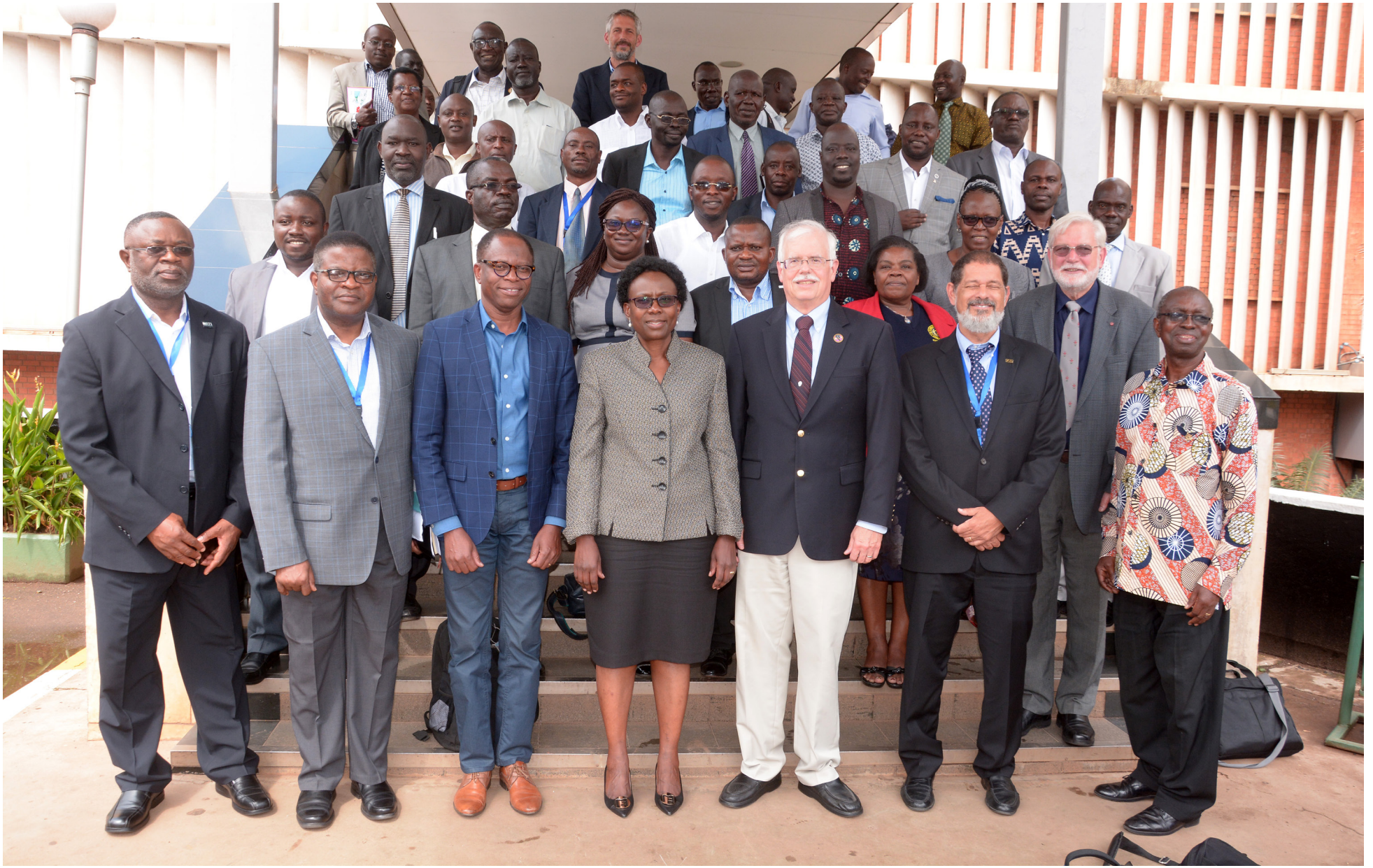


Group Photo, Closing Session UOEEAC 2019, 8th August 2019 at Sheraton Hotel, Kampala. First Row - Minister Jane Ruth Aceng (C); L - to Minister: Benjamin Binagwa, Bayo Fatunmbi, Yao Sodahlon. R – to Minister: Polly Ndyarugahi, Frank Richards, Thomas Unnasch Group Photo, Closing Session UOEEAC 2019, 8th August 2019 at Sheraton Hotel, Kampala. First Row - Minister Jane Ruth Aceng (C); L - to Minister: Benjamin Binagwa, Bayo Fatunmbi, Yao Sodahlon. R – to Minister: Polly Ndyarugahi, Frank Richards, Thomas Unnasch



« Jimmy Carter and his Wife Rosalynn Carter in Atlanta, USA, 1993

The founding family behind The Carter Center, Inc.

Jimmy Carter and Rosalynn in Atlanta, Ga, USA, 2018 »



LIST OF CONTENTS

ACRONYMS 06

SECRETARIAT STATEMENT AND 12th UOEEAC REPORT 10

UOEEAC 2019 - Secretariat's Word 10

Peace Habomugisha

12th UOEEAC Meeting Report: Overview 14

Thomas R. Unnasch

Uganda Oncho Flag as of August 2019 17

DAY ONE - TUESDAY, AUGUST 6th 2019

Session 2: Review of UOEEAC 2018 & Some 12th Session Opening Presentations 19

Review of the 11th Session of UOEEAC 19

Thomas Unnasch

VBNDD - OV16 and PCR Laboratory Updates 21

Christine Nahabwe

Report on DRC's Onchocerciasis Elimination Independent Advisory Committee 22

Adrian Hopkins

Report from the Onchocerciasis Elimination Technical Committee of RSS 23

Samuel Mackoy Logora

Session 3: Foci under PTS Period without Cross-Border Situations 30

Status of Post Treatment Surveillance in Obongi Focus 30

Michael Nyaraga

Post Treatment Surveillance in Wadelai Focus 33

Dickson Unoba

Session 4: Foci under PTS with Cross-Border Situations 35

Post Treatment Surveillance in Bwindi Focus 35

Lauriano Hakiri et al

Rutshuru Goma-DRC adjacent to Bwindi 38

Pablo Kanyamihigo

DAY TWO - WEDNESDAY AUGUST 7th 2019

Session 5: Suspected Interruption with Potential for Cross-Border Transmission 40

Nyagak-Bondo Focus 40

Patrick Dramuke et al

NTDs of Ituri-North, DRC with Special Emphasis on Onchocerciasis 47
Leonard Bay

Session 6: Transmission On-going and Cross-Border 52
Lhubiriha Focus 52
Abraham Muhesi et al
Madi Mid-North Focus Part 1 59
David Oguttu et al
Madi Mid-North Focus Part 2 73
Galex Ochieng et al
Madi Mid-North Focus Part 3 87
Joseph Wamani et al
Status of Onchocerciasis in counties of RSS adjacent to Madi Mid-North 91
Samuel Logora
Progress towards Onchocerciasis Elimination in Madi Mid-North Focus 97
David Oguttu

Session 7: Foci where transmission has been interrupted but with LF co-endemicity 105
Progress in Program for Eliminating Lymphatic Filariasis 105
Gabriel K Matwale

DAY THREE - THURSDAY, AUGUST 8th 2019

Session 7 Cont'd 108
Maracha-Terego Focus 108
Patrick Dramuke et al

Session 8: Special Presentations 111
Progress of Slash and Clear and EWT Activities in Northern Uganda 111
Dennis Loum et al
Plan to scale up Evaluation of *Slash and Clear* as a Community-
Directed *SimuIium* Vector Control Intervention 116
David Oguttu et al

APPENDICES

Appendix A: **Opening Remarks of 2019 UOEEAC** 117
Thomas Unnasch 117
Gabriel Matwale 117
Benjamin Binagwa 118
Yao Sodahlon 119

Clement Deng Aketch..... 119
Christian Katoto 120
Frank Richards 120
Yonas Tegegn Woldermariam 121
Jane Ruth Aceng 123
Appendix B: Closing Remarks and Press Statement 125
Thomas Unnasch 125
Ambrose Onapa 125
Sedrace Rwekikiga 126
Yao Sodahlon 127
Benson Ojara 127
Clement Deng Aketch 127
Patrick Karamura Mwira 127
Moses Katabarwa 128
Yonas Tegegn Woldermariam 129
Gabriel Matwale 130
Jane Ruth Aceng, Press Statement 131
Jane Ruth Aceng 132
Appendix C: **List of Participants** 134
Appendix D: A UOEEAC 2019 Photo Gallery 140
Appendix E: Appreciation to Frank Richards 146
Appendix F: An Overview of Carter Center Milestones in Uganda's Battles on River Blindness & Trachoma 148

ACRONYMS

ACHS - Assistant Commissioner of Health Services
Ag. - Antigen
Ag NTD - Acting NTD
AIDS - Acquired Immune Deficiency Syndrome
ALB - Albendazole
AMREF - African Medical and Research Foundation
APOC - African Program for Onchocerciasis Control
APOC-REMO - African Program for Onchocerciasis Control-Rapid Epidemiological Mapping of Onchocerciasis
ASCEND - Accelerated Sustainable Control & Elimination of Neglected Diseases
ATO - Annual Treatment Objective
ATP - Annual Transmission Potential
AVSI - International Service Volunteer Association
BASF - Badische Anilin und Soda Fabrik (English: Baden Aniline and Soda Factory), a global chemical producing company
BSF – Basic Services Fund, a USAID funded project in South Sudan
CAO - Chief Administrative Officer
CAR - Central African Republic
CBM - Christoffel Blinden Mission
CD - Community Directed
CDC - Centers for Disease Control and Prevention
CDDs - Community Drug Distributors / Community-Directed Distributors
CDHs - Community-Directed Health Supervisors
CDTI - Community Directed Treatment with Ivermectin
CFA - Circulating Filarial Antigen
CG = GC - Geographical Coverage
CHD - County Health Department
CL - Confidence Level
CMFL - Community Microfilaria Load
CNS - Central Nervous System
CR - Country Representative
CS - Community Supervisor
CSO – Community Services Officer
CT =TC - Therapeutic Coverage
CTA - Chief Technical Advisor
CTP - Chimiotherapie Preventive / Preventing/ve Chemotherapy
DBS - Dry Blood Spots
DDT - Dichloro-diphenyl-trichloroethane
DG - District Governor / District Government
DGHS - Director General for Health Services
DHOs - District Health Officers
DHT - District Health Team
DIRCABA – Directeur de Cabinet Adjoint / Deputy Cabinet Director
DLG - District Local Government
DMM - Distribution Massive Des Medicaments / Mass Drug Administration
DOCs - District Onchocerciasis Coordinators
Dom+int - Domestically and Internationally
DRC - Democratic Republic of Congo
DVCO - District Vector Control Officer
EC - Emulsifiable Concentrate
ELISA - Enzyme Linked Immunosorbent Assay
FL (French for LF) - Lymphatic Filariasis
ELF - Elimination of Lymphatic Filariasis
Ento - Entomological

EPI - Epidemiology
ESPEN - Expanded Special Project for the Elimination of Neglected Tropical Diseases
EST - Estimated
EWT - Esperanza Window Trap
FM- Frequency Module
GoU - Government of Uganda
GPELF - Global Program for Elimination of Lymphatic Filariasis
GPS - Global Positioning System
GTZ - German Technical Cooperation
HCII / HCIII - Health Center II / Health Center III
HDLG - Hoima District Local Government
HE - Health Education
HLC - Human Landing Collection / Human Landing Captures / Human Landing Catches
HMIS - Health Management Information System
HWs - Health Workers
HZ - Health Zones
ICT - Information Communication Technology
IDP - Insecurity and Displacement of Population / Internally Displaced Person
IDSR - Integrated Disease Surveillance and Response
IEC - Information, Education and Communication
IHRD/DBL – Institute of Health Research and Development / Danish Bilharzia Laboratory
IUs - Implementation Units
IVM - Ivermectin
IVT - International Verification Team
KAP - Knowledge Attitude and Perception / Knowledge Attitude and Practice
KCCA - Kampala Capital City Authority
KDLG - Kamwenge District Local Government
Lab - Laboratory
Lat – Latitude
LC(s) - Local Council(s)
LC1 - Local Council I
LC11 - Local Council II
LC111 - Local Council III
LCIF - Lions Clubs International Federation
LCV/5 - Local Council 5 Chairperson
LF - Lymphatic Filariasis
Lon - Longitude
LTO - Logistics and Transport Officer
Ltrs - Liters
Lym – Lymphocyte
M&E - Monitoring and Evaluation
MBR - Monthly Biting Rate
MCZ - Medecin Chef de la Zone de Sante
MDA - Mass Drug Administration
MDP - Mectizan Donation Program
MEC - Mectizan Expert Committee
MES - Monitoring Evaluation Specialist
Mf - Microfilaria(e)
MMDP - Morbidity Management and Disability Prevention
MMN - Madi Mid-North
MoH / MOH - Ministry of Health
MOHU - Ministry of Health Uganda
MOHZ - Ministry of Health Zone
MoU - Memorandum of Understanding
MPs - Members of Parliament

MSDP - Merck Sharp Dohme Program
MTN - Maladies Tropicales Negligees / Neglected Tropical Diseases
NCC - National Certification Committee
NDA - National Drug Authority
NDLG - Nebbi District Local Government
NGDO - Non-Governmental Development Organization
NOCP - National Onchocerciasis Control Program
NTD(s) - Neglected Tropical Disease(s)
NTD-NGDOs - Neglected Tropical Disease NGDOs
NTDCP - Neglected Tropical Diseases Control Program
NTLA - National Transition Legislative Assembly
O/A – Office Assistant, The Carter Center Uganda
***O. volvulus* -** *Onchocerca volvulus*
OCP - Onchocerciasis Control Program
OEIAC - Onchocerciasis Elimination Independent Advisory Committee (DRC)
OETC - Onchocerciasis Elimination Technical Committee (RSS)
Oncho – Onchocerciasis
OPM - Office of the Prime Minister
OTS – The WHO Onchocerciasis Technical Advisory Subgroup
OV - *Onchocerca Volvulus*
OV16 - Process/Machine for Investigation / Analysis of *Onchocerca Volvulus*
PAC - Program Administrative Coordinator
PA-CAO - Personal Assistant CAO
PC - Preventive Chemotherapy
PCC - Past Council Chairperson
PCNTDs - Preventive Chemotherapy NTDs
PCR - Polymerase Chain Reaction
PE - Post Elimination
PELF - Program for Elimination of Lymphatic Filariasis
PEM - Participatory Evaluation Meeting
PES - Post Elimination Surveillance
PPFI - Prior Probability of Freedom Index
PHASE – Preventive Chemotherapy, Health Education, Access to clean Water, Sanitation Improvement and Environmental Snail Control
PHO - Public Health Officer
PM-NOCP - Program Manager National Onchocerciasis Control Program
PM-TCC - Program Manager The Carter Center
PNLMTN/CP - National Program for the Control of Neglected Tropical Diseases with Preventive Chemotherapy
PNLMTN-CTP - Programme National de Lutte contre les Maladies Tropicales Négligées à Chimiothérapie Préventive
PT - Post Transmission
PTA - Program Technical Advisor
PTS - Post Treatment Surveillance
RB - River Blindness
RBP - River Blindness Program
Rd1 - Round 1
Rd2 - Round 2
RDC - Resident District Commissioner
REMO - Rapid Epidemiological Mapping of Onchocerciasis
RSS - Republic of South Sudan
RTI - Research Triangle Institute International
S/C - Sub-County
***S. damnosum* -** *Simulium damnosum*
S. *neavei* - *Simulium neavei*
SAEs - Severe Adverse Effects

SCH – Schistosomiasis
Schisto - Schistosomiasis
SCI - Schistosomiasis Control Initiative
SIZ - Special Intervention Zone
SMOH - State Ministry of Health (in RSS)
SPRO - Senior Public Relations Officer
SSGDP – South Sudan Government Development Program
SSNOLFEAC – South Sudan National Onchocerciasis and Lymphatic Filariasis Elimination Advisory Committee
SSOLFEC - South Sudan Roadmap for Onchocerciasis & LF Elimination Committee
STH - Soil Transmitted Helminth(e)s
STV – Standard Television
Sups – Supervisors
SVCO – Senior Vector Control Officer
SWOT - Strengths, Weaknesses, Opportunities and Threats
TAS - Transmission Assessment Survey
TCC - The Carter Center
TFGH - Task Force for Global Health
UFAR - United Front Against River Blindness -
UK - United Kingdom
UK.Aid - United Kingdom Agency for International Development
UNHCR - United Nations High Commission for Refugees
UOEEAC - Uganda Onchocerciasis Elimination Expert Advisory Committee
USAID - United States Agency for International Development
USF - University of South Florida
UTG - Ultimate Treatment Goal
VB & NTD - Vector-Borne & Neglected Tropical Diseases
VBNDD - Vector-Borne and Neglected Disease Division
VCD - Vector Control Division
VCO - Vector Control Officer
VHT - Village Health Team
VL - Viral Load
WHA - World Health Assembly Resolution
WHO - World Health Organization
WHO-AFRO - World Health Organization Africa Region
WHO-CO - World Health Organization Country Office
WHO-HQ - World Health Organization Headquarters
WHO-SCT - World Health Organization Special Consideration Treatment
WR - World Health Organization Country Representative

UOEEAC 2019 - Secretariat's Word



Peace Habomugisha

We are more than happy to return to the global health scientific and care fraternity, to political and related leaderships of countries around the world that have been affected by Onchocerciasis, and to NGDOs with interest in the control and elimination of this disease with the latest report of UOEEAC's once a year sitting and its proceedings. This is roughly a year since we last did so. UOEEAC 2019 was another historical meeting for members of the committee, this time of the 12th session since its creation in 2008. The start date was Tuesday 6th August 2019, and Sheraton Hotel in Kampala was the venue of the meeting on that and the following two days. Very briefly, the committee as at prior sessions convened for one major objective: They wanted to look at each individual Ugandan focus by critically listening to what the different Ugandan and non-Ugandan presenters and other speakers had to say, after which each presentation was discussed in detail and informed recommendations made to Uganda's Ministry of Health, which decides whether a given focus should move from one status to another or not. By the way, it is the country's National Certification Committee, NCC, whose base and home is the ministry that has the duty to review each recommendation and either accept or reject it.

It is important to note that the UOEEAC recommendations have never been rejected by the NCC as they are usually carefully made using data generated from within Uganda and following the WHO guidelines. This consistent and steady success story has ranked Uganda as a vanguard country in Africa in the fight to eliminate Onchocerciasis, and it is most likely going to be the first country to eradicate river blindness in that continent.[1]

It is time now to have a summary of the major activities of the meeting. The first item on the agenda was the opening of the session: Days before the meeting, different individuals had been assigned different responsibilities to fulfil in this respect. These were (after very brief introductory words by Gabriel Matwale who was the moderator of the starting event); Thomas Unnasch, Chair UOEEAC and Professor from the University of South Florida; Matwale, Ag. Assistant Commissioner of Health Services and National NTDs Coordinator, MOH Uganda; Benjamin Binagwa, Chief of Party, Act to End NTDs-East; Yao Sodahlon, the present Director of MDP; Clement Deng Akech, Deputy Head of Mission RSS; Christian Katoto, 1st Counselor DRC Embassy in Uganda who deputized DRC's Ambassador to Uganda; Frank Richards, Head of Carter Center delegation and Director for Carter Center's Health Programs - Malaria, Schistosomiasis, Onchocerciasis, etc; Yonas Tegegn Woldermariam, WHO representative in Uganda and, lastly, Uganda's Hon Minister of Health Jane Ruth Aceng who gave her remarks and by authority entrusted to her officially opened the 12th UOEEAC meeting. Before she left, the Minister noted, off cuff, that she would be returning on the third day of the meeting to close it, adding that everything needed to be done to remove the "color red" in the Ugandan Onchocerciasis flag which symbolizes "transmission ongoing". The above is the order in which the opening remarks are printed in the present report as Appendix A.

This time round the UOEEAC members present included: Thomas R. Unnasch (Chair), Gabriel Matwale (MoH), Moses Katabarwa (TCC USA), Dickson Unoba (NDLG Uganda) and Joseph Wamani (KDLG Uganda). (Peace Habomugisha and David Were Oguttu worked full time as co-secretaries to the committee.) Due to unavoidable circumstances some committee members did not attend but with apologies, and these were Johnson Ngorok (Sightsavers Uganda), Eddie W. Cupp (Auburn University USA), Edwin Michael (Notre Dame University, USA), Henry Mwebesa (DGHS Uganda) and Julian Kyomuhangi, Uganda Commissioner for Sanitation and Environment. Tom Rubaale was also absent but he explains this saying that the invitation to attend never got to him.

The session was attended by lots of other people, some of whom we may mention here: Mike French (RTI

Implementation Director), Adrian Hopkins (MDP Ex-Director and currently in consultancy service and the present Chair of Onchocerciasis Elimination Committee in DRC), Lauri Bernard (The Carter Center's Senior Program Associate), Tony Ukety (former WHO Coordinator for the Coalition of NTD-NGDOs and currently Consultant Ophthalmologist & NTD Expert), and Bayo Fatunmbi (Medical Officer, WHO Uganda), Naomi Uvon Awaca (NTD Coordinator DRC), Patrick Karamura Mwira (DRC-MoH), two South Sudan Commissioners in the names of Emilio Igga and Henry Kala Sabuni, Matthew Ochen Akiya from Lamwo, Isaac Komakech from KCCA and Leonard Lopay Bay DRC Coordinator from Ituri Nord Focus, Narsis Kabatereine – Country Head ASCEND Uganda, Annet Khainza RBP PM – TCC Uganda and Thomson Lakwo Retired Senior Entomologist, and Uganda Lions Clubs members Night Ndyarugahi – PCC, Sedrace Rwekikiga – First Vice District Governor and Polly K. Ndyarugahi – PCC. The details of the other invited guests, who included Ugandan District CAOs, RDCs, DHOs, radio and TV broadcasters and so on, are to be found in the list of participants published in this report as Appendix C. The entries for each participant include her/his phone contact and email address: hopefully these details will assist in case of anyone's need to communicate with any of the participants.

I will now take you to and very briefly through the major presentations that were delivered and discussed at the 12th UOEEAC meeting, leading to the recommendations of the 12th UOEEAC meeting and to the Oncho flag as of August 2019. Our procedure is day by day for the three days of the meeting. DAY ONE – there were several "sessions". The first one was about matters of registration, calling to order of the meeting, self-introductions, giving of starting speeches and formal opening of the meeting. Above we already talked about these addresses, who gave them and where they can be found in this report. Session 2 tackled issues arising from the 11th 'UOEEAC meeting and briefly reviewed the recommendations from that meeting. Also, it received and discussed updates from the molecular laboratory at Vector Borne and Neglected Disease Division (VBNDD), reports on the Onchocerciasis Elimination Technical Committees of the Democratic Republic of Congo (DRC) and Republic of South Sudan (RSS). Thirdly there was a session which dealt with "foci under PTS period without cross-border situations", a session focusing on PTS in Obongi and Wadelai foci. The 4th session was concerned with "foci under PTS with cross-border situations", that is Bwindi-Uganda and Rutshuru-DRC.

Day two began with Session 5 which handled Nyagak-Bondo and the CDTI Project in Ituri-North, DRC. There were also several others: Session 6 dealt with "transmission on-going and cross border issues". Its components were Lhubiriha focus; part 1 (Gulu, Kitgum, Lamwo, Pader & Lira districts), part 2 (Omoro, Oyam, Nwoya, Amuru & Adjumani districts) and part 3 (Moyo district) of Madi Mid-North focus (MMN); status of onchocerciasis in counties of RSS adjacent to MMN and overview of progress in MMN. Session 7 had as its business onchocerciasis foci (co-endemic with LF) where Onchocerciasis transmission has been interrupted. It discussed the program for elimination of LF in Uganda. As has been the practice previously, the second day ended with entertainment to relax the minds and physique of the participants who had been working hard to ensure that the UOEEAC was a success. This time, it was the Cranes entertainment group that made the day by bringing the reveler much closer to one another through their captivating music and unique dance stunts.

Day 3 – this was originally programed to deal with special presentations (Slash and Clear in Amuru and on Aci and Okike rivers in Adjumani, and a summary of the conclusions and recommendations coming from the 12th UOEEAC meeting) under session 8. However, before all that could be done, the session first of all tackled a spillover from session 7, namely Onchocerciasis in Maracha-Terego focus.

Finally, there was session 9. This was a set of events which crowned the activities of the 12th UOEEAC. These included: a) closing remarks which were given by a number of individuals - Thomas Unnasch, Onapa Ambrose, Sadres Rwekikiga, Yao Sodahlon, Benson Ojara, Clement Deng Akech, Patrick Karamura, Moses Katabarwa and Yonas Tegegn Woldermariam. b) overview of the meeting proceedings which included among others the discussions, conclusions and recommendations, (c) MOH Uganda press release on the country's milestone in the elimination of Onchocerciasis, which underscores that millions of people from Uganda's endemic areas have been saved from the scourge of this disease, and (d) the MOH Uganda's speech, by the Minister of Health Hon. Dr. Jane Ruth Aceng, that closed the 12th UOEEAC meeting. The details of all the above are available in this report in Appendix B.

Let us return to the point of Minister Aceng. We are saying above that she formally opened and closed the 2019 UOEEAC meeting: By the way this is what she did in 2018. For the closure in 2019, she returned to Sheraton with 21 different media teams to witness the event. As she entered Rwenzori room, she stood and closely stared at the new onchocerciasis map/flag which was hanging

on the wall and she could not hide her excitement; she nodded her head in agreement and said, "yes, Uganda has made it". What did that mean? The color "red" which she never wanted to see when she returned had indeed disappeared: The greater and formerly intimidating Madi Mid-North focus had changed its color from red to grey green, meaning a jump from "transmission ongoing" to "transmission suspected". This signaled a big achievement for her and the government of Uganda. The Madi Mid-North focus was the biggest ever to have made such a change. It was only a small portion of Lhubiriha focus that had remained a red zone. If it was not for Ebola virus that had manifested itself in DRC's Beni-Butembo, adjacent to Lhubiriha, probably this focus would have also obtained "transmission suspected" status, said Uganda's Minister of Health.

As if that was not enough, the 12th UOEEAC had passed Nyagak-Bondo focus from "transmission suspected" to "transmission interrupted", thus halting there a Mass Drug Administration (MDA) forever and saving lives of about 608,219 people from Onchocerciasis. Indeed, what the Minister of Health had anticipated during the opening ceremony had been achieved to a bigger extent. What a wonderful day it was for the Minister and indeed for Uganda!

Very excited, she thanked the 12th UOEEAC for guiding the country in the right direction, The Carter Center for providing technical and financial support (including among others Abate supply and installation and continued maintenance of the molecular laboratory at VCD), Mectizan company for giving the Ugandan communities many quantities of free Ivermectin for many years, Ugandan endemic districts for doing the actual work, the President of Uganda for providing a conducive atmosphere in which the relevant activities have been conducted, and all other partners and everyone else who contributed to this success. She promised the audience that Uganda will continue working closely with her neighbors to make sure that what has been achieved will not be jeopardized. We are very grateful to her for being such a committed servant who has a big heart for her country.

The meeting ended with a storm of deafening and jubilant claps, with people laughing and hugging each other. To non-Ugandans present, especially from other Oncho-affected African countries, this may have left them more determined to do even more and better than Uganda.

The success of Onchocerciasis elimination in Uganda is attributed to the government of Uganda and support from different partners. However, given the complex nature of the fight against the disease, as well as the sometimes turbulent history of Uganda from about 1971 to well into the 2010s, some partners for different reasons could not walk the entire course to the end of the elimination road. The Carter Center International Inc. is among those that have persisted and is determined to continue supporting MoH Uganda until Onchocerciasis is wiped out from Uganda.

What is The Carter Center and what empowers it to want to reach the finishing line? It is a non-governmental organization with its headquarters in Atlanta Georgia, USA; and was founded on 6th April 1982 by President Jimmy Carter and his wife Rosalynn Carter with the aim of serving humanity. In Uganda in particular, the Center has been on the ground since the early 1990s to date. Working with the country's MoH personnel, the Center has among others supported mapping of the disease, testing and treatment for the disease, and attacking and killing the vector of the disease, many times in very hard to reach areas with no roads and bridges. All this, countless times, has involved walking long distances, climbing hills and valleys and passing through thick forests most of them inhabited by wild animals. Also, it has meant going into and or passing through communities whose languages these frontline workers did not understand and yet they had to pass on to them the invitation that they take Ivermectin for many years, a drug that would cure them of the deadly Onchocerciasis – a drug and a disease that were not even known by many among the local populations. Insurgency in northern Uganda complicated matters and if it had not been for its love for humanity, the Center would have probably given up. The Carter Center staff in Uganda whose access routes to some northern districts were blocked by insurgency, resorted to flying there, especially to the districts that were reasonably stable and where Ivermectin could easily be distributed. Eventually when the war was over and people settled in their communities, the center had to deal with issues of non-payment of Ivermectin distributors, intensive health education and data forgery, something that was threatening the Onchocerciasis program if not handled well. Thanks to many northern district leaders, men and women of vision, who worked closely with the Center and relieved some of their non-performing staff from Onchocerciasis program activities and replaced them with hard-working ones. Such moves created a steadfast treatment regime with high coverage that resulted in a shift of MMN from "transmission ongoing" to "transmission suspected".

Onchocerciasis elimination in many places in Uganda would not have been possible without the following: a) molecular laboratory at VBNDD (formerly VCD) in Kampala whose personnel worked tirelessly in testing blood samples and examining flies to determine the

status of the disease in each focus, b) MoH policy of using vector elimination/control as one of the preventive measures, c) cross border collaboration to make sure that the neighboring countries do not re-infect Uganda, d) timely implementation of all CDTI activities since 1996 to ensure good coverage(s), and e) continuous and steady funding of UOEEAC (from 2008 to date) which has guided Uganda's elimination of Onchocerciasis in the right direction. All of the above and akin matters would probably not have happened without the continuous and timely support of The Carter Center, to whom we are thankful.

President Jimmy Carter, his wife Rosalynn Carter and the government of Uganda owe so much to Professor Thomas Unnasch of the University of South Florida and his team who not only assisted in the establishment of the Lab. at VBNDD, but also regularly checked on the laboratory team in Uganda to make sure that the work was going on as expected. He has been the UOEEAC chair for several years until now. To the UOEEAC members, even those who have retired from this committee, we say thank you very much for sharing your expertise that has uplifted the Oncho fight in Uganda. Special thanks go to the leaders (at different levels) of the affected districts for embracing the elimination strategy and assigning committed personnel to the Onchocerciasis program. To the CHSs, CDDs and others in that category who rendered their free services to the communities, the program owes you a lot. Thank you so much community members and leaders for accepting to take Ivermectin for many years; we encourage those of you who are in areas where MDA has not stopped to continue doing so to the end. To the Carter Center staff in Uganda who worked tirelessly and sometimes had sleepless nights, as we rode through the August 2018-August 2019 fiscal year, thank you so much; let us tighten our belts to face more and tougher challenges, hoping that the end positive results will be in excess of what our national Onchocerciasis program has ever achieved.

Ambassador Mary Ann Peters, formerly of The Carter Center, Atlanta, 2014 – 15th June 2020, was not present during the 12th UOEEAC meeting. However, by virtue of her overarching duty as CEO of the center and her visit to Uganda in November 2018 to open the new VBNDD-based building supported by the center, she was automatically linked to the people of Uganda and the country's Onchocerciasis program. We thank her for her commitment and hard work that have contributed to the Onchocerciasis elimination program in Uganda. This acknowledgement is echoed in annex F, a compressed and edited version of a presentation that was originally given by the current writer at the November 2018 building inauguration where Ambassador Peters deputized her bosses. Appendix D of this report entails images of some people who attended the 12th UOEEAC meeting: These have been picked out as a mark of acknowledging their multi-contributions, as of 8th August 2019 and/or in future, to Uganda's war on onchocerciasis. This is not to overlook the many important contributions by other persons present who were none the less not singled out. It was lack of space that dictated the limited selection. Frank Richards who was the head of the Carter Center delegation to the 12th committee congregation has recently left the organization. To acknowledge that he meant and did a lot for Uganda, we have iconized him in a special compliment in this report as shown in Appendix E.

Immediately following the successful proceedings of the UOEEAC 2019 meeting, the atmosphere within the membership of the committee and even beyond - as seen for example above after the Ugandan Health Minister gave the concluding speech – was celebratory. The ripples so to say of that celebration are still present long afterwards. It is easy to forget however, standing as we are almost at the apex of Uganda's elimination struggle, that UOEEAC and its glorious attainments have come from shaky beginnings. As for the entire national extermination program, the road for the committee was often - at least in the beginning years - uphill. Let us have a few highlights of this journey, leaving out what were arguably very contentious and divisive issues. Starting from scratch in 2008 and having the duty to build a firm foundation for its work, the first committee needed among others to: (a) Study the Ugandan political environment, (b) critically select more key people to be on the committee, (c) handle the issues of Uganda's different unique vector species particularly *neavei* that transmit Onchocerciasis which were not included in the WHO guidelines, (d) establish elimination criteria that included post treatment surveillance, and (e) chart ways of dealing with cross border issues. These initial efforts which involved serious input from MoH Uganda and partners produced a first class committee, comprising both national and international experts in controlling and eliminating Onchocerciasis.[2]

As we conclude, we would like to apologize for the errors we may have made, in one way or the other, in this publication. These may include misspellings etc. that remained unnoticed to us.

1 This shining record has consequently challenged other affected countries in Africa - those bordering Uganda such as DRC and RSS, and distant ones like Sudan, Ethiopia and Nigeria. Taking a leaf from Uganda, some of them have also embarked on elimination of onchocerciasis.

2 Anyone interested in the early and later history of UOEEAC will find detailed information mainly in the archives of The Carter Centre, Uganda and Ministry of Health Uganda.

12th UOEEAC Meeting Report: Overview



Thomas R. Unnasch

The 12th meeting of the Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC), an advisory body commissioned by the Uganda Ministry of Health (MOH), met in Kampala from August 6th-8th, 2019. The meeting was officially opened and closed by the Hon. Dr. Ruth Jane Aceng, the Minister of Health of Uganda.

The major task of the UOEEAC is to evaluate the current status of Onchocerciasis in Uganda in light of the guidelines for elimination set forth by the MOH and World Health Organization (WHO) and to provide both general and focus-specific recommendations to the MOH regarding the status of parasite transmission at the various foci in the country. The focus-specific recommendations are summarized on a color-coded table, known as the "Oncho flag" and a complementary color-coded map. Copies of both the flag and map are included at the end of this report. The committee also recommended a priority list for field-based and laboratory activities to be undertaken in the coming year. The following sections summarize the general and focus-specific comments and recommendations and provide recommendations for priority activities to be conducted by MOH/DHS field teams and the laboratory in the coming year.

General Comments and Recommendations

1. The committee noted with thanks the presence of delegations from RSS & DRC, noted with pleasure that both countries have launched National Onchocerciasis Elimination Committees, and thanked them for their presentations at the UOEEAC meeting.
2. The committee noted DRC's report of successful implementation of Abate as a vector control measure in Ituri province in the DRC. DRC expressed gratitude for the technical and logistical support received from Uganda. The CNEO of the DRC expressed their gratitude for the technical and logistical support provided by Uganda in this process, but expressed concern that, although it had been approved locally by the political and medical authorities, it had not yet been approved by the National Environmental and Health Authorities of the DRC.
3. UOEEAC recommended that Uganda and the DRC should work together to gather data from OCP, APOC and Uganda's Onchocerciasis Control Program on Abate's environmental safety. It may also be possible to carry out limited studies on the environmental effect of Abate application directly in the Ituri sites if funding can be identified. The UOEEAC noted that it is important to know precisely what studies National Environmental and Health Authorities might require in this regard to assist in the planning of these activities.
4. The committee applauded the fact that RSS and Uganda held a meeting in May 2018 in Gulu to discuss cross border cooperation in Onchocerciasis elimination and recognized that a communique summarizing strategies for such cross-border activities was produced as a result of the meeting. The committee expressed its hope that both governments sign this communique soon to allow its recommendations to be implemented.
5. The UOEEAC requests further information on epidemiological assessments, treatments and movement of refugees and displaced peoples with respect to Onchocerciasis. The estimated requirement of Mectizan to treat at risk refugee populations should be included in the current application to the Mectizan Donation Program.
6. The committee was gratified to learn of the success of the research that has been conducted in the past years that has shown the efficacy of community based methods in reducing vector densities in Northern Uganda (i.e. slash and clear and the EWT trap). The committee encouraged the Ministry of Health to begin developing procedures for implementing these methods at scale in the affected communities and insuring community ownership and sustainability of these programs.

7. The committee recommends that the program always include the flag and previous UOEEAC meeting's report in the information packet for UOEEAC members.

8. The committee noted that The Carter Center is experiencing a shortage of donated Abate for insecticide control of black flies and encouraged the ministry to find alternative ways to source this product.

9. The committee felt that the Ugandan program could assist DRC and RSS in developing technical and laboratory capacity for Onchocerciasis evaluations. There are suitable laboratories in DRC, but similar facilities still need to be established in RSS. If requested, and if a source of funding can be found, the Ugandan program might consider hosting trainees from RSS and DRC in the Onchocerciasis laboratory with the purpose of assisting these countries in developing the technical expertise needed to carry out the Ov16 ELISA and O150 PCR assays. This training could possibly utilize samples collected in the cross-border areas of DRC and RSS, as the results obtained would be of interest both to Uganda and to its neighbors.

Focus Specific Comments and Recommendations

Obongi: Vector control had eliminated the vector at this focus, with the last flies seen in 2012. However, as the focus was co-endemic for LF, the PTS period could not begin until treatment for LF was discontinued in 2016. Since then the program has conducted entomological surveys throughout a three-year PTS period and has demonstrated a continued absence of vectors. It also conducted a serosurvey in 2019 that revealed no evidence of parasite exposure in children (OV16 prevalence<0.1% with 95% confidence). The committee thus recommended that the ministry consider re-classifying this focus from "transmission interrupted" to "transmission eliminated".

Wadelai: Similar to Obongi, the PTS period in this focus could not begin until treatment for LF was completed in August, 2017. No vector flies have been detected in this focus since 2017. The committee recommends that the program plan to conduct a final OV16 serosurvey in children as soon as the 36 month PTS period ends (in August 2020), the successful completion of which will allow this focus to be re-classified as "eliminated". Until this is done the focus remains classified as "transmission interrupted".

Bwindi: Based upon evidence conducted near the Ugandan border in the neighboring area of Rutshuru in North Kivu province of DRC, the committee reclassified Bwindi as "transmission interrupted" in 2018. However, treatments and parasite activity remain in the neighboring area of Rutshuru in North Kivu province in DRC although this activity is not adjacent to the border. The committee requests that the DRC NOEC consider prioritizing the following actions that will ensure the elimination of Onchocerciasis in this cross-border focus:

- Conducting additional assessments to confirm that instituting twice per year treatment would be advisable in this area.

- Assist the Uganda program in ensuring that security issues will be handled effectively and transparently when Ugandan teams cross into Rutshuru to assist in elimination activities.

- Develop a strategic plan for activities (entomological and serological surveys) to be conducted in the Ishasha- Nyamirima - Sarambwe areas and to consider conducting a repeat survey within the Binza Health Zone, prioritizing the Nkanka and Kaku rivers.

Nyagak Bondo: There has been no evidence of vectors in this focus for the past six years. Recent data from surveys conducted on the DRC side bordering Nyagak Bondo suggests that it is isolated from any endemic areas in DRC, and there is no risk of re-introduction of parasites from DRC by flies, migrants or refugees. The focus has had seven years (14 rounds) of twice per year treatment with satisfactory coverage. The committee recommended that this focus be provisionally re-classified as "transmission interrupted" and treatments for Onchocerciasis cease, assuming that the remaining serum samples from resident children in the focus are OV16 negative and that seroprevalence can meet the WHO guideline of being<0.1% with 95% confidence. Following the meeting, the laboratory reported that testing on the remaining samples was completed and 0/3184 samples were positive. These data meet the WHO guideline and as a result, the committee voted in an email poll to reclassify this focus as "transmission interrupted". Treatment can cease following the final scheduled treatment round and the post treatment surveillance period can then begin.

Lhubiriha: Cross-border activities recommended by the committee in 2018 were unable to be completed due to the Ebola epidemic currently occurring in the neighboring areas of DRC. As a result, the committee recommended that this focus remain classified as "transmission ongoing". The committee recommends

that the program complete the analysis of the samples currently in the lab. Cross-border activities should remain on hold until the Ebola epidemic subsides.

Madi Mid-North: The committee was impressed by the amount of entomological and epidemiological data collected by the program in this focus. Taken together, these data suggest that transmission has been suppressed in this focus, and the committee recommended that the focus be re-classified as "interruption suspected". However, the committee noted that a minimum of 13 rounds of twice per year treatments at high coverage are needed to sterilize or kill the remaining parasites once transmission is suppressed. The committee recommended:

- Twice per year treatment with ivermectin should continue in the focus.

- The program should undertake a thorough analysis of the number of high coverage, twice per year treatments that have been conducted throughout this focus, accounting for administrative re-organizations that have occurred, and the insecurity that challenged the region until 2014. The committee recommends that treatments continue throughout the focus until all communities in the focus receive a minimum of 13 consecutive twice per year treatments at high coverage rates.

- The committee felt that it was important for the program to collect data to define the boundaries of this focus. Because treatment in this focus is occurring in some sub-counties and not in adjoining sub-counties, solid data supporting the decision to treat some sub-counties and not others will be necessary to include in the dossier submitted to WHO for elimination verification.

- The committee noted that there was evidence presented in a prior UOEEAC meeting that biting flies in Moyo District were coming from outside Moyo District, and most likely from Kajo-Keji in RSS. The committee recommended that Uganda continue to assist RSS in cross border entomological and epidemiological assessments in Kajo-Keji (opposite Moyo District) and recommended to the RSS Onchocerciasis Elimination Committee that it consider twice per year ivermectin MDA in this area.

- The UOEEAC noted that The Carter Center was assisting the MOH complete a district by district "strengths, weaknesses, opportunities and threats" (SWOT) analysis that considers each district's technical (including treatment and treatment coverage, epidemiology, entomology, laboratory specimens, larviciding), political (including the refugee situation), administrative and financial situations. The UOEEAC requested a report of this analysis at its next meeting.

