.	All countries.
Objective 6 Promote research and the generation of evidence for programme planning, policy development and strengthening of the health system.	Number of operational research projects undertaken & published in collaboration with country & international partners.	At least two research papers published per annum.
	Extent of implementation of APOC generated research findings.	
	Health system research undertaken in collaboration with WHO/TDR.	At least 5 over the plan period.
Objective 7 Advocate for increased funding for NTDs by international donors and national governments.	International donors honour their commitments to fund NTDs.	All donors outlined under Driver 7.
	Increased donor commitment to fund NTDs.	50% increase above the 2011 commitment.
	Increased number of national governments allocating funding for NTDs.	80% of national governments.

9.0 Transitional arrangements

APOC officially comes to the end of its mandate in 2015. The 2010 mid-term evaluation recommends that APOC works toward an exit strategy that ensures long-term sustainability of the achievements made. The report further recommends, beyond 2015, a transformed, lean, efficient and focused APOC. It is therefore likely that APOC will transform into another programme/structure beyond 2015. Sightsavers

will engage with other partners to put up a position on the need for a structure to succeed APOC beyond 2015 and we expressed this position at the World Health Assembly 2010.

This strategy is aligned with the current APOC programme strategy. As APOC transitions, Sightsavers will review the strategy to take into account the new African onchocerciasis programme outlook beyond 2015.

10.0 Certification for elimination

WHO certification guidelines for onchocerciasis elimination recommend that foci where mass drug administration (MDA) has been stopped should continue post-treatment surveillance for a minimum of three years. If no recrudescence of infection is detected during this period, then *O. volvulus* can be declared to have been

eliminated from that focus. However, certification of elimination can be considered by WHO only when elimination of the disease has been achieved for the entire country and not only for selected foci.

11.0 Risk assessment and mitigation strategies

Risk	Impact Analysis 1=low 2=Medium 3=High			Mitigation Strategy
	Significance	Likeli-hood	Over-all	
Slow progress in post-conflict countries (DRC, Angola).	3	2	6	Work with partners who are experienced in working in these countries.
Serious adverse effects where oncho is co-endemic with Loa loa leading to high ivermectin treatment refusals.	3	1	3	Follow the WHO/APOC protocol for managing loa loa co-endemicity.
The low grading of WHO in the recent value for money assessment leading to reduced funding to APOC.	2	1	2	Monitor the impact of the assessment. Review and adjust plans as may be necessary.
Programme changes arising from redefinition of APOC beyond 2015 affecting implementation.	3	1	3	Engage in the redefinition of the role of APOC beyond 2015. Review strategy in light of the changes.
Inadequate numbers of epidemiologists and entomologists for training in oncho surveillance.	2	2	4	Consider a regional approach to capacity development.
Inadequate commitment to cross border collaboration by project staff and governments.	2	2	4	Work with regional health authorities to coordinate cross-border collaboration e.g. Nile Basin Initiative, WAHO etc.
Population and fly migrations re-introducing infections to transmission zones/countries where elimination had been achieved.	2	2	4	Studies an population and fly migration. Ongoing surveillance.
<i>Onchocerca volvulus</i> strains become resistant to ivermectin.	3	1	3	Be informed and encourage the ongoing work on the development of molecular tools for monitoring of resistance. Review and adjust plans as may be necessary.

12.0 Budget

A budget is attached as appendix 3.

Appendix 1: Country situation summaries as by 2011

1. Uganda

The Uganda onchocerciasis project is implemented in four districts; three in Phase 1 Project and one in Phase 2 Project. The project targets a total population of 373,877 in 553 meso and hyper-endemic communities which constitutes 14% of the 2,720,611 total population at risk in the country. National scale-up of the oncho programme has been achieved but there are gaps in projects with NGDO support. The implementation of the programme is coordinated through the National Onchocerciasis Task Force (NOFT), the NTD Task Force and the Uganda National Onchocerciasis Elimination Task Force (UNOETF). A total of 4,516 CDDs and 130 health workers support the implementation of CDTI; the programme has achieved an average GCR of 100% and TCR of 79% over the period of its implementation. The Government of Uganda in 2007, with the support of The Carter Centre, started implementing an onchocerciasis elimination strategy which supports semi-annual ivermectin treatment and vector control. Entomological surveillance is ongoing in the project area and adequate capacity has been developed. The UNOETF oversees the implementation of the elimination strategy. A national NTD control programme is in place; ivermectin is integrated into NTD MDA while progress has been made in integrating other aspects of the programme. There is no onchocerciasis co-endemicity with lymphatic filariasis or loa loa in the project area.