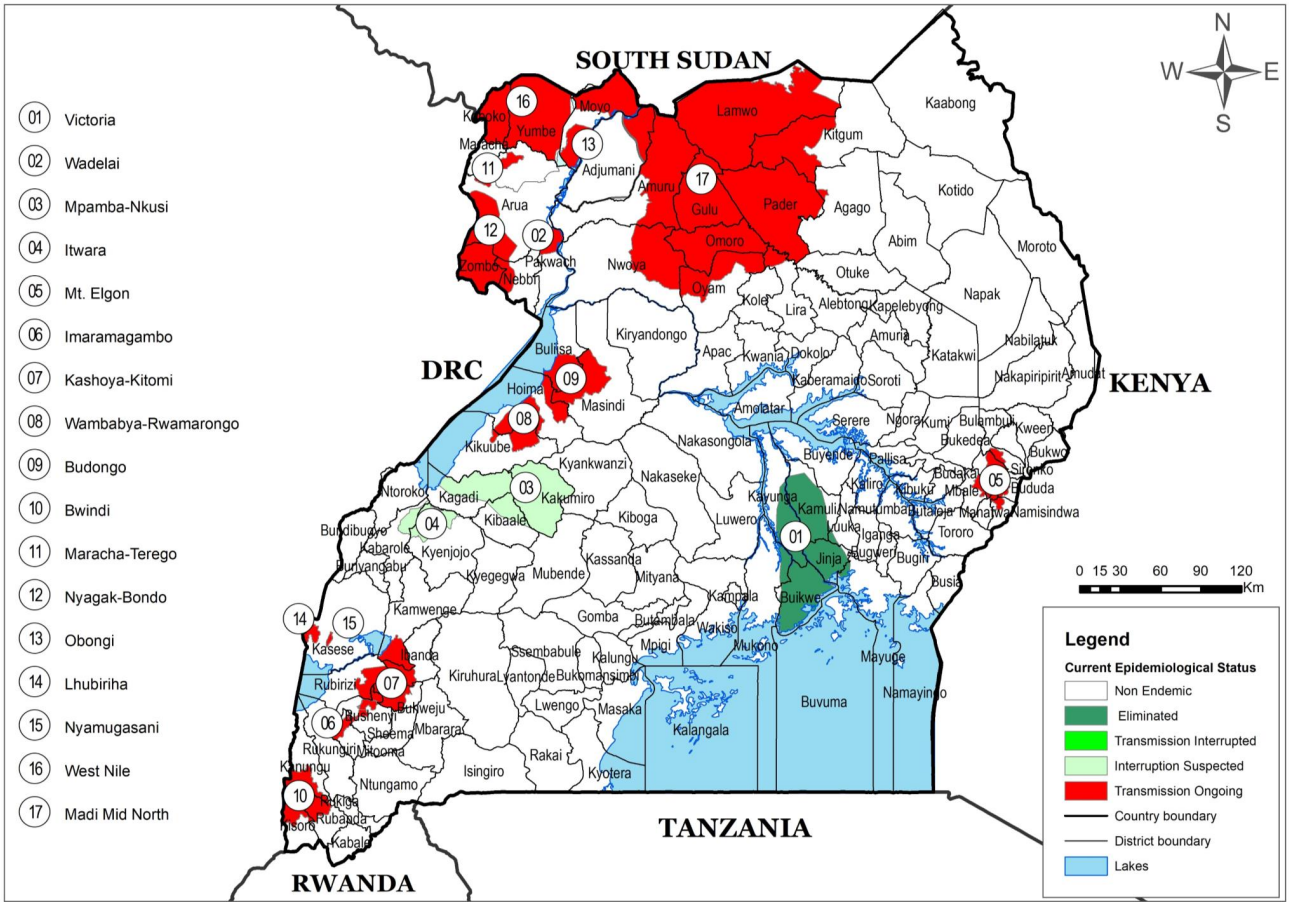
Work plan for 2019-2020

Focus	Activity	Priority
Nyagak Bondo	Complete analysis of 1958 DBS in lab as soon as possible and communicate results to the UOEEAC	1
Kajo-Keji (RSS)	Analysis of DBS in the lab	1
Lhubiriha	Analysis of DBS in the lab	2
Lhubiriha	Analysis of flies in lab	2
Madi Mid-North	Collect and analyze DBS as needed to delineate MMN boundaries	2
Madi Mid-North	Analysis of DBS in the lab	3

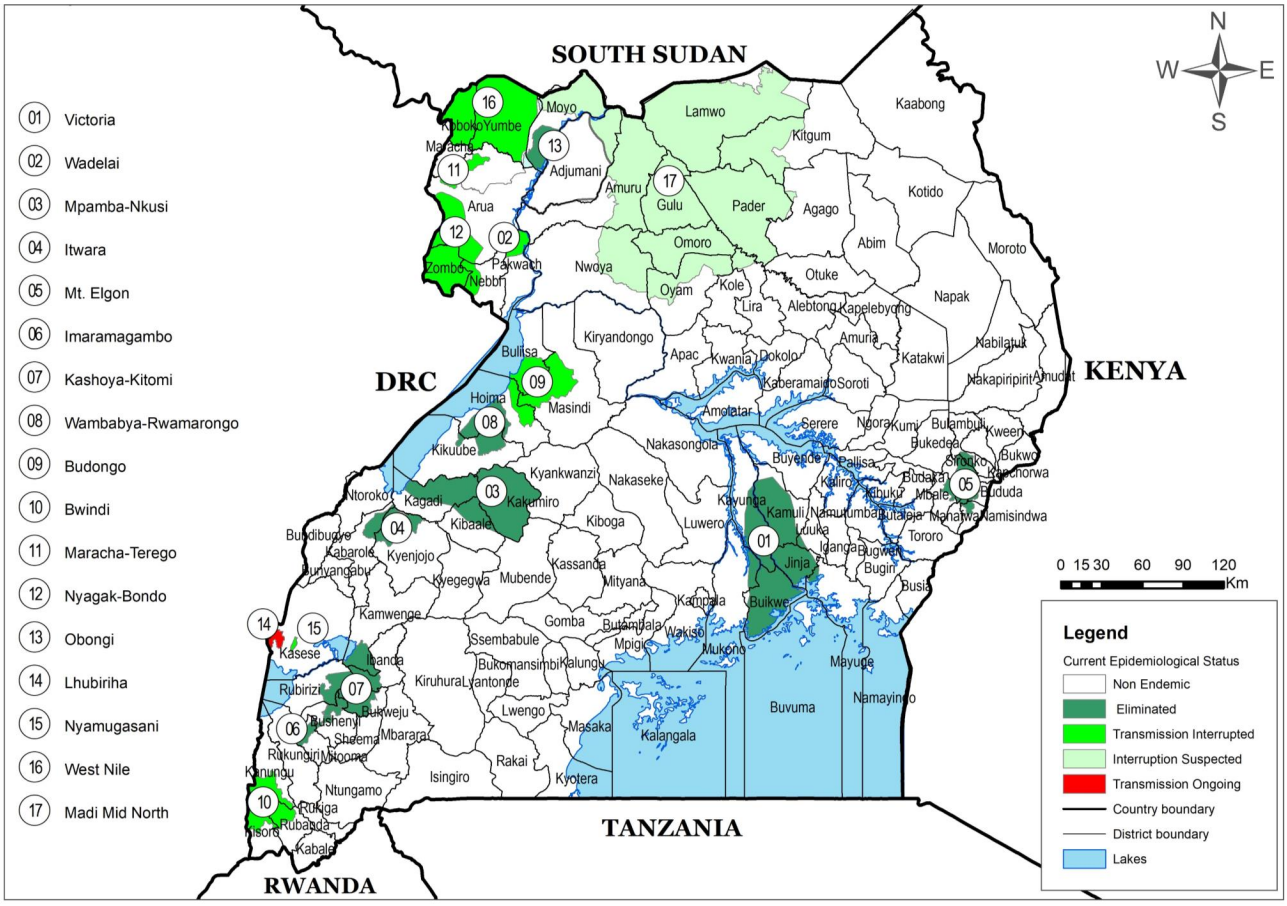
Uganda Oncho Flag as of August 2019

ID #	Focus	Vector	District	# MDA Annual Rounds	Total Pop 2019	Planned UTG1 TXs 2019	Planned UTG2 TXs 2019	Status of Transmission	Year Eliminated	Plan for MDA Treatment	Larviciding (Years)	LF Status	TAS1 Date	Date of PTS Start	Cross Border	Remarks
1	Victoria	*S. damnosum*	Jinja	N/A	589,524			Eliminated	1973	None	*Vector Elimination (??-??)*		NA			*Source of data (UBOS)*
			Mukono	N/A	650,430			Eliminated	1973	None	*Vector Elimination (??-??)*		NA			*Source of data (UBOS)*
			Kamuli	N/A	592,447			Eliminated	1973	None	*Vector Elimination (??-??)*		NA			*Source of data (UBOS)*
			Mayuge	N/A	549,512			Eliminated	1973	None	*Vector Elimination (??-??)*		NA			*Source of data (UBOS)*
			Kayunga	N/A	404,587			Eliminated	1973	None	*Vector Elimination (??-??)*		NA			*Source of data (UBOS)*
		Total	5		2,786,501											
3	Mpamba-Nkusi	*S. neavei*	Kibale	17	236,329		401,759	Eliminated	2016	None	*Vector Elimination*		NA	Nov 2012		*Treatment stopped in 2012 (projected by 3.5%)*
4	Itwara	*S. neavei*	Kabarole	20	40,825	34,702		Eliminated	2016	None	*Vector Elimination*		NA	Nov 2011		*Treatment stopped in 2009 (projected by 3.5%)*
			Kyenjojo	20	84,939	72,198		Eliminated	2016	None	*Vector Elimination*		NA	Nov 2011		*Treatment stopped in 2009 (projected by 3.5%)*
5	Mt. Elgon	*S.neavei*	Manafwa	15	50,424		85,720	Eliminated	2016	None	*Vector Elimination*		NA	Nov 2011		*Treatment stopped in 2011 (projected by 3.5%)*
			Mbale	15	62,406		106,091	Eliminated	2016	None	*Vector Elimination*		NA	Nov 2011		*Treatment stopped in 2011 (projected by 3.5%)*
			Sironko	15	94,846		161,238	Eliminated	2016	None	*Vector Elimination*		NA	Nov 2011		*Treatment stopped in 2011 (projected by 3.5%)*
			Bududa	15	200,719		341,223	Eliminated	2016	None	*Vector Elimination*		NA	Nov 2011		*Treatment stopped in 2011 (projected by 3.5%)*
6	Imaramagambo	*S.neavei*	Bushenyi	18	126,892	107,858		Eliminated	2016	None	*None*		NA	Nov 2012		*Treatment stopped in 2011 (projected by 3.5%)*
7	Kashoya-Kitomi	*S.neavei*	Buhweju	16	69,852		118,749	Eliminated	2017	None	*Vector Elimination*		NA	Nov 2013		
			Rubirizi	16	89,554		152,242	Eliminated	2017	None	*Vector Elimination*		NA	Nov 2013		
			Ibanda	16	30,308		51,524	Eliminated	2017	None	*Vector Elimination*		NA	Nov 2013		
			Kamwenge	18	52,893		89,918	Eliminated	2017	None	*Vector Elimination*		NA	Nov 2013		
8	Wambabya-Rwamarongo	*S. neavei*	Hoima	16	87,795		149,252	Eliminated	2017	None	*Vector Elimination*		NA	Nov 2013		*Treatment stopped in 2013*
13	Obongi / Moyo	*S.neavei/ S. damnosum*	Moyo	20	43,518	36,990		Eliminated	2019	None	*None*		2015	Jan 2016		
		Total	14	237	1,271,301	251,748	1,657,715									
2	Wadelai	*S.neavei*	Nebbi	15	24,424		41,521	Interrupted (2010)		None	*None*		2016	Aug 2017		*Treatment stopped in 2008 (projected by 3.5%)*
11	Maracha-Terego	*S.neavei/S.damnosum*	Maracha-Terego	19	211,532	179,802		Interrupted (2012)		LF Treatment	*None*	LF	2019	Aug 2019		*Treatment stopped in 2011 (projected by 3.5%)*
15	Nyamugasani	*S. Sebwe*	Kasese	21	12,795	10,876		Interrupted (2015)		None	*None*		NA	Apr 2018		
16	West Nile	*S.neavei/ S. damnosum*	Yumbe	22	332,265	282,426		Interrupted (2017)		None	*None*		2016	Aug 2017	*Yes (RSS)*	
			Koboko	22	193,687	164,634		Interrupted (2017)		None	*None*		2016	Aug 2017	*Yes (DRC & RSS)*	
9	Budongo	*S.neavei*	Masindi	17	57,290		97,392	Interrupted (2018)		None	*Vector Elimination*		NA	Jan 2019		
			Buliisa	17	36,470		61,999	Interrupted (2018)		None	*Vector Elimination*		NA	Jan 2019		
			Hoima	17	87,544		148,824	Interrupted (2018)		None	*Vector Elimination*		NA	Jan 2019		
10	Bwindi	*S.neavei/ S. damnosum*	Rubanda	17	35,309		60,026	Interrupted (2018)		None	*Vector Control*		NA	Jan 2019		
			Kanungu	17	61,065		103,810	Interrupted (2018)		None	*Vector Control*		NA	Jan 2019	*Yes (DRC)*	
			Kisoro	17	43,523		73,989	Interrupted (2018)		None	*Vector Control*		NA	Jan 2019	*Yes (DRC)*	
12	Nyagak Bondo	*S.neavei*	Nebbi	22	147,136		250,131	Interrupted (2019)		End 2019	*Vector Control*	LF	2016		*Yes (DRC)*	
			Zombo	22	267,451		441,692	Interrupted (2019)		End 2019	*Vector Control*	LF	2016		*Yes (DRC)*	
			Arua	22	193,632		331,212	Interrupted (2019)		End 2019	*Vector Control*	LF	2019		*Yes (DRC)*	
		Total	15	267	1,704,122	637,737	1,610,597									
17	Madi Mid North		Pader	8	200,673		341,144	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF	2017			
			Kitgum	8	110,998		188,697	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF			*Yes (RSS)*	
			Lamwo	8	157,591		267,905	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF			*Yes (RSS)*	
			Gulu	21	154,490		262,632	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF				
			Omoro	21	198,334		337,167	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF				
			Amuru	21	249,814		424,684	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF	2017		*Yes (RSS)*	
			Nwoya	21	186,036		316,260	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF	2017			
			Oyam	21	24,556		41,746	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF	2015			
			Lira	5	75,303		128,016	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF	2013			
			Moyo	22	93,451		158,866	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF	2015		*Yes (RSS)*	
			Adjumani	22	29,447		50,059	Interruption Suspected		Semi-Annual	*Vector Control Feasibility*	LF	2015		*Yes (RSS)*	
		Total	11	178	1,480,692	0	2,517,176									
14	Lhubiliha	*S. Sebwe & S. kilibanum*	Kasese	22	139,097		236,466	Ongoing		Semi-Annual	Vector Control		NA		*Yes (DRC)*	
	Total		46	22	139,097	0	236,466									
	GRAND TOTAL			704	7,381,713	0	2,753,642									

2007 Uganda Onchocerciasis Map (Elimination program starts)



2019 Uganda Onchocerciasis Map



Review of the 11th Session of UOEEAC
Thomas R. Unnasch

Role of the Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC)

- Advisory committee to MOH.
- Provides recommendations and gives technical advice to the government of Uganda regarding program activities and change of focus status from one level to another; but all operational or programmatic decisions rest with the MOHU.

UOEEAC 11 th Session Recommendations

General Recommendations

- Uganda/committee focused.
- Cross border activities.

Focus specific Recommendations.

- Lab and field research priorities.

Focus Specific Recommendations #1

1. Victoria Nile focus: Program completed and requested for Post Elimination Surveillance (PES) activities at this focus. The committee recommended that the results be written up for publication. Status as eliminated remains unchanged.

2. Wadelai, Obongi, West Nile foci: Foci remain in PTS period. Population sensitization activities should continue and be documented for inclusion in the dossier. The foci status is transmission interrupted.

3. Nyamugasani focus: PTS period should be considered to have begun as end of vector control activities in April 2018. Continue entomological surveillance. Focus status is transmission interrupted.

General Recommendations

1. Provide Mectizan to residents of refugee camps.

2. In consultation with office of the Prime Minister and UNHCR, develop a plan for MDA for camp residents.

3. Continue investigations of slash and clear and EWT based methods for vector control in comparison to Abate ground treatment efficacy.

4. Look at efficacy of EWT for other vector species (e.g. *S. neavei and S. killibanum*).

5. Present entomological data in conventionally accepted formats, e.g. MBR.

6. Program should begin planning for post-elimination surveillance.
   Suggest that entomological surveillance be done once every 5 years after PTS period has ended.

7. MOH should provide UOEEAC with schedules for district level assessments for TAS1 surveys in LF-Oncho co-endemic areas.

Cross Border Recommendations

The committee was very gratified to hear about the progress made in cross border activities with DRC and RSS and recommended the following:

1. Continuing collaborations with DRC and encouraged Uganda to provide assistance to DRC where possible and when requested by DRC.

2. Committee requested that it should be informed of any vector control activities being undertaken in DRC cross border foci, if these were supported by Uganda.

3. Committee lauded RSS for declaring cross border foci with Uganda as special intervention zones.

4. Committee requested that it be provided with the communique and joint workplan developed between RSS and Uganda.

Focus Specific Recommendations #2

1. Maracha-Terego focus: MDA for LF continues. PTS for oncho may begin once focus passes TAS1 for LF and treatment is stopped.

2. Budongo focus: Start PTS period in October, 2018. Continue entomological surveys quarterly and conduct serology surveys in 2019 and after the three year PTS. Serology surveys should exclude any known positive people at the start of the PTS. Passive treatment of infected individuals should continue. Re-classify as "transmission interrupted".

3. Bwindi focus: Based on results from DRC, re-classify as "transmission interrupted" and start PTS after final treatment round. Strengthen ongoing collaboration with DRC.

Focus Specific Recommendations #3

1. Nyagak Bondo: Remains "interruption suspected", due to activity in adjoining areas of DRC. Continue quarterly entomological surveillance and consider vector control along border.

2. Lhubiriha: Remains "transmission ongoing". Recommended to collect additional data on status of transmission here.

3. Madi-mid North: Remains "transmission ongoing". Conduct independent coverage surveys. Collect updated entomological and epidemiological data at the district level.

Laboratory Priority Areas for 2019

1. Entomological surveys – Budongo, Lhubiriha, MMN.

2. Serosurveys – Lhubiriha, MMN, RSS cross border areas, Goma Rutshuru in DRC.

Onchocerciasis Elimination Flag August 2018

Focus	Vector	District	# MDA Annual Rounds	# of MDA Semiannual Rounds	Total Pop 2018	Year Eliminated
Victoria	*S. damnosum*	Jinja	N/A	N/A	572,354	1973
		Mukono	N/A	N/A	631,486	1973
		Kamuli	N/A	N/A	575,191	1973
		Mayuge	N/A	N/A	533,507	1973
		Kayunga	N/A	N/A	392,803	1973
Mpamba-Nkusi	*S. neavei*	Kibale	17	8	229,446	2016
Itwara	*S. neavei*	Kabarole	20	2	39,636	2016
		Kyenjojo	20	2	82,465	2016
Mt. Elgon	*S.neavei*	Manafwa	15	8	48,955	2016
		Mbale	15	8	60,589	2016
		Sironko	15	8	92,083	2016
		Bududa	15	8	194,873	2016
Imaramagambo	*S.neavei*	Bushenyi	18	0	123,196	2016
Kashoya-Kitomi	*S.neavei*	Buhweju	16	13	67,818	2017
		Rubirizi	16	13	86,946	2017
		Ibanda	16	13	29,425	2017
		Kamwenge	18	13	51,352	2017
Wambabya-Rwama	*S. neavei*	Hoima	16	13	85,238	2017
Wadelai	*S.neavei*	Nebbi	15	8	23,713	
Maracha-Terego	*S.neavei/S.damnosi*	Maracha-Terego	19	0	205,371	
Obongi / Moyo	*S.neavei/ S. damno*	Moyo	20	0	42,250	
Nyamugasani	*S. Sebwe*	Kasese	21	0	12,422	
West Nile	*S.neavei/ S. damno*	Yumbe	22	0	322,588	
		Koboko	22	0	188,046	
Budongo	*S.neavei*	Masindi	17	23	55,621	
		Buliisa	17	23	35,408	
		Hoima	17	23	84,994	
Bwindi	*S.neavei/ S. damno*	Rubanda	17	23	34,281	
		Kanungu	17	23	59,286	
		Kisoro	17	23	42,255	
Nyagak Bondo	*S.neavei*	Nebbi	20	13	147,136	
		Zombo	20	13	259,661	
		Arua	20	13	191,883	
Lhubiliha	***S. Sebwe & S. kilibi***	**Kasese**	**20**	**9**	**139,097**	
Madi Mid North		**Pader**	**6**	**11**	**200,673**	
		Kitgum	**6**	**11**	**110,998**	
		Lamwo	**6**	**11**	**157,591**	
		Gulu	**19**	**11**	**154,490**	
		Omoro	**19**	**11**	**198,334**	
		Amuru	**19**	**11**	**249,814**	
		Nwoya	**19**	**11**	**186,036**	
		Oyam	**19**	**11**	**24,556**	
		Lira	**3**	**11**	**75,303**	
		Moyo	**20**	**9**	**93,451**	
		Adjumani	**20**	**9**	**29,447**	

VBNDD - OV16 and PCR Laboratory Updates



Christine Nahabwe et al♦

UOEEAC Recommended Lab Priorities from the 11th Session

Field/Lab activity	Priority	Status
Ov16 and Fly PCR: Madi Mid North	1	DONE
OV16 and Fly PCR: Lhubiriha	1	DONE
OV16: RSS	1	DONE
OV16: Goma Rutshuru, DRC	1	NOT DONE
OV16: Budongo	2	NOT DONE
OV16: Nyamugasani	3	NOT DONE

Recommendations and Progress of OV16 Results (RSS and Lhubiriha)

Focus	Category	DBS Collected	Number of DBS Analyzed (%)	# Positive	% Positive
RSS (Kajo-Keji)	Children	2081	0 (0%)		
	Adults	372	372 (100%)	53	14.2
RSS (Magwi)	Children	3104	3104 (100%)	1	0.03
	Adults	153	153 (100%)	1	0.7
Lhubiriha	Children	3102	412 (13.3%)	0	0

Recommendations and Progress for OV16 Cont'd (Madi Mid-North focus)

Focus	Category	DBS Collected	DBS Analyzed (%)	# Positive	% Positive
Sentinel sites	Children	2263	2263 (100%)	5	0.2
	Adults	1239	1239 (100%)	110	8.9
Beyond sentinel sites	Children	7351	3217 (43.76%)	0	0
Lamwo (along Uganda/RSS border)	Children	2840	2840 (100%)	0	0

Ov16 Results of other areas in line with UOEEAC Recommendations

Focus	DBS Collected	DBS Analyzed (%)	Number positive	% positive
Obongi	3122	3047 (97.6%)	0	0
Nyagak-Bondo	3182	1224 (38.5%)	0	0

Fly PCR Results

Focus	District	Number of flies Analyzed	Number of pools	Number positive
Madi Mid-North	Amuru	1438	8	0
	Kitgum	612	4	0
	Moyo	15759	80	0
	Nwoya	10167	53	0
	Omoro	35	1	0
	Oyam	635	4	0
	Pader	689	5	0
Lhubiriha	Kasese	2669	25	0
Nyamugasani	Kasese	362	8	0
	RSS	182	4	0
	DRC	4762	29	0
Total		**37310**	**221**	**0**

Simulium Fly Backlog at the VCD Laboratory

Focus	Number of flies
DRC	89
Madi Mid-North	36,593
Nyamugasani	764
Lhubiriha	53
Total	**37,499**

OV16 Backlog at VCD Laboratory

Focus	Category	DBS Collected	DBS analyzed	Balance
Nyagak Bondo	Children	3182	1224 (38.5%)	1958
Lhubiriha	Children	3102	412 (13.3%)	2690
Beyond sentinel sites	Children	7351	3217 (43.76)	4134
Kajo-Keji (RSS)	Children	2081	0(0%)	2081
Total		**15,716**	**4,853**	**10,863**

Challenges

- Mechanical break down of ELISA reader delayed dry blood spot analysis.
- The laboratory ran out of OV16 and PCR reagents.

Way Forward

- Timely supply of reagents which are not available in Uganda.
- Consider providing second ELISA reader to avoid future delays in analysis.

Acknowledgement

The Carter Center for supporting the laboratory, Ministry of Health Uganda, Prof. Unnasch for Technical support and ensuring timely supplies to Uganda laboratory, Molecular laboratory team at VCD, DOCs, VCOs, DHOs and communities in districts visited.

♦Presentation co-authored with Monica Ngabirano and Paul Akampurira.

Report on DRC's Onchocerciasis Elimination Independent Advisory Committee



Adrian Hopkins

Meetings of the Committee

First meeting was held in November 2018 and the following were discussed:

- Overview of the program.
- Terms of reference.
- APOC criteria guidelines on when to start or stop treatment.
- Need for elimination mapping.
- Lack of entomologists to carry out surveys.
- Methodology for monitoring and evaluation.
- How to evaluate stopping MDA in a focus.
- Absence of coordinators at the meeting.
- Delayed funding from ESPEN.

Second meeting was conducted in April 2019 with emphasis on the following:

1. Requirement of further relevant information.
2. Reorganisation of provinces does not always coincide exactly with the old APOC projects.
3. Quality of data remains a problem in some projects.
4. Review of the foci in much more details:
    - Apart from Ituri and Rutshuru-Goma, MDA was done based on APOC REMO mapping.
    - Treatment and coverage data.
    - Considerably delayed treatment in some areas.
    - Lack of funding to carry out in depth evaluation.

Cross Border Issues

- There is coordination only with Uganda's onchocerciasis program.
- There is need to cover all of the foci close to the Uganda border.
- Specimens are being collected and sent to Kampala instead of Kinshasa.
- There are well equipped laboratories in Kinshasa, but what is needed is training of the National and University of Kinshasa laboratory technicians on how to use OV16 and PCR.
- Anything which may upset the flora and fauna of DRC must be approved by the Ministry of the Environment in Kinshasa.
- Results from the Ituri program with Dr. Lopay Bay, which led to some discussion and yet the central level had not been informed, were reviewed.
- What was also discussed was the Rutshuru-Goma focus where some affected crabs were found but no action has been taken as yet.

NB: You may review the 12th UOEEAC recommendations on the above concerns raised by the DRC's Onchocerciasis Elimination Independent Advisory Committee Chair.

The committee felt that the Ugandan program could assist DRC and RSS in developing technical and laboratory capacity for Onchocerciasis evaluations. There are suitable laboratories in DRC, but similar facilities still need to be established in RSS.

- Thomas Unnasch

Report from the Onchocerciasis Elimination Technical Committee of South Sudan



Samuel Makoy Yibi Logora

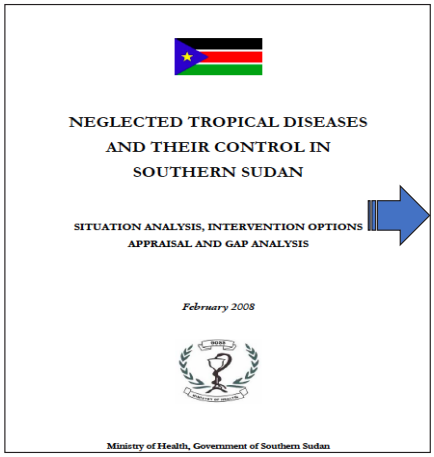
Country Profile

- The Republic of South Sudan got its independence from Sudan in 2011.
- It covers 644,329 square kilometers with a population density of about 13 persons per square kilometer.
- It lies in the Sahel belt and 90% of which is within the Nile Basin, with the vast swamp region of the Sudd formed by the Nile.
- It borders Sudan to the North, Ethiopia to the East, Kenya to the Southeast, Uganda to the South, the Democratic Republic of Congo to the Southwest and the Central African Republic to the West.

Background of NTDs Endemic to South Sudan

- South Sudan is endemic to almost all the World Health Organization (WHO) prioritized Neglected Tropical Diseases (NTDs), most of which are preventable and or treatable.
- The ones that have been reported in the country include: *Onchocerciasis, ONCHO (also called River Blindness), Lymphatic Filariasis (LF), Visceral leishmaniasis,VL, (also called kala-azar), Human African Trypanosomiasis (Sleeping Sickness), Trachoma, Soil-transmitted helminth infections, STH (hookworm, ascariasis and trichuriasis), loiasis, Schistosomiasis,SCH (Schistosoma haematobium and S. mansoni), Dracunculiasis (Guinea worm), Leprosy, Buruli ulcer, Hydatid Cysts, Mycetoma and Rabies.*
- The exact burden of each of these diseases is yet to be determined as mapping has not been completed across the country.

Co-Implementation of NTD Programs



South Sudan Integrated Strategic NTD Plan (2008 – 2011) → No Strategic Plan (2012-2015) → South Sudan NTD Master Plan (2016 – 2020)

- Little alignment of activities.
- No clear commitments by government or partners.
- No partner coordination.
- Progress not properly monitored.
- No idea about the resources required to run these programs.

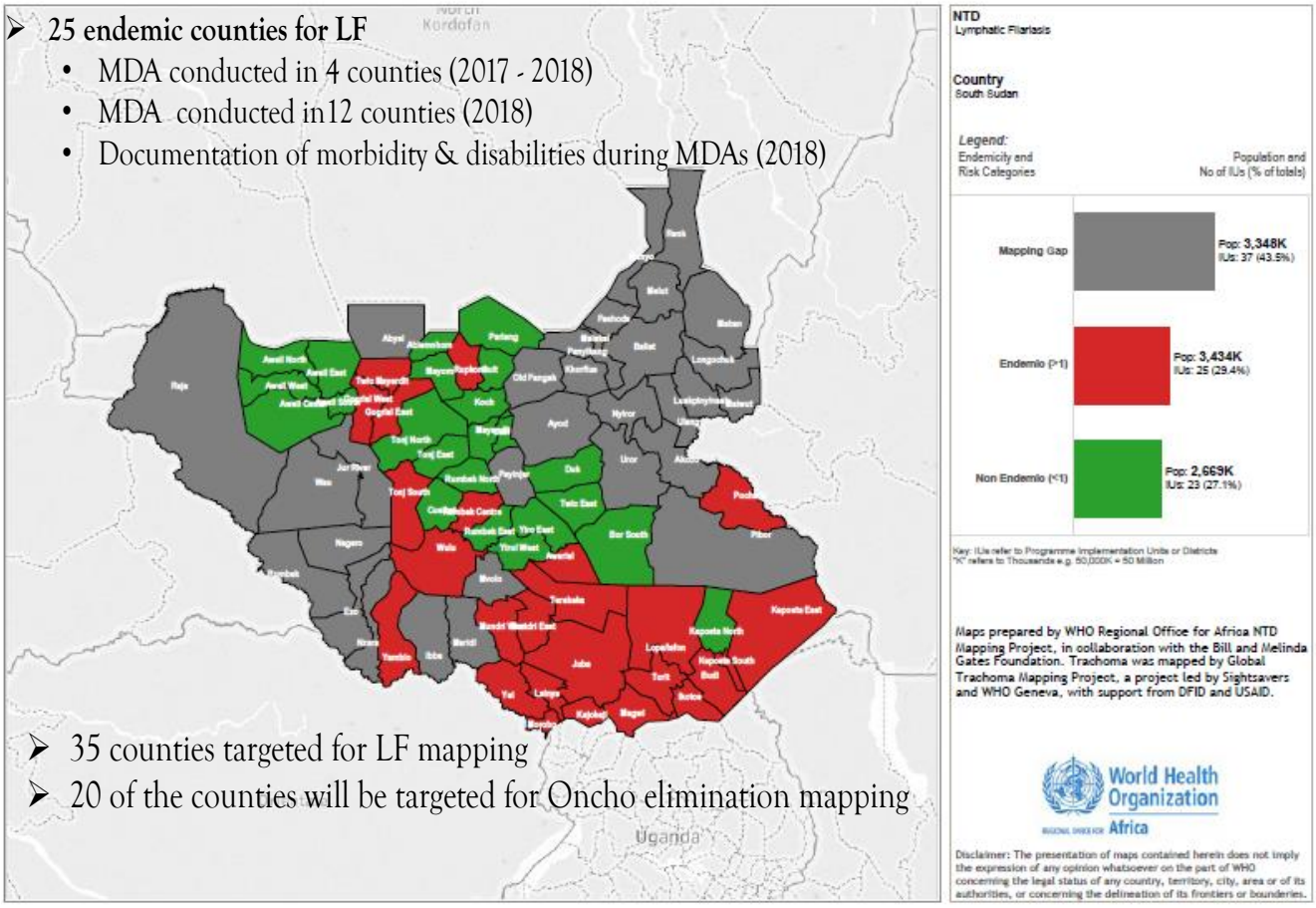
Cross Border Meeting in Gulu - May 2018



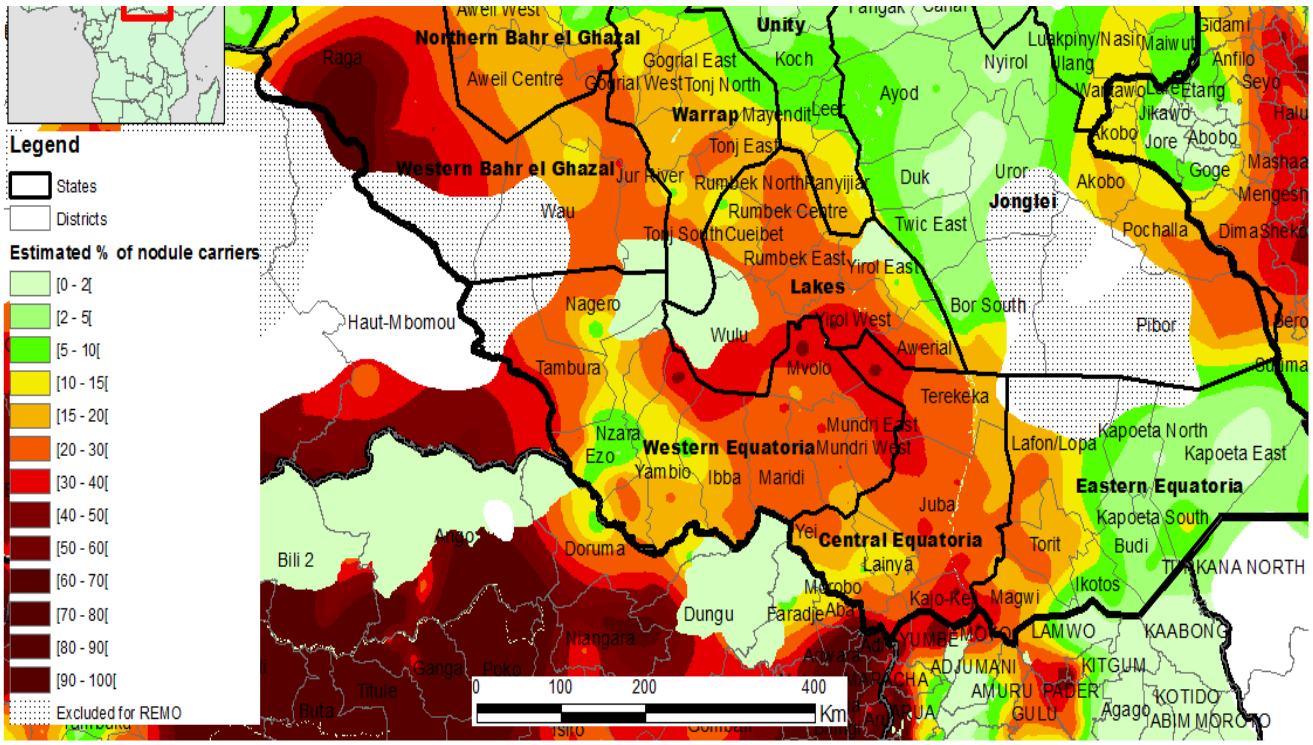
JOINT COMMUNIQUE from the meeting between Uganda and RSS on Elimination of Cross-border Onchocerciasis Transmission held on 15th and 16th May 2018 at Bomah Hotel, Gulu, Uganda



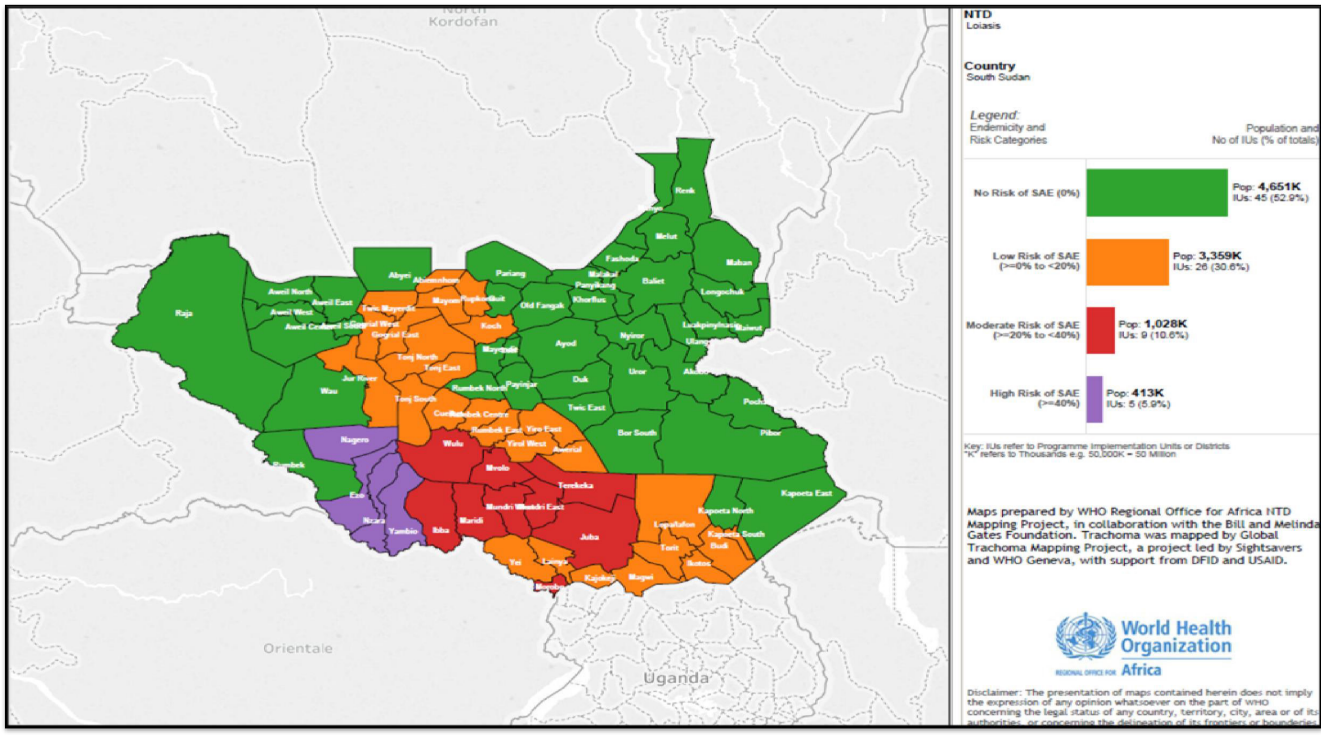
Lymphatic Filariasis - Endemicity / Risk Categories and Population by Implementation Unit in South Sudan



Onchocerciasis Endemicity Map



Loiasis Endemicity Map



Inauguration of the South Sudan Onchocerciasis and Lymphatic Filariasis Elimination Expert Committee at Palm Africa Hotel - Juba, South Sudan, April 30th 2019





Professor Charles D Mackenzie AO

Chairperson, SSOLFEC



Dr John Pasquale Rumuru

Vice Chairperson, SSOLFEC

South Sudan National Onchocerciasis and Lymphatic Filariasis Elimination Advisory Committee (SSNOLFEC)

2nd/05/2019

Dr Makur Matur Kariom,
Honourable Undersecretary of Health,

Dear Undersecretary,

On behalf of the South Sudan Onchocerciasis and Lymphatic Filariasis Elimination Committee, established by you in response to the Ministerial Order No: 001/2019- "Establishment of the South Sudan National Onchocerciasis and Lymphatic Filariasis Elimination Committee (SSNOLFEC)" issued by the Honorable Minister, Ministry of Health, Dr. Riek Gai Kok on 14/01/2019; we would like to inform you on our progress and plans achieved by the Committee thus far.

The newly established SSNOLFEC had its first committee meeting on the 30th April 2019; the meeting was active and productive where members present, which included three State Minsters of Health, Academia and Health Professionals reviewed important and essential information on the current situation in the country regarding onchocerciasis and lymphatic filariasis and assisted in the planning of the activities for the National NTD program in the upcoming year.

It is expected that the next meeting of the SSOLFEC will be in November 2019 in Juba, prior to which, there will be several on-line meetings to ensure that the committee remains in close communication with the National NTD programme. The visit to Raga, that was originally planned to take place immediately after the meeting this week, is now planned for November; the purpose of this visit it to document the status of residents of the Raga area in terms of eye, skin and central nervous system health.

A full report of the meeting and the plan developed will be sent to you in the very near future; in the meantime, we are providing you with a summary of the priority action items developed during our meeting.

Please feel free to contact us with any questions regarding this summary.

Yours sincerely,

Professor Charles D Mackenzie AO

Chairperson, SSOLFEC

Dr John Pasquale Rumuru

Vice Chairperson, SSOLFEC

PROPOSED ACTION PLAN DEVELOPED AT THE SSNOLFEAC MEETING, JUBA 30TH APRIL 2019

Thematic Issues	Major Concerns	Action	Priority
Improving MDA Coverage in Juba, Terekeka, Awerial Yirol West, Wullu & Tonj South	The population data is the concern. i.e. more than 84% coverage is not realistic.	1. Complete registers in the rural areas. 2. Determine the strategy for counting urban population (query treatment card). 3. Compare the MDA figures with EPI figures. 4. Confirmation budget for MDA including the coverage survey. 5. Establish the CDD proportion per population ratio (supervisor). 6. Review strategies for increasing the geographical coverage to 100%.	1. Urgent and should be done in one week.
Twice yearly treatment (hyper)	1. Is there enough Mectizan? 2. Is the coverage good enough? 3. Are there priority areas (high transmission and morbidity areas)? 4. Is there enough funding? 5. Are all endemic areas accessible?	1. The NTD department should select a priority area. 2. Produce a budget and submit it to NTD partners. 3. Rapid analysis of data	2. Done within six months.
Vector Control	1. Are there areas where vector control will help. e.g. Maridi, Wulu, Raga and Mvolo? 2. Cross border areas where vector control is being done. 3. Vector control as part of the LF strategy.	1. NTD department should survey where vector control can be done together with IVM. 2. NTD department should liaise with cross border partners. 3. NTD department should also liaise with malaria control program. 4. Coordinate vector management for LF.	3. To be done in Maridi and cross border areas.

PROPOSED ACTION PLAN DEVELOPED AT THE SSNOLFEAC MEETING, JUBA 30TH APRIL 2019

Thematic Issues	Major Concerns	Action	Priority
Data Management	•Data collection from CDDs to Boma, Payam, state and finally the national level. •Partners should collect the data, analyse it and disseminate the final report.	1. The NTD department should review with the partners ways to accelerate the collection of data from lower levels. 2. Review data collection tools in different counties. 3. Review where modern technology might help. 4. Capacity building within the NTD dept to collect, analyse and disseminate data within a month. 5. Develop a strategy for rapid data analysis with partners.	1
Advocacy (Dom + Int)	What is the SSMOH doing? How do we increase international advocacy?	1. NTD department to develop strategy for domestic advocacy. 2. Committee members should advocate nationally and internationally. 3. Reports should be widely distributed nationally and internationally.	2
Loiasis	No retraining was done in Western Equatoria (meso and hyper).	1. NTD department to work closely with partners to ensure that management systems are in place including reporting of SAEs. 2. Hypo endemic areas for Oncho should be identified. 3. Detailed mapping should be done in all loa loa areas.	2
Cross Border	Countries like Uganda, Ethiopia, Sudan and South Sudan should make an agreement with DRC on how to handle cross border activities.	1. Continue development of MoUs with Ethiopia and Sudan. 2. Enter discussion with DRC & CAR.	1 and 3(for DRC and CAR)
CNS morbidity	CNS morbidity in hyper endemic areas in Maridi, Mvolo, Mundri and Raga is poorly understood and needs more research.	1. Increase sensitization to educate the population on the positive effects after taking Mectizan. 2. A research project on special advocacy for twice per year treatment and vector control should be done. 3. Advocacy for measuring the impact of ONCHO morbidity should be conducted in Raga.	1/2

PROPOSED ACTION PLAN DEVELOPED AT THE SSNOLFEAC MEETING, JUBA 30TH APRIL 2019

Thematic Issues	Major Concerns	Action	Priority
Urban MDA	No strategies put in place to determine a stable MDA denominator in urban areas.	NTD dept should develop a strategy for urban treatment including sensitization and reporting	2
Oncho LF interface	How do we combine the two programs?	Develop a strategic frame work for implementing combined MDAs.	2
LF Morbidity	No records on the burden of the disease lym and Hydro)	NTD dept to develop a simple questionnaire to identify the diseases that are endemic.	2
Support for SSNOLFEAC	There is no baseline budget allocation for the annual meeting. Communication between meetings	1.NTD department should make budget allocation for annual meetings. 2.Committee members should have updated email addresses for proper communication. 3.Online meetings using skype teams etc should be put in place.	2
Support for Coordination	Do you have enough people to do the work? Do you have money/budget? Are there support state level coordination activities?	1.Review the structure of the NTD department and its organogram (both the national and state levels). 2.Review of the staffing needed and to be facilitated to the end of the program (including state level). 3.Review of the working budget at central and state levels.	1
Mapping	How do we map areas that are hypo endemic? How to do elimination mapping?	Should develop a list of areas with evidence of ONCHO and conduct desk review of the potential transmission and exclusion area.	3
Capacity building	Capacity building for County, State and National levels is lacking.	1.The dept should ensure there is capacity to implement all these activities at all levels. 2.Ownership of the program at all levels including the community is a requirement for elimination program.	2

1. Improving MDA Coverage

Major Concern:

- More than 84% coverage of the population data is not realistic.

Specific Action(s):

- Complete registers in the rural setup.
- Determine the strategy for counting urban population (query treatment card).
- Compare the MDA figures with EPI figures.
- Confirm every budget for MDA including the coverage survey.
- Establish the CDD proportion per population ratio.
- Review strategies for increasing the geographical coverage to 100%.

2. Twice per year Treatment with Ivermectin

Major Concerns:

- Is there enough Mectizan?
- Is the coverage good enough?
- Are there priority areas (high transmission and morbidity areas)?
- Is there enough funding?
- Are endemic areas all accessible?

Action: How to obtain good prevalence and treatment data for 2018

1. Maridi 2018 MDA data (51,500 accounting for 75% therapeutic coverage of the total population).
2. The first treatment cycle should have started by June 2019 and the 2nd treatment cycle is planned to start by December 2019. Note: In case Sightsavers is not in position to support the first cycle of MDA, CBM will do it.
3. Kajo-Keji and Magwi sub-counties target to treat about 100,000 people twice a year probably with the support of The Carter Center.

3. Urban MDA

Major Concern:

- Strategies on how to get the denominator are a concern of urban MDA.

Specific Action(s):

1. NTD department should develop a strategy for urban treatment including sensitization and reporting.
2. Review the strategies on how good coverage was obtained in Juba during the 2018 MDA in order to draw lessons from that.
3. Incorporate good practices from other programs or countries like the use of phone text messages to workers on how to resupply drugs and remind the endemic populations to take their drugs.

4. Vector Control

Major Concerns:

- o Are there areas where vector control will help e.g. Maridi, Wulu, Raga and Mvolo?
- o Cross border areas where vector control is being done.
- o Vector control as part of the LF strategy.

Specific Action(s):

- Write to Tom Lakwo and Dr. Jane Ruth Aceng as to whether there is enough information to develop a plan of action and budget for river dosing in Maridi.
- What are the possibilities for other interventions e.g. slashing of vegetations along breeding sites?
- Develop a plan and budget for targeted dosing of rivers in Magwi and Kajo-Keji.

5. Data Management

Major Concerns:

- Collection from CDDs to Boma, Payam states and finally the national level.
- Partners collecting the data, analyzing and then disseminating the final report.

Specific Actions:

1. All the photograph scans of the L5 should be sent to the national level on daily basis during MDAs by Payam supervisors after verifying the validity of data with the Boma supervisor.
2. Establish a labelling system for the photos, to make sure that you get the right information of the L5.
3. Recruit additional data persons to the national data management units. Establish a data quality assurance methodology statement for the program.
4. Retro-information should be delivered back to the county and partners. In other words, timely reporting and communication with all stakeholders.

6. Advocacy (Domestically and Internationally)

Major Concern:

- How do we increase advocacy for Oncho and LF Elimination domestically and internationally?

Specific Actions:

1. Disseminate the report of the launch of the Oncho/LF Elimination Committee with all stakeholders, especially with the states and counties.
2. The Oncho/LF Elimination Committee to provide a summary to the international stakeholders by next week.

3. The NTD department should continue to engage the health education/promotion department in the MoH to assist with advocacy domestically.
4. The MoH to develop a communique on the launch of the committee and share with local press by next week. The Oncho/LF Elimination Committee should assist with drafting of the Press Release by early next week.

7. Loiasis

Major Concern:

- No retraining was done in Western Equatoria (meso and hyper).

Specific Actions:

1. Retraining on management of SAEs must be done before start of any MDAs in greater Western Equatoria.
2. The training should include reporting SAEs to the National NTD Program. Ensure all alerts of possible SAE are investigated and reported to the National program and there after to the WHO.
3. Review LF mapping data in June 2019 in non Oncho areas and decide on twice yearly MDA with Albendazole (ALB) according to WHO strategies.

8. Cross border

Current Status:

- There is agreement with countries like Uganda, Ethiopia, Sudan and South Sudan. There should also be communication with DRC.

Specific Actions:

1. **Continue development of MoUs with Ethiopia and Sudan**: Prof. Mackenzie in his capacity as Chairperson of the Oncho/LF Elimination Committee to follow up in Atlanta with the communique of the cross border meeting between Sudan, South Sudan and Ethiopia.

2. **Enter discussion with DRC & CAR:** The NTD Program to share the existing communique with DRC and CAR and ask if they are interested to establish an MoU on cross border collaboration with South Sudan on Oncho/LF elimination.

9. CNS morbidity

Main Concern:

» CNS morbidity in hyper endemic areas in Maridi, Mvolo, Mundri and Raga is poorly understood and need more research.

Specific Actions:

1. Support for the ongoing research in Maridi with AMREF Health Africa, University of Antwerp and University of Amsterdam. This is to ensure that, all stakeholders promote twice a year treatment with IVM in Maridi plus vector control.
2. Establish the importance of CNS involvement during the upcoming survey in Raja, around October/November 2019.

10. Oncho/LF Interface

Main Concern:

» How do we combine the two programs?

Specific Actions:

1. Review the mapping data urgently in June to decide if extra supplies of Albendazole will be required.
2. Organize training for health workers and CDDs.
3. Mobilize additional resources for implementation.

11. LF Morbidity

Main Concern:

No records on the burden of the disease (Lymphedema and Hydrocele).

Specific Actions:

1. Fill out the WHO situation analysis form to establish a baseline morbidity data for LF.
2. Establish a simple questionnaire for assessing the burden of LF morbidity during MDAs in 2019.
3. Conduct in 2020 more detailed survey to determine the burden of LF morbidities across the country.
4. Training of NTD program staff, state and county NTD managers, clinicians and surgeons on LF morbidity awareness.

12. Mapping

Major Concerns:

1. How do we map areas that are hypo endemic?
2. How do we do elimination mapping?

Specific Actions:

1. Desk review of Oncho in the unknown areas to identify places of exclusion and those that need mapping (WHO/OTS).
2. Prepare a list of counties that will need mapping when the protocol is clarified.

13. Capacity Building

Major Concern:

Capacity building for county, state and national levels.

Specific Actions:

1. Review the human resource capacities at all levels (national, state, county, Payam and Boma).
2. Mobilize appropriate training resources to stimulate and or increase ownership of the program.
3. The health department should ensure that all these activities at all levels are implemented.
4. Make sure that the program is owned by all stakeholders at all levels including the communities.

14. Support for the SSONLFEAC Meetings

Major Concern:

There is no budget allocated to cater for the annual meeting and communication between meetings.

Specific Actions:

1. Develop a plan and budget for the committee (both online and face-to-face).
2. Plan for the next committee meeting due in October 2019.

15. Support for Administration of the NTD Program

Major Concern:

No funds available to support administration.

Specific Actions:

1. Review current situations and add tasks to individuals for the coordination of activities at the national and peripheral levels.
2. Establish an organogram that includes the role of external stakeholders.
3. Determine the logistic needs for the NTD program coordination.
4. Review the plan and budget for administration of NTD program (personnel, equipment, and facilities).

16. South Sudan Roadmap for ONCHO and LF Elimination (2019 – 2030)

» **Mapping for LF**

» **April 2019:** Completed mapping for LF in 35 counties.

» **ONCHO/LF Elimination Plan (2019-2030)**

- Oct – Dec 2019: Year 1: 100% MDA for IUs for LF (Plus MMDP).
- 2020: Year 2: 100% MDA and Vector Control for IUs (Plus MMDP).
- 2021: Year 3: 100% MDA and Vector Control for IUs (Plus MMDP).
- 2022: Year 4: 100% MDA and Vector Control for IUs (Plus MMDP).
- 2023: Year 5: 100% MDA and Vector Control for IUs (Plus MMDP).
- 2024: Pre-TAS (Plus MMDP).
- 2026: TAS 1 (Plus MMDP).
- 2028: TAS 2 (Plus MMDP).
- 2029: TAS 3 (Plus MMDP).
- 2030: Validation (Plus MMDP).
- Post 2030: Post-Validation Surveillance (Plus MMDP).

» **2020:** Review of the South Sudan NTD Master plan.

» Review the post-2020 priorities for PC NTDs in South Sudan (Align with WHO NTD Roadmap 2021-2030).

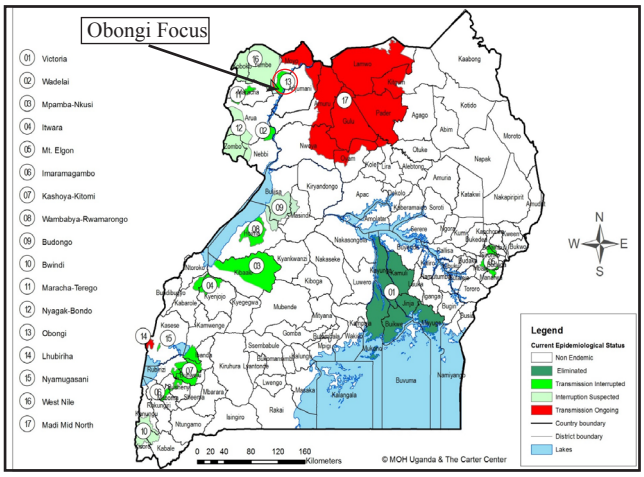
Cross-border meetings should be conducted on a regular basis with support of partners and governments. Countries that share borders should step up efforts to synchronize treatments and where required conduct mapping of border communities /---/ The cross-border meetings appeal for the contribution of our regional member governments /---/ Every government must give financial support to eradicate this disease. We appreciate Uganda for the progress made in the fight of this disease. We need to work together as a team to improve the economic livelihood of our citizens.

- Christian Katoto, Deputized DRC's Ambassador to Uganda



Michael Edema Nyaraga et al♦

Map of Uganda Showing The Location of Obongi Onchocerciasis Focus



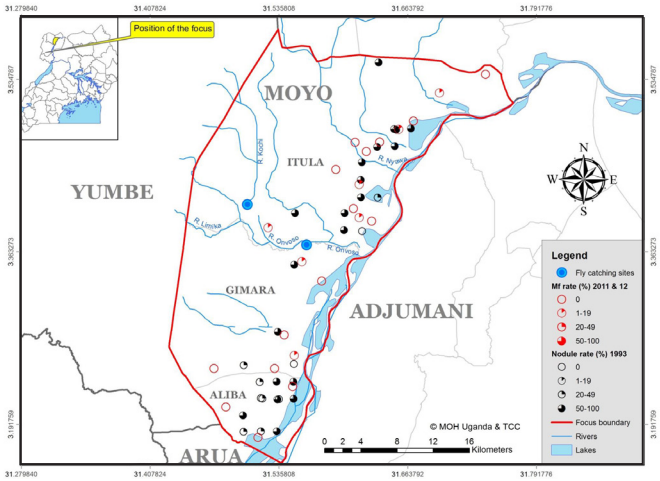
Background

- **Obongi Focus:** Carved from Moyo District; became a district of its own on 1st July 2019.
- It covers five sub-counties of Aliba, Gimara, Itula, with the two newly created ones of Obongi Town Council & disputed Palorinya, 4 Parishes and 61 communities with a total population of about 43,904 people (NTD 2019).
- The focus is bordered by River Nile and Adjumani district on the East, Arua in the South,Yumbe in the North and West Moyo county in the West.
- The focus has the following functional number of social amenities: 27 schools, 14 health facilities and 33 religious sites i.e. 17 Christian churches & 16 Muslim mosques.
- Interruption of river blindness was declared in 2014, but due to its co-endemicity with Lymphatic Filariasis, post treatment surveillance commenced later in 2017 after LF was also eliminated in the focus.

Recommendation from 11th Session of UOEEAC 2018

- The focus is in Post Treatment Surveillance (PTS), status remains unchanged. Sensitization activities should continue and be documented.

Obongi Onchocerciasis Focus (1993 and 2011)



Post Treatment Surveillance (PTS) Activity Period

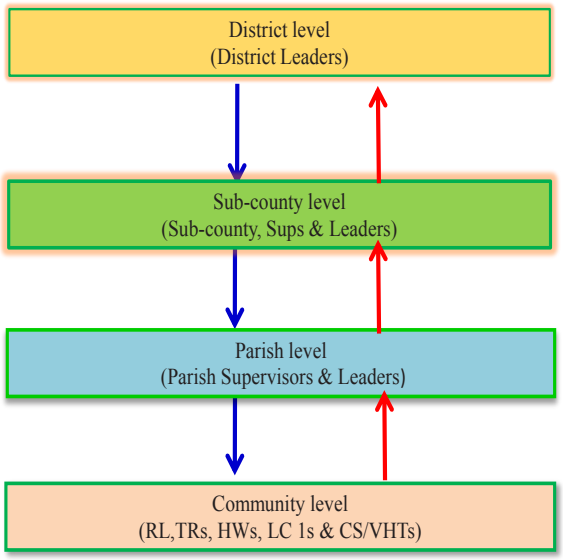
» Information, Education and Communication (IEC) materials distributed and used for PTS sensitization meetings; these were yellow visual aid charts, posters, pictures and brochures designed by Ministry of Health.

» PTS sensitization meetings and health education in communities were done in a cascaded manner at various levels targeting the following:

- Advocacy for district leaders.
- Community level dialogue meetings.
- Schools and religious institutions for Christians and Muslims.
- Health facility outpatient department meetings.
- Radio talk shows and jingles/spot messages.
- Entomological monitors for adult simulium vectors.
- Epidemiological (serological) monitors for onchocerca parasites.

» During these meetings conclusions were made and the way forward charted.

The Flow of Post Treatment Surveillance Sensitization messages downwards while cases simultaneously reported upwards



Note:- RL= Religious Leaders, TRs= Teachers , HWs= Health Workers, Sups= Supervisors, LC 1=Local Council One, CS= Community Supervisors, VHTs=Village Health Teams

PTS Community Sensitization Meeting data at different levels in Obongi for 2017 and 2018 Compared

2017

Level	Number Targeted	Total Attendance	% Attendance Sensitized
District	42	47	112%
Sub County	56	56	100%
Parish	183	183	100%
Community	39825	7894	19.8%
Obongi Focus	**40106**	**8180**	**20.4%**

2018

Level	Number Targeted	Total Attendance	% Attendance Sensitized
District	42	47	112%
Sub County	56	56	100%
Parish	183	183	100%
Community	36359	6266	17.2%
Obongi Focus	**42625**	**6552**	**15.4%**

2019 PTS Sensitization in Obongi Focus

Level	Number Targeted	Total Attendance	% Attendance Sensitized
District Leaders	47	47	100%
Sub-county Leaders	56	56	100%
Parish Leaders	80	80	100%
Total Schools	27	10473	(10473/43904) =**23.9%**
Total Religious Institutions	33	8271	(8271/43904) = **18.9%**
Obongi Focus	**43904**	**18744**	**42.7%**

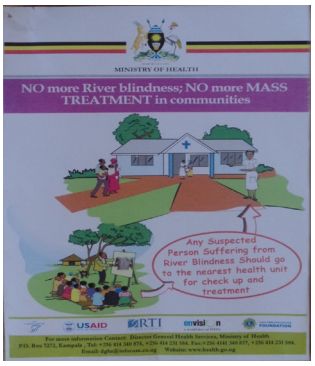
IEC materials distributed and used for Post Treatment Surveillance Sensitization meetings



Yellow Chart



PTS poster No.1



PTS poster No. 2



PTS poster No. 3

District advocacy for Post Treatment Surveillance Sensitization meetings at different levels PTS advocacy for district leaders in Obongi focus during 2019



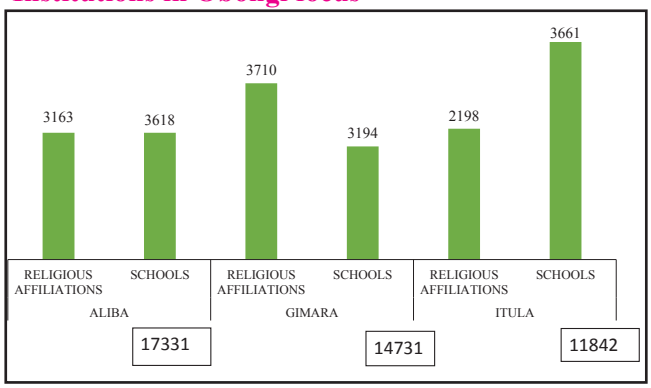


PTS community sensitization meetings in Obongi during 2019

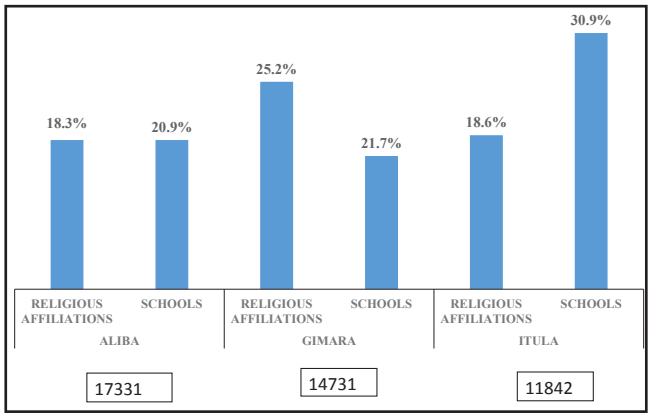




2019 Post Treatment Surveillance Sensitization - total recorded attendance in Schools and Religious Institutions in Obongi focus



2019 Post Treatment Surveillance Sensitization in Obongi focus in percentage (%) by sub-county



Post Treatment Surveillance Sensitization at a school and a health facility, outpatient department





Post Treatment Surveillance Sensitization for Muslims/Christians at a Mosque/Church on Friday & Sunday Respectively





Spot Messages for Post Treatment Surveillance Sensitization

» Radio spot messages in English were translated into Madi local language and aired out on the local FM radio stations using simple English & Madi for a period of three months.

» Through these interventions a larger audience of the communities was reached.

» Many of the questions asked, interestingly, rotated around stopping Ivermectin and not putting it at health facilities for people with oncho-like signs such as itching, rashes, papules and nodules, although such could have resulted from other causes.



ENTOMOLOGICAL EVALUATION

Entomological Monitoring of *Simulium* Vectors from 2012 To Date:

- No adult *simulium* flies have been encountered in the focus before and during Post Treatment Surveillance period, i.e. 72 months (7 years & 2 months) to date.
- No breeding of *simulium* has been detected in the prospected sites in the focus.
- All the main river systems prospected in the focus do not support adult *simulium* vector breeding; have very poor flow and pour water into River Nile.

Table of adult Simulium fly monitoring to date

Year	Number of Fly Catching Sites	Number of *S. damnosum* Caught
2016	2	0
2017	2	0
2018	2	0
2019	2	0

Adult vector monitoring was scaled down to 4 days per month & quarterly per year.

EPIDEMIOLOGICAL (SEROLOGICAL) EVALUATION

Ov16 results for dry blood samples (DBS), ELISA for children aged 3-9 years (2019)

Focus	Dry Blood Samples (BDS) Collected	Dry Blood Samples (BDS) Analyzed (%)	Number Positive	% Positive
Obongi	3122	6047 (97.6%)	00	00%

Lymphatic Filariasis Transmission Assessment Survey results in citizen children 6-7 years

District	Year of Survey	Total Persons Examined	Total LF Infected	% LF Infected
Moyo	2015 (TAS- 1)	1584	00	0.0%
Moyo	2018 (TAS-2)	1532	00	0.0%

Results of Ov16 ELISA from refugee settlements

District	Refugee Cluster	No. of Adults Screened	No. Positive	(%) Positive	Oncho Focus	Status
Moyo	Dongo	106	12	11.3%	Obongi	No Oncho Vector
Moyo	Ibakwe	111	8	7.2%	Obongi	No Oncho Vector
Moyo	Palorinya	84	7	8.3%	Obongi	No Oncho Vector & No Transmision
Total		**301**	**27**	**8.9%**		

NB: All the 27 (8.8%) positive adults were coming from Kajo-Keji county in Republic of South Sudan.

Conclusion

- Looking at the results of OV16 of the 3047 children examined who all turned to be negative, it is now evident that there is no current Onchocerciasis transmission in this focus.
- Although OV16 results in adult refugee community indicated that 8.8% were positive, they can not transmit the *onchocerca* parasites without the presence of the adult *Simulium* vectors.
- Transmission Assessment Survey (TAS- 1 & 2) has also shown that Lymphatic Filariasis (LF) interruption of transmission amongst the indigenous communities is likely to have accrued and awaits TAS-3 evaluation.
- Demand for mass treatment with Ivermectin from the community has reduced with exception of infected elderly who still show Onchocerciasis-like signs (leopard skins, skin itching, rashes, nodules) that resulted from other illnesses.

Way Forward

- Obongi focus should be moved from "Onchocerciasis transmission interrupted" to "Onchocerciasis eliminated".
- Only the refugee community from Onchocerciasis & Lymphatic Filariasis co-endemic areas in Kajo-Keji county, Republic of South Sudan, should be isolated & treated with Ivermectin/Albendazole combination in Obongi focus.
- Post Treatment Surveillance sensitization should continue to include community meetings / dialogues and Radio talk shows / jingles.

♦ Presenter's co-authors were: Peace Habomugisha, Edridah Tukahebwa, Annet Khainza and Christopher Asiopkwo.

Post Treatment Surveillance in Wadelai Focus



Dickson Unoba

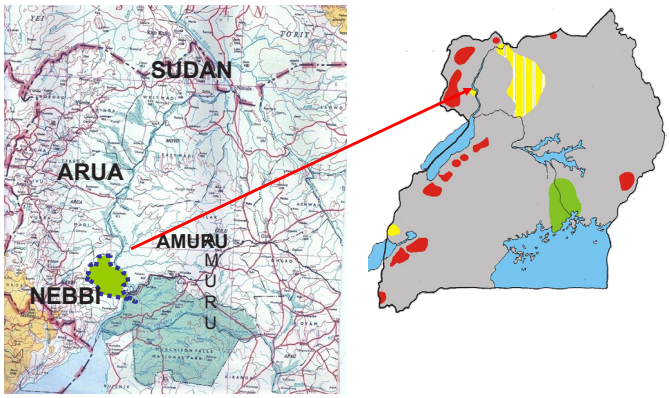
Recommendations from UOEEAC 2018

- Wadelai focus has been in post treatment surveillance (PTS) and this status remains unchanged. Sensitization activities should continue and be documented for eventual inclusion in the dossier.

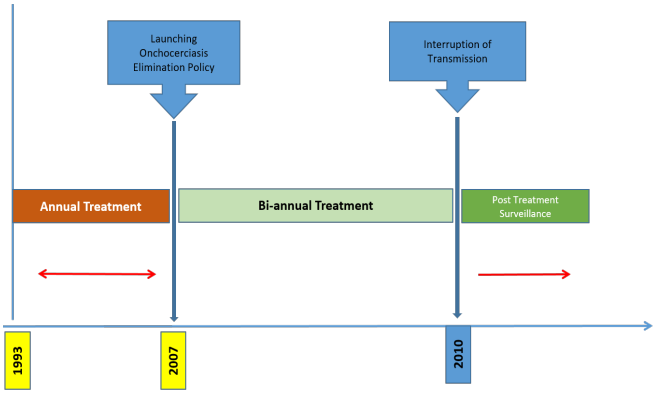
Background of Wadelai Focus

- The focus is located in the Eastern part of Nebbi District (now Pakwach District) adjacent to the Albert Nile.
- The vector fly was *Simulium damnosum.*
- The focus underwent CDTI and bi-annual treatment with ivermectin from 2006 and stopped in 2010.

Location of Wadelai Focus



Timeline of Program Activities



District Advocacy Organogram

District Leaders

↓

Sub-county Leaders

↓

Parish Leaders

↓

Community Leaders (LC1s, VHTs & Teachers etc.)

Objectives for PTS Meetings

1. To ascertain the effectiveness of the different channels that were used to pass on information on river blindness elimination information.
2. To find out whether it had reached all communities and schools in the focus of Wadelai.

Commencement of PTS Sensitization and Advocacy Meetings

Materials used during PTS

1. Pictorial flipcharts, brochures, posters, banners and flyers.
2. District leader advocacies that involved district, sub-county, parish as well as community leaders, schools and communities.
3. Radio engagements – Talk shows, jingles with messages on the stoppage of onchocerciasis treatment and what community leaders must do.
4. Community dialogues involving local council leaders, village health teams and community members.

Follow up of Advocacy and Health Education Messages

The channels of communication in PTS follow up were:-

- Community leaders
- Teachers / Headteachers
- School children
- Religious leaders
- Radio talk shows and jingles

DISTRICT STAKEHOLDERS' ADVOCACY ON ONCHOCERCIASIS 2018





Attendance of Stakeholders

Level	Number in attendance
District	15
Sub-county	20
Health workers	8
Religious leaders	3
Cultural leaders	5

Training of Health Workers and Supervisors



Level	Number Trained
Parish	10
Communities (LCs, VHTs)	60

Participatory Evaluation Meetings (PEMs) during 2019



Men of Aguu North attending PEM on PTS



Women of Ajei West attending PEM on PTS

» Most men were aware that onchocerciasis treatment had stopped, but had not got formal communication as to why it stopped.
» Majority of women were not informed by their school children about stopping of treatment except one.

PUPILS RECEIVING HEALTH EDUCATION ON ONCHOCERCIASIS ELIMINATION FROM DIFFERENT SCHOOLS



Attendance of PTS health education by children of Mutir Primary School



Children of Pakwinyo Primary School attending PTS meeting



Evidence of information well received and passed to school pupils



Health education given to the pupils of Paten Primary School

NB: All the 10 schools in the focus were reached for health education/sensitization on River blindness elimination

Current Entomological Situation, Achievements, Challenges and Way Forward

***Simulium* fly catches, 2017-2019**

YEAR	MONTH	NO OF FLIES CAUGHT
2017	Jan	0
	Feb	0
	Mar	0
	Apr	0
	May	0
	Jun	0
	Jul	0
	Aug	0
	Sep	0
	Oct	0
	Nov	0
	Dec	0
2018	Mar	0
	Jun	0
	Sep	0
	Dec	0
2019	Mar	0
	Jun	0

Achievements

- All communities visited appreciated the treatment given to them.
- The communities swallowed the ivermectin tablets willingly.
- They were happy to know that river blindness is no more in their communities.

Challenge during the PTS follow up

- Majority of the community members acknowledged stopping of ivermectin treatment several years back, but did not know why it was stopped.

Way forward

- Continue with PTS health education and sensitization.

APPRECIATION

River Blindness Foundation, The Carter Center, LCIF/ Uganda Lions, Ministry of Health-Uganda, National Onchocerciasis Control Program, USAID/Envision/ RTI, MDP, District Health Team, Team members and Community members

Session 4: Foci under PTS with Cross-Border Situations Post Treatment Surveillance in Bwindi Focus

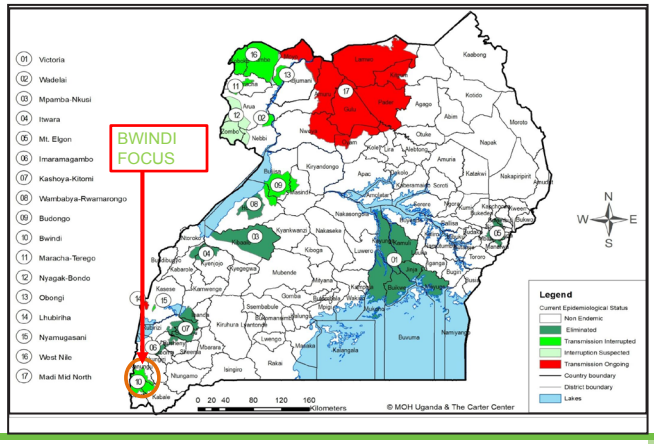


Lauriano Hakiri et al♦

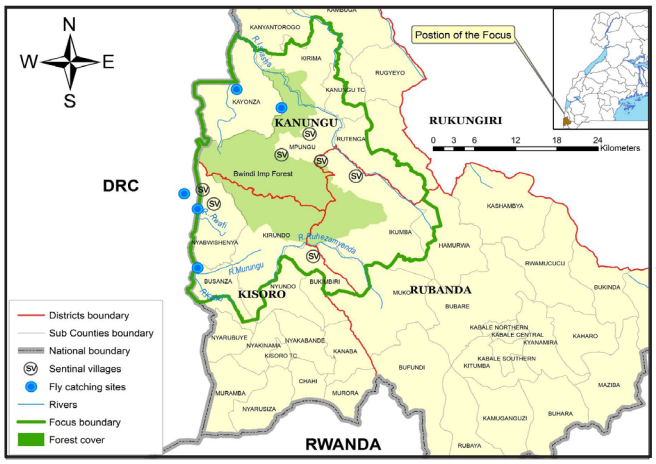
Recommendations from the 11th UOEEAC Meeting

Recommendations from 2018	Action Taken
Focus be re-classified "transmission interrupted"	Done - see change in the status map
Start PTS following the final treatment round in October 2018	Done and PTS commenced in 2019
Continue to strengthen the ongoing collaboration with the DRC program working in Rutshuru-Goma and also provide assistance in this area if requested by DRC	Not done due to insecurity

Map of Uganda showing the Location of Bwindi Focus



Map of Bwindi Onchocerciasis Focus



Introduction

- Bwindi focus is located in South Western Uganda, around the Bwindi impenetrable forest.
- It traverses the districts of Kisoro, Rubanda (carved from Kabale 2017) & Kanungu with an area of 1023sq km.
- The focus had 12 sub-counties and 213 communities which were formerly oncho endemic with a total population of 138,472 persons (Community Directly Treatment Ivermectin data, 2018).
- Mass treatment of river blindness was stopped in October 2018.
- The focus was declared transmission interrupted during 11th session of UOEEAC.
- PTS commenced in 2019.

POST TREATMENT SURVEILLENCE ACTIVITIES

Activities conducted in Bwindi onchocerciasis focus during Post Treatment Surveillance (PTS) period

- Advocacy for leaders at districts, sub counties, parishes, schools and communities.
- Sensitization and health education at the community level.
- Entomological monitoring of adult *Simulium Neavei* flies.

ENTOMOLOGY

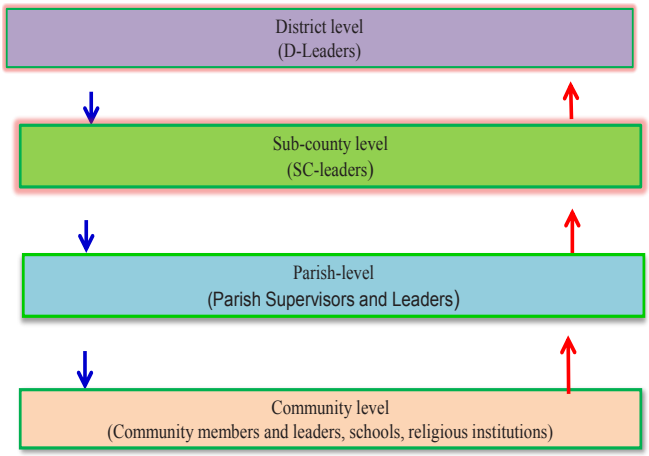
Quarterly Fly Collection 2018 / 2019

District	Site	River	*S. neavei*	*S. damnosum*	Period
Kisoro	Mugoti Murungu & Kashegu	R. Ruafi & Murungu	*3*	72	April 2019
Kisoro	Mugoti & Kashegu	R. Ruafi & Murungu	*2*	32	Sept 2018
Kanungu	Buranda & Ruheza	R. Munyaga / Ishasha	*0*	32	April 2019
Kanungu	Buranda & Ruheza	R. Munyaga / Ishasha	*0*	31	Sept 2018

PTS Sensitization Advocacy Meetings at Different Levels and Avenues

- Advocacy meetings were held with district, sub-county and religious leaders, parish supervisors, community supervisors & school teachers.
- The community received PTS messages through different avenues (parish supervisors, teachers, school children and church leaders).
- Community health education and sensitization were done by church leaders, parish supervisors and school teachers using IEC materials (brochures, posters, flip charts).

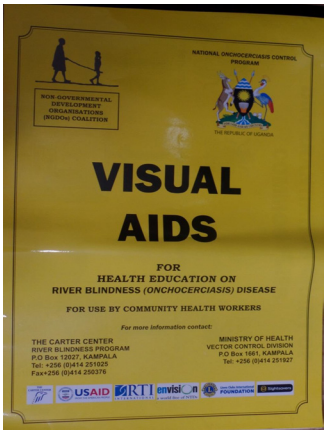
The Organogram of Post Treatment Surveillance Sensitization Meetings at different Levels using Community Directed Approach



Attendance of Stakeholders PTS Meetings in Bwindi Focus during 2019

Level	Number of people targeted	Number achieved	% Achieved
District	72	71	98.6
Sub-county	76	76	100
Parish	419	417	99.5
Community	118474	46144	39

IEC Materials Distributed and Used for PTS Sensitization Meetings









PTS Sensitization Meetings at Various Levels



Kisoro District leaders' PTS meeting at the headquarters

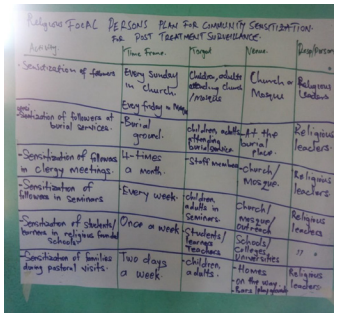


District leadership- Kisoro district

PTS Work Plan made by Religious Leaders in Kanungu



At Kanungu Headquarters



Attendance of Different Institutions during PTS Meetings in Rubanda District in 2019

Level	Target	# Achieved	% Achieved
Schools	45	40	88.9
Ngozi groups	59	59	100
Religious institutions	30	29	96.7

Attendance of Different Institutions during PTS Meetings in Kanungu District in 2019

Level	Target	# Achieved	% Achieved
Schools	59	59	100
Ngozi groups	107	103	96
Religious institutions	19	19	100

Attendance of Different Institutions during PTS Meetings in Kisoro District in 2019

Level	Target	#Achieved	% Achieved
Schools	45	43	95.6
Ngozi groups	47	47	100
Religious institutions	27	27	100

Total Attendance of Different Institutions during PTS Meetings in Bwindi Focus 2019

Level	Target	# Achieved	% Achieved
Schools	144	142	98.6
Ngozi groups	213	209	98
Religious institutions	76	75	98.7

Additional Avenues Used to Pass on PTS Messages to Community Members

- Schools using teachers and school children.
- Parents-Teachers Association meetings (PTA).
- Ngozi group meetings using traditional leaders.
- Churches using church leaders.
- Political leaders used in monitoring government programs.

Follow Up at Community Level

- Some community members still demand for ivermectin as they complain that blackflies still bite them (Buhoma and Kitunga communities).
- Communities bordering DRC in Kanungu think that they will get infections from DRC and as such they would like to continue getting Ivermectin (reported by one of the elders in Kayonza sub-county).
- Tea growers in areas of Byumba and Mpungu were happy to note that the disease has gone and can freely carry out their agricultural activities.
- Some people were happy and thankful to the MoH and partners for eliminating the disease and protecting their future generations.

School children listening to PTS messages at Nyamiyaga Primary School, Kanungu District



Nyamiyaga PS children holding PTS posters



Religious leaders, parish superiors and teachers in Kanungu District



Way Forward for PTS Meetings

- Onchocerciasis Post Treatment Surveillance sensitization meetings should continue.
- Radio talk shows and jingles should continue being used to supplement sensitization meetings.
- KAP study to be undertaken to assess people's attitudes towards halting of ivermectin in Bwindi focus.

♦ Peace Habomugisha was Lauriano Hakiri's co-author.

Rutshuru Goma-DRC adjacent to Bwindi



Pablo Kanyamihigo





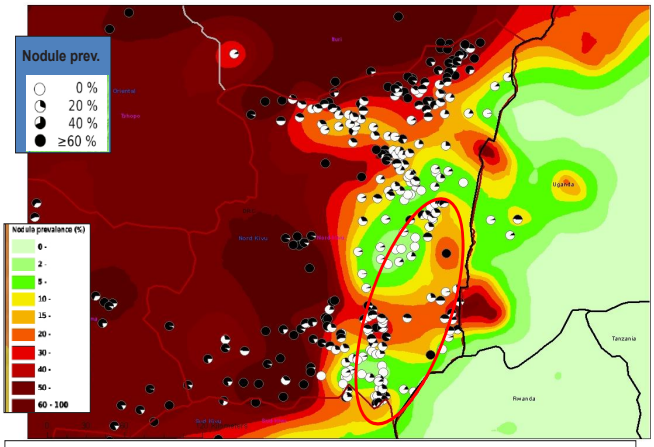
INTRODUCTION

- Rutshuru-Goma project is one of the 22 NTD program areas in DRC.
- It is located in North Kivu Province (Eastern DRC).
- It covers 3 Mesoendemic HZ & 6 Hypoendemic HZ, 601 communities, 47 Health areas, with 766694 persons at risk.
- Crabs with larval stages of S. *neavei* are found in this place.
- CDTI was launched in this project in 2006.
- Mass drug administration with albendazole and praziquantel started in 2017.

ONCHOCERCIASIS CONTROL ACTIVITIES FROM 2006 – 2018

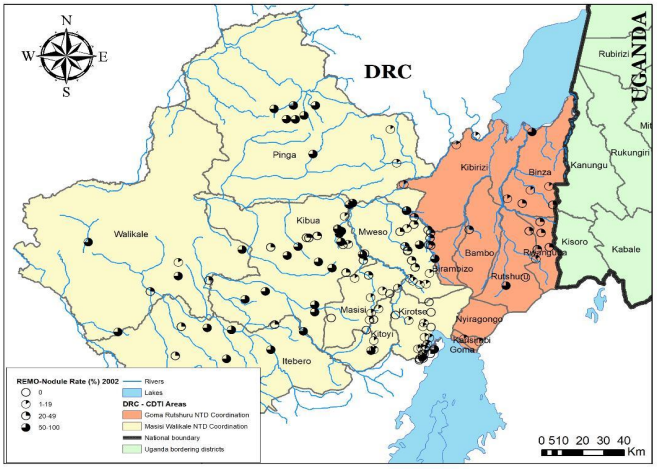
- Treatment for onchocerciasis started in 2006 using community-directed treatment with ivermectin (CDTI) strategy in 3 mesoendemic health zones of the project area.
- Complementary strategy includes clinic-based ivermectin treatment in 6 hypoendemic health zones.

2002 REMO MAP OF DRC SHOWING THE PREVALENCE OF ONCHOCERCIASIS IN RUTSHURU-GOMA CDTI PROJECT

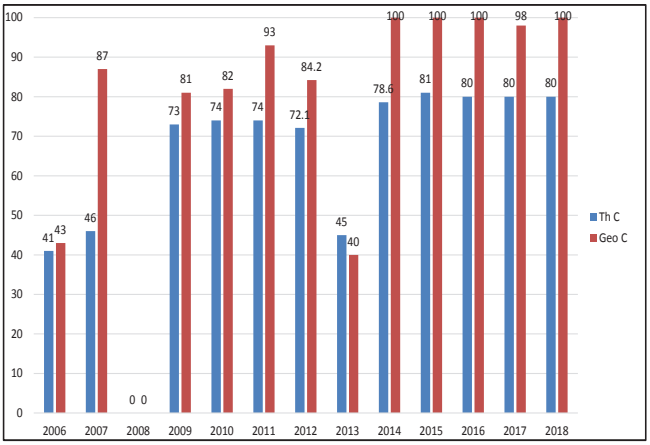


Results showed that 3 HZ were mesoendemic and 6 HZ were hypoendemic

MAP OF DRC SHOWING MASISI WALIKALE RUTSHURU-GOMA CDTI PROJECTS

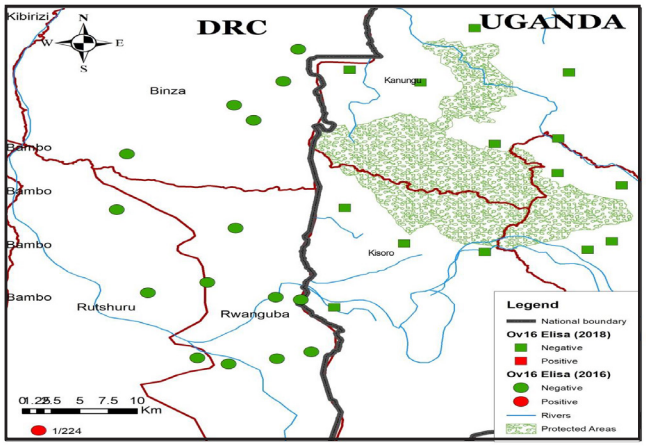


GEOGRAPHIC & THERAPEUTIC COVERAGE FROM 2006 - 2018



Insecurity in 2008 and 2013 was a challenge, hence the poorest performance for both years

EPIDEMIOLOGICAL (OV16) STATUS IN RUTSHURU-GOMA NTD PROGRAM IN 2017

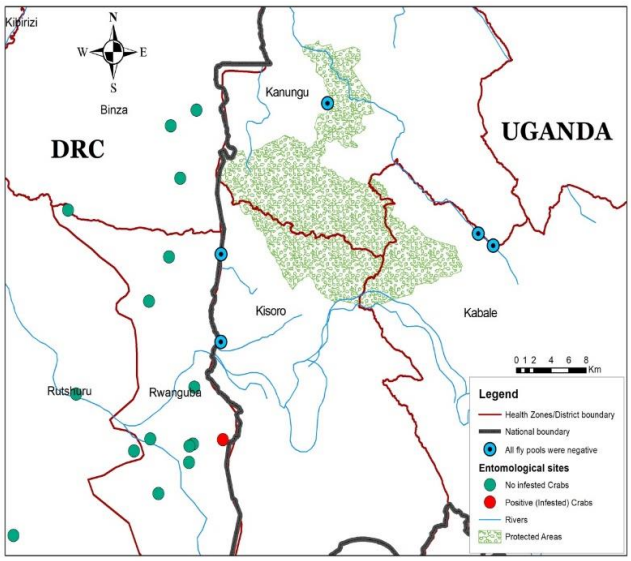


A total of 3,163 samples of blood for OV16 from children of < 10 years in 16 villages were analyzed: 1 positive (Katale).

OV16 RESULTS FROM CHILDREN (UNDER 10) FROM NORTH KIVU AREA DRC NEXT TO BWINDI FOCUS OF UGANDA IN NOV 2016

Village	# screened Ov16	# positive Ov16	% positive
A.S Rubavu	224	0	0
Buhimbavuba	224	0	0
Buramba	224	0	0
Butinde/Kisharu	75	0	0
Butsinde/Kasharu	157	0	0
Katale	224	1	0.45
Kibanda	223	0	0
Kinyandonyi	223	0	0
Kirambo	221	0	0
Kiseguro	224	0	0
Kitivu	110	0	0
Mugogo	220	0	0
Mungo	100	0	0
Mutabo	224	0	0
Nyamilima	224	0	0
Ruvumbura	266	0	0
Total	**3163**	**1**	**0.03**

ENTOMOLOGICAL (OV16) STATUS IN RUTSHURU-GOMA PROJECT IN 2016



- 554 crabs caught.
- 74 crabs positive with early stages of *Simulium neavei* out of a total of 102 collected in Nkanka river in Rwanguba Health Zone (in Rubavu Health Area)

ENTOMOLOGY RESULTS OBTAINED IN RUTSHURU (NORTH KIVU) IN NOVEMBER 2016

River	Crabs Caught	Crabs +ve	%age +ve
Kinyamakuhe	13	0	0
Kyengerero	4	0	0
Kicuru	123	0	0
Kicuru	83	0	0
Murungu	23	0	0
Kabaraza	59	0	0
Rwankwi	88	0	0
Fuko	0	0	0
Kamira	0	0	0
Kicuru	-	-	-
Chamitundwe	4	0	0
Ivi	0	0	0
Rwahambi	55	0	0
Chabavu	0	0	0
Nkwenda	0	0	0
Nkanka/ Kicuru	102	74	72.5
TOTAL	**554**	**74**	**13.4**

WEAKNESSES & CHALLENGES

- Limited personnel to monitor DMM in villages with coverage below 80%.
- Delay in the provision of ivermectin at all levels.
- Delay in the release of approved funds.
- Limited expertise in entomology and lack of equipment in serology.
- Maintenance of optimal therapeutic and geographic coverage.
- Supply of resources not received in time.

FUTURE PERSPECTIVES

- Expand epidemiological assessments.
- Need to build capacity in entomology and serology.
- Undertaking vector control.

CONCLUSION

- Let us combine efforts through cross-border collaboration to support the process of onchocerciasis elimination both in Uganda and DRC.