Key opportunities and strengths include:

- Integration into PHC, the onchocerciasis elimination strategy and the integrated NTD programme.

The main challenges include:

- the risk of cross border infection from the DRC although the threat is greater in northern Uganda in the Kitgum/Pader CDTI programme which borders Southern Sudan; a project not supported by Sightsavers.

2. Malawi

The Malawi onchocerciasis programme has two projects: Thyolo Mwanza CDTI and the Extension CDTI projects and is implemented in all the eight endemic districts. The programme targets a total population of 1,978,309 in 2,186 meso and hyper endemic communities. Sightsavers is the sole NGDO partner having taken over from IEF, however there are partners such as WHO, Tea Estates Association which supports the MDA. The implementation of the programme is coordinated through the NOTF. National scale up has been achieved; there are no gaps. A total of 14,147 CDDs and 2,787 health workers support the implementation of CDTI. The programme had a poor start but picked up in 2004 and has since been performing well. Over the period of implementation, the projects achieved an average GCR of 78% and TCR of 59%. No epidemiological surveys have been carried out other than initial REMO. At the time of writing this strategy, there was an ongoing entomological study to map out the simulium fly species in the country. There is currently no national NTD programme in place; Albendazole treatment is integrated into Mectizan MDAs. Lymphatic filariasis is co-endemic with onchocerciasis in the programme area; co-administration of ivermectin and albendazole is ongoing. There is no loa loa co-endemicity.

Key opportunities and strength:

- Availability of government funded Health Surveillance Assistants (HSAs) at community level.
- SWAP funding.
- Availability of NGDO and other partners.
- Co-implementation and inclusion of CDTI into District Implementation Plans (DIPs).

Key challenges and threats include:

- Gaps in full integration into NTDs.
- High CDD to population ratio.
- Migratory population.
- Inadequate capacity for epidemiological and entomological surveillance.

3. Tanzania

The Tanzania onchocerciasis programme supports five of the seven projects in the country i.e. Ruvuma, Tukuyu, Kilosa, Morogoro and Tunduru CDTI; the exception being Mahenge and Tanga CDTI projects. The national onchocerciasis programme is implemented in 17 districts of the 19 endemic districts in five oncho endemic regions of Ruvuma, Mbeya, Iringa, Morogoro and Tanga. Sightsavers is the NGDO partner in 13 districts in 4 regions. There is no NGDO partner for the Tanga and Mahenge CDTI projects. The programme targets a population of 1,694,971 in 5,539 meso and hyper-endemic communities which constitutes 85% (1,694,971 of 1,997,459) of the burden of onchocerciasis in the country. In 2011, it is planned to start ivermectin treatment in two oncho endemic districts of Njome and Mufindi in Iringa region to bring the national programme coverage to full scale. Implementation is within the NTD implementation structures i.e. the NTD steering committee, the NTD secretariat, regional and district structures. A total of 8,609 CDDs and 915 health workers support the implementation of CDTI; the programme achieved an average GCR of 100% and TCR of 66% over

the period of its implementation. Epidemiological surveys were carried in Mahenge CDTI in 2009 and in Tanga CDTI in 2010 with the support of APOC which showed significant decrease in infection rates. Vector elimination using ground larviciding was implemented in Tukuyu focus at the start of the programme but was stopped. Capacity for epidemiological and entomological surveillance is low. With the support of APOC and USAID, Tanzania is implementing an integrated NTD control programme in five of its regions and is currently a show case in the implementation of integrated NTD control.

Key opportunities and strength include:

- The integrated NTD control programme and the prioritization of NTDs in the Tanzania National Health Plan.

The main challenges include:

- Competing programme approaches to CDD incentives.
- Completion of NTD mapping.
- Inadequacy of the M&E and information system.