Onchocerciasis has been eliminated in 7 foci, protecting over a million people from this infection. Another 7 foci where 1.1 million people reside are in their post treatment surveillance period. But we still have work ahead of us.
- Thomas R. Unnasch

Nyagak-Bondo Focus



Patrick Dramuke ♦

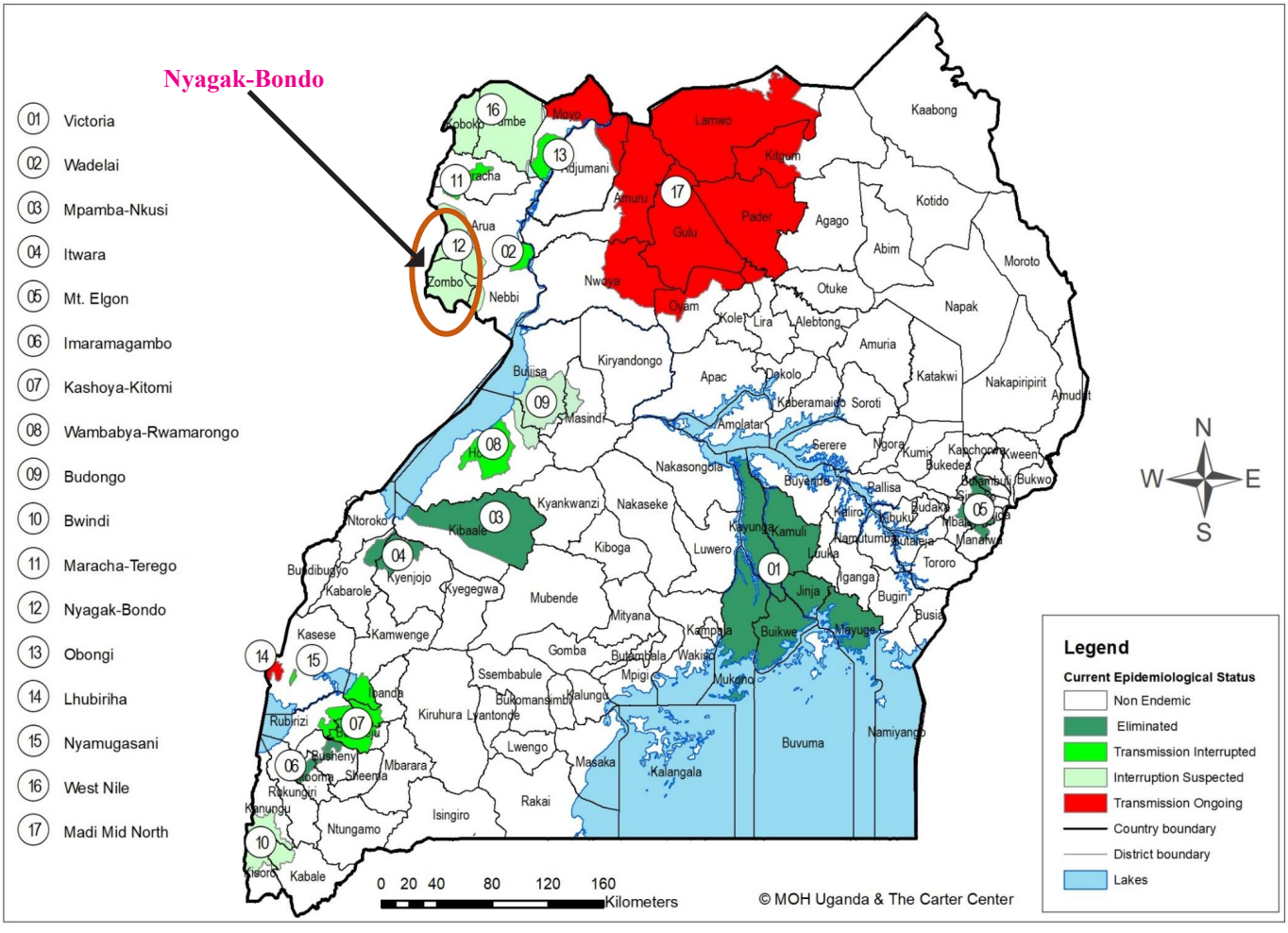
Recommendations made during the 11th UOEEAC Assembly

- Nyagak-Bondo focus was classified as "interruption suspected" due to ongoing transmission in the area of DRC bordering the focus.
- Continue quarterly entomological surveillance activities.
- Semi-annual treatments should continue.

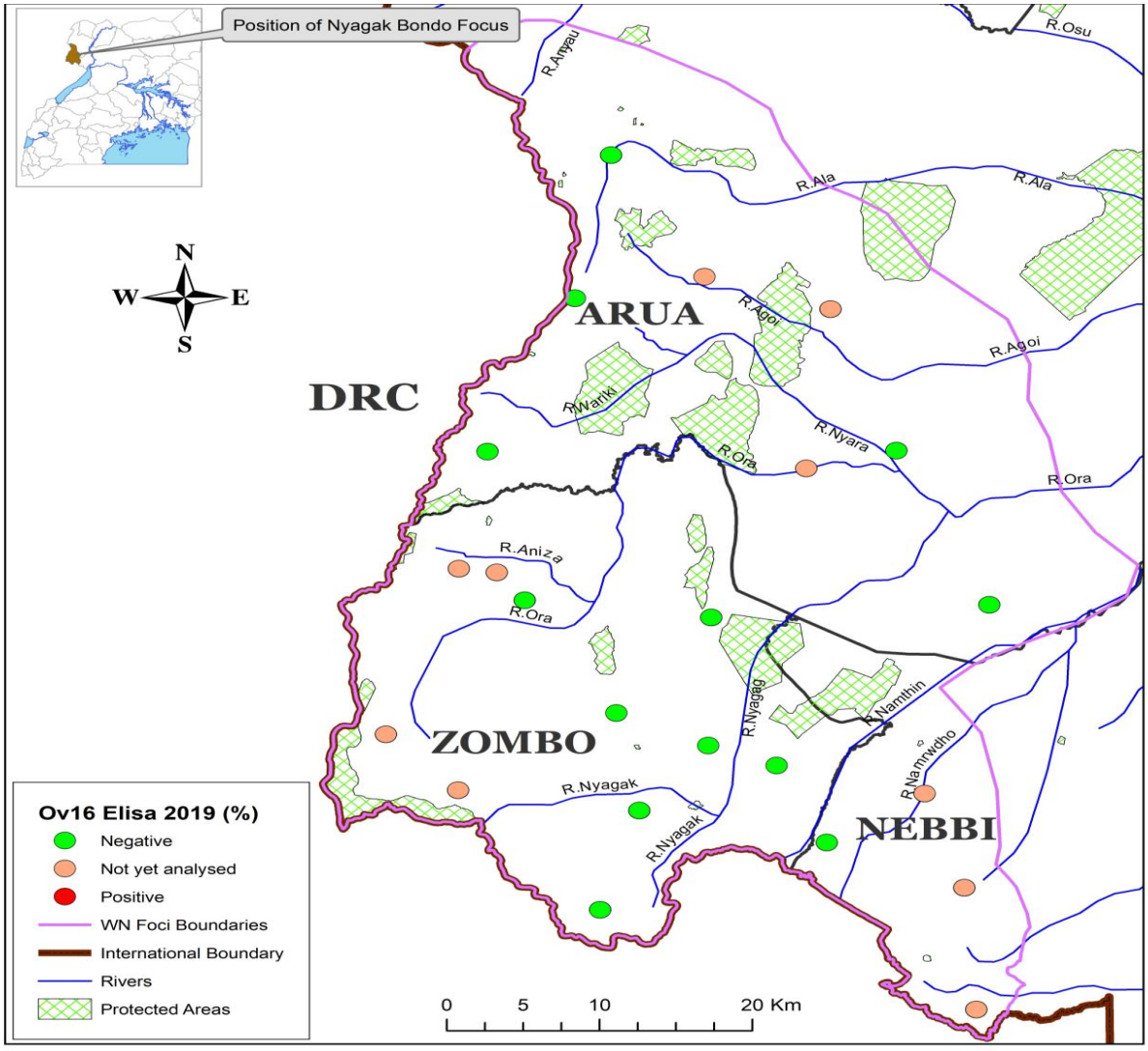
Background

- The focus is located in West Nile Region.
- It occupies the entire Zombo District, extending to 6 sub-counties of Nebbi District, and the same number in Arua District.
- It borders DRC on the West.
- Rivers Nyagak, Ora, Wariki and Agoi are the main river systems.
- The vector is S. neavei breeding in the middle reaches of the above river systems.
- Annual mass treatment started 1993 and semi annual treatment began in 2012.
- Baseline prevalence of mf in 1993 was 97%.

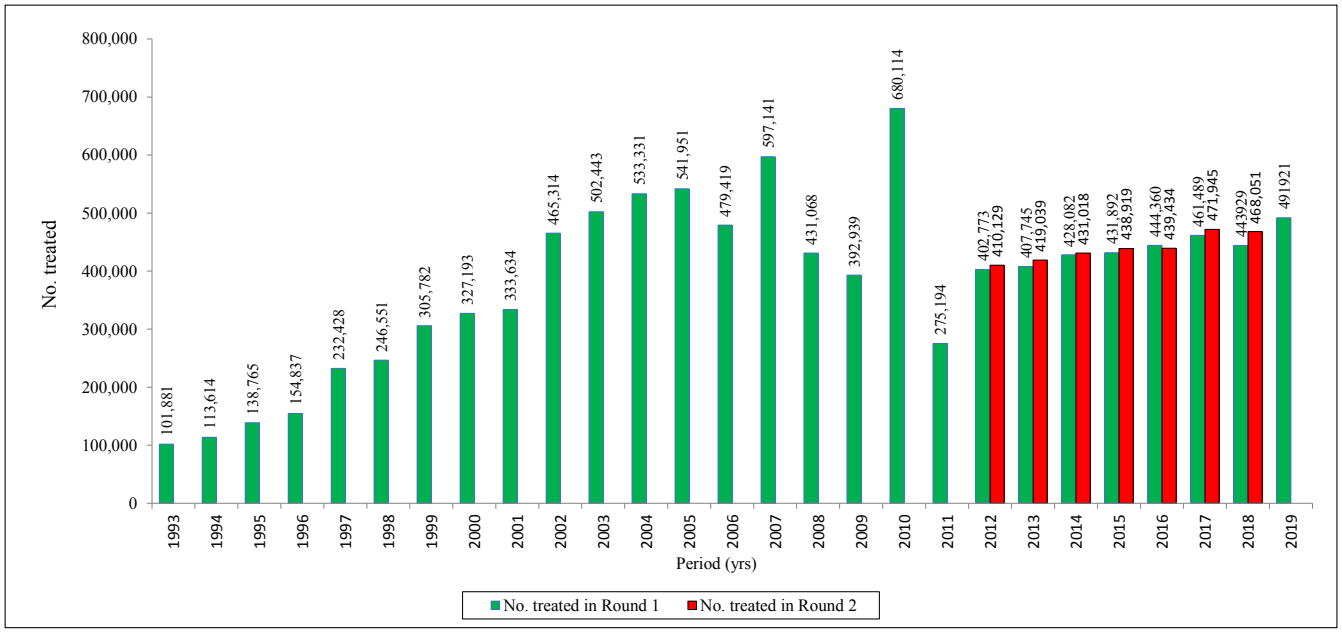
Map of Uganda showing the Location of Nyagak-Bondo Onchocerciasis Focus



Map of Nyagak-Bondo Onchocerciasis Focus

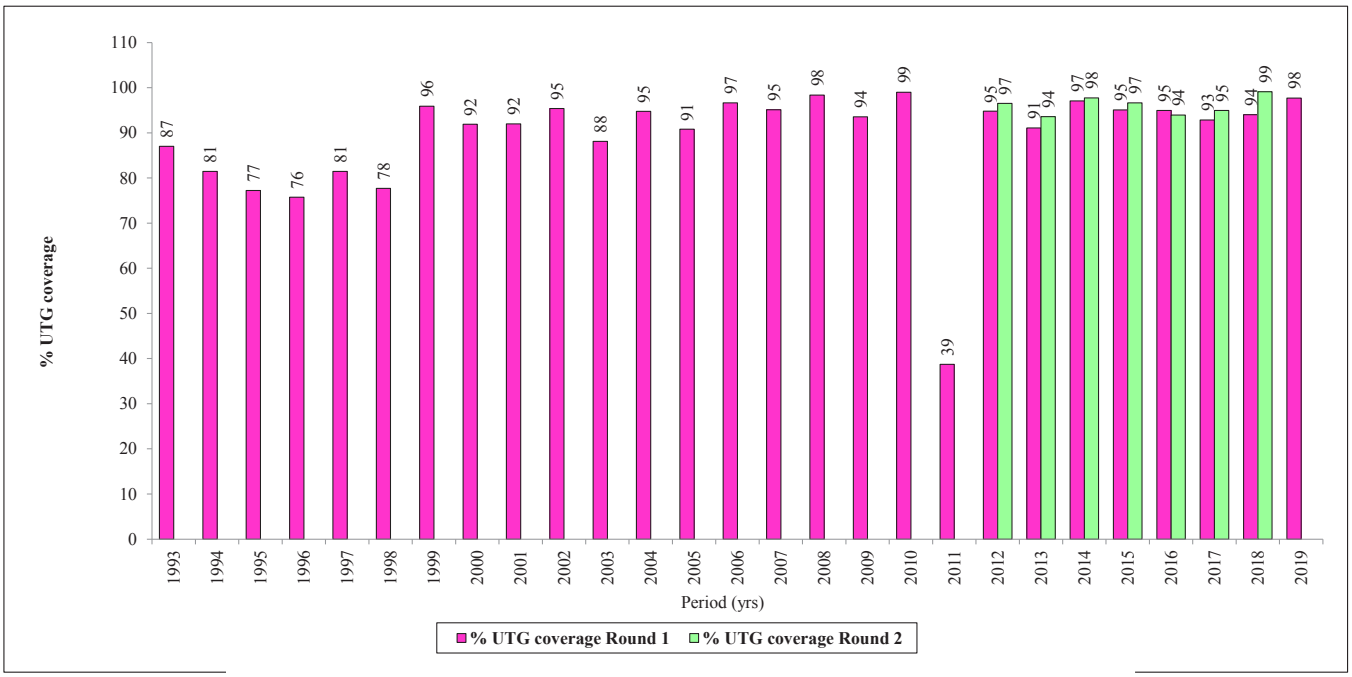


History of Mass Treatment with Ivermectin from 1993 - 2019 in Nyagak-Bondo Onchocerciasis Focus



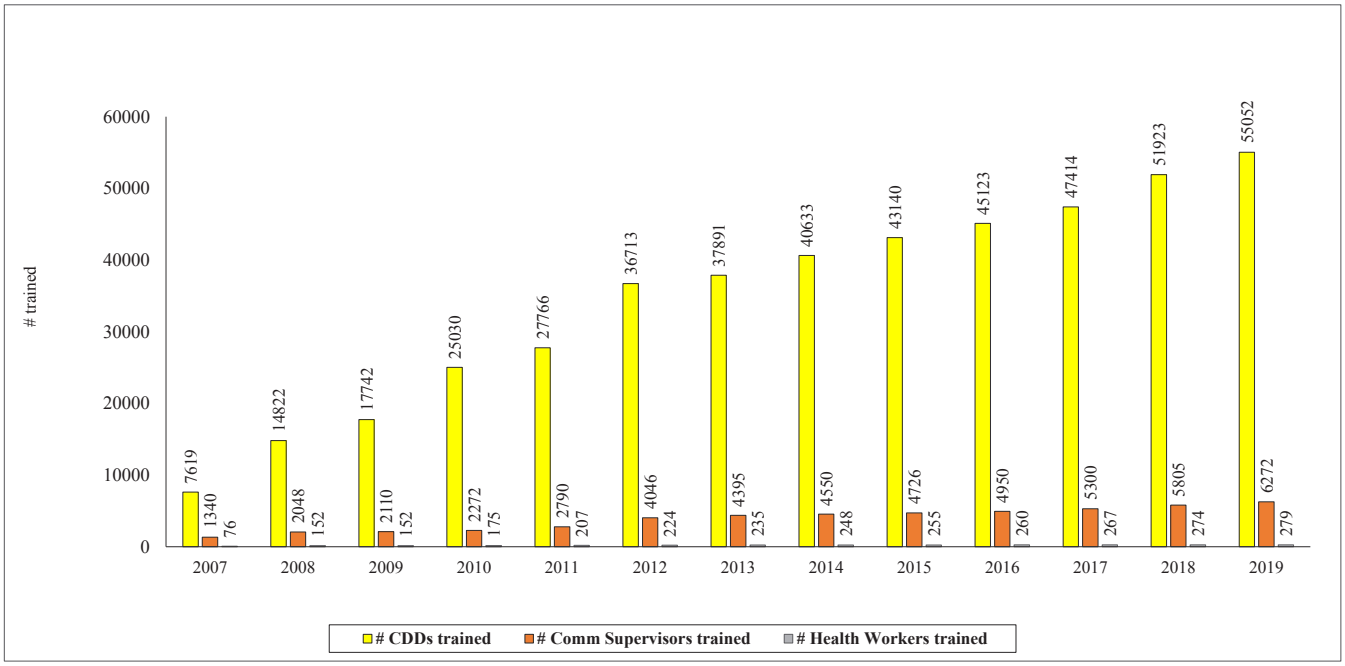
NB: MDA for Oncho was not done in Arua focus in 2011.

History of Percentage Treatment Coverage with Ivermectin 1993 - 2019 (UTG) in Nyagak-Bondo Onchocerciasis Focus



NB: Communities in CDTI areas in Arua did not treat in 2011

Number of CDDs, Community Supervisors & Health Workers ever trained from 2007 to 2019



Parasitological Assessments, Adults mf prevalence (MDA alone, No Larviciding)

Baselines, 1993					Follow up, 2011					P-value
District	Community	No. Examined	No. Positive	% mf positive	District	Community	No. Examined	No. Positive	% mf positive	
Nebbi	Patek Athele	50	50	100	Zombo	Patek Athele	89	3	3.4	<0.0001
Nebbi	Abilambe	50	48	96	Zombo	Abilambe	100	19	19.0	<0.0001
Nebbi	Agweci	50	48	96	Nebbi	Agweci	87	17	19.5	<0.0001
Nebbi	Nyandima	50	50	100	Arua	Anguru	89	34	38.2	
Nebbi	Ukongo	50	50	100	Zombo	Pachen	101	24	23.8	
Nebbi	Jupa Ngali Upper	50	45	90	Nebbi	Oloamura	66	14	21.2	
					Arua	Kairo	75	30	40.0	
Total		300	291	97			607	141	23.2	

Mf Prevalence – Children ≤10years

Baselines, 1993					Follow up, 2011					P-value
District	Community	No. Examined	No. Positive	% mf positive	District	Community	No. Examined	No. Positive	% mf positive	
Zombo	Patek Athele	11	9	81.8	Zombo	Patek Athele	19	0	0.0	<0.0001
zombo	Abilambe	11	4	36.4	Zombo	Abilambe	25	2	8.0	<0.041
Nebbi	Agweci	9	7	77.8	Nebbi	Agweci	24	3	12.5	<0.0001
Zombo	Nyandima	4	3	75.0	Arua	Anguru	19	7	36.8	
Zombo	Ukongo	11	11	100.0	Zombo	Pachen	20	2	10.0	
Zombo	Jupa Ngali Upper	12	12	100.0	Nebbi	Oloamura	38	6	15.8	
					Arua	Kairo	25	4	16.0	
Total		**58**	**46**	**79.3**			**170**	**24**	**14.1**	

Ov16 ELISA 2019

District	Number screened	Number analyzed	Number positive
Zombo	1506	522	0
Nebbi	556	349	0
Arua	1112	353	0
Total	**3174**	**1224**	**0**

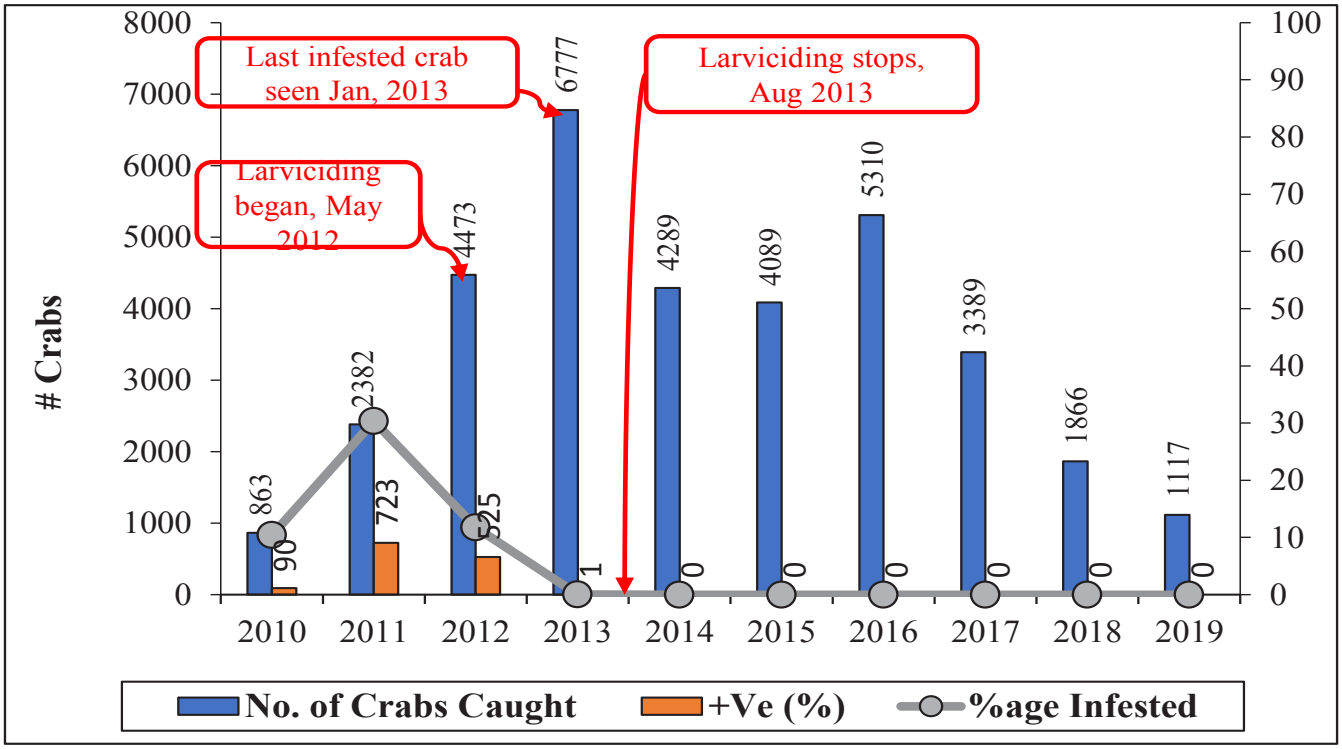
NB: 1950 samples yet to be analyzed.

Fly Dissection of S. neavei in Nyagak-Bondo Focus showing Active Transmission

Year	Month	Parous flies	No. positive [L_1, L_2,L_3	% infection rate
2011	June	177	3	1.7
	Sept	0	0	0.0
	Oct	19	2	10.5
	Nov	12	1	8.3
	Dec	4	0	0.0
2012	Jan	6	1	16.7
	Feb	1	1	100.0
	Mar	10	2	20.0
	April	11	1	9.1
		240	11	4.6

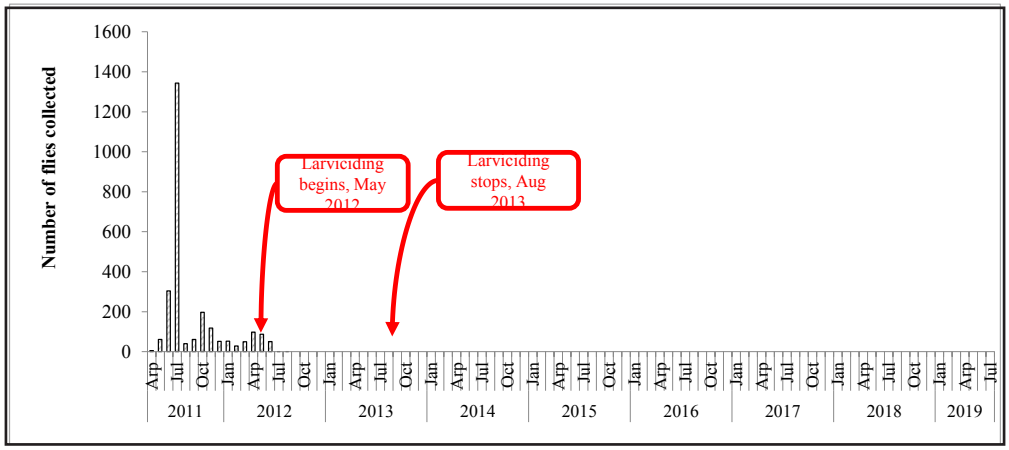
8 flies had L_1L_2, 2 flies had L_3, 1 fly had L_3H.

Trend of Crab Infestation in Nyagak-Bondo Focus from 2010 to 2019



Note: Larviciding began in May 2012 until Aug 2013. The last infested crab was caught in Jan 2013, the focus has had 6 years of no crab infestation.

Fly Collections in Nyagak-Bondo Focus (Apr 2011- Jul 2019)

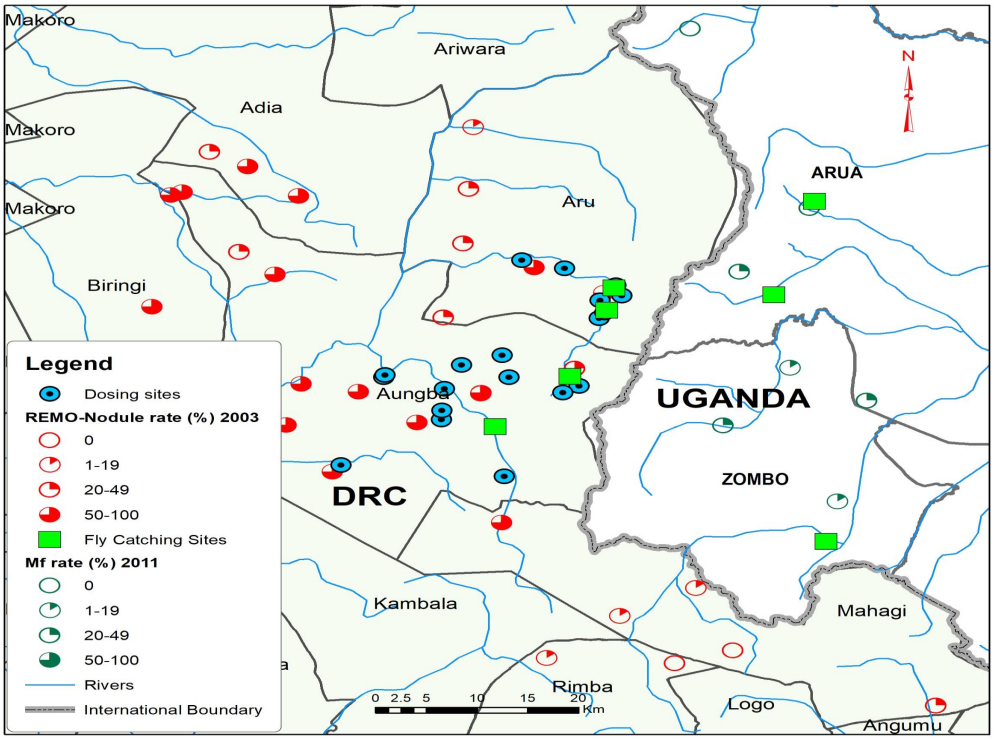


NB: The last fly was caught in Aug 2012, 6 years of no flies.

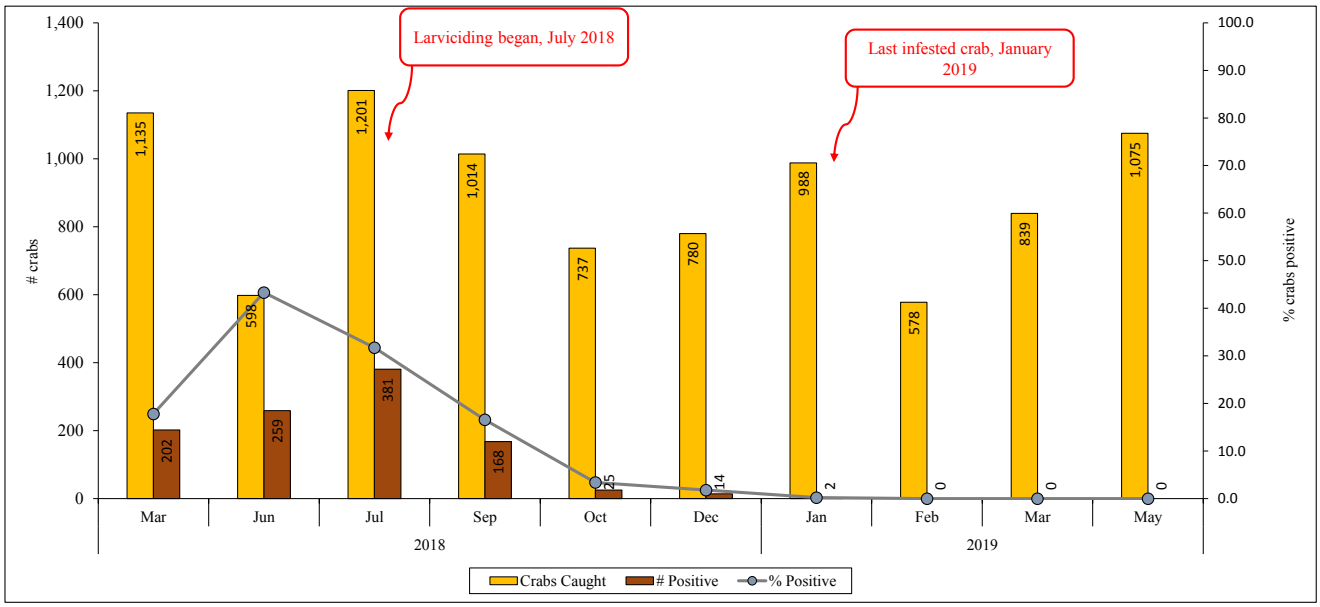
River Discharge and Application Rates During Larviciding in 2012

Month	River system	Discharge (M^3/sec)	Number of dosing points	Application rate (ppm)	Amount (l)
June	Nyagak	6.837	5	(0.15mg/l)	6.15
	Ora	4.735	8	(0.15mg/l)	6.80
	Wariki	0.693	2	(0.30mg/l)	0.50
	Odrua	0.505	2	(0.30mg/l)	0.36
	Agoi	0.395	3	(0.30mg/l)	0.45
July	Nyagak	6.837	5	(0.15mg/l)	6.15
	Ora	4.735	8	(0.15mg/l)	6.80
	Wariki	0.693	2	(0.30mg/l)	0.50
	Odrua	0.505	2	(0.30mg/l)	0.36
	Agoi	0.395	3	(0.30mg/l)	0.45

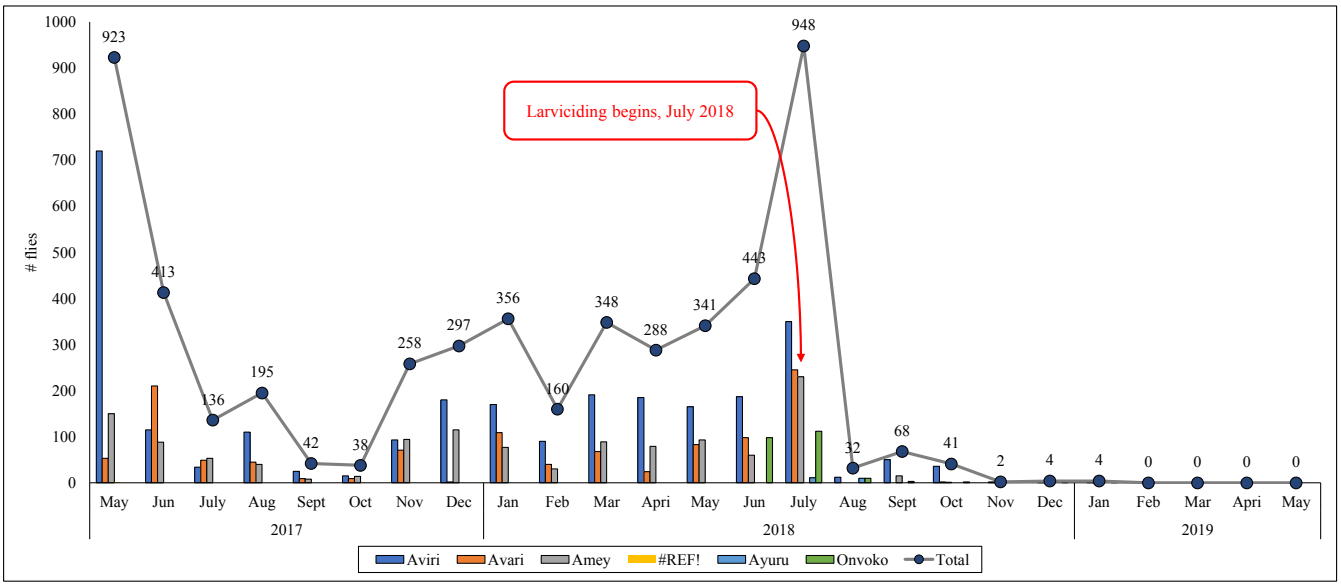
Map Showing Cross Border Activities in Ituri North, DRC in Relation to Nyagak-Bondo Focus



Trend of Crab Infestation in Ituri North-DRC, Adjacent to Nyagak-Bondo Focus from 2018 to 2019



Trend of Fly Collections in Ituri North-DRC, Adjacent to Nyagak-Bondo Focus from 2017 to 2019



Note: There were only 3 fly collection sites (Aviri, Avari & Amey) from May 2017 to Jun 2018. Starting from Jul 2018, 3 more sites (Taga, Ayuru, Onvoko) were added.

CONCLUSION

» The last infested crab was observed in January 2013 (6 and half years ago).
» Last fly was caught in August 2012 (6yrs ago). The focus seems to be isolated from Ituri North focus in DRC following 6 years of monitoring (River prospection and fly catches) with no flies or infested crabs observed.
» In the neighboring area of Ituri North (Omi and Mii river systems), ground larviciding has been done.
» The last infested crab and last fly were observed in January 2019. These results further confirmed that Nyagak-Bondo is isolated.

Way Forward

Reclassify the focus from "suspected interruption" to "transmission interrupted" after all the blood spots have been analyzed.

♦ Dramuke had as his contributors Ephraim Tukesiga, Andrean Etole and Stephen Azabo.

The program would like to thank

Lions Clubs of Uganda, M.O.H-Uganda, John Moores, Kuluva Hospital, CBM Support, local governments of Nebbi, Zombo & Arua districts, focus vector control officers, focus entomological assistants and vector collectors, focus general community for the high level cooperation.

Let me mention migration, displaced people, and refugees in the MMN. Northern Uganda is widely recognized to be a post conflict zone having massive fluxes of people. Many of these are from the Republic of South Sudan and the Democratic Republic of the Congo. These people often come from river blindness endemic areas of their countries; they may be infected; and if they settle in areas of MMN having the black fly, vector transmission can be reintroduced.

A WHO International Verification Team will certainly ask about this dynamic area. UOEEAC must help the MOH Uganda to be well prepared to successfully a ddress MMN issues using available data to answer these difficult questions.

I am therefore saddened that refugees are not a subject area on this year's UOEEAC agenda.

- Frank Richards

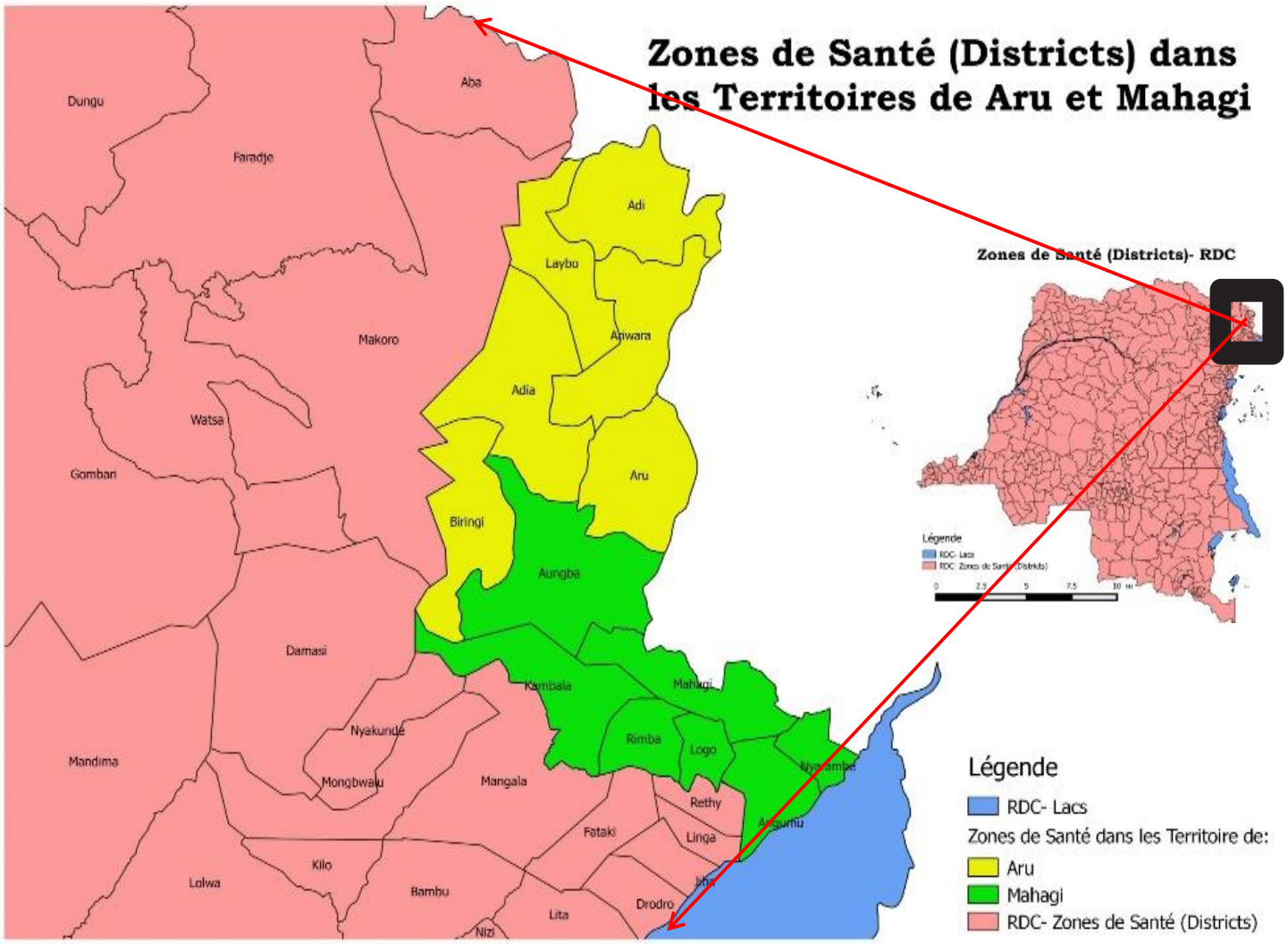


Leonard Lopay Bay





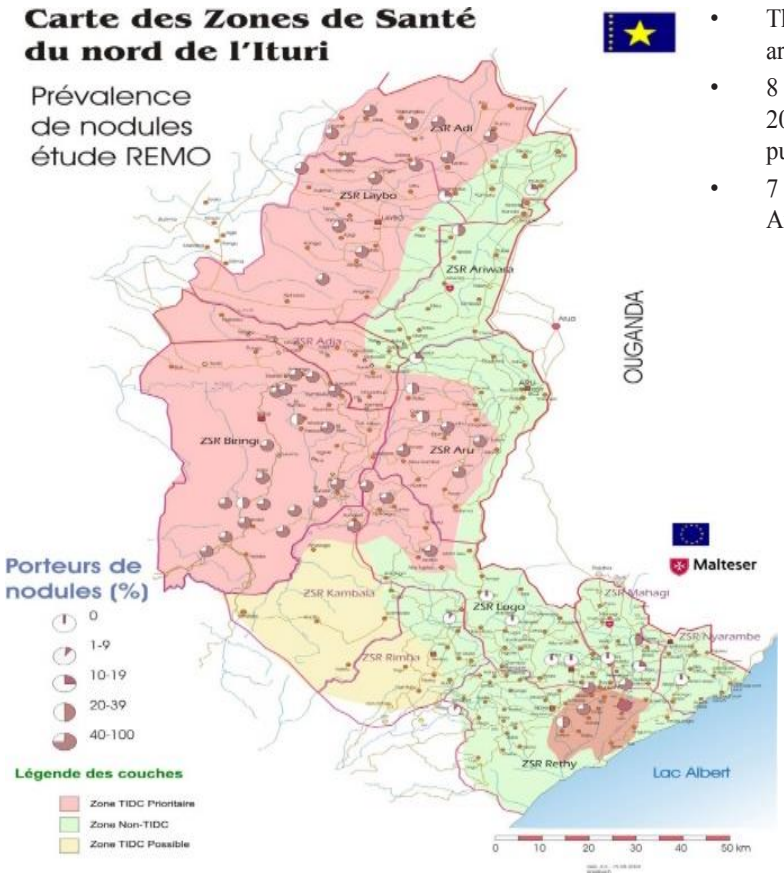
1. Location of Ituri-North CDTI Project Area



Ituri-North NTDs Project - Population 2018 & 2019

NO	Zones	Population 2019	Population 2018	Refugies et Deplaces, 2019	
1	Adi	167944	162906	Adi	36409
2	Laybo	170626	165507	Biringi	10164
3	Adja	144391	140059	Laybo	9532
4	Angumu	176436	171143	Angumu	27500
5	Nyarambe	286889	278282	Nyarambe	12000
6	Ariwara	205202	199046	Ariwara	13600
7	Biringi	146090	141707	Logo	7200
8	Aungba	178009	172669		
9	Kambala	137387	133265		
10	Rimba	234888	227841	Rimba	3400
11	Logo	289514	280829	Mahagi	11900
12	Mahagi	198612	192654	Aru	13000
13	Aru	195793	189919		
	Total	**2531781**	**2455827**		**144705**

2. REMO Map of Ituri-North Project (2001-2002)



- The REMO map shows that all the zones of Ituri North are endemic to Onchocerciasis.
- 8 of the 13 HZ have been under CDTI since 2008 - 2009. Regardless of its endemicity, Aru HZ has not been put on CDTI.
- 7 of the HZs border Uganda (i.e.Adi, Ariwara, Aru, Aungba, Mahagi, Nyarambe & Angumu).

For Uganda to make good progress towards elimination, peace and security will be critical. The impact of insecurity on health programs is known globally and in our region. We hope that the efforts of the Ministry of Health, Uganda, to reach out and provide support to neighboring countries will be met with a conducive environment to allow the partnership to achieve its desired results.

- Benjamin Binagwa

3. Epidemiology of NTDs in Ituri-North

Basic information

1. Area 25.000km^2.
2. Density: 96 hab./km^2.
3. Population: 2,387,711 people.
4. Partners: UFAR & Sightsavers.

Population at risk

1. Oncho: 135,1148.
2. Lymphatic filariasis: 901,577.
3. Schistosomiasis: 1,592,994.
4. Helminthiasis: 56474.
5. Trachoma: 839,946 & more surveys are ongoing.

Number of endemic zones

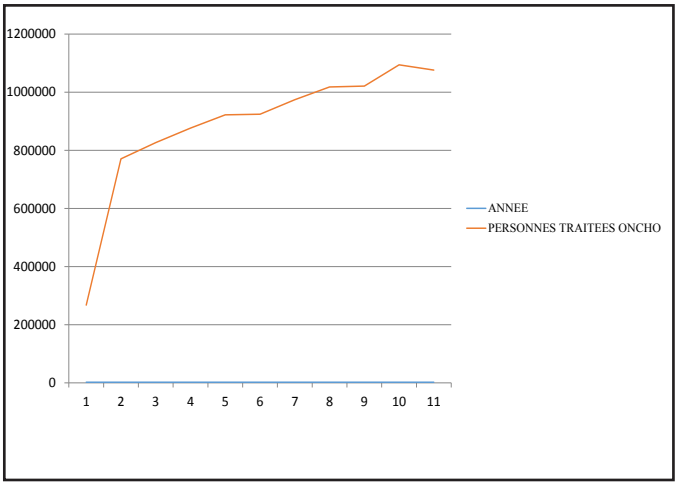
1.Oncho: 8 health zones.
2. LF: 5 health zones.
3. Schisto:7 heath zones.
4. STH: 1 health zone.
5.Trachoma: 4 health zones.
confirmed & more surveys are being carried out.