4. Nigeria

The oncho programme in Nigeria is implemented in six oncho endemic states: Kaduna, Kebbi, Kogi, Kwara, Sokoto and Zamfara serving a population of 5,097,761 in 6,692 meso and hyper endemic communities. This represents 19% of the 26,704,224 total treatments undertaken in the country in 2010. Oncho is implemented within the FMOH/NTD structures. Besides Sightsavers, other active NGDO partners in the country include CBM, The Carter Centre, UNICEF, MITOSATH and HKI. A total of 9,605 CDDs and 1,463 health workers support CDTI implementation and the country has achieved an average GCR of 93% and TCR of 76% for all projects since treatment started in 1997. The country has achieved full scale up of the oncho programme in all meso and hyper endemic communities. Besides pre-control REMO, epidemiological surveys were conducted in Kaduna and Zamfara states; all of which showed zero positive cases. Entomological surveys are planned to confirm elimination in these states. The country has a large pool of epidemiologists and entomologists who, if supported, would strengthen the country's oncho surveillance capacity. A national NTD strategy is in place but due to lack of dedicated donor funding for NTDs, the NTD programme has not expanded. Sightsavers is however supporting integrated NTD control in Zamfara state and plans to expand to all its 6 supported states.

Key opportunities and strength include:

- Integration into PHC.
- Devolution of oncho project technical review to the Nigeria Technical Review Comitee.
- Strong research capacity.
- Good data base/base line data.

Key challenges/threats include:

- Limited government funding.
- Competing policies on CDD incentives by donor programmes.

5. Cameroon

The Cameroon oncho programme supports three projects i.e. Southwest 1 CDTI, Southwest 2 CDTI and Northwest CDTI projects targeting a population of 1,404,387 in 1,738 meso and hyper-endemic communities. This represents 22% of the 6,309,992 at risk population in the country. Oncho is implemented within the national structures within NOTF and Regional Oncho Task Forces. The NGOs have formed a national coalition to harmonise activities and jointly engage with MOH. The NGO coalition is in the process of being transformed into an NTD coalition. Other active NGOs in the country include the Carter Centre, HKI, LCIF, IEF and PersPective. A total of 6,931 CDDs and 953 health workers support CDTI implementation and in 2010 achieved a combined GCR of 93% and TCR of 78%. All meso and hyper-endemic communities are covered by CDTI; there are no gaps. As projects are still in the control stage, no structural surveillance activities have been established except on ad hoc ones. The country however has sufficient number of epidemiologists and entomologists; some of whom were trained in oncho assessment by APOC in 2010. There is a national shift away from oncho stand alone programme to an integrated NTD approach. Accordingly, Sightsavers has signed an MOU with the MOH to support integrated NTD control. The CCO is co-implementing oncho + LF + STH and there are plans to collaborate with HKI in trachoma elimination in northern Cameroon.

Key opportunities and strengths:

- Integrated NTD control.
- National research institute on filariae.
- Loa loa and NTD mapping completed.
- USAID/RTI/HKI NTD funding.

Key challenges/weaknesses:

- Loa loa endemicity.
- Limited unrestricted funding which constraints expansion into integrated NTD control.
- Issue of CDD incentives.

6. Sierra Leone

The onchocerciasis programme in Sierra Leone started in 1989. However, the ten year civil war, 1993-2002, disrupted both ivermectin treatment and vector control activities. Activities resumed in 2003. Sightsavers supports the Southern and Eastern Provinces serving a population of 1,498,310 in 8,451 meso and hyper-endemic communities. This represents 54% of the total at risk population of 2,775,158. HKI supports activities in the Northern Province. The programme is fully integrated into PHC structures. At the national level, it is coordinated by the NTD control programme/NTD task force while at the district, the NTD focal person works under the District Medical Officer. All oncho endemic communities are covered with CDTI projects; there are no gaps. A total of 16,902 CDDs and 785 health workers support CDTI implementation achieving an average GCR of 94% and TCR of 71% over the six years of treatment. REMO was carried out in 2005 prior to commencement of treatment; prevalence rates ranged from 20% to 68%. In 2010, a follow-up epidemiological study was

conducted in 32 sentinel sites; the results showed a reduction of prevalence rates to 0% to 47%. An entomological study is planned in 2011. There is one epidemiologist, one entomologist and seven technicians available to the programme. The national onchocerciasis control programme is fully integrated into the national NTD programme. NTD mapping was completed and did show that LF is endemic in all the districts.

Key opportunities and strengths:

- Integrated NTD control.
- APOC Technical Advisor for NTDs.
- NTD funding from USAID/NTD grant.
- Effective supervision from the national programme.

Key challenges and weaknesses:

- Low community participation.
- CDD incentives.