PROGRESS OF ONCHOCERCIASIS ACTIVITIES IN ITURI-NORTH PROJECT, DRC [Programme National de Lutte contre les Maladies Tropicales Négligées à Chimiothérapie Préventive (PNLMTN-CTP)]

Number of Oncho patients treated with Mectizan Annually 2008-2018 - Suite 1

Years	Oncho patients treated
2008	267429
2009	770462
2010	826441
2011	876333
2012	922124
2013	924236
2014	974236
2015	1018000
2016	1020800
2017	1093955
2018	1075870

Number of Oncho Patients treated with Mectizan - Suite 2

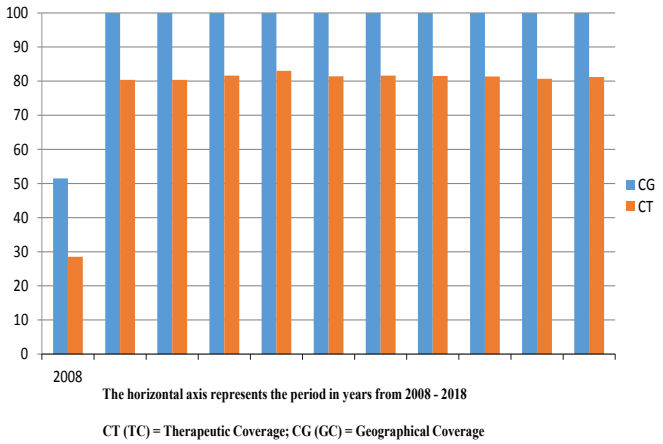


Therapeutic and Geographical Coverage of Oncho Mass Treatment in Ituri - North CDTI (2008- 2018)

Year	CG	CT
2008	51.5	28.5
2009	100	80.4
2010	100	80.4
2011	100	81.6
2012	100	83
2013	100	81.4
2014	100	81.6
2015	100	81.5
2016	100	81.4
2017	100	80.7
2018	100	81.2

CT (TC) = Therapeutic Coverage
CG (GC) = Geographical Coverage

Geographiccal & Therapeutic Coverage of Oncho - Mass Drug Administration in Ituri-North Health Zones 2008 - 2018



The horizontal axis represents the period in years from 2008 - 2018

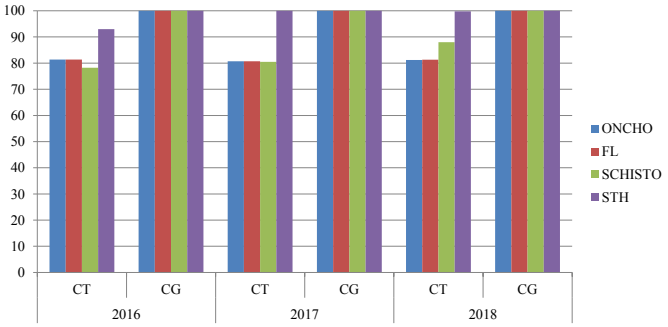
CT (TC) = Therapeutic Coverage; CG (GC) = Geographical Coverage

Therapeutic and Geographical Coverage of Oncho, LF, Schisto, STH 2016 - 2018

	2016		2017		2018	
	CT	CG	CT	CG	CT	CG
ONCHO	81.35	100	80.7	100	81.2	100
FL	81.35	100	80.7	100	81.3	100
SCHISTO	78.24	100	80.5	100	88.0	100
STH	92.99	100	100	100	99.8	100

CT (TC) = Therapeutic Coverage; CG (GC) = Geographical Coverage

Therapeutic and Geographical Coverage of Oncho, LF, Schisto, STH, 2016-2018



Vision for Uganda, South Sudan & DRC

» If we are to achieve Onchocerciasis elimination in Ituri North by 2030, we need a well developed framework/strategy for cross border collaboration on Simulium vector control/elimination. This will involve onjob training and sharing experiences from our counterparts.

OV16 Results in Children less than 10 years in 2016

District	Village	Number Examined	Number Elisa Positive	% Positive
Aru	Ozoo	89	0	0.00
Mahagi	Mbaku	104	4	3.90
Mahagi	Mondoli	365	2	0.55
Aru	Walebe	333	2	0.60
Aru	Nono	332	3	0.90
Aru	Gobiri (Oronzi)	334	7	2.10
Mahagi	Ama-Amaie	208	3	1.44
Mahagi	Aringo	210	0	0.00
Mahagi	Avari	203	0	0.00
Mahagi	Jupa Lung	205	3	1.46
Mahagi	Jupazanga	200	0	0.00
Mahagi	Luga	200	0	0.00
Mahagi	Mahagi (Panzudu)	205	0	0.00
Aru	Onibha	200	0	0.00
Mahagi	Panyona-A	204	0	0.00
Mahagi	Pogi-Jagi	205	0	0.00
Mahagi	Tali Tali	210	4	1.90
Mahagi	Tilal (Awasi)	205	0	0.00
Mi	Azao	204	3	1.47
Muda	Madi	200	0	0.00
Ome	Oswalo I (Ngbaju)	205	8	3.90
Utol	AngabaTELE	190	0	0.00
		4811	**39**	0.81

Monthly Catches of Simulium Flies (March 2017 – December 2017)

Year	Month	River system		Other species	Total
		Mi & Omi	Nzoro & Aru		
2017	Mar	924	200	74	1124
	Jun	413	231	0	664
	Jul	134	218	21	352
	Aug	195	345	0	540
	Sep	42	187	0	229
	Oct	38	294	0	332
	Nov	258	452	0	710
	Dec	420	723	0	1143

NB: Initially, the flies were not identified before submission for PCR.

Similium Fly Catches per Month before the Start of Larviciding

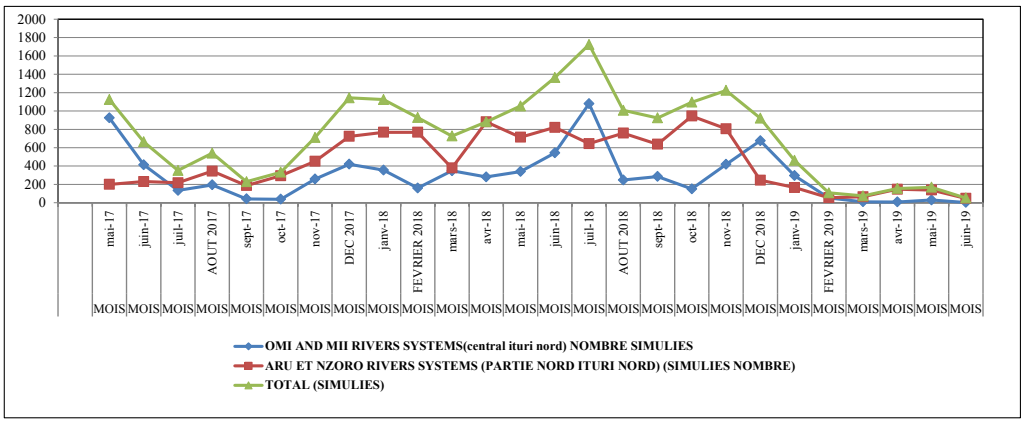
Year	Month	River system		Other species	Total
		Mi & Omi	Nzoro & Aru		
2018	Jan	356	768	0	1124
	Feb	160	768	0	928
	Mar	348	379	0	727
	Apr	281	882	0	882
	May	340	714	83	1137
	Jun	543	812	0	1355
	Jul	1080	644	86	1724
	Aug	248	759	94	1007
	Sep	286	638	0	924
	Oct	151	945	108	1096
	Nov	418	806	0	1224
	Dec	676	246	0	922
Total		**4887**	**8361**	**371**	**13050**

NB: Initially, the flies were not identified before submission for PCR. Ground larviciding began May 2018.

No. of *Similium* Flies Caught per Month, Janaury to May 2019

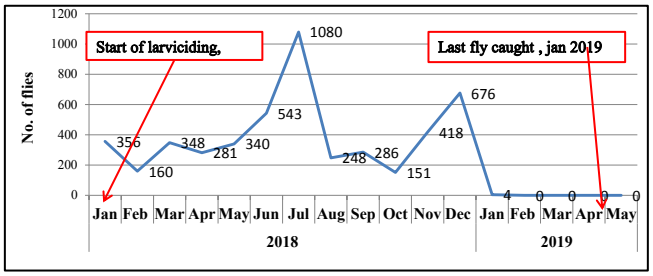
Year	Month	River system		Other species	Total
		Mi & Omi	Nzoro & Aru		
2019	Jan	4	166	0	170
	Feb	0	55	0	55
	Mar	0	65	387	452
	Apr	0	147	305	452
	May	0	139	611	750
Total		4	572	1303	**1879**

No. of *Similium* Flies Caught per Month from May 2017 to June 2019



NB: Number of *simulium* flies has reduced in river sytems of Omi and Mii due to Abate application. S. *damnosum* flies are still being caught at Aviri site on river Omi and Amey site on Mii river.

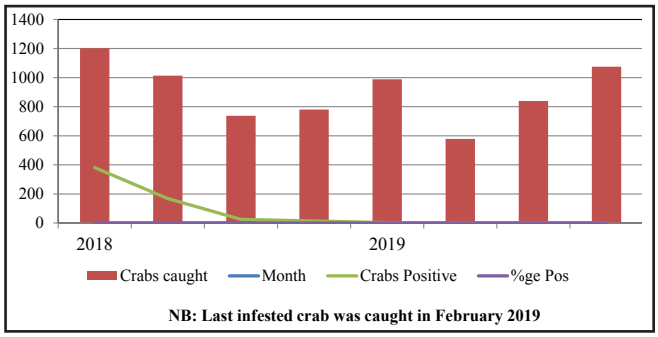
Trend of Fly Catches in Omi and Mii river systems (Jan 2018 – May 2019)



No. of Positive and Negative Crabs Caught from Omi and Mii River Systems in 2018 & 2019

	2018				2019			
Month	July	Sept	Oct	Dec	Jan	Feb	Mar	May
No. of crabs	1201	1014	737	780	988	578	839	1075
Crabs positive	381	168	25	14	2	0	0	0
% positive	31.7	16.6	3.4	1.8	0.2	0	0	0

Trend of Crab Infestation in Omi & Mii River Systems Ituri North, DRC



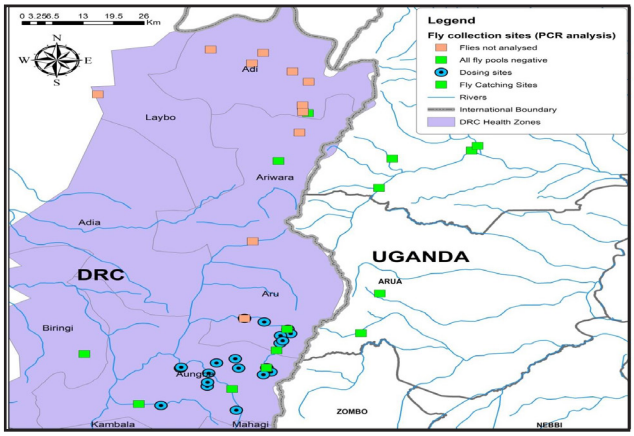
NB: Last infested crab was caught in February 2019

Number of *Similium* Flies Analysed with PCR in 2018 & 2019

Fly catching sites	Number of flies analysed	No. of pools
Amey	42	1
Avari	205	2
Aviri	1111	5
Aviri & Amey	42	1
Baranya	47	1
Kibuli Taga	200	1
Nzoro	481	3
Omi &Mi	1194	7
Onvoko	200	1
Taga	840	5
Site name not clear	600	3
TOTAL	4962	30

NB: All the flies were negative to PCR analysis.

Collection Sites for *Simulium* Flies in Ituri North



Achievements of Cross-Border Activities with Uganda (2017 – 2019)

- Capacity building of DRC personnel in river prospection, fly collection techniques and ground larviciding with Abate was done.
- Three entomological and 3 assistant entomological DRC technicians were fully trained.
- Fly catching sites were established on river systems of Mii, Omi, Azita and Nzoro.
- Supervision of fly catching in DRC sites was done by Ugandan together with DRC supervisors.
- Ground larviciding started in the sub-focus of Omi and Mii river systems which has produced promising results.
- However we expect the same to be extended to Kibali (Wele) river system, Ituri North Onchocerciasis CDTI project.

Anticipated Challenges

- Lack of logistics (laboratory equipment, transport {motorcycles/vehicles} and financial support).
- Inadequate capacity of personnel to work independently without Ugandan experts being invloved in these activities in Ituri North.
- Other Oncho suspected areas such as Nzoro river system, Kibali river system, South Ituri (Angumu HZ ,Nyarambe and Logo Health Zones) not yet prospected.
- We may not know how to handle *S. neavei* and *S. damnosum* that co-exist in Ituri North focus (in the Omi, Mii and Nzoro river systems).

Conclusions

Following the recommendations of the last UOEEAC meeting in August 2018, Ituri North thinks that:

» Routine *simulium* catching in territories of Aru and Mahagi should continue.

» 3 entomological technicians and assistants trained to do larviciding using Abate in the territories of Aru and Mahagi should also train others in DRC.

» Ground larviciding (of *simulium* vector) in Ituri North focus in Aru and Mahagi in DRC and Nyagak Bondo focus in Uganda should continue.

Suggestions for Cross Border Activities

» Integrate 2 other HZs in Mectizan or CDTI project, that is Logo and Mahagi.

» Continue combining vector control and Mectizan mass distribution.

» Move from once to twice per year distribution of Mectizan.

» Need for more additional support to equip Ituri North laboratories with necessary reagents and need to keep monitoring the lab for some time.

» Continue building capacities of personnel in DRC and logistics such as motorcycles, vehicles etc to enable the personnel to train and supervise these activities.

Acknowledgement

The Carter Center for their financial, technical and material support, Sightsavers, Give Well, MDP & UFAR and others for financial and technical support, Governments of Uganda and DRC for the facilitation of cross-border collaboration meetings and activities, Community/population in DRC.

Session 6: Transmission On-going and Cross-Border Lhubiriha Focus



Abraham Kibaba Muhesi et al♦

Recommendations made by 11th UOEEAC 2018 Meeting

» The committee recommended that the focus remain classified as "transmission ongoing".

» The committee requested that the program should consider doing entomological and epidemiological surveys to provide updated data on the current status of the focus.

» The committee recommended that quarterly vector control activities and semi-annual treatments should continue.

» The committee recommended that the Ministry of Health Uganda should provide assistance if requested by Democratic Republic of Congo in conducting epidemiological and entomological activities in the neighboring Beni Butembo area.

Background of Lhubiriha Focus

» The focus is located in Bukonzo West Health Sub-district, Kasese district and borders Democratic Republic of Congo.

» It has 129 oncho-endemic communities with a total population of 132,585 *(Community Directed Treatment with Ivermectin Report,* April 2019).

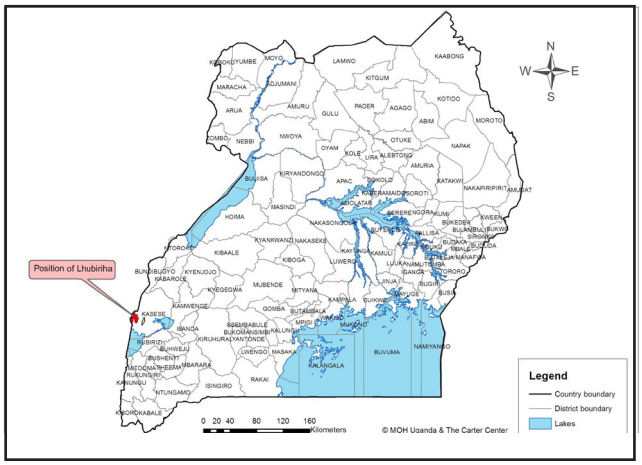
» Annual treatment with Ivermectin started in 1993.

» Semi-annual treatment commenced in 2007 and mass treatment is still ongoing.

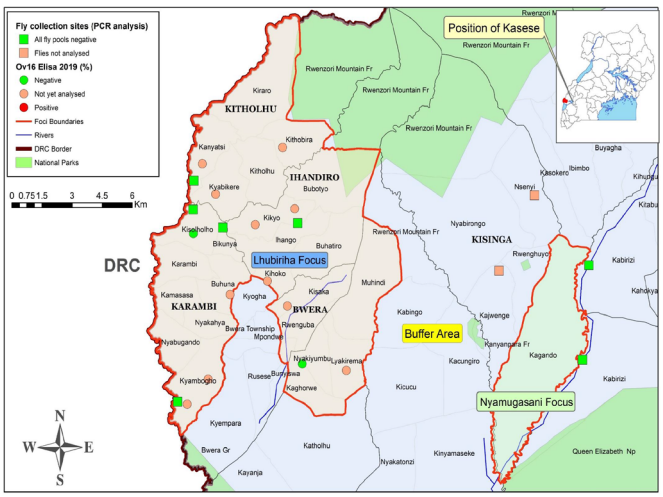
» The focus has 2 main rivers (Thako & Lhubiriha) with their tributaries (Muruseghe & Kabiira rivers).

» The known oncho vector is S. *kilibanum.*

Map of Uganda showing Lhubiriha Focus



A Map of Lhubiriha Focus showing Fly Collection Sites and Places where OV16 Samples were Obtained during 2019



Activities Implemented

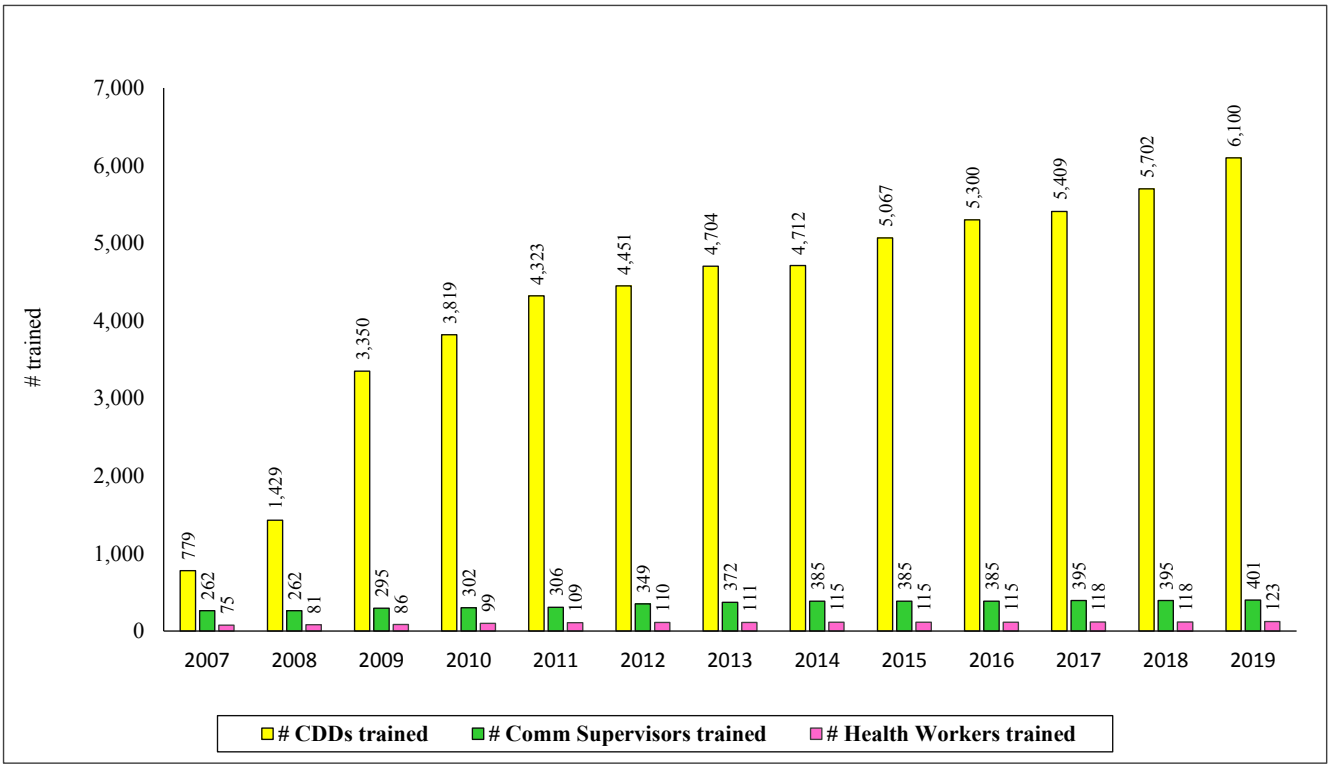
1. Community Directed Treatment with Ivermectin:

- Community-Directed Treatment with Ivermectin: implementation is done twice in a year during the months of April and October.
- Last treatment was done in April 2019.
- CDTI activities include: trainings, health education & selection of community drug distributors, update of registers, treatment, data collection & reporting.

2. Entomological:

- Vector collection / monitoring.
- Ground larviciding with Abate 500 EC and was last done in March 2019.

3. Training of Health Workers, Community Supervisors and CDDs from 2007 to 2019



Examples, in pictures, of training at sub-county and parish levels in 2019

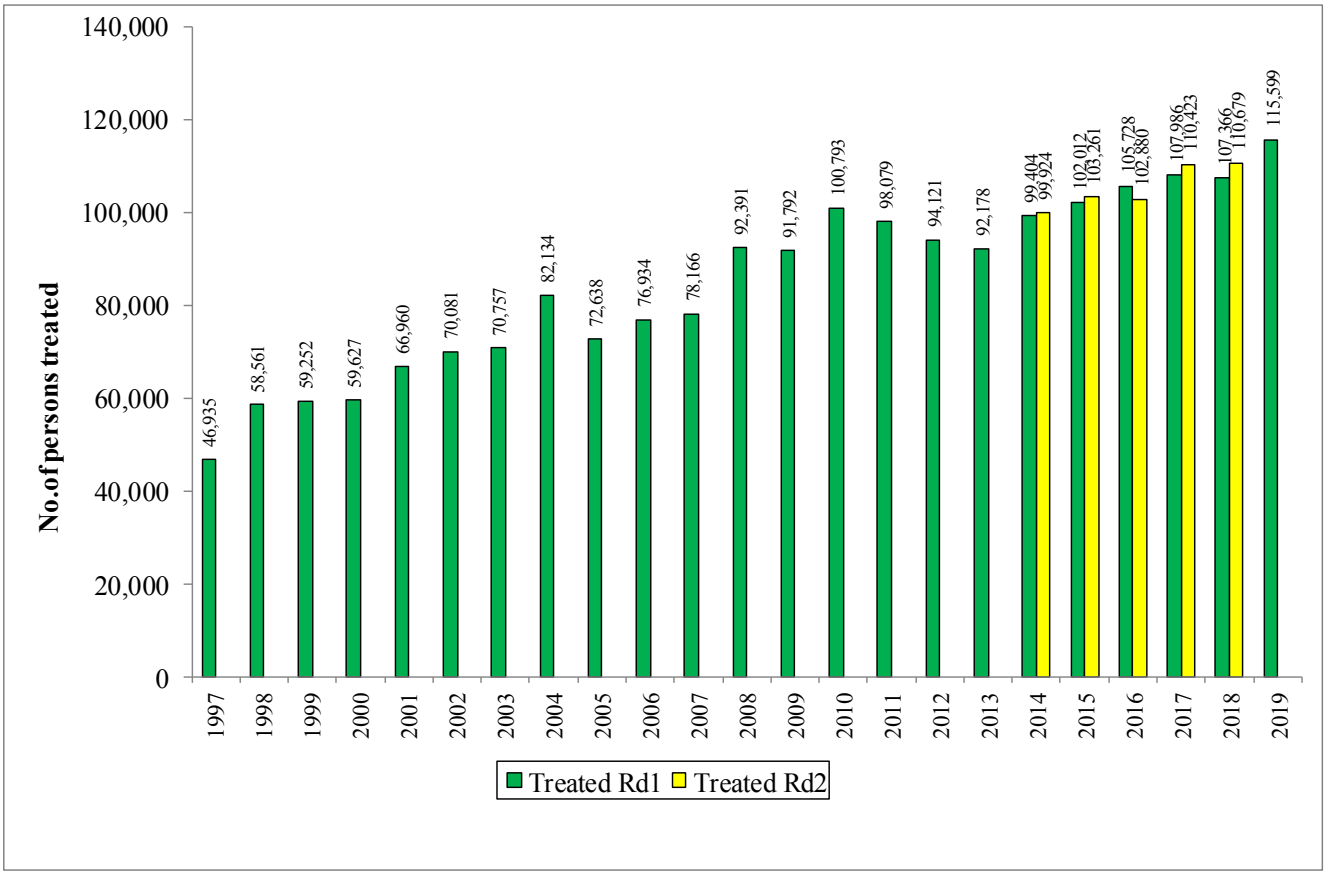




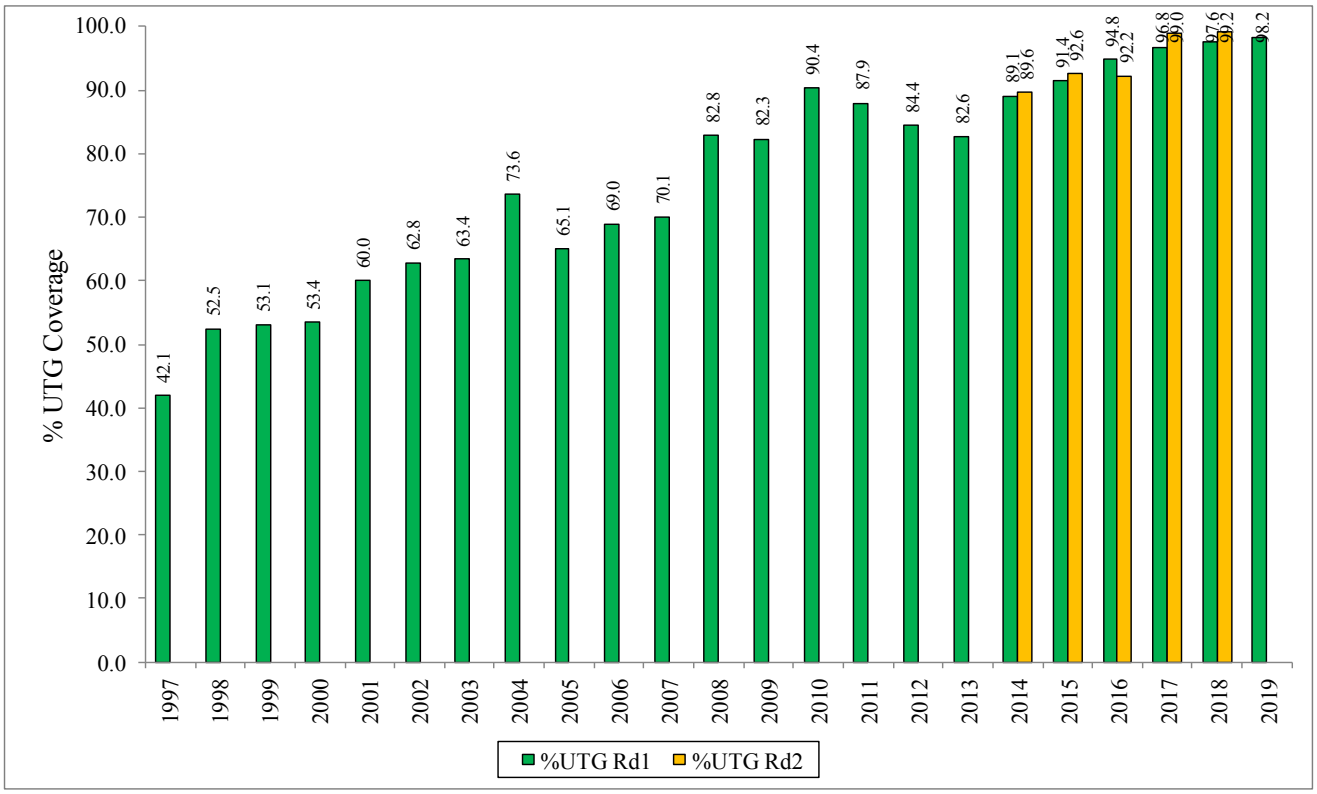




Number of Treatments from 1997 - 2019



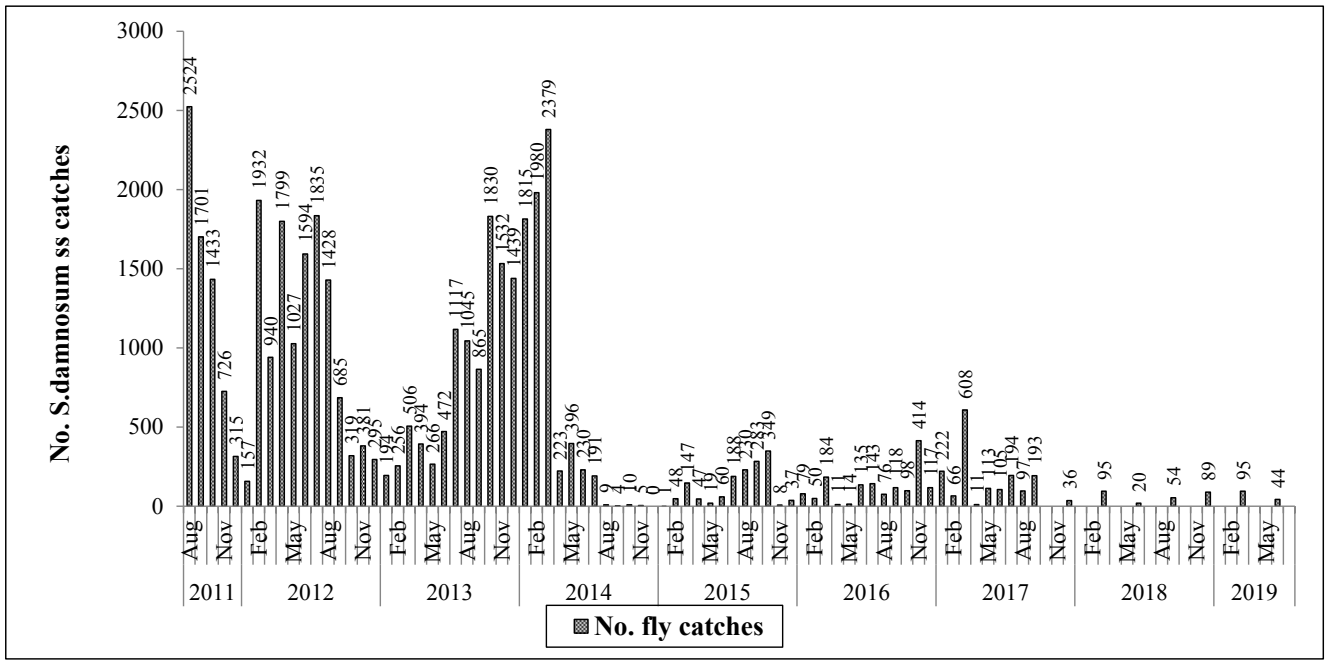
% Treated of UTG in Lhubiriha Focus from 1997 to 2019



Entomological Activities

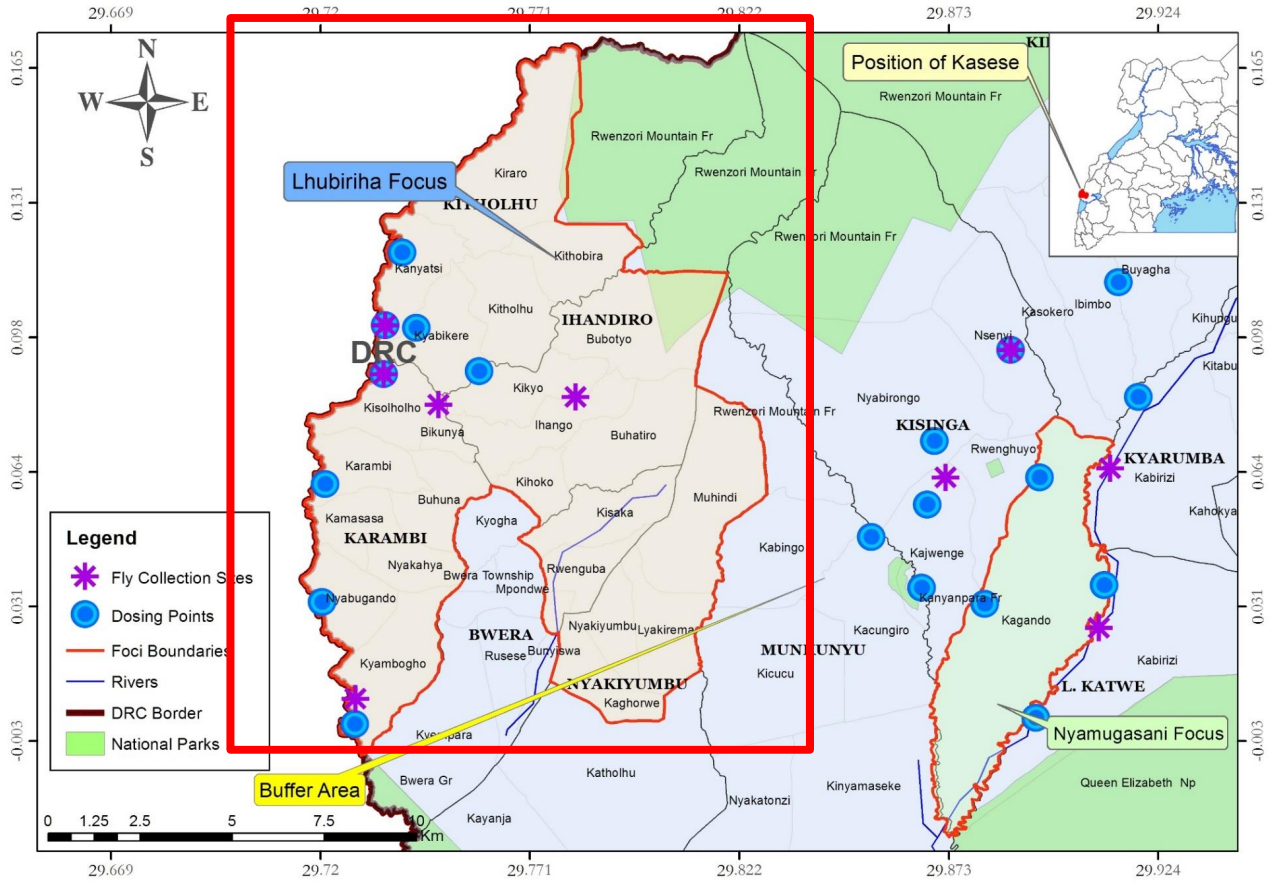
- Fly collection.
- River dosing and other vector elimination activities.

S. kilibanum Collection in Lhubiriha from August 2011 to June 2019



Weekly river dosing started in April and ended in December 2014. 8 weekly dosing started in January 2015 and stopped in September 2017. Quarterly dosing began in October 2017 to date. The last ground larviciding was done in March 2019.

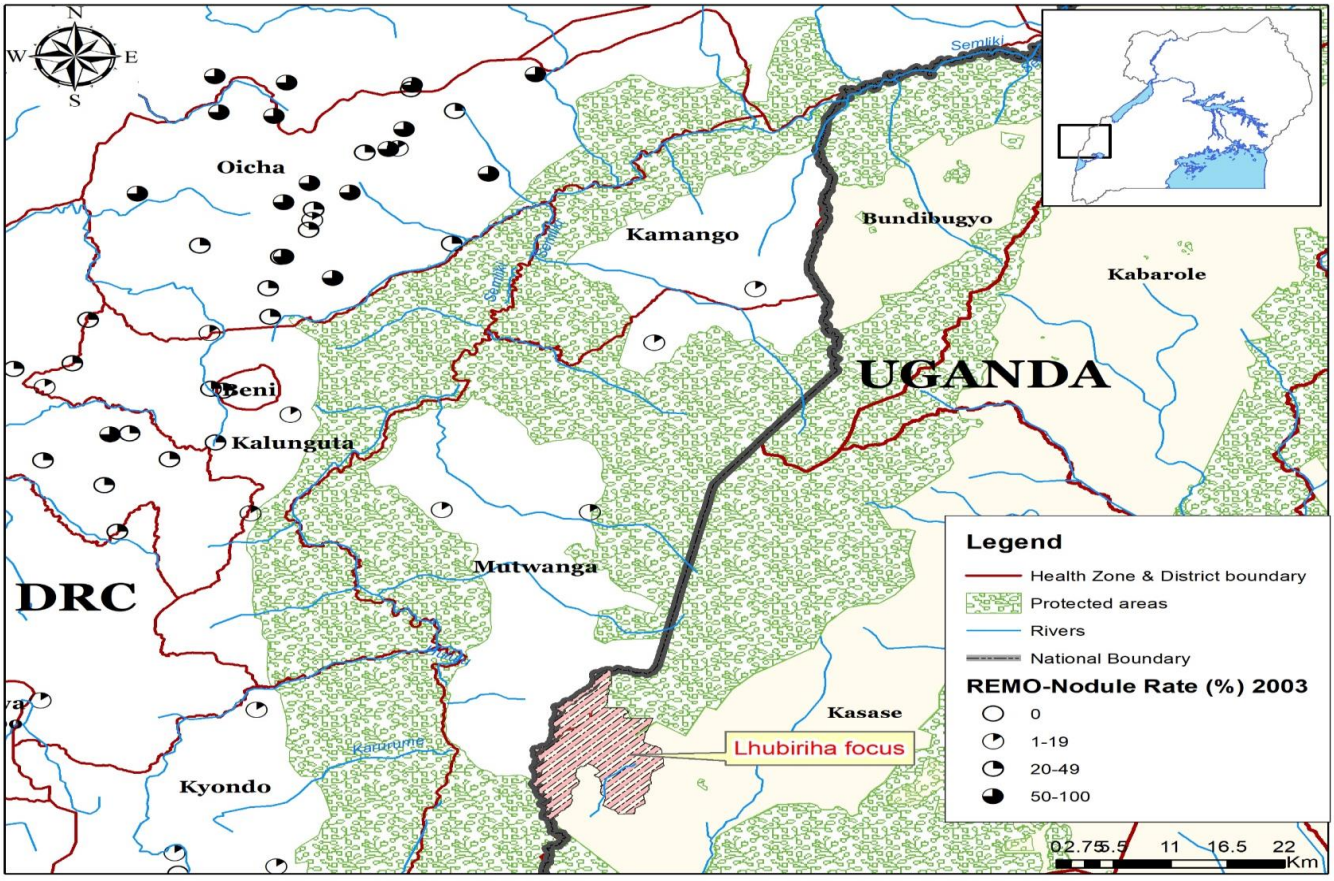
Map of Lhubiriha Focus showing Sites for River Prospection and Dosing and Fly Collections





Entomological team doing river gauging and ground larviciding in 2019.

Map showing Health Zones in DRC Neighboring Lhubiriha Focus



NB: River network where entomological activities will be done in Mutwanga HZ, DRC, in order to control vectors in Lhubiriha focus.

Impact Assessment conducted in 2019

OV16 results

- Out of 3,102 dry blood samples collected, only 412 were analyzed and they were all found negative. A detailed report to be presented by the laboratory team at VCD, Kampala.

Fly PCR analysis results

- Out of 12,140 flies collected, only 2,669 were analyzed and fly pools were all negative.

Results of Fly PCR Analysis from Lhubiriha Focus

Year	River	Site	No. of flies analyzed	pool size	No. of pools	No. pools positive
2014	Lhubiriha	Isango	74	74	1	0
	Lhubiriha-Tako	Kisolholho	491	200 (2 pools) & 91	3	0
	Muruseghe	Ihango bridge	30	30	1	0
	Thako	kamukubi	65	65	1	0
	Thako	Kathembo	5	5	1	0
Sub Total			**665**	**174**	**7**	**0**
2015	Lhubiriha-Tako	Kisolholho	85	85	1	0
Sub Total			**85**	**85**	**1**	**0**
2016	Lhubiriha	Isango	49	49	1	0
	Lhubiriha-Tako	Kisolholho	393	200 & 193	2	0
	Muruseghe	Ihango bridge	29	29	1	0
	Thako	Kathembo	24	24	1	0
Sub Total			**495**	**102**	**5**	**0**
2017	Lhubiriha	Isango	240	200 & 40	2	0
	Lhubiriha-Tako	Kisolholho	937	200 (4 pools) & 137	5	0
	Muruseghe	Ihango bridge	25	25	1	0
	Thako	Kathembo	120	120	1	0
Sub Total			**1322**	**145**	**9**	**0**
2018	Lhubiriha	Isango	25	25	1	0
	Muruseghe	Ihango bridge	2	2	1	0
	Thako	Kathembo	75	75	1	0
Sub Total			**102**	**102**	**3**	**0**
TOTAL			**2669**	**608**	**25**	**0**

Challenges

- The vector situation across the border is generally unknown.
- Dry blood spot samples and fly analysis have not been completed, thus there is no idea on the status of the disease in the focus.
- Cross border movements have constantly affected treatment activities.
- Ebola outbreak in June 2019 in DRC jeopardized vector control and elimination activities.

Conclusion

- Community-Directed Treatment with Ivermectin (CDTI) activities have been implemented and they have maintained high treatment coverage in the focus.
- Vector control activities have reduced greatly.
- Fly population reduced due to vector control and elimination activities in the focus.
- Analysis of PCR flies and blood spot samples has not yet been completed, hindering UOEEAC to make any relevant recommendations.

Way Forward

- Complete PCR and OV16 analysis.
- Entomological activities along Lhubiriha and Thako rivers should continue.
- Continue semi annual treatment.
- Cross border interventions should begin when Ebola cases reduce to zero in DRC.
- The focus should remain 'transmission ongoing' pending results from OV16 & fly PCR analyses.

The program would like to thank

River Blindness Foundation, John Moores Foundation, Lions clubs of Uganda, M.O.H. Uganda, Local government of Kasese District, Focus vector control officers, Entomological assistants, Vector collectors and general community for the high level of cooperation.

♦ Abraham Kibaba Muhesi worked along with Joseph Wamani, Gilbert Mubangizi, Noah Tibamwenda and Justus Musika.

Allow me to comment on the issue of cross-border collaboration and treatment of refugees that are pertinent to our NTD elimination effort in Uganda. I have been informed that implementation of joint cross border elimination activities between Uganda and RSS made huge progress following the 2018 UOEEAC recommendations…I want to affirm and laud MoH Uganda's stand of strengthening this collaboration even further. I am confident that the presence of key stakeholders from the DRC and Republic of South Sudan in this meeting will offer this network more opportunity to discuss cross border action plans including post elimination surveillance. Uganda is one of the countries hosting the biggest number of refugees and I know that some of our sisters and brothers in refugee settlements came from onchocerciasis endemic areas and therefore need mass treatment.

- Health Minister Jane Aceng



David Oggutu et al♦

GULU DISTRICT

Introduction

» Gulu District was sub-divided to form the districts of Amuru (2006), Nwoya (2010) and Omoro (2017).

» The current Gulu district is bordered by Lamwo District to the North, Pader District to the East, Oyam District to the South, Nwoya District to the South-West and Amuru District to the West.

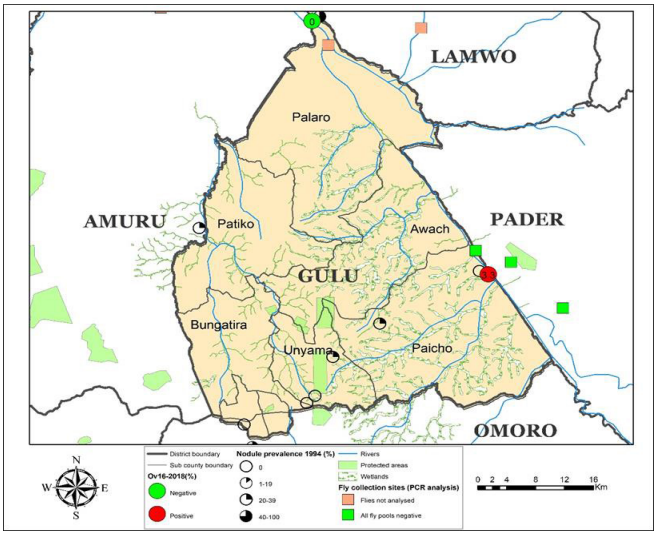
» The many sub-counties, into which it is divided, we have Bungatira, Unyama, Awach, Patiko, Paicho, Palaro, and Aswa.

» It has two river systems of Aswa and Unyama which are known to be breeding onchocerciasis vectors.

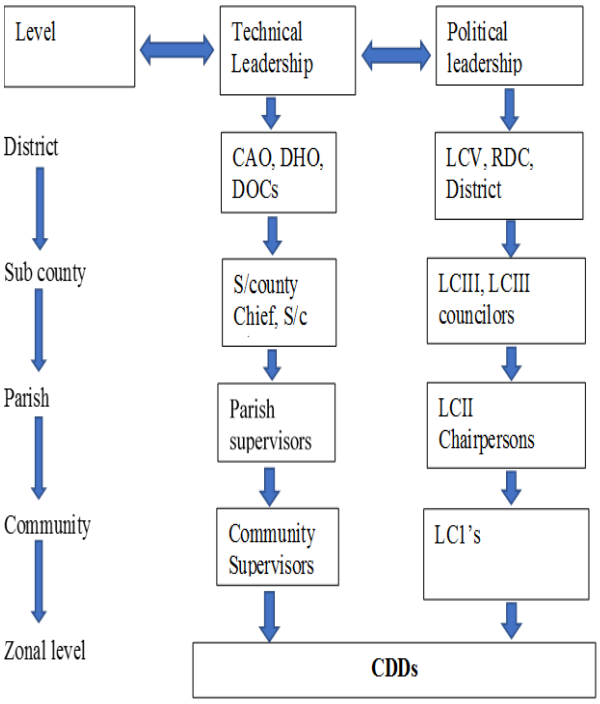
» Ivermectin treatment in Gulu district started in 1993 when Amuru, Nwoya and Omoro were still part of it.

» Vector control on river Aswa commenced in 2012 with aerial spraying while ground larviciding was conducted from 2013 to 2018.

Map of Gulu District

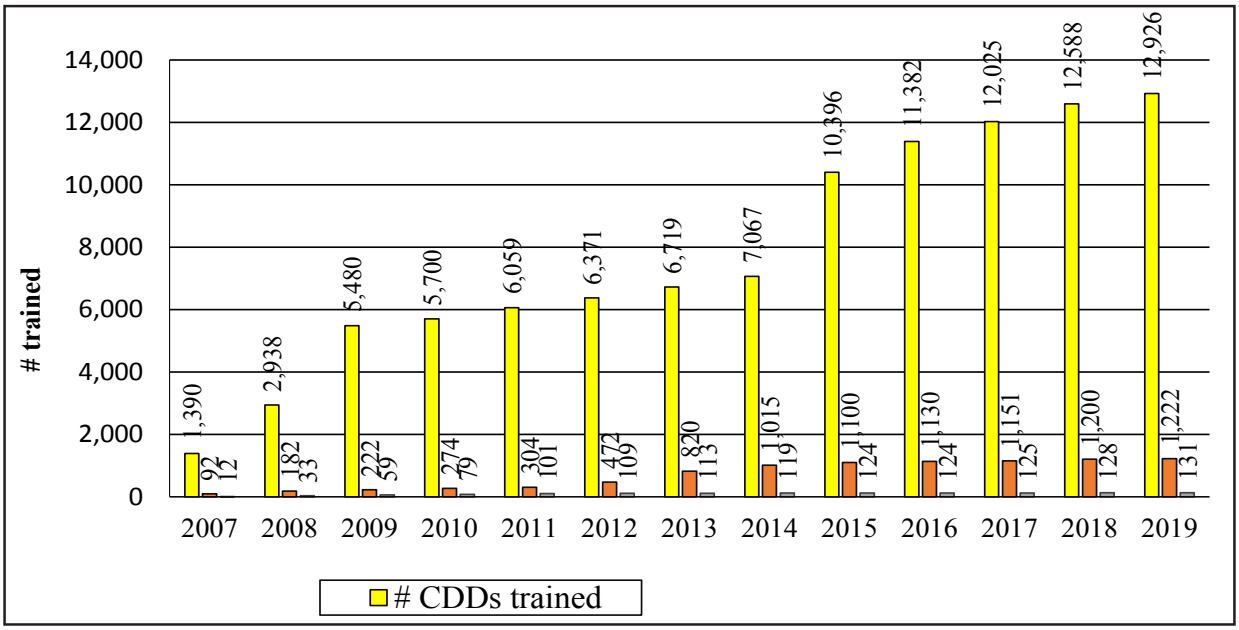


CDTI Implementation Structure

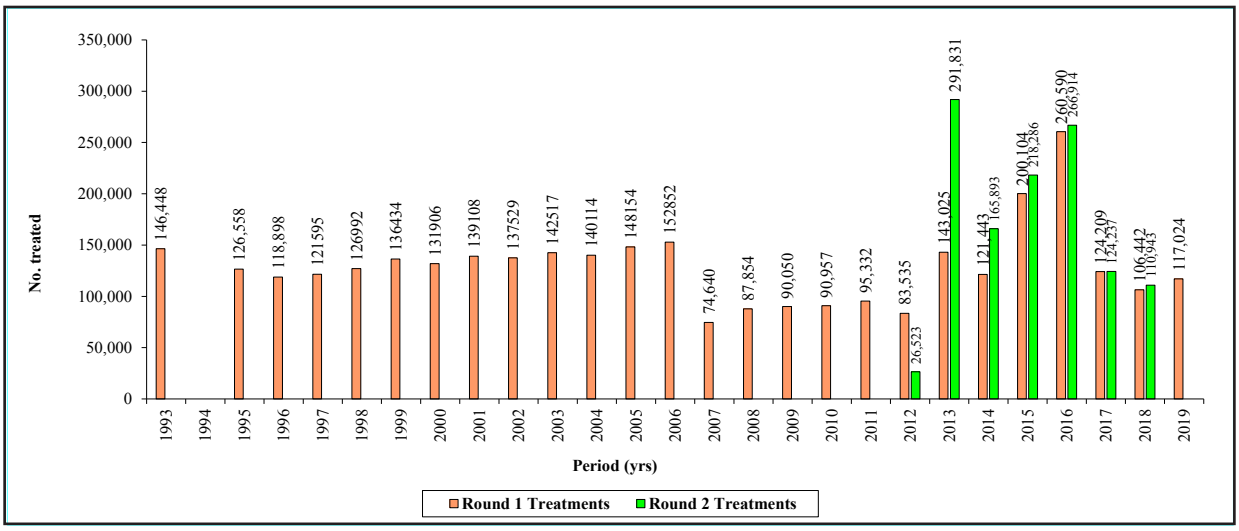


I want to commend…
the strong cross border collaboration with the
Democratic Republic of Congo and the Republic of South Sudan.
This will safeguard the achievements Uganda has made.
- Yao Sodahlon

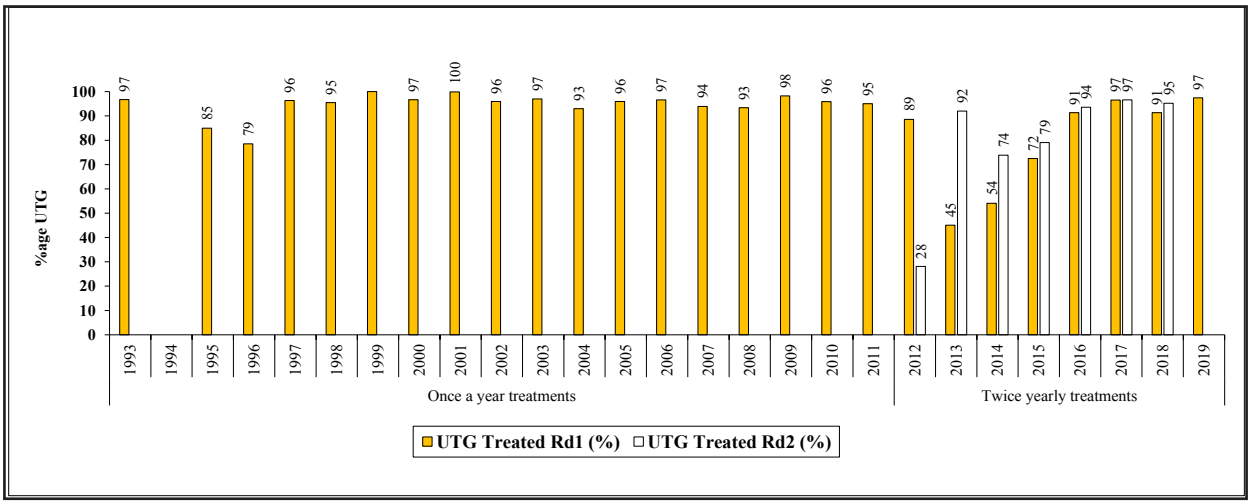
CDTI Training in Gulu District since 2007 to Date



Number of Treatments in Gulu District from 1993 To Date



UTG Coverage for Gulu District from 1993 To Date

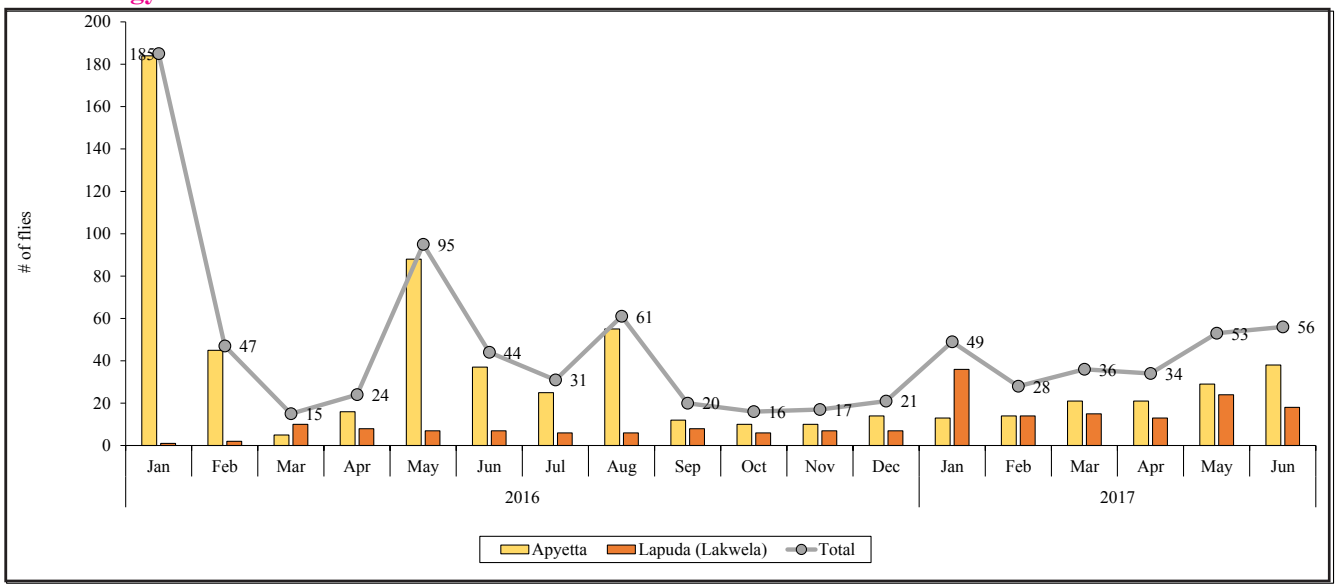


NB: Gulu district started treatment in 1993, and has had 7 consecutive rounds of treatment(>90%) since 2016 to date.

Epidemiology - Skin Snip Results, 2012 & 2015

	2012			2015		
Communities	**No. Examined**	**No. Positive with mf**	**%age mf**	**No. Examined**	**No. Positive with mf**	**%age mf**
Akoyo	94	45	47.9	99	53	53.5
Lakwela	95	41	43.2	68	17	25.0
Oroko	82	17	20.7	36	0	0.0
Dwere				120	3	2.5
Ongedo				145	0	0.0
	271	**103**	**38.0**	**468**	**73**	**15.6**

Entomology - Trend of Adult Catches



Strategy : Vector control; the population of black flies has reduced but has not been eliminated.

Impact Assessments: Ov16 results for 2018 in Sentinel Sites

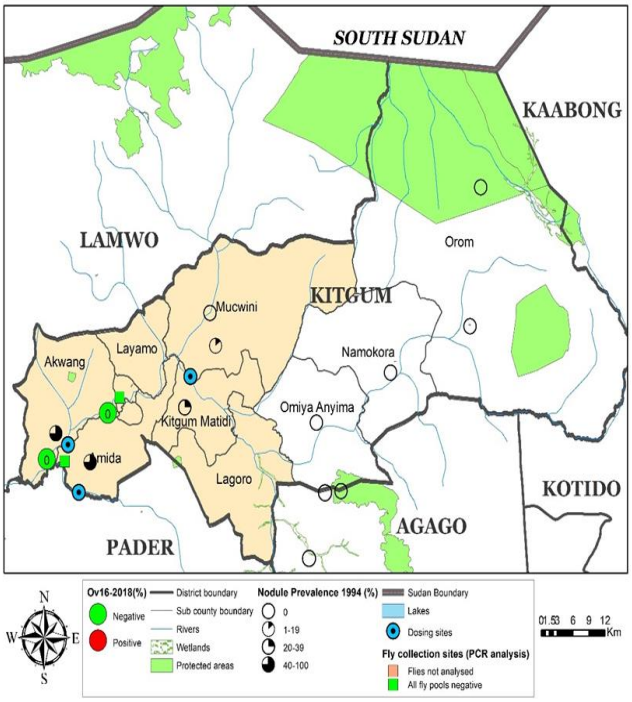
Sub-county	**Parish**	**Village**	**#Children screened**	**#positive (%)**	**#Adults screened**	**#positive (%)**
Palaro	Mede	Ongendo	66	0(0%)	49	0(0%)
Paicho	Kal Ali	Lakwela	49	1(2%)	25	4(16%)
Palaro	Mede	Oroko	39	0(0%)	25	2(8%)
Paicho	Pagik	Dwere	11	1(9.1%)	15	3(20%)
			165	**2(1.2%)**	**114**	**9(7.9%)**

KITGUM DISTRICT

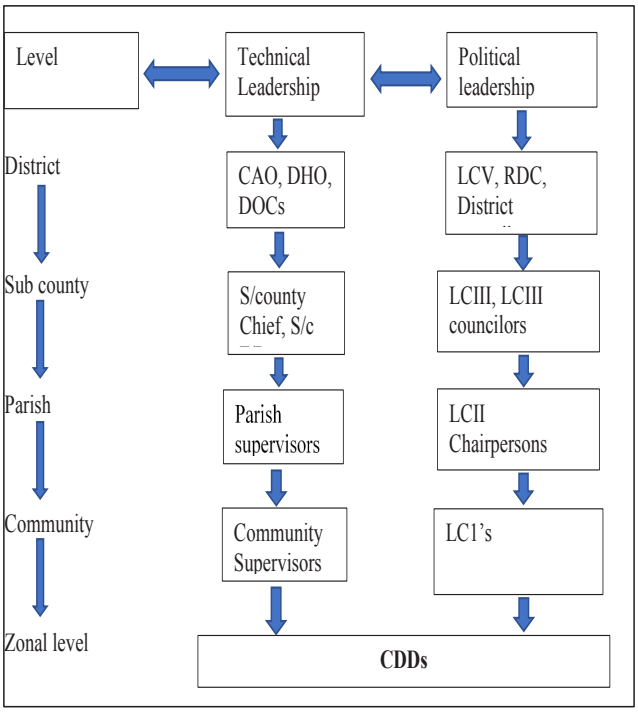
Introduction

- Kitgum was one of the two original districts of Acholi sub-region.
- It is bordered by South Sudan to the North, Kaabong District to the East, Kotido District to the South-East, Agago District to the South, Pader District to the South-West and Lamwo District to the North-West.
- It has 9 sub-counties and 3 divisions within its municipality.
- Onchocerciasis is known to be endemic in 6 sub-counties and 3 divisions within the municipality.
- There are no refugee settlements in Kitgum District.
- Pager is the main river with tributaries of Aringa & Lanyadyang draining down to River Aswa.

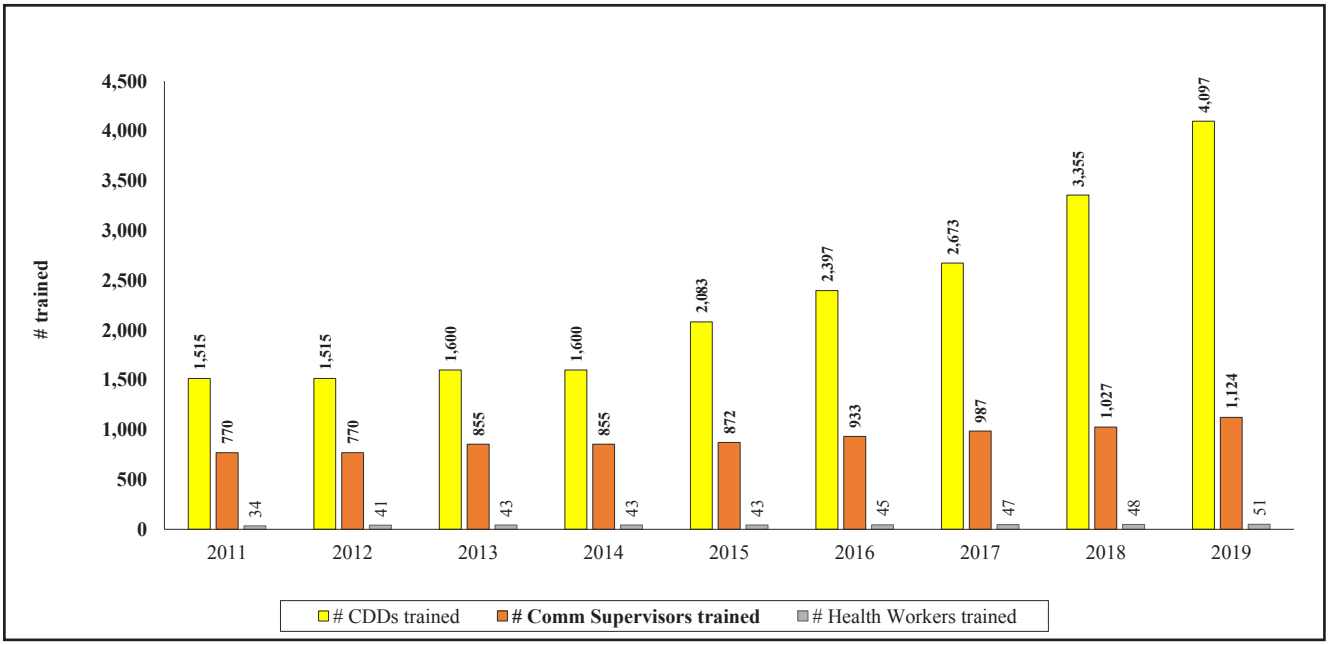
Map of Kitgum District



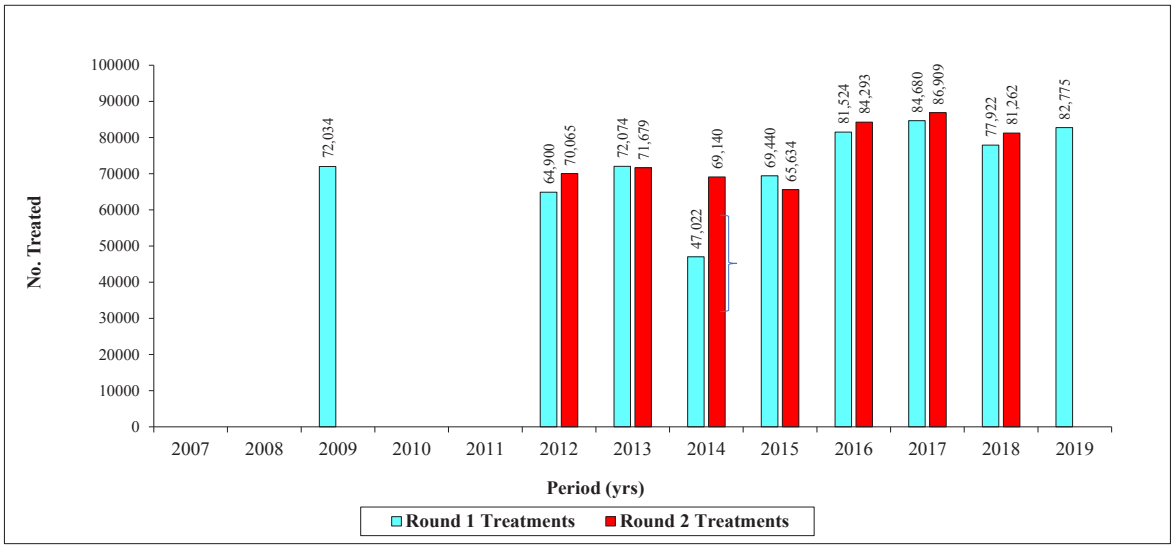
CDTI Implementation Structure



CDTI Training in Kitgum District from 2011 To Date

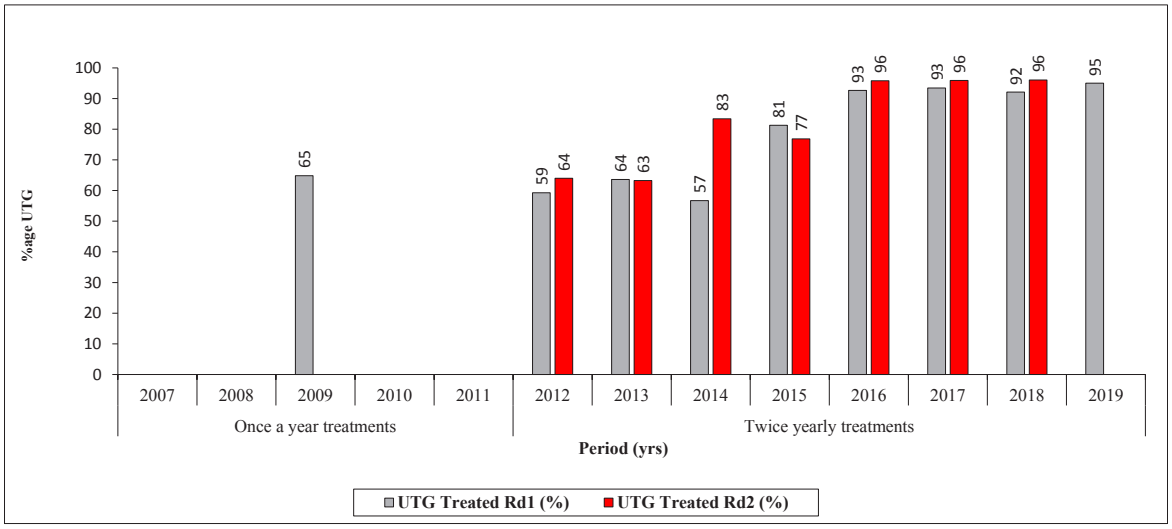


Number of Treatments in Kitgum District from 2009 To Date



NB: In 2010 & 2011, treatment was not done because the district had not yet established proper CDTI system.

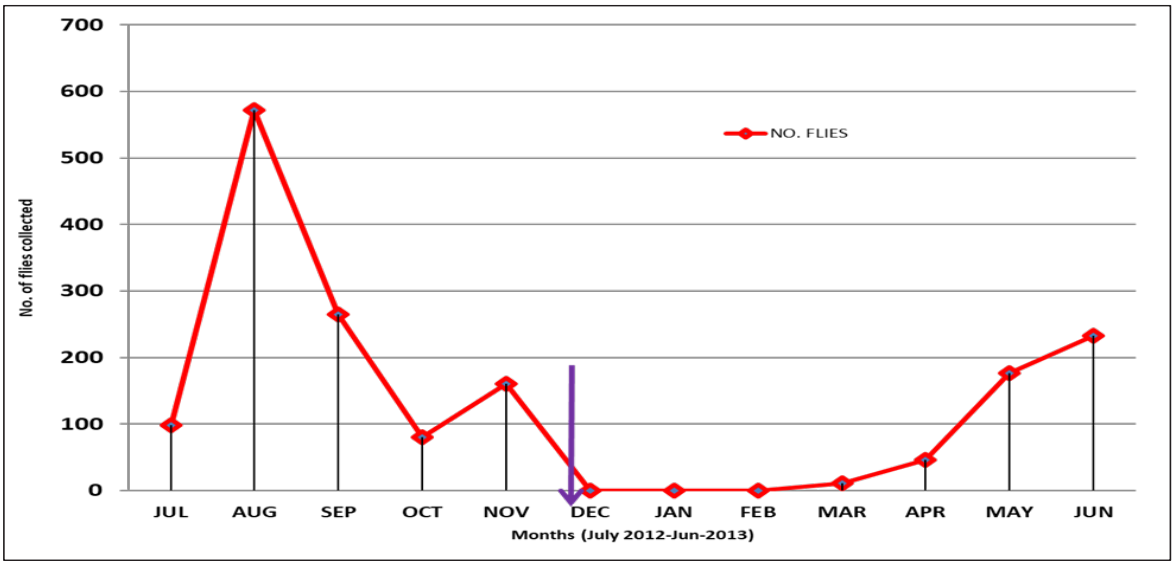
UTG Percent Coverage in Kitgum District from 2009 To Date



NB: The district has had 7 consecutive rounds of effective treatment (>90%) since 2016 to date.

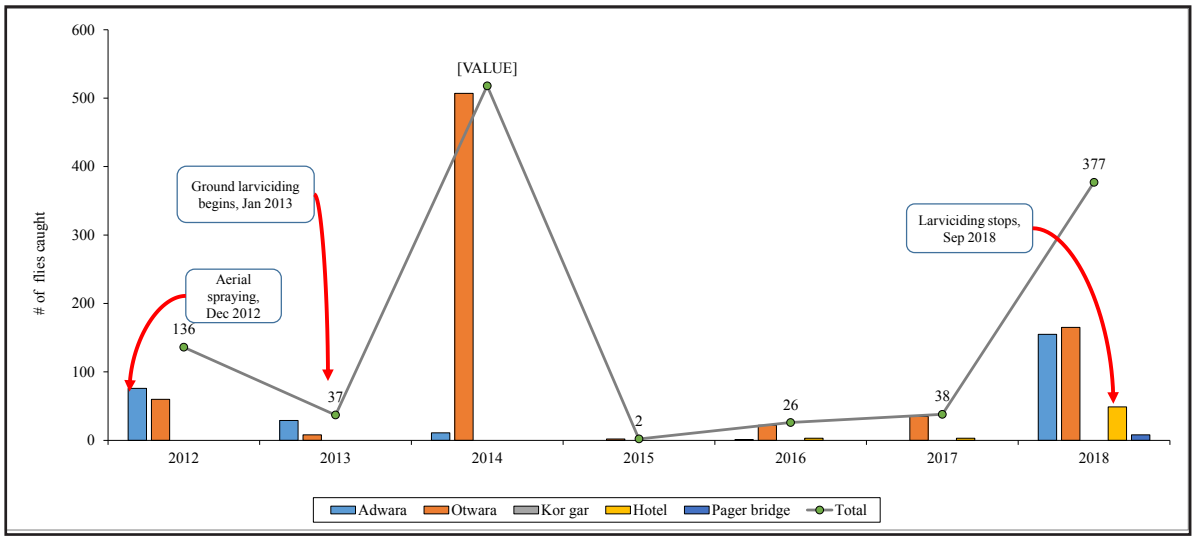
Entomology 1

Impact of Aerial Spraying



- Vector control started with the launch of aerial spraying in 2012.
- To sustain the gains made, ground larviciding was launched in 2013.
- Vector control activities such as fly catching and larviciding are being done on River Pager.
- There are five vector collection sites where monitoring is being carried out.

Entomology 2



Impact Assessments for OV16 in Sentinel Sites During 2018

Sub County	Parish	Village	#Children screened	# positive (%)	# Adults screened	# positive (%)
Akwang	Pajimo	Bola	71	0(0%)	37	7(18.9%)
Akwang	Lamit	Tumanguu	90	0(0%)	50	8(16%)
Akwang	Lamit	Adyee	76	0(0%)	37	8(21.6%)
Akwang	Lamit	Libia	71	0(0%)	50	4(8%)
Total			**308**	**0(0%)**	**174**	**27(15.5%)**

Impact Assessments: Simulium Fly PCR results in Sentinel Sites During 2014

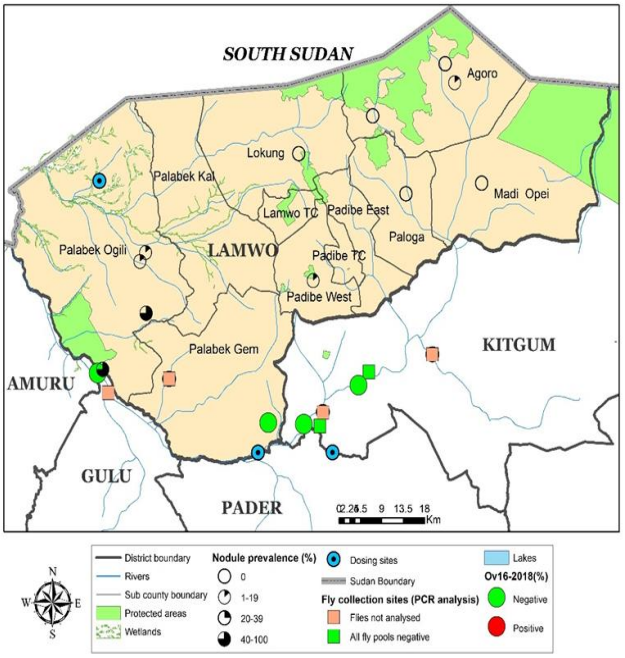
Site	River	No. of flies collected	No. of flies analyzed	Pool size	No. of pools	No. pools positive
Adwara	Pager	12	12	12	1	0
Otwara	Pager	509	600	200	3	0
		521	**612**		**4**	**0**

LAMWO DISTRICT

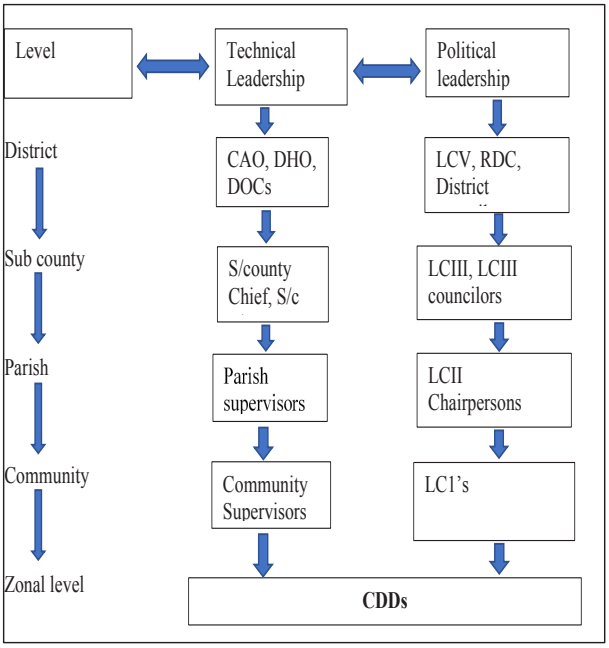
Introduction

- Lamwo District was carved out of Kitgum District in 2009.
- It borders Magwi county in South Sudan to the North, Kitgum District to the East and South East, Pader District to the South, Gulu District to the South East and Amuru District to the West.
- It has a population of about 150,877 people.
- The main river systems are Aswa and Pager.

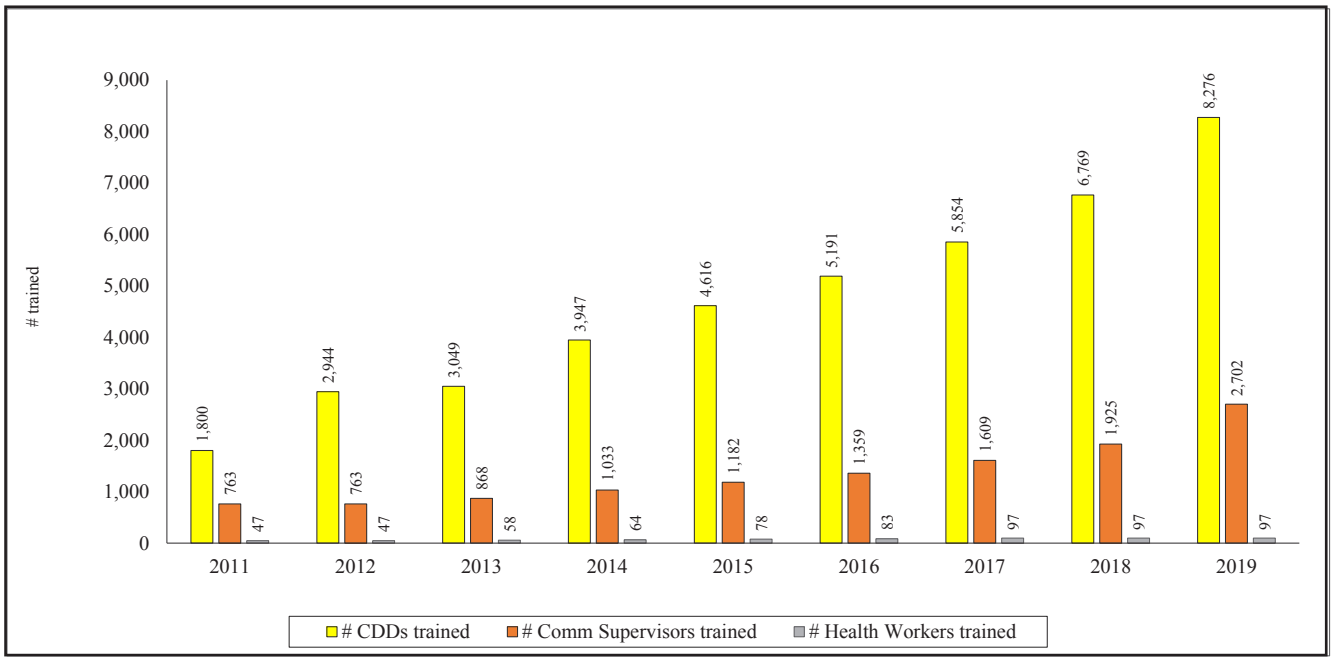
Map of Lamwo District



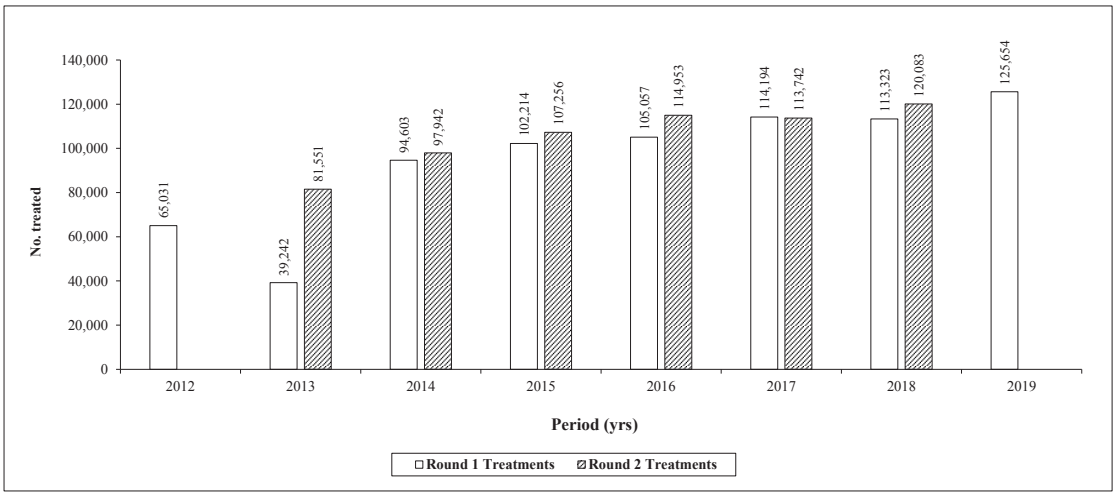
CDTI Implementation Structure



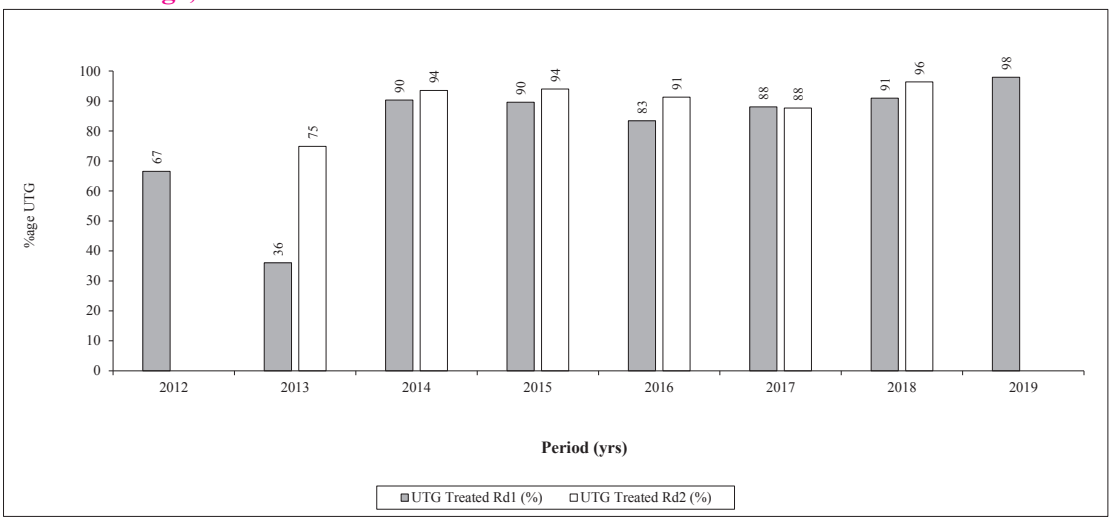
CDTI Training in Lamwo District since 2011 To date



Number of Treatments in Lamwo District from 2012 To Date

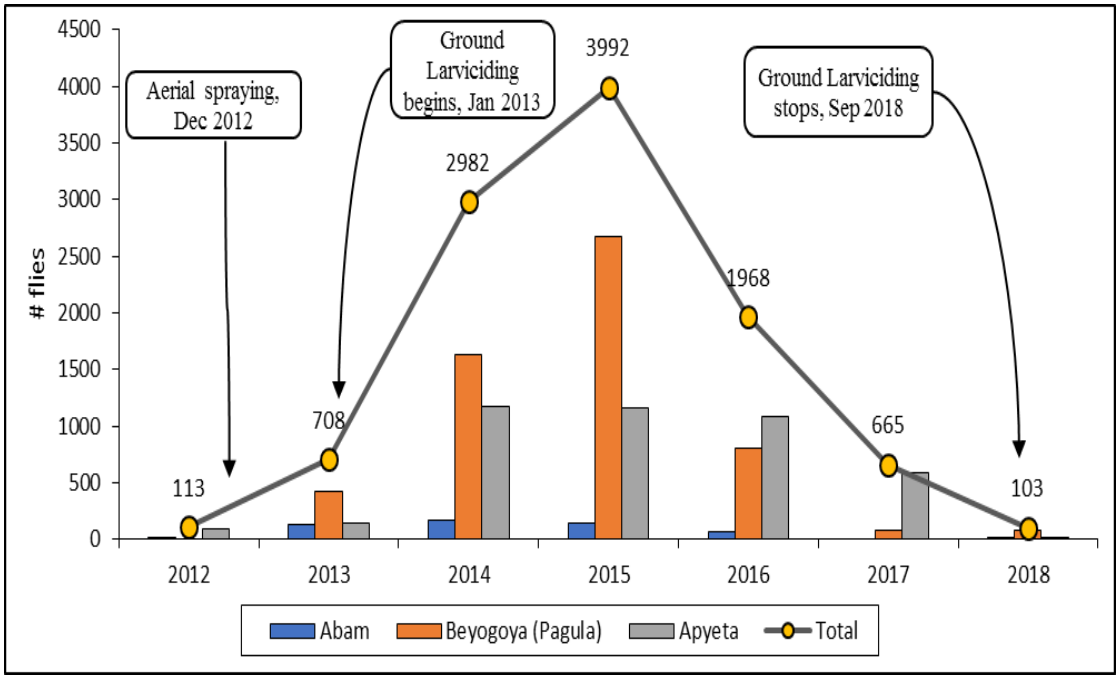


UTG Coverage, Lamwo District 2012 To Date



NB: Lamwo District started treatment in 2012, and has had 3 consecutive rounds of treatment (>90%) since 2018 to date.

Entomology - Vector Control in Lamwo District



- Vector control using aerial spraying was done in December 2012 in River Aswa.
- Three catching sites were established to monitor fly population.

Impact Assessments: OV16 ELISA, 2018 in Sentinel Sites

Sub-county	Parish	Village	#Children screened	#positive (%)	#Adults screened	#positive (%)
Palabek gem	Cubu	Abam	68	0(0%)	50	11(22%)
Palabek gem	Cubu	Agwata	48	0(0%)	39	6(15.4%)
Total			116	0(0%)	89	17(19.1%)

Refugee Situation in Lamwo District

- Lamwo hosts refugees from RSS in Palabek Refugee Settlement.
- There are 45,831 refugees and 150, 877 Ugandan nationals in Lamwo District.
- The refugees account for 23% of the district population.
- They are from Magwi County and Eastern Equatoria.
- Magwi County is part of an old onchocerciasis focus known as Imatong.



Results of Skin Snip

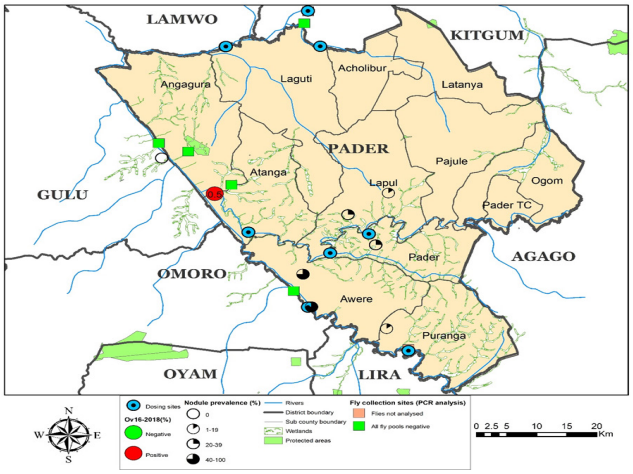
- 733 refugees were skin sniped in Palabek Refugee Settlement and they all tested negative for onchocerciasis.

PADER DISTRICT

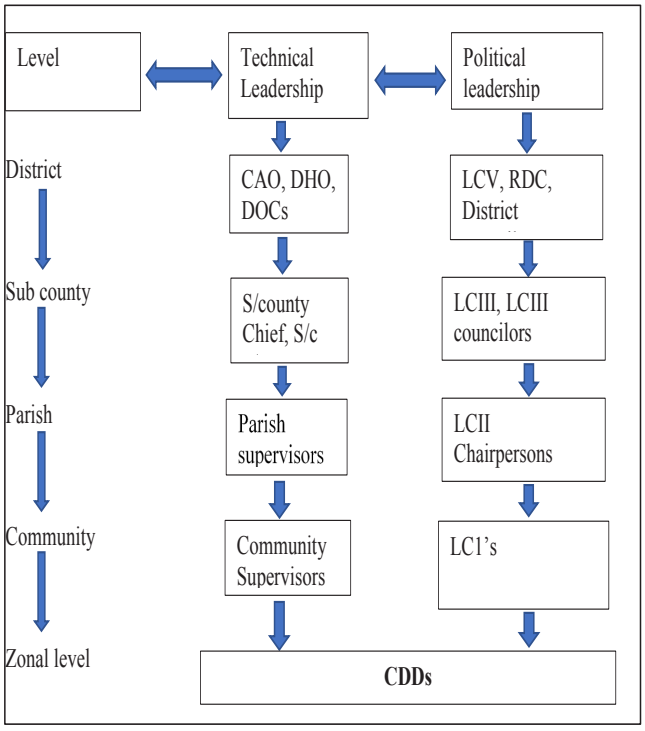
Introduction

- The District was carved out of Kitgum District in 2001.
- Bordered by Lamwo District to the North West, Kitgum District to the North East, Agago District to the East, Otuke District to the South East, Lira District to the South, Oyam District to the South West and Gulu District to the West.
- It has 12 Sub-counties endemic for onchocerciasis.
- The main river systems are Aswa and Agago.
- It has a population of 200,351.