7. Liberia

The Liberia oncho programme supports all the three CDTI projects in the country: Northwest CDTI, Southwest CDTI and South East CDTI projects targeting the entire 2,225,368 at risk population living in 3,247 meso and hyper-endemic communities in 15 endemic counties. The programme has achieved full national scale up; there are no gaps. The programme is coordinated through the NOTF and county health teams. A total of 8,511 CDDs and 709 health workers support the implementation of CDTI; the programme achieved a GCR of 68% and TCR 69% over the period of its implementation. The low coverage rates are a result of the civil war but the programme is beginning to have a turn around. As the programme is still in the control stage, no structured surveillance activities have been established. The MOH has, however, 5 epidemiologists and one entomologist who could be trained in oncho surveillance. County Surveillance Officers send weekly surveillance reports to the MOH but this currently does not include oncho surveillance information. A national plan for NTD control is being finalised following which a national NTD programme will be developed. Oncho is co-implementation with EPI, yellow fever and polio eradication is taking place. Oncho is co-endemic with LF in 13 of the 15 programme counties. There is no loa loa co-endemicity.

Key opportunities and strength include:

- Inclusion of NTDs in the National Health Plan.
- Liberia Institute of Biomedical Research for research.
- Collaboration and donor interest to support NTD programme.

Key challenges include:

- The issue of CDD incentives.
- Weak coordination and monitoring system.

8. Ghana

The Ghana oncho programme supports oncho/LF in four of the nine endemic regions; Western, Eastern, Ashanti and Volta Regions targeting a total population of 2,134,563 in 3,265 meso and hyper-endemic communities. This constitutes 70% of 3,060,479 of at risk population. The other oncho endemic regions i.e. Northern, Upper East, Upper West, Central and Brong Ahafo are supported by USAID, World Vision and Red Cross. All known meso and hyper-endemic communities have CDTI projects. A REMO conducted in 2009 identified additional meso and hyper-endemic communities; treatment was started in 2009 in these communities. The national programme continues REMO surveys on other prospective endemic areas. The implementation of the programme is coordinated by the NTD Task Force which ensures that activities are carried out in collaboration with NGDO partners and teams at all levels of government. A total of 8,309 CDDs and 886 health workers support CDTI; the programme has achieved an average GCR of 97.3% and TCR of 75.8% in 2010. In 2009, semi-annual treatment was started as the programme moves to elimination. Epidemiological and entomological studies are conducted in sentinel villages with funding support from APOC, MDSC and Sightsavers. Capacity for Epidemiological and entomological studies exists at national level, although the current breed of epidemiologists and entomologists are aging, but is limited at regional level. A Multi-Year Surveillance Plan was developed aimed at building capacity at national and regional levels; this needs to be supported. A national NTD programme is in place and oncho activities are fully integrated. Oncho is co-implemented with LF.

Key opportunities and strengths include:

- Increased profile of NTDs.
- Commitment from partners.
- Integration of LF and oncho.

The challenges and weaknesses facing the programme include:

- Limited capacity for surveillance at regional level I.
- Lack of drugs for some of the NTDs.
- Timing of donor fund disbursement.

9. Mali

Mali is an ex-OCP country. Sightsavers supports oncho in two regions of Sikasso and Koulikoro serving a population of 2,835,037 which constitutes 72% of 3,946,492 at risk population. All activities are implemented within the framework of the NTD programme. Full scale up of oncho programme in all the endemic communities has been achieved. Epidemiological and entomological surveillance is conducted annually in sentinel villages. To date, CMFL and standardised prevalence have been at zero. Regional teams for epidemiological surveys have been developed but capacity for entomological surveillance remains low. The national NTD programme, funded by USAID with HKI as the lead agency, supports integrated NTD MDAs. LF is co-endemic with oncho in the project area; ivermectin and albendazole treatment is taking place in the areas of co-endemicity. There is however no loa loa.

Key opportunities and strength include:

- The NTD programme.
- Strong NGO partnership and support from WHO and WAHO.

Key challenges and threats include:

- A high dependence on INGOs & USAID.
- Inadequate human resources for health impacting on monitoring and surveillance.