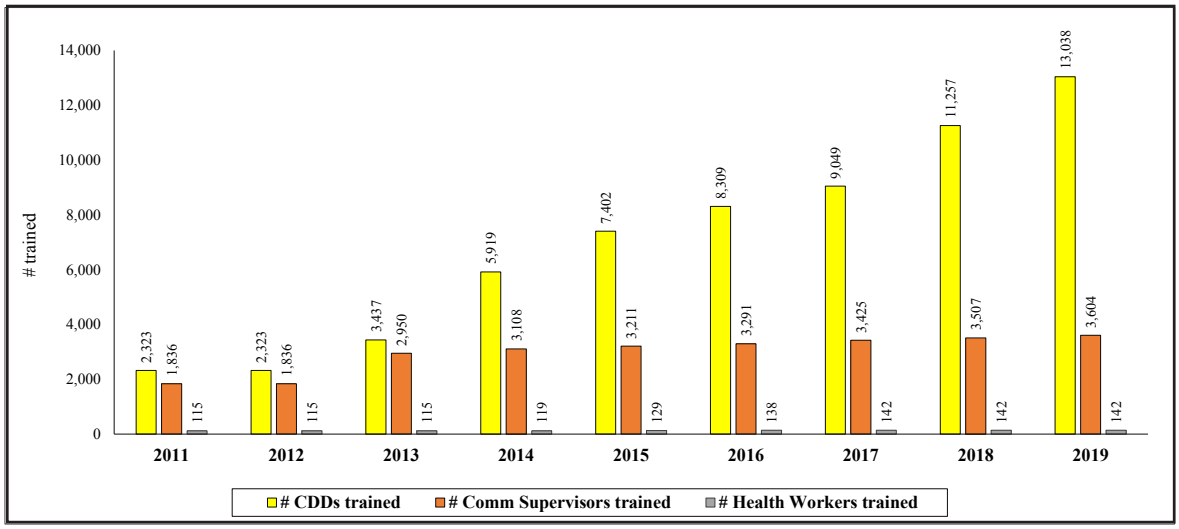
Map of Pader District



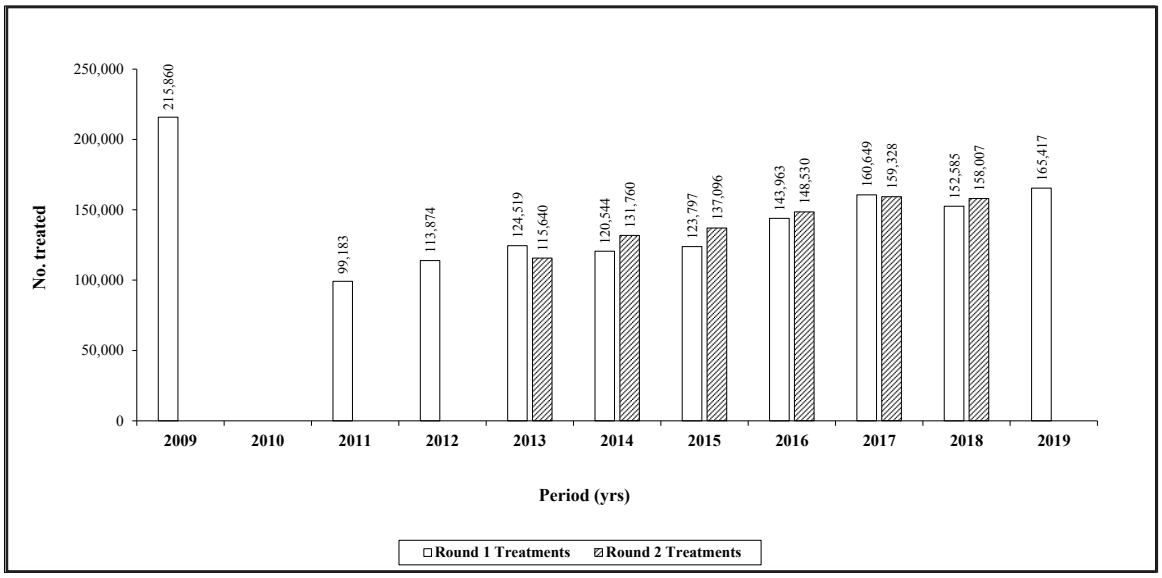
CDTI Implementation Structure



CDTI Training in Pader District since 2011 To Date

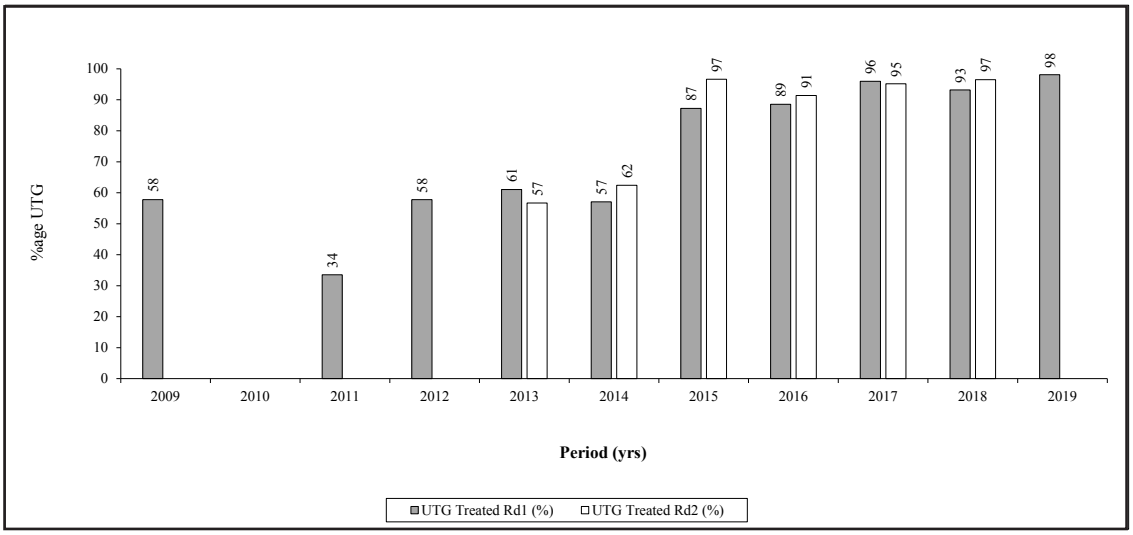


Number of Treatments in Pader District from 2009 To Date



NB: Treatment did not take place in 2010 because CDTI structures were not stable in the district

UTG Coverage for Pader District from 2009 To Date



NB: The district has had 6 consecutive rounds of treatment (>90%) since 2015 to date.

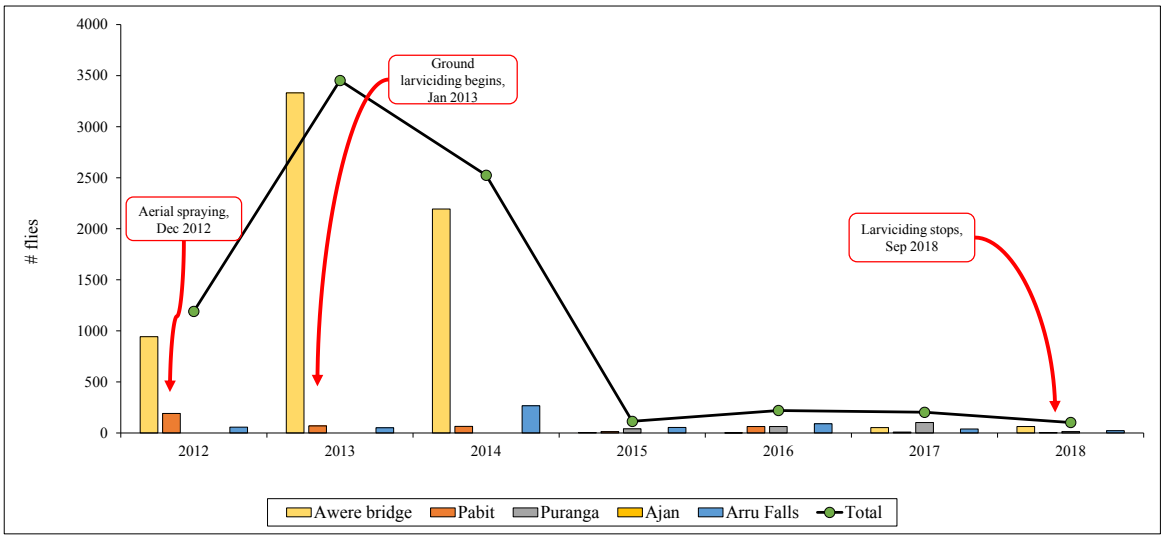
Baseline Nodule Prevalence, 2009

District	Community Name	Total Number Assessed	Total Analyzed	Total Positive for Nodules	Percent Positive for Nodules
Pader	Pece	47	47	0	0
Pader	Kabala	50	50	0	0
Pader	Obolokome	50	50	0	0
Pader	Ojuru	50	50	13	26
Pader	Bar Odilo	50	50	4	8
Pader	Kalangore	50	50	15	30
Pader	Adongkena	50	50	4	8
Pader	Angagura	50	50	23	46
Pader	Lajeng	50	50	39	78
Pader	Wang Opok	37	37	2	5
Pader	Porogali	50	50	2	4
Pader	Lamac South	50	50	24	48
Pader	Latek West	50	50	27	54
Sub Total		**634**	**634**	**153**	**24.1**

Microfilaria Prevalence, 2012

Community	Total Number Assessed	Total Analyzed	Total Positive	Percent Positive
Ojuru	50	50	31	62.0
Ongany	50	50	20	40.0
Angagura	50	50	29	58.0
Lamac South	50	50	45	90.0
	200	**200**	**125**	**62.5**

Entomology - Vector Control



Impact Assessment - Ov16 ELISA Results, 2018 in Sentinel Sites Pader District

Sub County	Parish	Village	#Children screened	#positive (%)	#Adults screened	#positive (%)
Angagura	Pucota	Lapaya	94	1(1.1%)	51	9(17.6%)
Angagura	Pucota	Abilnino	98	0(0%)	51	4(7.8%)
			192	**1(0.5%)**	**102**	**13(12.7%)**

NB: Only 1(0.5%) of the 192 children that were screened for Ov16 in 2018 was found positive. Among the adults screened, 12.7% (ranging from 7.8 – 17.6) were found positive.

Impact Assessment: Simulium Fly PCR Results from Sentinel Sites

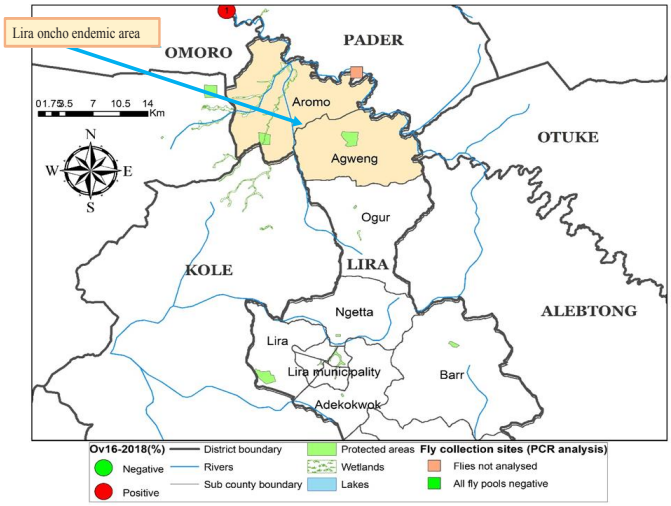
Year	Site	River / Stream	No. of flies collected	No. of flies analyzed	Pool size	No. of pools	No. pools positive
NA	Aruu	Aswa R		245	200 & 45	2	0
NA	Awere	Aswa R		187	187	1	0
NA	Pabit	Abuku S		57	57	1	0
2014	Awere	Aswa R	2194	200	200	1	0
TOTAL			**2194**	**689**		**05**	**0**

LIRA DISTRICT

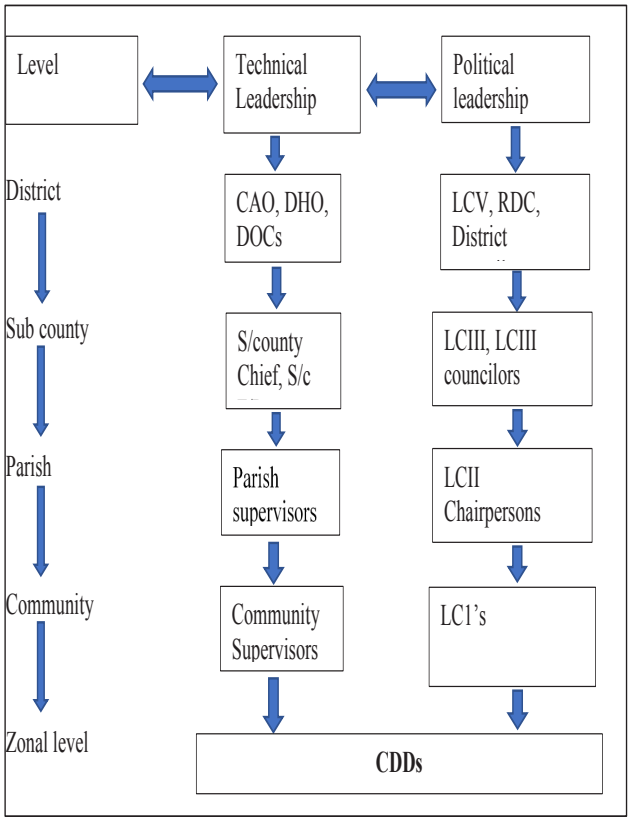
Introduction

- Lira District is situated in Lango sub-region.
- It has 10 sub-counties out of which only two are onchocerciasis endemic with a total population of about 77,562 persons.
- Bi-annual treatment with Ivermectin started in 2014.
- The main river system in Lira District is River Aswa which is located in the North Western part of the district.
- Vector monitoring has been conducted at Puranga bridge which borders Lira and Pader districts.

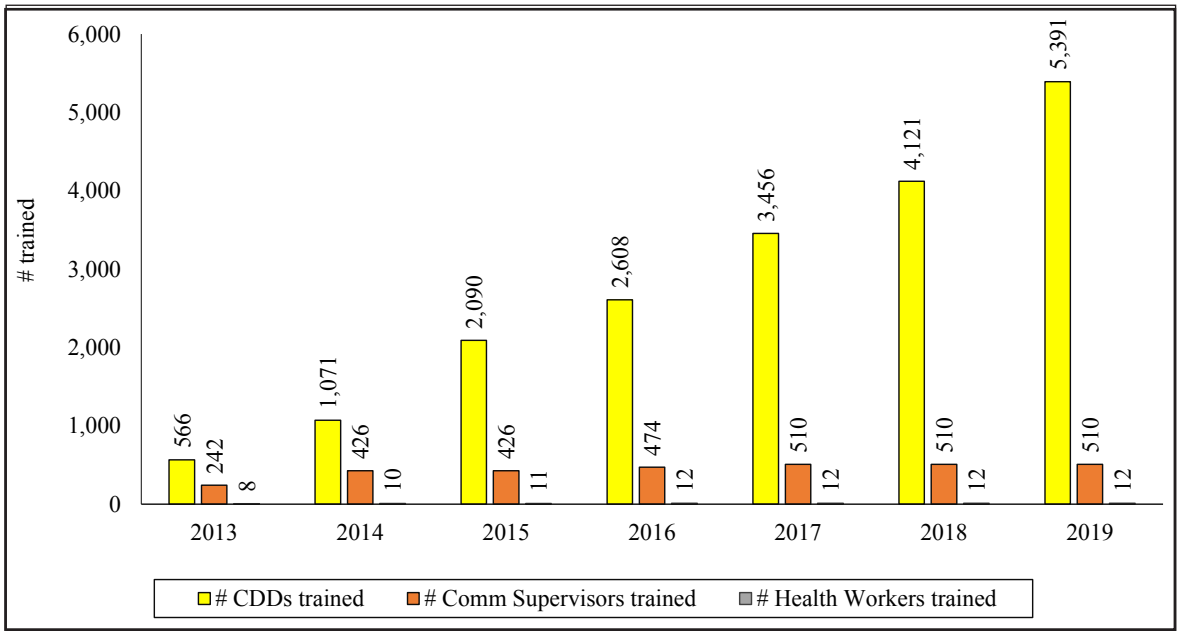
Map of Lira District Onchocerciasis Endemic Area



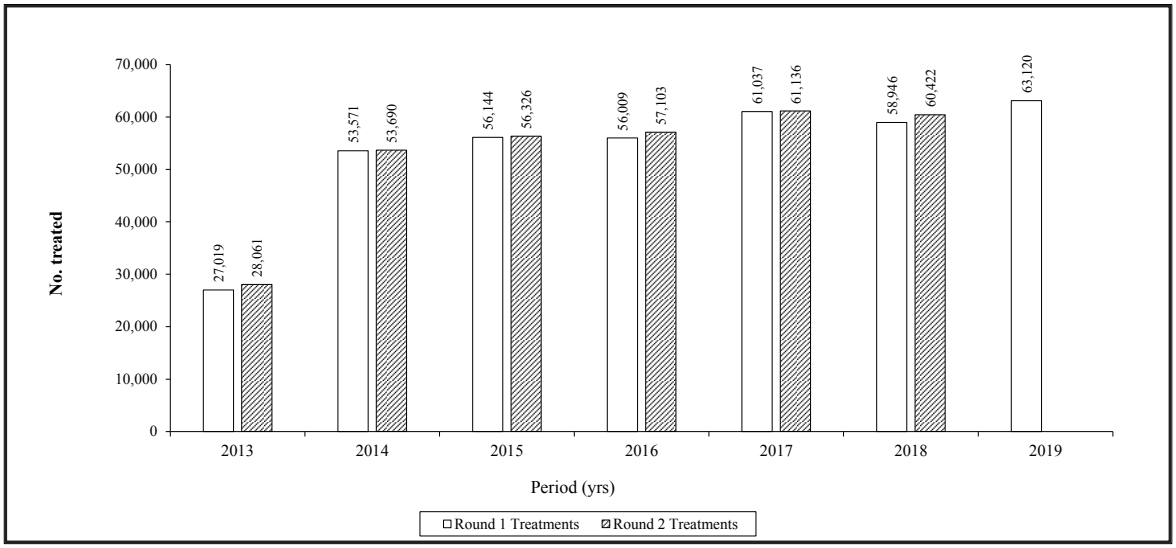
CDTI Implementation Structure



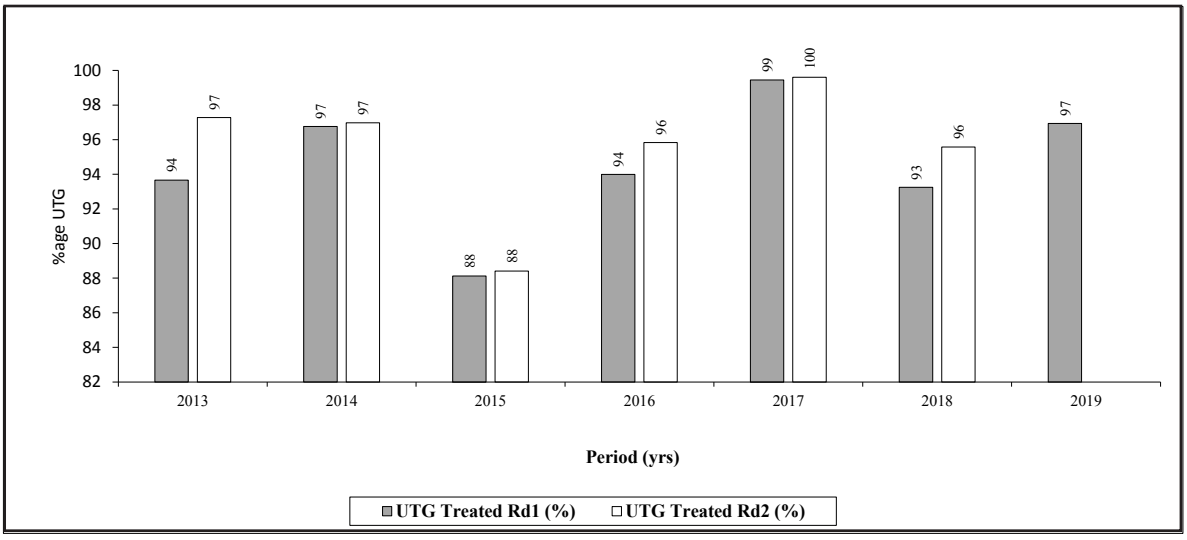
CDTI Training in Lira District since 2013 To Date



Number of Treatments in Lira District from 2013 To Date



UTG Coverage for Lira District from 2013 To Date



NB:The district has had 7 consecutive rounds of treatment (>90%) since 2016 to date

Baseline Data for Skin Snips Obtained in 2012

Year	District	Sub-county	Parish	Communities	No. Examined	No. Positive with mf	%age mf	No. Nodules	%age Nodules
2012	Lira	Aromo	Apuce	Gulwoo	40	3	7.5	5	12.5

Conclusion

- Ov16 results from children 5-9 years in sentinel sites of Kitgum and Lamwo districts were all negative.
- However, the Ov16 results from children in Gulu, Omoro and Pader districts were positive, but the flies in the same sentinel communities were negative.
- All adults screened by Ov16 ELISA from Gulu, Kitgum, Lamwo and Pader districts were positive.
- Beyond the sentinel sites, there are backlogs of DBS and flies to be analyzed for all the districts.
- Vector control contributed to reduction in fly population; however following the halting of larviciding, an increase in fly population has been observed.
- No infection with *O. volvulus* was detected among South Sudanese refugees screened in Palabek Refugee Camp in Lamwo District.

Challenges

- Although results from screening of refugees did not indicate any infection with *O. volvulus*, the continuous refugee influx from endemic communities of RSS beyond Magwi may import the parasite into Lamwo, thus jeopardizing the elimination process.

Way Forward

- Analyze all the DBS and flies pending in the laboratory.
- Continue with semi-annual mass treatment with ivermectin.
- Strengthen cross-border surveillance activities between RSS and Uganda.

Acknowledgements

Ministry of Health, The Carter Center, Sightsavers, RTI/Envision, APOC/WHO, BSF, District Local Governments of Gulu, Kitgum, Lamwo, Pader and Lira, District coordinators, supervisors & CDDs and Endemic communities.

♦ David Oguttu co-worked with Christopher Katongole.

The formation of the elimination committees in the Republic of South Sudan and the Democratic Republic of Congo has been applauded as a good direction for tackling this disease. The Republic of South Sudan is hereby commended for having an expert committee critically reviewing both Onchocerciasis and Lymphatic Filariasis. lt is called South Sudan Onchocerciasis and Lymphatic Filariasis Expert Advisory Committee (SSOLFEAC).

- Gabriel Matwale



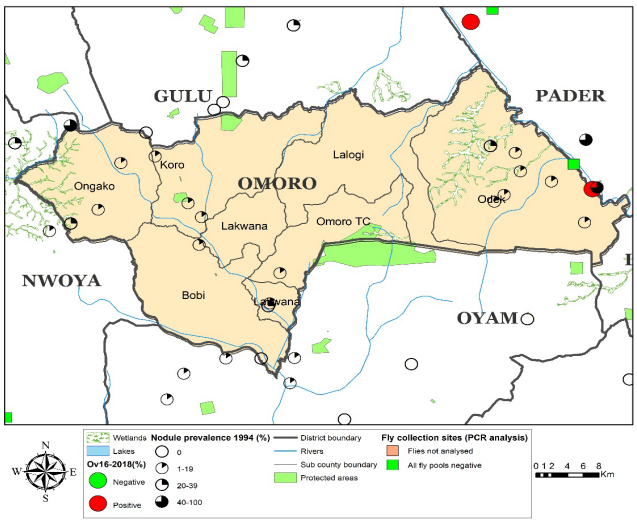
Galex Ochieng et al♦

OMORO DISTRICT

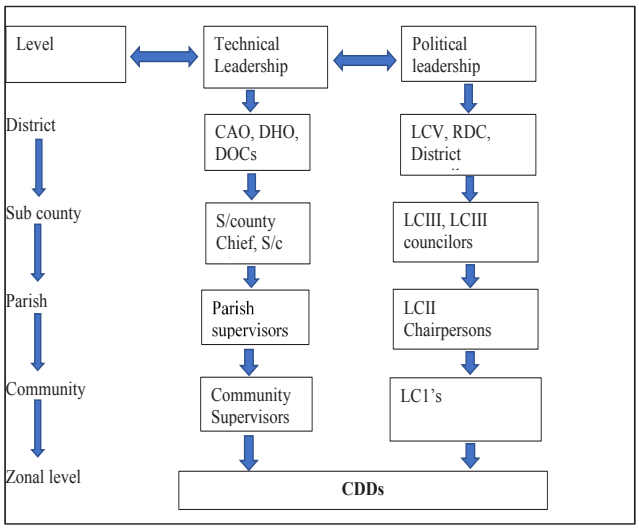
Introduction

- Omoro District was sliced out of Gulu District in July 2016.
- The District has 7 subcounties (Kolo, Larogi, Odek, Bobi, Ongako, Omoro Town council and Lakwana, which contain 33 parishes and 149 communities); and they are all Onchocerciasis endemic, with a total population of about 176,663 at risk of catching the disease.
- Suffered civil unrest for over 20 years but currently is peaceful.
- This district had cases of nodding syndrome.

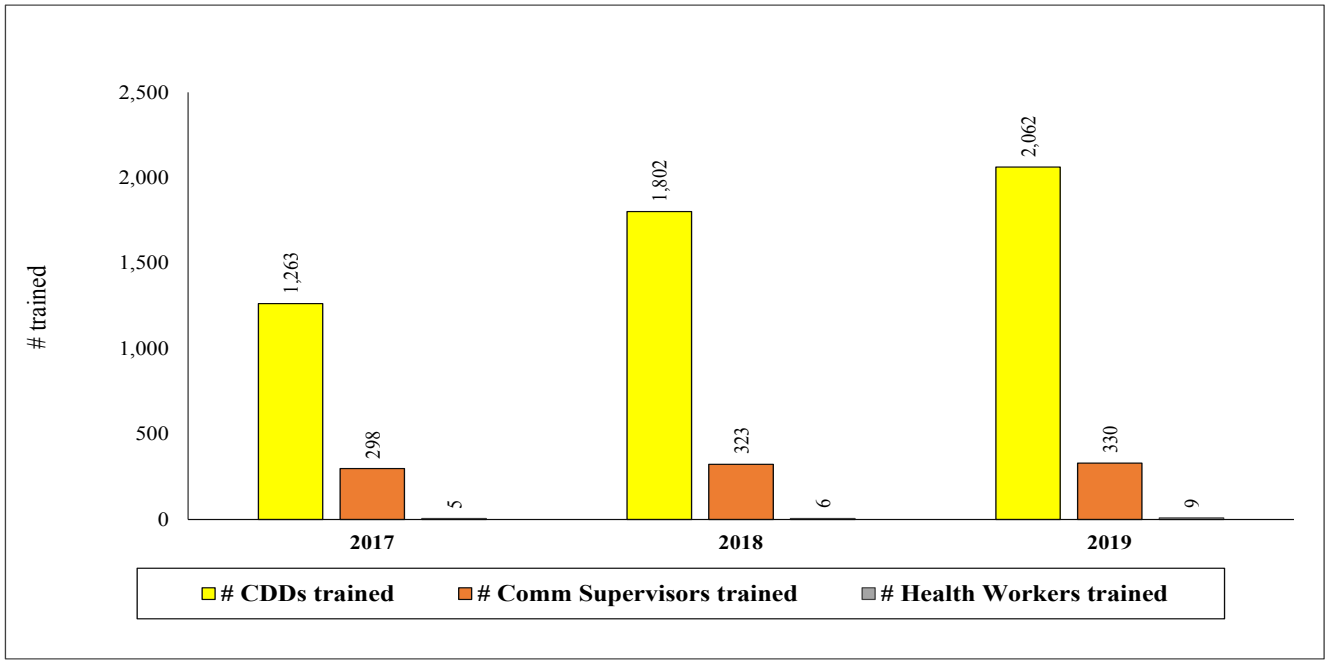
Omoro District Area Under Ivermectin Treatment



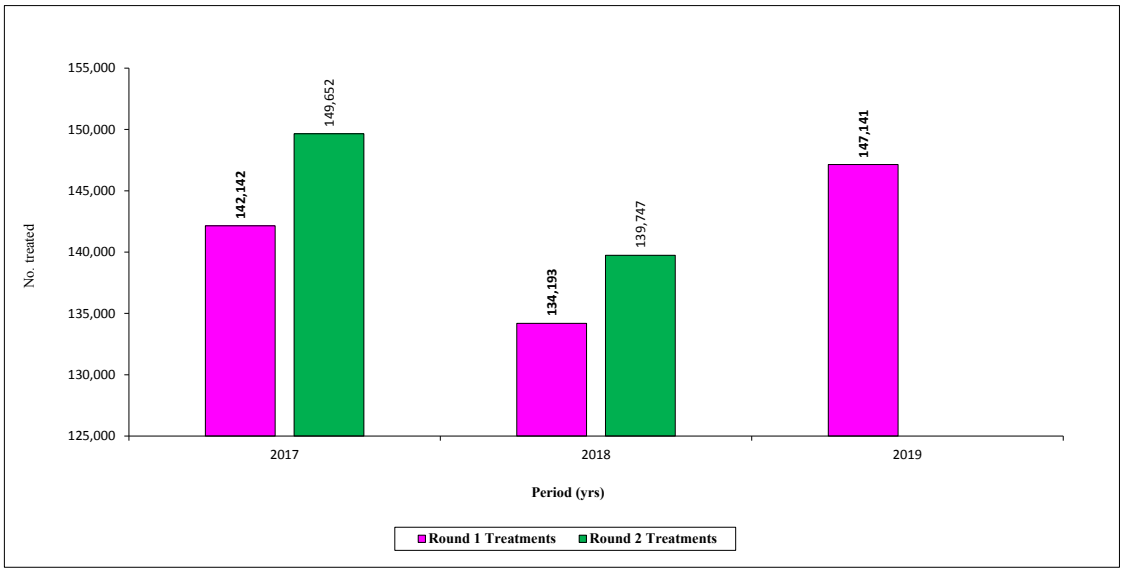
CDTI Implementation Structure



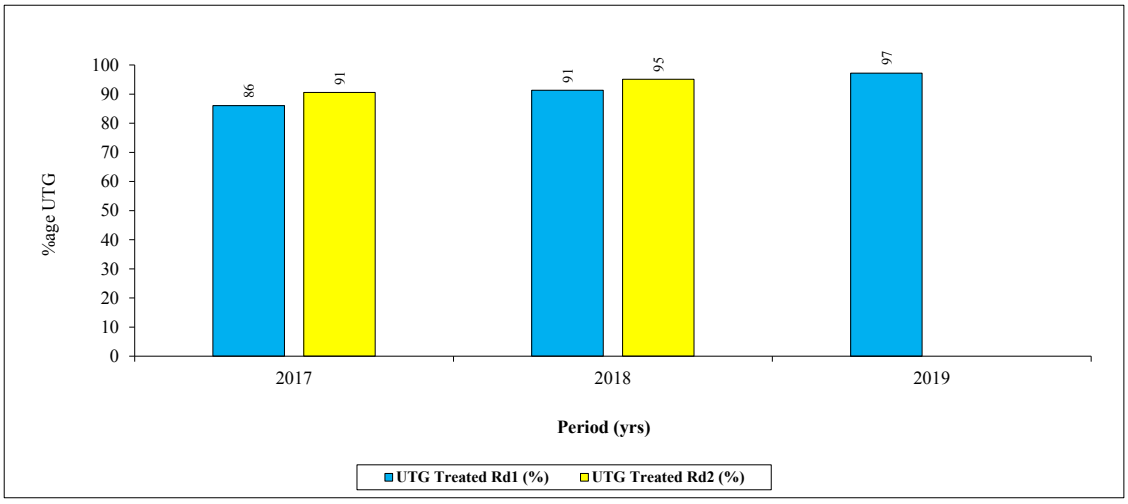
CDTI Training in Omoro District, 2017 To Date



CDTI Training in Omoro District, 2017 To Date



UTG Coverage in Omoro District from 2017 To Date



NB: The district has had 4 consecutive rounds of effective treatment from 2018 to date

Skin Snipping Results from Omoro District, 2012

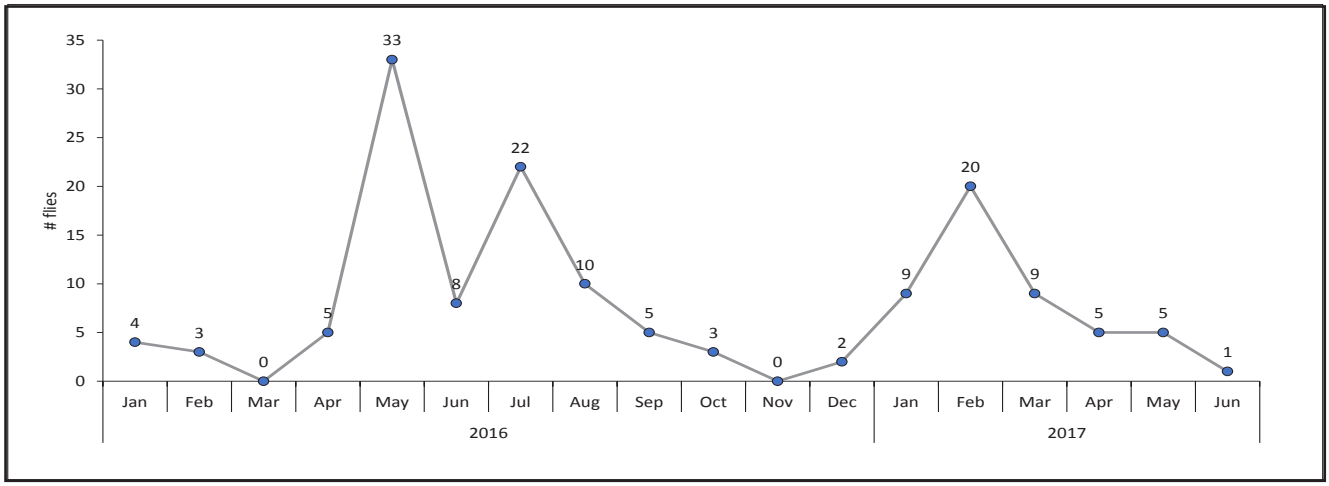
Year	District	Sub-county	Parish	Communities	No. Examined	No. Postive with mf	%age mf	No. Nodules	%age Nodules
2012	Omoro	Odek	Palaro	Akoyo	94	45	47.87	2	2.13

NB: Of the 94 people examined, 45 (47.87%) were positive with O. volvulus, while 2 (2.13%) were nodule carriers

Vector Control

- The district has one major river system (R. Aswa) at the Eastern border with Pader, known to breed the Onchocerciasis vector (*S. damnosum*).
- Vector control through aerial spraying was done in 2012, and later switched to ground larviciding due to high costs involved in the former strategy.
- The district has one fly catching site (Lapuda) at Awere bridge, which is also a sentinel site for entomological and epidemiological surveillance.
- 35 flies analyzed with PCR were all negative.

Fly Biting Pattern along River Aswa



Note: There is only one catching site in the district on River Aswa close to where dosing was being done in Pader district.

Ov16 Results, 2018

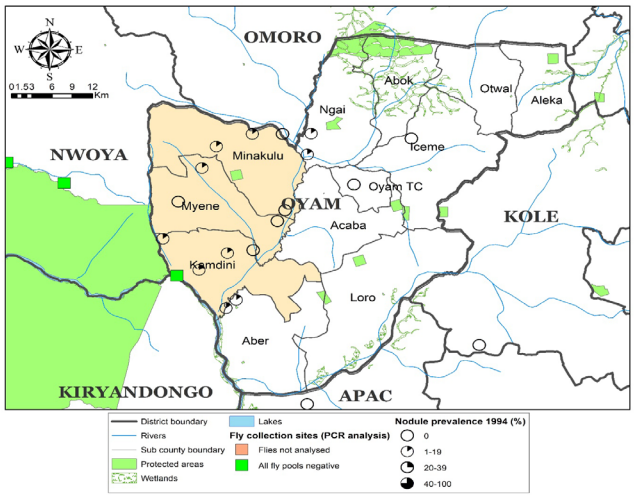
District	Sub-County	Parish	Village	#Children screened	#positive (%)	#Adults screened	#positive (%)
Omoro	Odek	Lamola	Akoyo	103	2(1.9%)	50	16(32%)
Omoro	Odek	Lamola	Awaliwanglobo	96	0(0%)	36	0(0%)
Total				**199**	**2(1.0%)**	**86**	**16(18.6%)**

OYAM DISTRICT

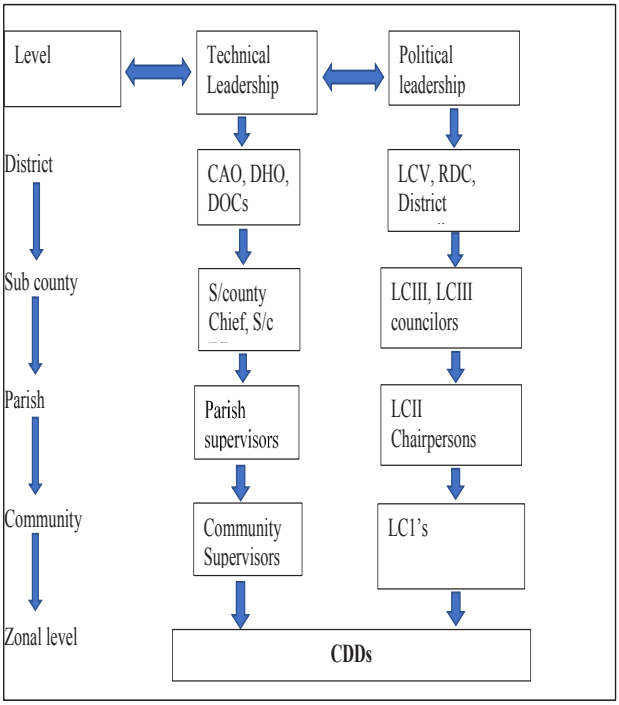
Introduction

- Oyam District was cut out of Apac in 2006.
- The district suffered the Kony insurgency which lasted for two decades.
- The district comprises 12 sub-counties out of which only 3 (Kamdini, Minakulu and Myene, with a total number of 6 parishes and 35 communities) are oncho endemic, and with a total population of about 25,294 persons at risk of being infected by the disease.

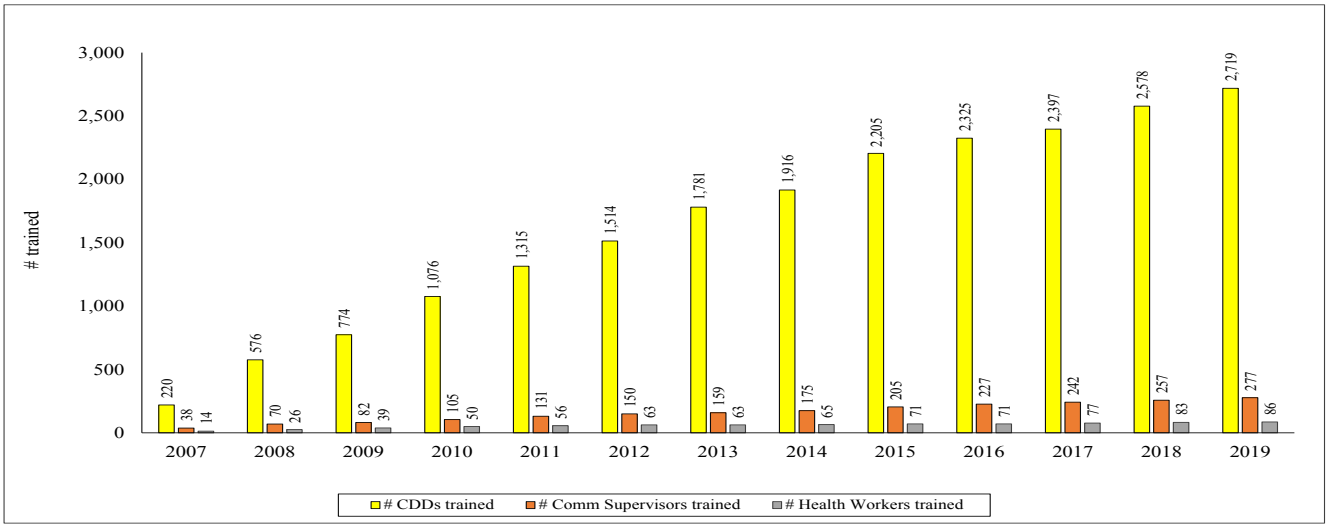
Oyam District area Under Ivermectin Treatment



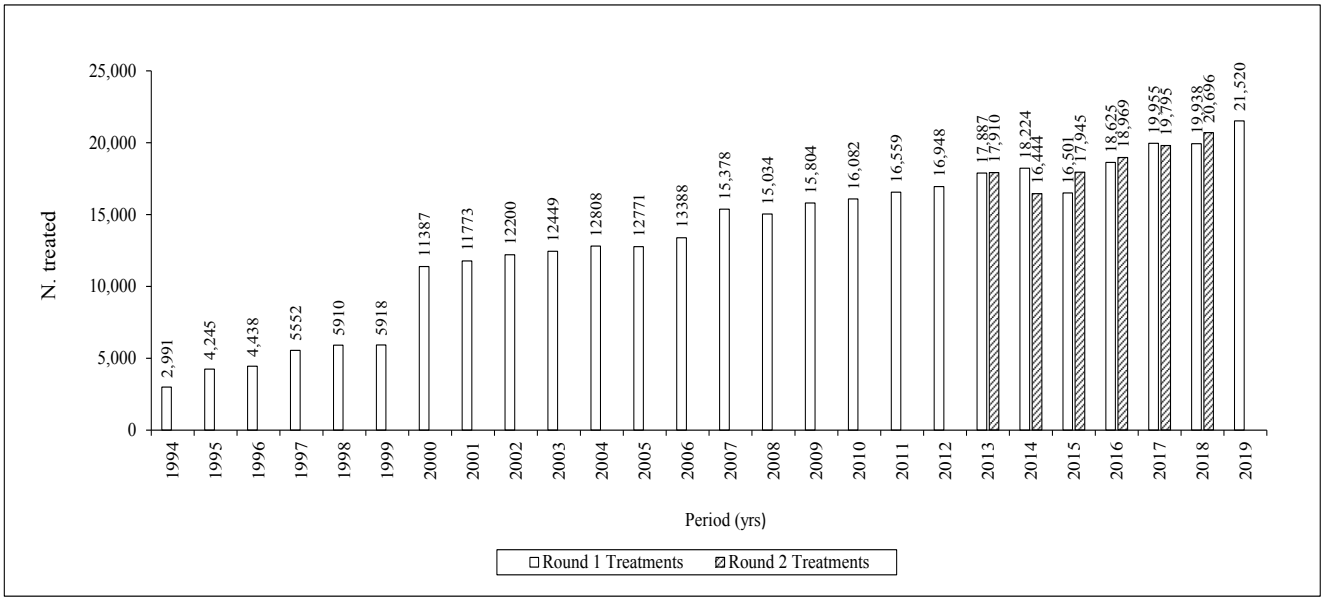
CDTI Implementation Structure



CDTI Training in Oyam District from 2007 to date

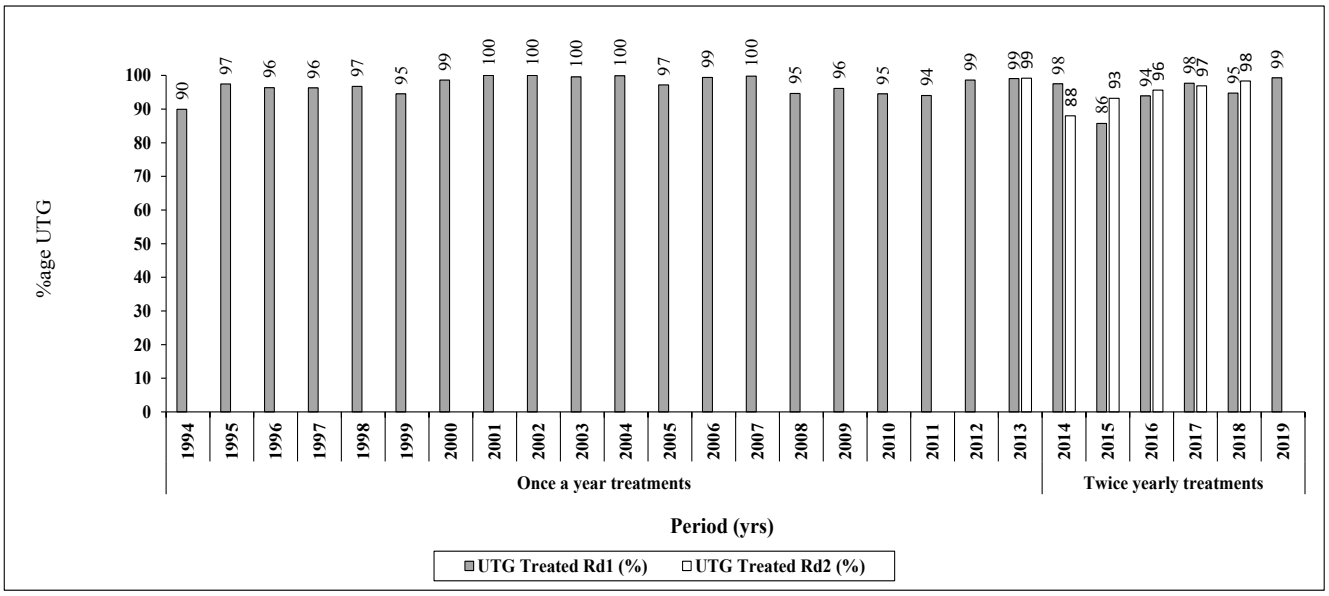


Number of Treatments for Oyam District from 1994 To Date



NB: Annual treatment was from 1994 to 2012, Bi-annual treatment started in 2013 to date

UTG Coverage for Oyam District from 1994 To Date



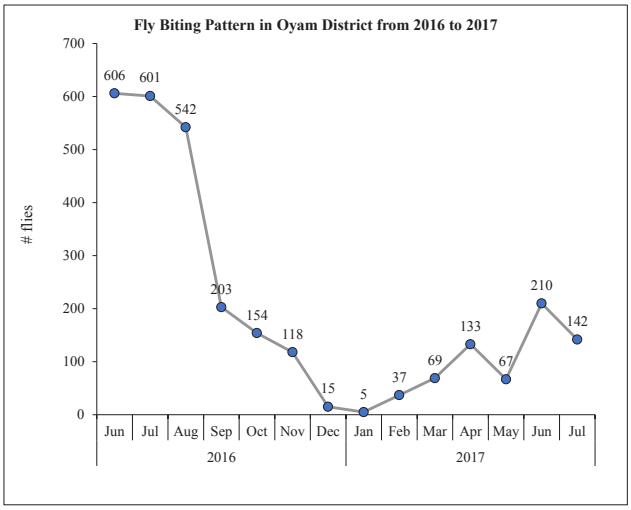
8 consecutive effective treatment rounds (>90%) have been achieved.