10. Guinea Conakry.

Guinea Conakry is an ex-OCP country. Sightsavers supports two projects; Mxenne Guinea CDTI and Haute Guinea CDTI which in 2010 targeted a population of 1,213,780 (38% of the 3,158,410 total at risk population). The programme is implemented within the national oncho and blindness control programme (PNLOC) and the Regional Health Directorates structures. All endemic communities are covered with CDTI projects. Epidemiological and entomological surveillance is conducted annually in sentinel villages and to date the CMFL and the standardise prevalence have been at zero. Oncho endemicity across the borders with Sierra Leone and Liberia remains a potential risk for re-infection necessitating cross-border collaboration. Regional teams for epidemiological surveys have been developed but capacity for entomological surveillance is low. There is no NTD programme and no lymphatic filariasis nor loa loa co-endemicity.

Key opportunities:

- A strong INGO partnership.
- Support from WHO and WAHO.

Challenges include:

- Potential political instability.
- Potential for cross border re-infection from Sierra Leone and Liberia.
- Low government funding.
- Inadequate human resources for health (impacting on monitoring and surveillance).

11. Guinea Bissau

Guinea Bissau is an ex-OCP country. Sightsavers supports the Bafata-Gabu CDTI project which in 2010 targeted a population of 175. The oncho programme is integrated into the National Eye care Programme and is coordinated at the regional and district level by the eye care programme staff while the National Oncho Coordinator provides overall programme management. National programme scale-up has been achieved. A total of 538 CDDs and 12 health workers support CDTI implementation but the 2010 GCRs and TCR at 57% and 48% has been low. With the support of APOC, capacity for epidemiological and entomological studies has over the years been developed. Entomological surveillance surveys conducted in sentinel villages in 2007 and 2008 found low flies infection rates of 0.54% and 0.09% respectively. A National NTD coordinator is in place. LF is endemic in the project area and there are plans to co-implement LF and oncho treatment. There is no loa loa endemicity.

Key opportunities/strengths:

- Good stakeholder collaboration.
- Availability of technical expertise for epidemiological and entomological studies.

Challenges include:

- Political instability.
- CDD incentives.
- Low community participation.
- Cross border transmission zone with Guinea Conakry.

12. Togo

The Togo CDTI project supports the National Onchocerciasis Control programme (NOCP) under the MOH implement oncho programme activities in 28 (of the total of 30) oncho endemic districts with a target population of 2,768,920 in 2,884 meso and hyper-endemic communities. The implementation of the programme is coordinated by the NOCP at central, regional and district levels. There is a CDTI focal person at regional and district level. Full scale up of the programme to all endemic districts has been achieved. A total of 954 CDDs and 48 health workers support the implementation of CDTI. Semi-annual treatment is taking place in some of the districts and the project has consistently achieved a 100% GCR and 80% TCR required for elimination. Epidemiological and entomological surveillance are conducted in sentinel villages both of which, by 2010, still showed parasite infectivity rates and fly infection rates above the threshold required for elimination. The country has capacity for epidemiological and entomological studies with one of its staff being a consultant to APOC on epidemiological evaluations. A national NTD programme was started in 2010 and is implemented in 3 of the 5 regions. LF was co-endemic in 7 districts but has since been eliminated and is now in the surveillance stage. There is no information on loa loa endemicity.

Key opportunities/strength include:

- Experienced onchocerciasis team.
- Integrated NTD control.
- Integration of CDTI into the health system.

Challenges/weaknesses include:

- Conflicting approaches of the NTD programme with the CDTI approach.
- Limited government financial contribution.
- Technicians not adequately equipped to undertake epidemiological and entomological studies.
- Sightsavers is the only NGDO.

13. Benin

The Benin CDTI project supports the National Onchocerciasis Control programme (NOCP) under the MOH implement oncho programme activities in 51 (of the total of 77) oncho endemic districts with a target population of 2,606,385 in 4,619 meso and hyper-endemic communities. The oncho programme is integrated into the National Programme Against Transmissible Diseases and within the health structures at central, regional and commune levels and is scaled up to all endemic districts. A total of 1,720 CDDs and 70 health workers support the implementation of CDTI. Semi-annual treatment is taking place in 11 of the 51 endemic districts a consistently annual GCR of and TCR 80% TCR required for elimination is being achieved. In 2009, epidemiological evaluation conducted in 35 villages showed a 9% prevalence rate (higher than the WHO recommended rate of 5%) and entomological evaluation carried out in 10 villages from capture points around the Benin-Nigeria cross border area found one infected fly. The country has capacity for epidemiological and entomological studies with adequate numbers of health workers trained in epidemiological and entomological evaluations but gaps exist in the provision of kits and materials for surveillance. A national NTD programme was started in 2009 but has no funding yet. LF is endemic in some of the communes in the country. There is no information on loa loa endemicity.

Key opportunities/strength include:

- Experienced oncho team.
- Integrated NTD control and the National Programme Against Transmissible Diseases.
- Integration of CDTI into the peripheral health unit level.

Challenges/weaknesses include:

- Lack of coordination with LF supporting NGOs.
- Lack of funding for NTDs.
- Inadequate HR capacity in the country.
- Technician lacking kits for epidemiological and entomological surveillance.

Appendix 2: 2010 performance data

Sightsavers Supported Onchocerciasis Projects – 2010 Performance Data

COUNTRY	Name of Project	No. of meso and hyper-endemic communities	TOTAL POPULATION in meso and hyper-endemic communities	ULTIMATE TREATMENT GOAL (UTG)	No of people treated	No. of Years of Mectizan Treatment	No of CDDs trained	No of Health Workers trained	Elimination Classification Category	SSI Annual Budget (£)
Nigeria	Kaduna	2,677	1,727,486	1,410,960	1,344,233	14	7,828	773	1	123,512
	Kebbi	286	386,694	288,646	317,755	12	3,683	386	3	
	Kogi	2,544	1,605,291	1,358,555	1,309,144	14	4,866	2,658	3	
	Kwara	1,069	1,060,572	1,016,114	872,006	12	5,914	1,784	2	
	Sokoto	15	75,910	63,764	64,017	12	103	23	2	
	Zamfara	116	241,808	188,740	192,204	12	846	227	2	
	Total - Nigeria	6,707	5,097,761	4,326,779	4,099,359		23,240	5,851		
Cameroon	SW1	478	387,207	325,254	300,081	14	1,101	150	2	113,453
	SW2	492	236,228	198,432	197,838	12	1,117	125	2	
	NW	768	780,952	656,000	656,000	8	4,713	678	4	
	Total - Cameroon	1,738	1,404,387	1,179,686	1,153,919		6,931	953		
Uganda	Masindi (Phase 1)	60	43,249	36,329	69,420	12	1,019	36	1	43,000
	Buliisa (Phase 1)	30	24,289	20,403	39,521	12	323	12	1	
	Hoima (Phase 1)	140	140,229	117,792	223,926	12	2,074	45	1	
	Kibaale (Phase 1)	323	166,110	139,532	255,285	13	1,100	37	2	
	Total - Uganda	553	373,877	314,057	588,152		4,516	130		
Malawi	Thyolo & Mwanza	672	869,442	721,843	712,639	13	5,520	869	2	0
	Extension	1514	1,148,270	939,937	925,716	10	8,627	1,918	3	
	Total - Malawi	2186	2,017,712	1,661,780	1,638,355		14,147	2,787		
Tanzania	Tukuyu	298	107,155	90,010	87,235	12	599	42	2	27,220
	Ruvuma	1127	375,787	315,661	302,507	13	2,426	498	3	
	Morogoro Rural	893	346,777	291,293	278,963	8	1,129	80	3	
	Tunduru	539	125,571	105,480	102,544	8	1,080	65	3	
	Kilosa	970	482,954	405,681	389,234	9	2,138	74	2	
	Mahenge	396	256,727	215,651	211,543	14	1,237	156	3	
	Total - Tanzania	4223	1,694,971	1,423,776	1,372,026		8,609	915		
Liberia	North West	1,188	1,004,552	843,824	761,834	12	1,876	320	4	36,914
	South East	610	335,428	281,759	274,726	9	2,489	165	4	
	South West	1,449	716,336	601,723	565,013	9	4,146	224	3	
	Total-Liberia	3,247	2,056,316	1,727,306	1,601,573		8,511	709		60,613
Ghana	Oncho Projects	3,265	2,134,563	1,814,379	3,087,684	24	8309	886		
	Total-Ghana	3,265	2,134,563	1,814,379	3,087,684		8309	886		
Togo	Oncho Project	2,884	2,768,920	2,325,868	2,371,834	13	954	48		56,791
	Total-Togo	2,884	2,768,920	2,325,868	2,371,834		954	48		
Benin	Oncho Projects	4,619	2,606,385	2,189,363	2,227,808	13	1,720	70		50,824
	Total-Benin	4,619	2,606,385	2,189,363	2,227,808		1,720	70		
Sierra Leone	Oncho Projects	8,451	1,498,310	1,258,580	1,134,958	5	16,902	785	3	17,144
	TOTAL Seirra Leone	8,451	1,498,310	1,258,580	1,134,958		16,902	785		
Mali	Oncho Projects	1,892	2,835,037	2,409,781	1,928,443	18	6,324	359		51,330
	Total-Mali	1,892	2,835,037	2,409,781	1,928,443		6,324	359		
Guinea Bissau	Oncho Projects	2,098	175,000	147,000	83,986	3	538	12	3	130,000
	Total Guinea Bissau	2,098	175,000	147,000	83,986		538	12		
Guinea Conakry	Oncho Projects	3,992	1,213,780	1,031,713	979,584	17	6,506	128		4,894
	Total Guinea Conakry	3,992	1,213,780	1,031,713	979,584		6,506	128		
All	TOTAL SSI	45,855	25,877,019	21,810,067	22,267,681		107,207	13,633		715,695

Classification of projects according to feasibility of elimination of transmission

Category 1 - Elimination eminent (very likely) before 2012

Category 2 - Elimination possible by end of 2012

Category 3 - Elimination feasible by end of 2015

Category 4 - Elimination not envisaged for the foreseeable future

Appendix 3: 10 Year Detail Budget

Sightsavers Fast Track Initiative for Elimination of Transmission of Oncho in Sightsavers Supported Projects

Based On The Oncho Ft. All In US\$

Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total (\$)
Total Capital Items	-	-	-	-	-	-	-	-	-	-	-
Programme Administration											
Personnel (Staff costs-Salaries & Benefits 10% Increment)											
Programme Coordinator, Fast Track Initiative for Trachoma	-	-	-	-	-	-	-	-	-	-	-
Epidemiologist	-	40,000	40,000	50,000	50,000	60,000	60,000	70,000	70,000	75,000	515,000
Programme Manager	-										-
Programme Administrator	-	-	-	-	-	-	-	-	-	-	-
Driver	-	-	-	-	-	-	-	-	-	-	-
Sub total	-	40,000	40,000	50,000	50,000	60,000	60,000	70,000	70,000	75,000	515,000
Supplies											
Office Stationery, supplies and sundries	-	3,360	3,528	3,704	3,528	3,890	4,084	4,288	4,502	4,728	35,612
Sub total	-	3,360	3,528	3,704	3,528	3,890	4,084	4,288	4,502	4,728	35,612
Communication											
Phone and Fax	-	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	9,000
Courier(DHL, EMS)	-	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	9,000
Internet Service	-	-	-	-	-	-	-	-	-	-	-
Sub total	-	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	18,000
Other Administration											
Vehicle Running cost	-	-	-	-	-	-	-	-	-	-	-
Insurance of Vehicles (10% of cost of vehicle)	-	-	-	-	-	-	-	-	-	-	-
Printing of annual reports	-	3,150	2,208	3,473	3,647	3,829	4,021	4,221	4,432	4,654	33,635
International Travels for meetings, workshops, M & E	-	50,000	50,000	50,000	50,000	50,000	5,000	5,000	5,000	5,000	270,000
Carry out drug audit in 4 countries per year	-	-	-	-	-	-	-	-	-	-	-
Sub total	-	53,150	52,208	53,473	53,647	53,829	9,021	9,221	9,432	9,654	303,635
Total Administration	-	98,510	97,736	109,177	109,175	119,719	75,105	85,509	85,934	91,382	872,247
CDTI											
Treat up to 30 million people annually											
in APOC countries:											
Train up to 150000 CDDs annually	-	200,000	200,000	200,000	200,000	250,000	250,000	100,000	750,000	750,000	2,900,000
Train 20,000 health workers annually (supervision and monitoring)	-	100,000	75,000	75,000	80,000	80,000	50,000	50,000	50,000	50,000	610,000
Sustainability plans	-	-	45,000	-	45,000	45,000	-	-	-	-	135,000
HSAM activities	-	80,000	100,000	100,000	50,000	25,000	-	25,000	-	25,000	405,000
Monitor ordering, storage and delivery of ivermectin	-	10,000	-	10,000	-	10,000	-	10,000	-	10,000	50,000
management and technical support - visits by regional and cos	-	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	180,000
strengthen m and e and feed learning back to programmes	-	10,000	-	10,000	-	10,000	-	10,000	-	10,000	50,000
	-	-	-	-	-	-	-	-	-	-	-
In OCP countries:											
1-7 as above	-	200,000	150,000	150,000	100,000	100,000	90,000	80,000	70,000	70,000	1,010,000
epidemiological and entomological surveillance activities through MDSC	0	150,000	150,000	150,000	150,000	200,000	200,000	200,000	150,000	150,000	1,500,000
support cross-border collaboration	-	40,000	40,000	50,000	50,000	50,000	50,000	40,000	40,000	30,000	390,000

Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total (\$)
Total CDTI in current Sightsavers APOC and OCP programmes	-	810,000	780,000	765,000	695,000	790,000	660,000	535,000	1,080,000	1,115,000	7,230,000
Fragile states											
Low GCR and TCRs in post-conflict countries/fragile states delaying the achievement of elimination in Africa											
South Sudan	-	90,000	90,000	90,000	100,000	100,000	100,000	90,000	90,000	50,000	800,000
DRC/UFAR	111,120	77,120	83,000	83,000	85,000	80,000	93,000	70,000	70,000	70,000	822,240
Ivory Coast	-	50,000	50,000	50,000	500,000	50,000	50,000	50,000	50,000	50,000	900,000
Angola	-	10,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	410,000
CAR	-	5,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	325,000
Total: Fragile states	111,120	232,120	313,000	313,000	775,000	320,000	333,000	300,000	300,000	260,000	3,257,240
Coimplemenation											
Work with other disease specific control programmes to map out areas of overlap with CDTI projects.	-	70,000	70,000	70,000	70,000	10,000	10,000	10,000	10,000	10,000	330,000
Integrate into CDI the delivery of NTD interventions including mass drug administration (MDA	-	30,000	30,000	30,000	40,000	50,000	50,000	50,000	50,000	50,000	380,000
Integrate into CDI the delivery of NTD interventions including mass drug administration (MDA in Sightsavers supported eye health projects.	-	25,000	40,000	40,000	40,000	30,000	30,000	30,000	30,000	30,000	295,000
Work with the network of CDDs to identify and train people who are blind in CBR	-	40,000	40,000	40,000	30,000	30,000	20,000	20,000	20,000	20,000	260,000
To strengthen surveillance systems											-
Partnership with MDSC	-	350,000	350,000	400,000	400,000	400,000	400,000	300,000	300,000	300,000	3,200,000
To promote research											-
Studies to determine if the "break point" has been reached.	-	30,000	30,000	-	30,000	30,000	-	30,000	-	30,000	180,000
Studies on the impact of human and flies migration into transmission zones	-	40,000	40,000	-	-	40,000	-	-	40,000	40,000	200,000
Post-surveillance sentinel surveys	-	-	-	40,000	40,000	40,000	40,000	40,000	40,000	30,000	270,000
Total: Co-imp; surveillance; research	-	585,000	600,000	620,000	650,000	630,000	550,000	480,000	490,000	510,000	5,115,000
Advocacy		-									
International and local advocacy networks	-	30,000	30,000	30,000	30,000	35,000	35,000	35,000	35,000	20,000	280,000
Total: Advocacy	-	30,000	30,000	30,000	30,000	35,000	35,000	35,000	35,000	20,000	280,000

Description	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total (\$)
Budget Summary											
Total Capital Equipment	-	-	-	-	-	-	-	-	-	-	-
Total Administration	-	98,510	97,736	109,177	109,175	119,719	75,105	85,509	85,934	91,382	872,247
Total Administration and Capital Equipment	-	98,510	97,736	109,177	109,175	119,719	75,105	85,509	85,934	91,382	872,247
Country plans/CDTI/ research	111,120	1,627,120	1,693,000	1,698,000	2,120,000	1,740,000	1,543,000	1,315,000	1,870,000	1,885,000	15,602,240
Total Capital/ Administration/Program	111,120	1,725,630	1,790,736	1,807,177	2,229,175	1,859,719	1,618,105	1,400,509	1,955,934	1,976,382	16,474,487
Advocacy	-	30,000	30,000	30,000	30,000	35,000	35,000	35,000	35,000	20,000	280,000
Grand Total	111,120	1,755,630	1,820,736	1,837,177	2,259,175	1,894,719	1,653,105	1,435,509	1,990,934	1,996,382	16,754,487

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