Results of Skin Snips from Oyam District in 2012

Sub-county	Parish	Communities	No. Examined	No. Postive with mf	%age mf	No. Nodules	%age Nodules
Minakulu	Kuluabura	Kongo	28	0	0	0	0

Vector Control

- The district has two major rivers namely, Tochi and the Nile and the latter supports the breeding of *S. damnosum*.
- In the 1950s, *Simulium* vector control was done on a section of River Nile using DDT and the intervention was successful (Brown, 1962).
- Since then no other control measure has been applied on the Nile thus, re-infestation has not occurred there over time.
- In 2016, one fly monitoring site was established at Akuridia near Karuma falls.

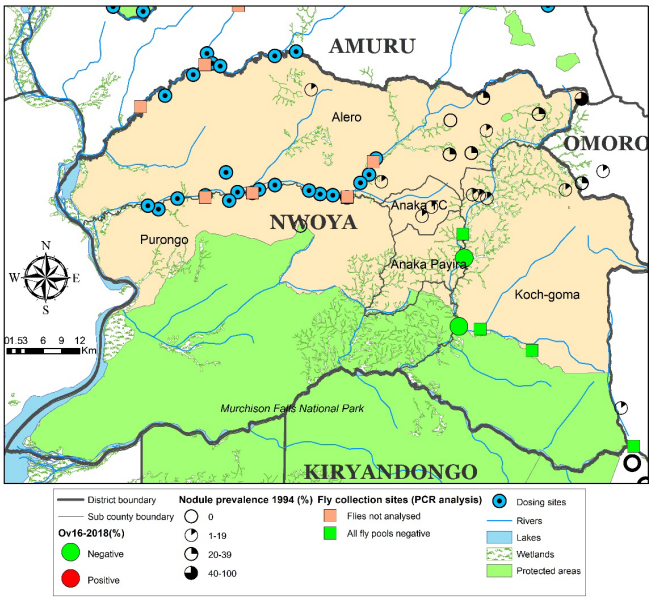


NWOYA DISTRICT

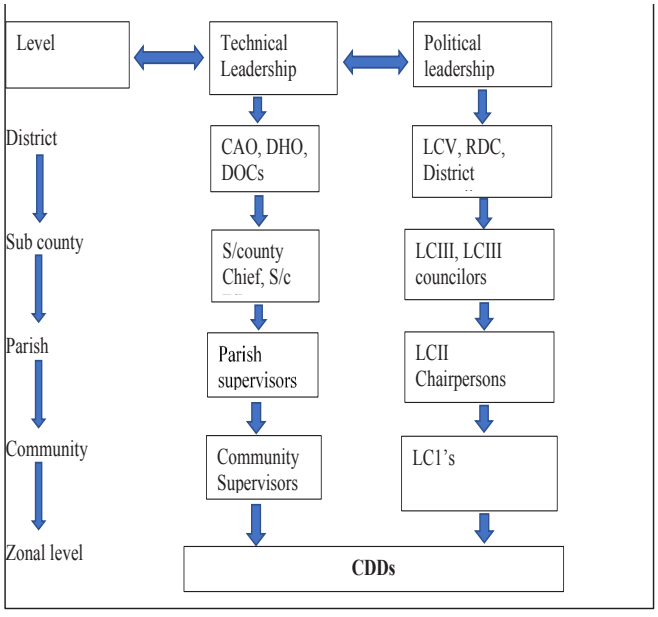
Introduction

- Nwoya District was cut off from Amuru District in 2010.
- The district is made up of 8 sub-counties (Alero, Kochi-Goma, Purongo, Lungulu, Kochi-lee, Got-Apwoyo, Anaka and Anaka town council – which together make up 32 parishes and 54 communities) that are all endemic for Onchocerciasis, with a total population of about 162,021 at risk of being infected by the disease.
- Murchison Falls National Park covers half of the district to the South.
- The district suffered The Lord's Resistance Army civil unrest for over two decades.
- There are no refugees in the area.

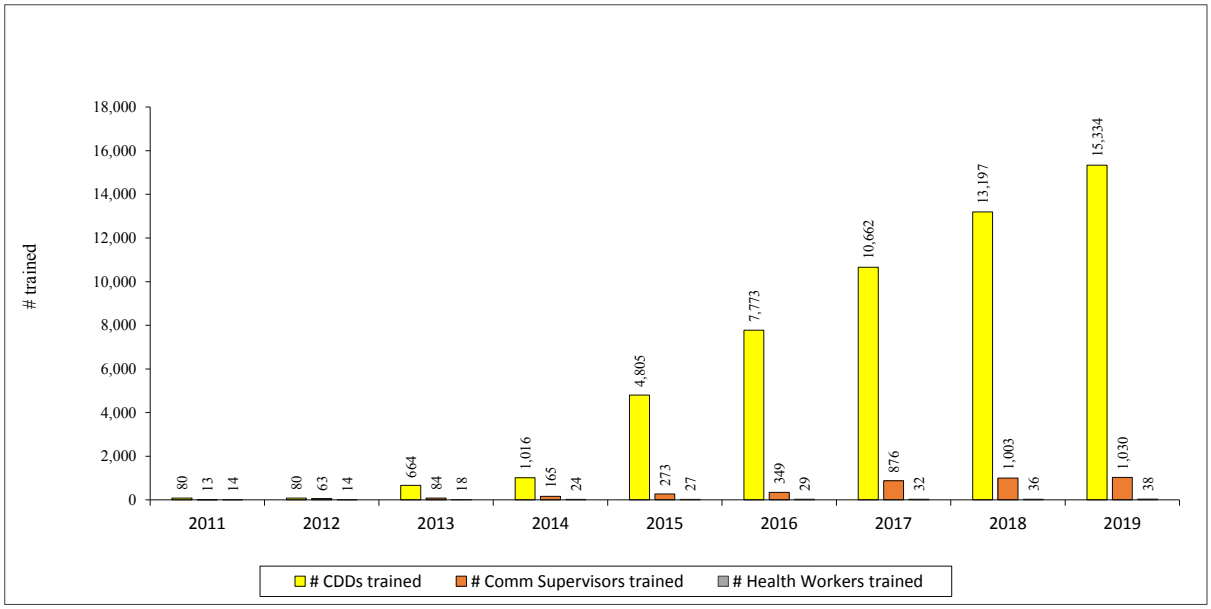
Nwoya District showing Areas under Ivermectin Treatment and Larviciding



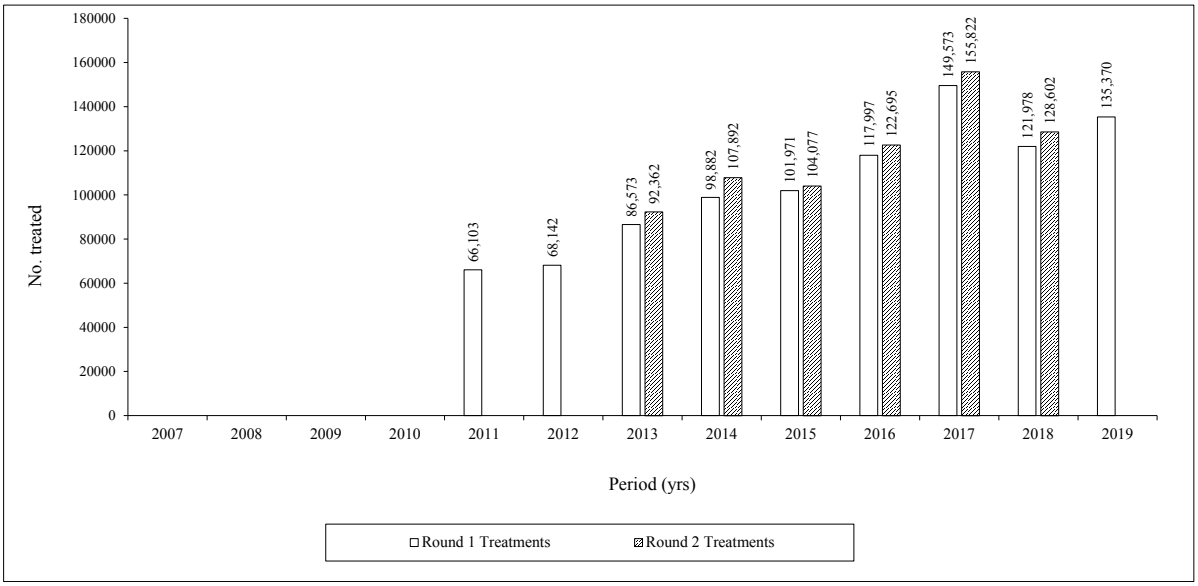
CDTI Implementation Structure



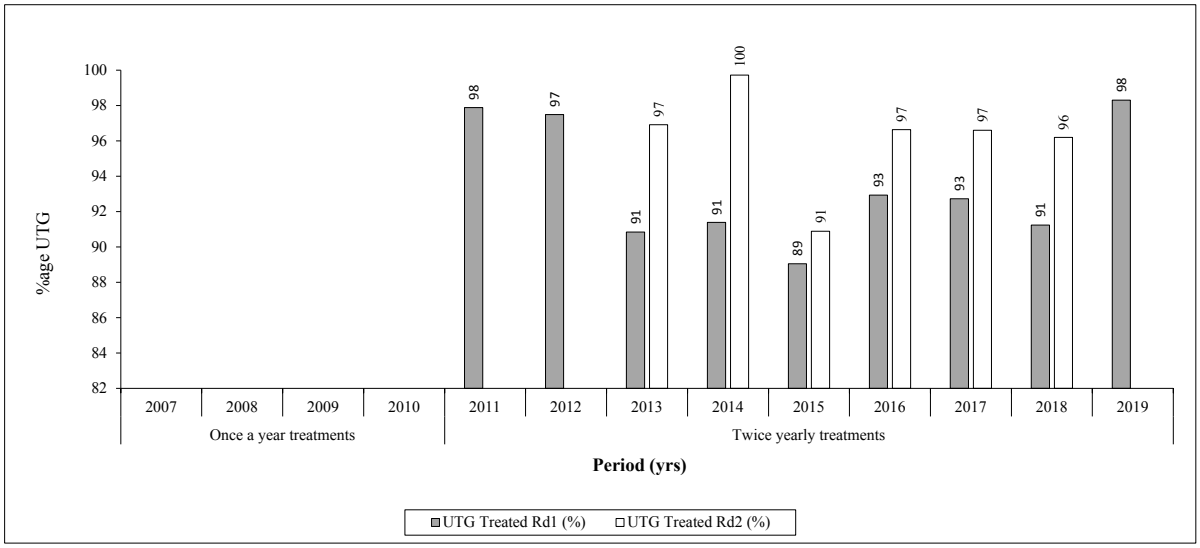
CDTI Trainings in Nwoya District from 2011 To Date



Number of Treatments Rounds in Nwoya District from 2011 To Date



Treatment of UTG coverage for Nwoya District from 2011 To Date

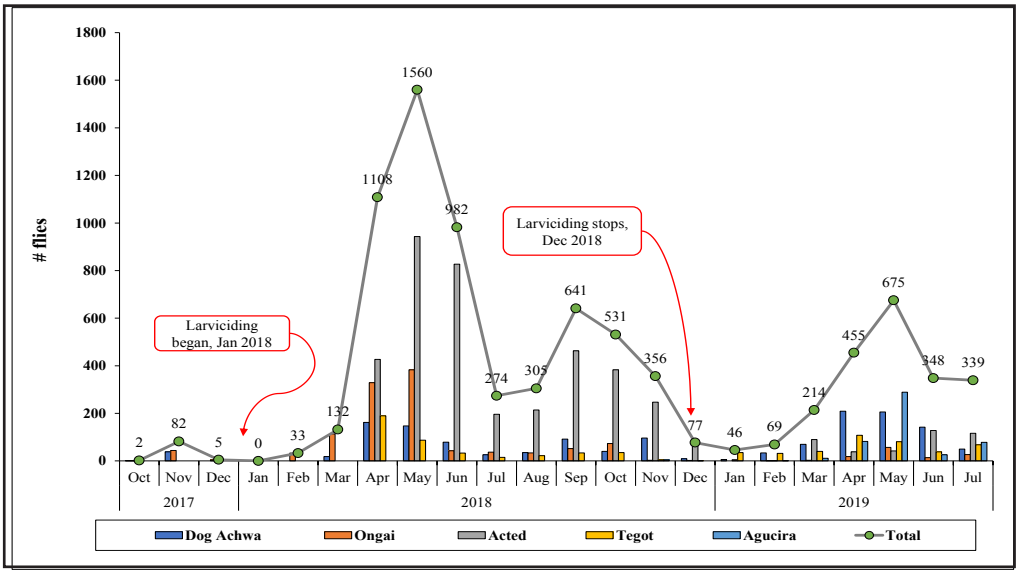


NB: The district has had 8 consecutive rounds of effective treatment since 2015 to date

Skin Snip Results from Nwoya District in 2012

Sub-county	Parish	Communities	No. Examined	No. Positive with mf	%age mf	No. Nodules	%age Nodules
Alero	Bwobonam	Bwobonam A	78	1	1.28	0	0.00
Kochgoma	Lii	Adibuk	55	0	0	0	0.00
Total			**133**	**1**	**0.8**	**0**	**0**

Trend of *S. damnosum* Flies Caught from Sites along Dosed Rivers in Nwoya District from August 2017 to June 2019



Months	Abate used (ltr)
Jan	4.2
Feb	9.4
Mar	23.9
Apr	40.3
May	33
Jun	21.8
Jul	21.9
Aug	21.3
Sep	23.7
Oct	48.1
Nov	-
Dec	28.9
Total	**276.5**

NB: **Flies drastically reduced during larviciding but were not eliminated**

PCR Results for Nwoya District from 2015 to 2017

Year	Site	River	No. of flies analyzed	Pool size	No. of pools	No. pools positive
2015	Ceke	Adibuk River	2590	200 (12 pools) & 95 (2 pools)	14	0
2015	Ademola	Ayago River	200	200	1	0
2015	Ayago	Ayago River	2800	200	14	0
2015	Nyoya	Site not clear	400	200	2	0
2015	no site	Site not specified	200	200	1	0
Sub Total			**6190**		**32**	**0**
2016	Ceke	Adibuk River	555	200 (2 pools) & 155	3	0
2016	Ademola	Ayago River	1197	200 (5 pools) & 197	6	0
2016	Ayago	Ayago River	1173	200 (5 pools) & 173	6	0
Sub Total			**2925**		**15**	**0**
2017	Ceke	Adibuk River	78	78	1	0
2017	Ademola	Ayago River	187	187	1	0
2017	Ayago	Ayago River	187	187	1	0
Sub Total			**452**		**3**	**0**
Total			**9567**		**100**	**0**

NB: **All the 9567 flies analysed were negative for *Onchocerca volvulus.***

Ov16 ELISA Results in Nwoya District in 2018

Sub-County	Parish	Village	# Children screened	# Positive (%)	# Adults screened	#Positive (%)
Koch goma	Kal B	Gonycogo (Ayago)	46	0(0%)	51	1(2%)
Koch goma	Kal B	Gonycogo (Te-okutu)	72	0(0%)	51	0(0%)
Koch goma	Agonga	Agong B (Jali)	78	0(0%)	51	0(0%)
Koch goma	Agonga	Agong B (Amayokoma)	69	0(0%)	51	0(0%)
Total			**265**	**0(0%)**	**204**	**1(0.5%)**

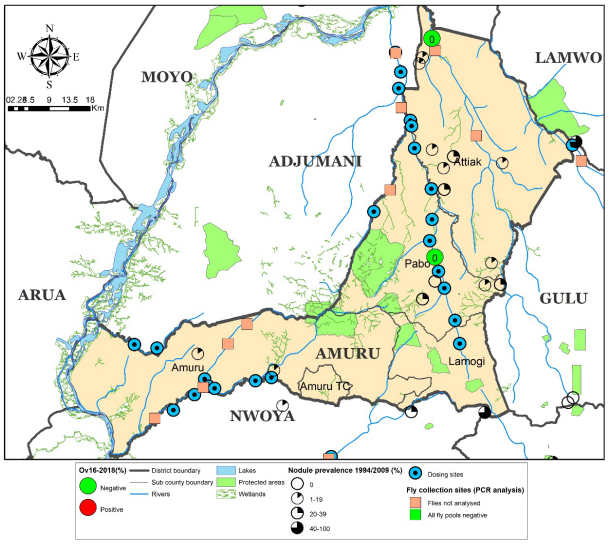
NB: Of all the 265 children screened for Ov16, none of them was found positive. However, out of the 204 adults that were screened for Ov16, 1(0.5%) was found positive which is negligible, thus indicating absence of transmission in Nwoya District.

AMURU DISTRICT

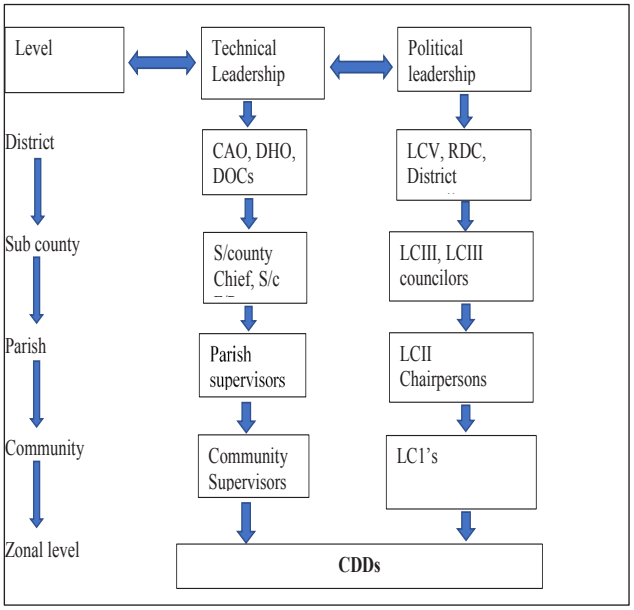
Introduction

- Amuru District was created out of Gulu District in 2006. This was further split in 2010 to form Nwoya District.
- The district was severely affected by the LRA civil war. However, the district is now peaceful, and people are no longer in IDP camps.
- The district has a total of 5 sub-counties (which include Pabo, Lamogi, Amuru, Atiak and Otwe Town council which consist of 33 parishes and 67 communities), all endemic for Onchocerciasis, with a total population of 232,885 at risk of the disease.
- The rivers known to breed Onchocerciasis vectors in the district include Omee, Apaa, Cheri, Lakang and Ayugi. Other rivers still under prospection include Atii, Arii, Ocipi, and Okiki.
- The known Onchocerciasis vector in the district is S. damnosum.

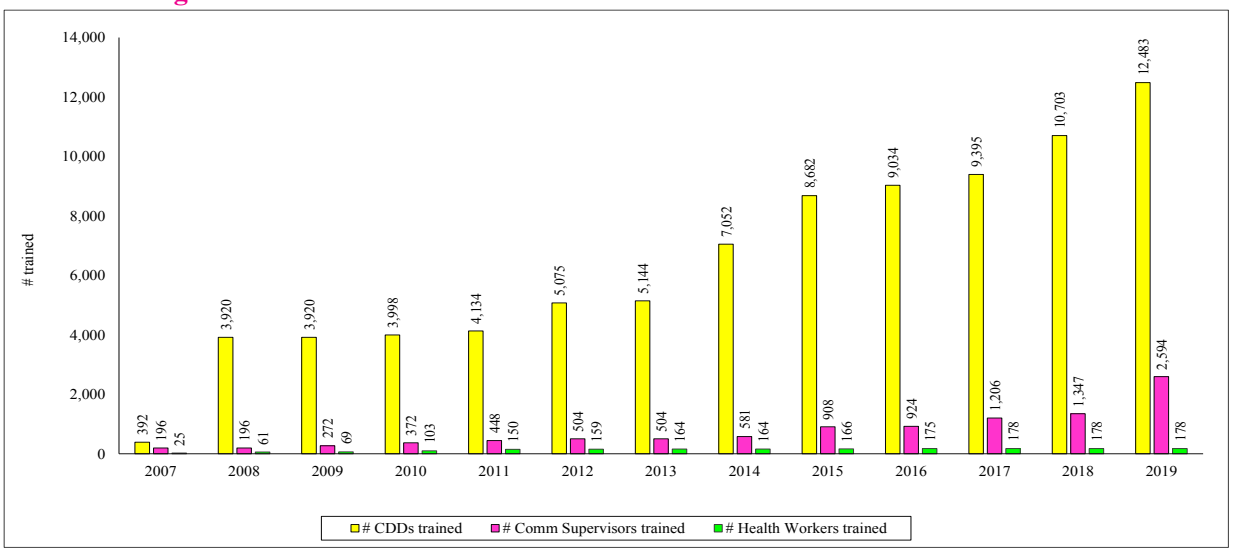
Amuru District - Area Under Ivermectin Treatment and Larviciding



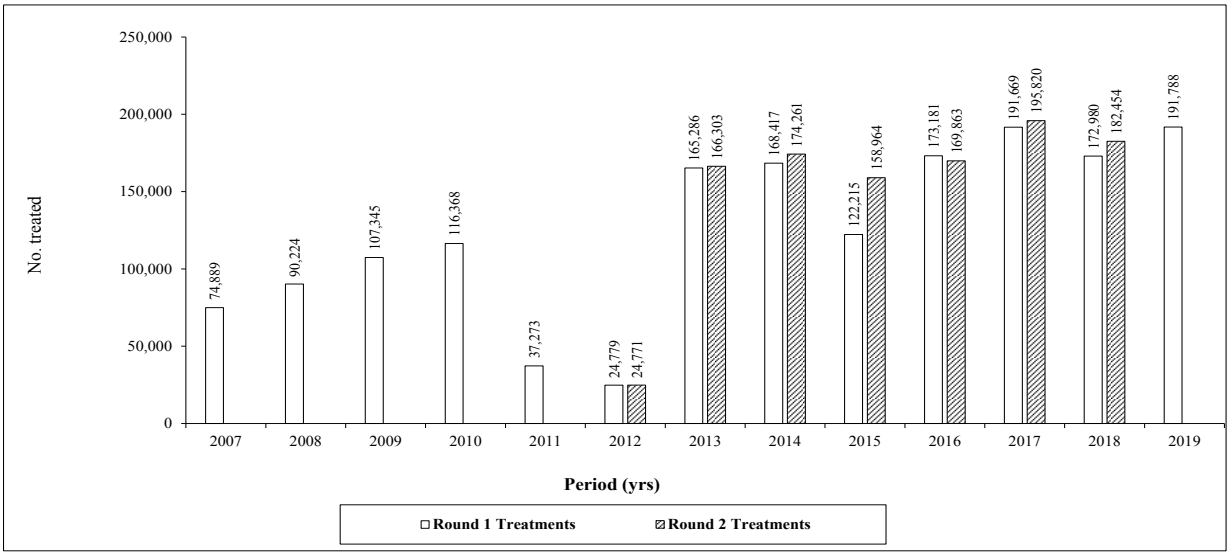
CDTI Implementation Structure



CDTI Training in Amuru District from 2007 To Date

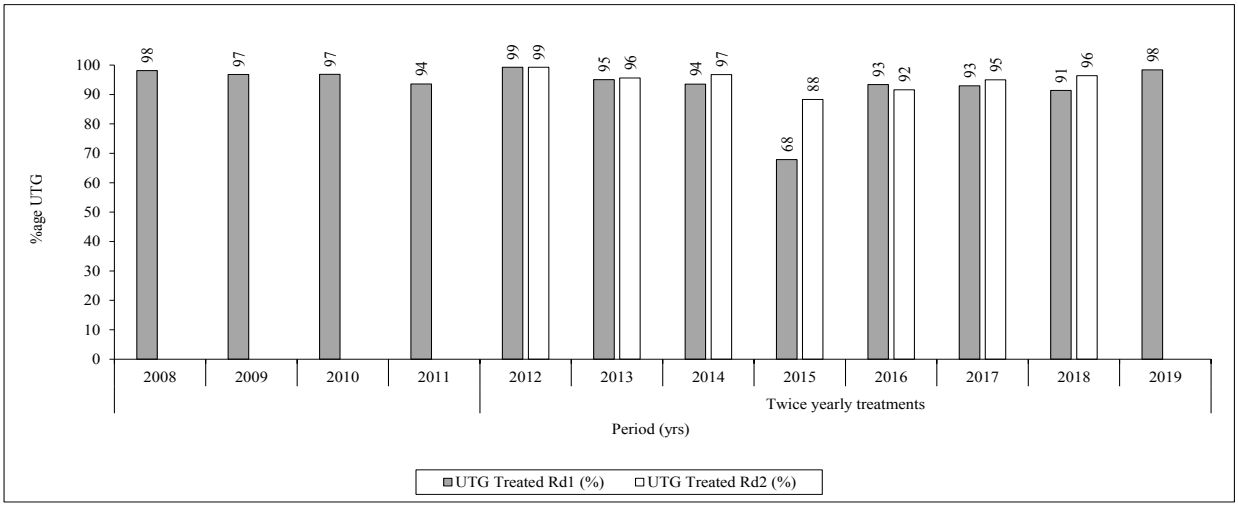


Number of Treatments in Amuru District from 2007 To Date



NB: From 2007 to 2012, the population was not well known as a result of the civil unrest.

UTG Coverage for Amuru District from 2007 To Date



NB: Amuru District started treatment in 2007, and has had 7 consecutive rounds of treatment(>90%) from 2016 to date.

Status of MF Prevalence Rates (Skin Snip Microscopy) - 2012

Sub-county	Parish	Communities	No. Examined	No. Positive with mf	%age mf	No. Nodules	%age Nodules
Atiak	Okidi	Okidi South	58	9	15.52	7	12.07
Pabo	Gaya	Pukwany	85	4	4.71	1	1.18
Total			**143**	**13**	**9.1**	**8**	**5.6**

NB: In 2012, two communities Okidi South and Pukwany were assessed for microfilaria and nodule prevalence in the district and the findings were 9.1% (average) and 5.6% (average) respectively.

Entomology

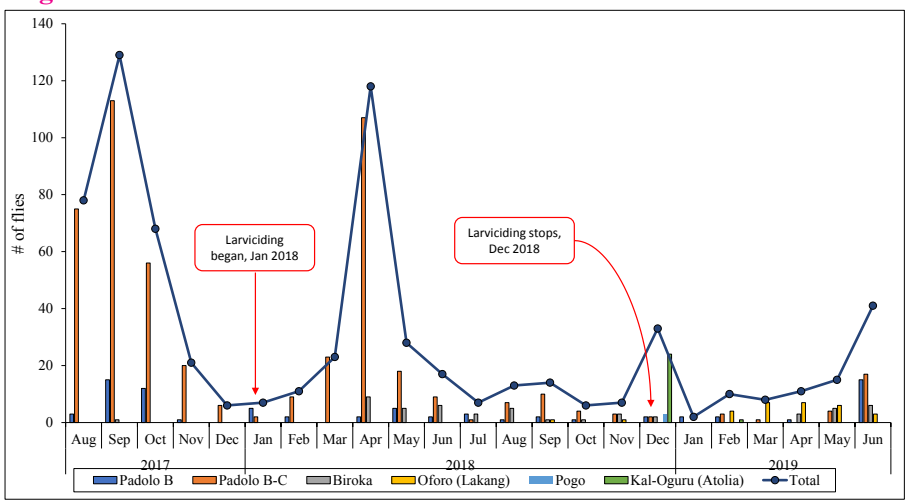


Vector control officers gauging River Omee



Vector control officer dosing River Omee

Trend of *S. Damnosum* Flies Caught from Sites along Dosed Rivers in Amuru District, August 2017 – June 2019



River	No. of Dosing points	Abate used (ltrs)
Omee	7	53.2
Apaa	2	16.1
Lakang	3	12.7
Ayugi	10	56.4
Cheri	5	16.5
TOTAL	**27**	**154.9**

NB: S. damnosum population has been reduced but not eliminated.

Results of Ov16 ELISA from Sentinel Communities (Sept 2018)

Sub-county	Parish	Village	No. of children screened	No. positive (%)	No. of Adults screened	No. positive (%)
Atiaka	Bibia	Elegu West	122	0(0%)	48	0(0%)
Atiaka	Pacilo	Pacilo east	100	0(0%)	50	9(18%)
Pabo	Kal	Oguru	76	0(0%)	45	0(0%)
Pabo	Parabanga	Pericu	147	0(0%)	40	0(0%)
Total			**445**	**0(0%)**	**183**	**9(4.9%)**

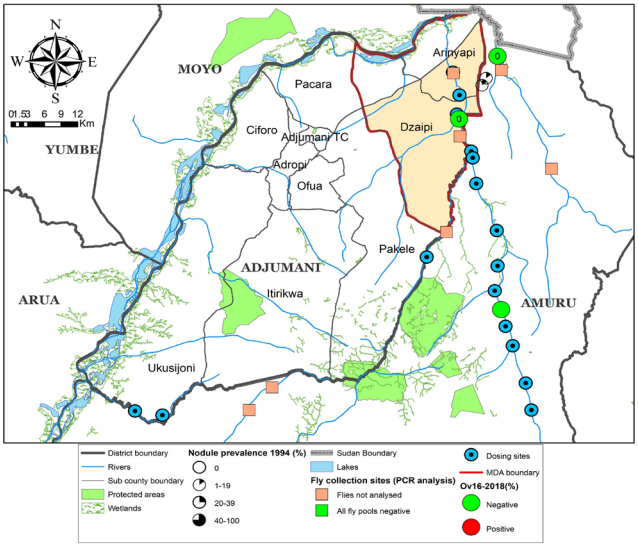
NB: Of all the 445 children screened for Ov16 in 2018, none was positive. However, out of the 183 adults that were screened for Ov16, 9 (4.9%) were found positive.

ADJUMANI DISTRICT

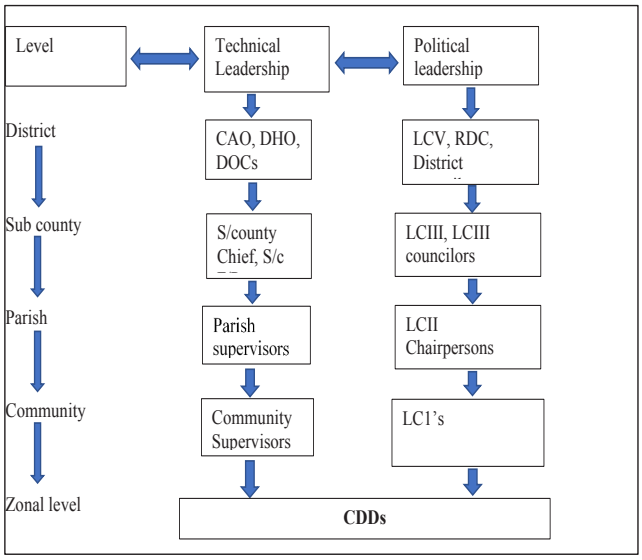
Introduction

- Adjumani district was created out of Moyo District in 1997.
- It has 10 sub-counties of which only two namely Dzaipi and Arinyapi (comprising 10 parishes and 43 communities) are Oncho endemic with a total population of about 28,819 people at risk of getting the disease.
- For over two decades, the district suffered civil unrest, but currently it is peaceful.
- Adjumani hosts over 190,000 refugees from the Republic of Southern Sudan.

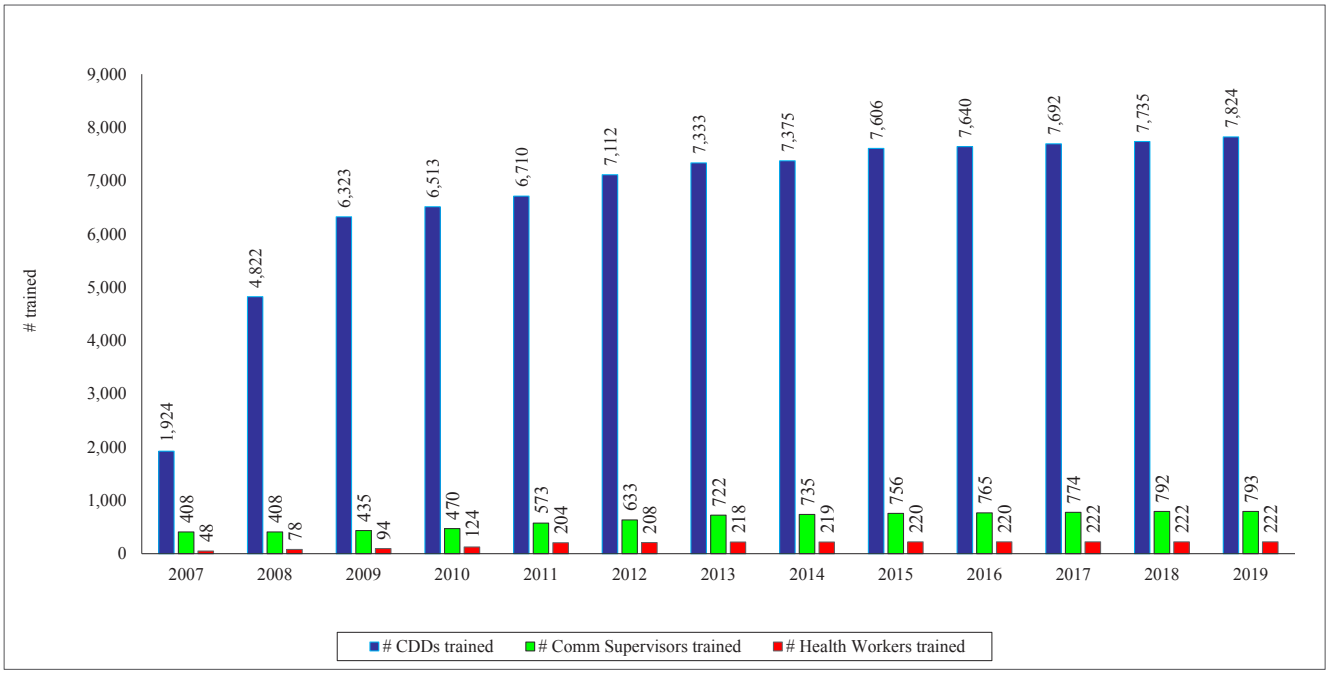
Endemic Sub-counties, Sentinel Sites, Fly Collection Sites & Dosing Sites in Adjumani District



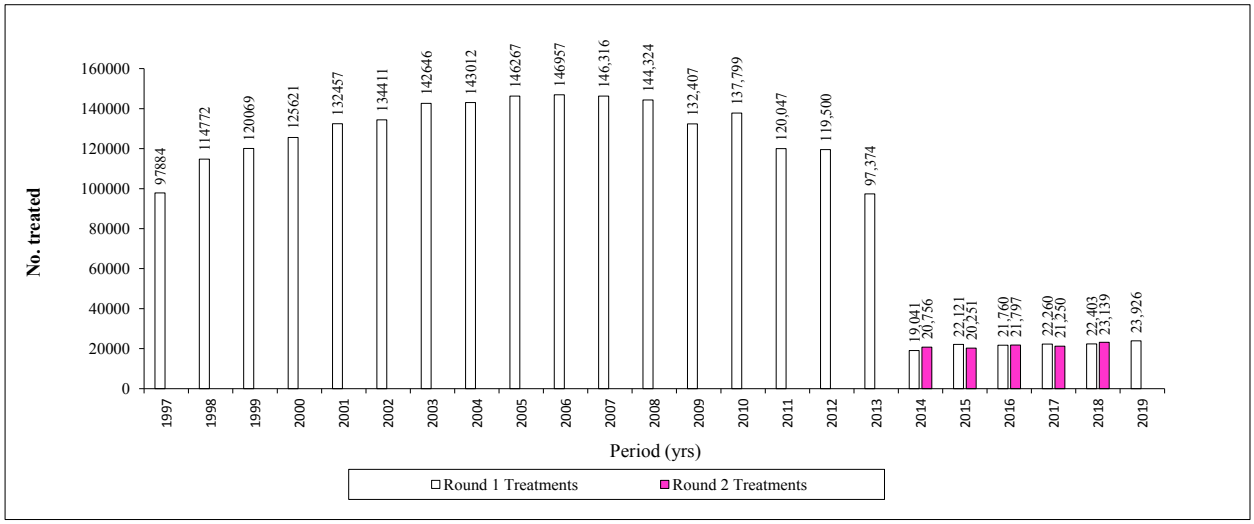
CDTI Implementation Structure



CDTI Training in Adjumani District from 2007 To Date

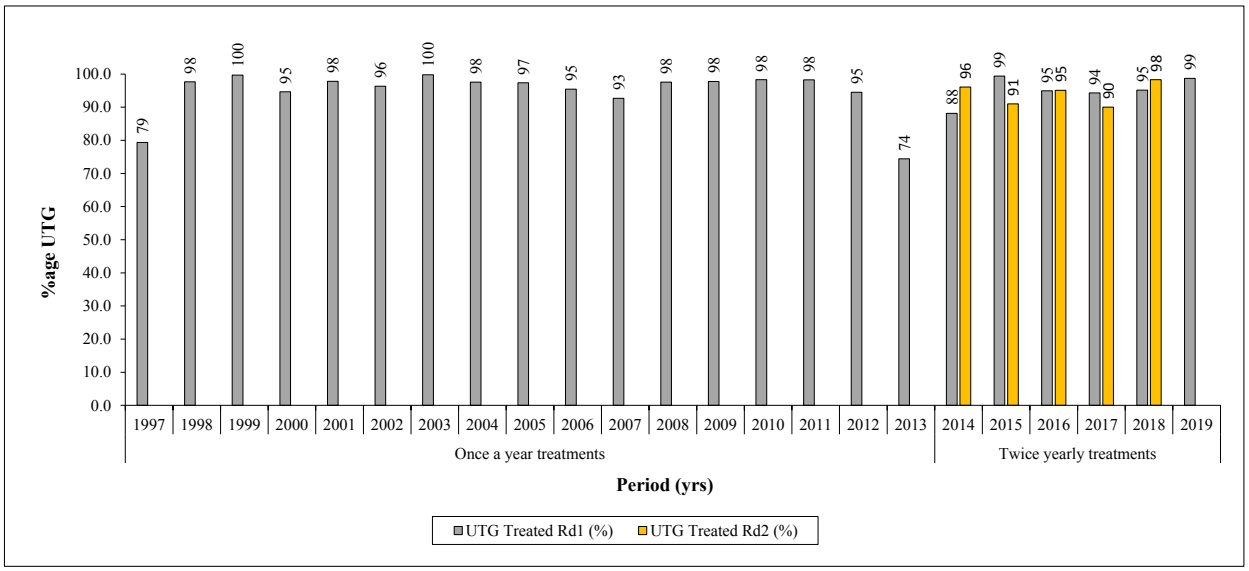


Treatments in Adjumani District from 1997 To Date



- **Annual treatment in Adjumani District began in 1993 while the area was still part of Moyo District. This treatment which included even the refugees stopped in 2013.**
- **Before 2014, the entire district was treated. After detailed mapping, only 2 sub-counties were recommended for MDA.**
- **Bi-annual treatment started in 2014 to date.**

UTG Coverage in Adjumani District from 1997 To Date



10 consecutive rounds of effective Ivermectin treatment (>90%) have been achieved

Results of Skin Snip Microscopy in 2011 & 2014

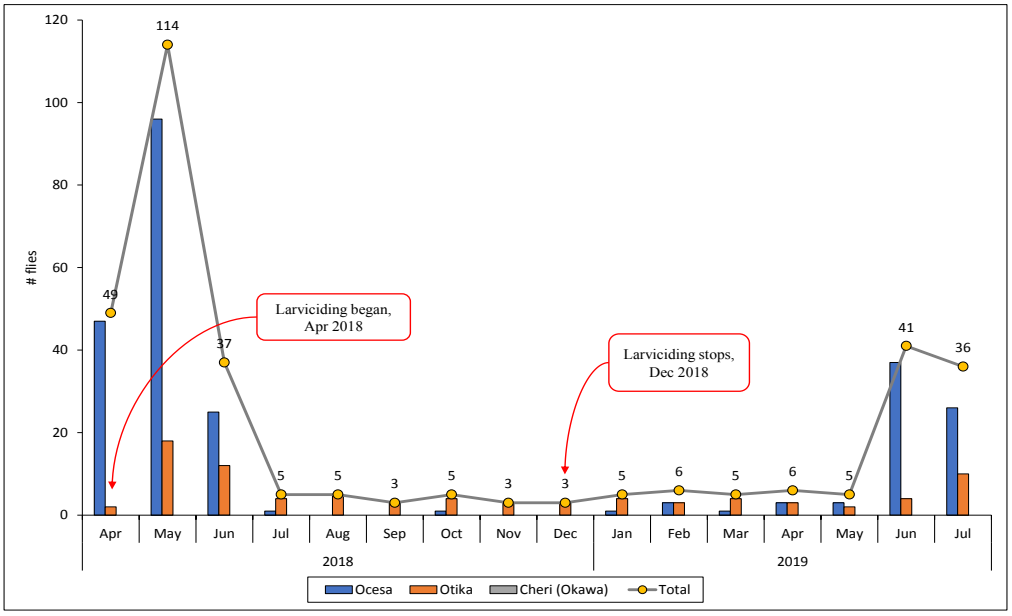
Year	Communities	No. Examined	No. Positive with mf	%age mf	No. with Nodules	%age Nodules
2011	Itoasi	75	0	0	1	1.33
2011	Madulu	106	2	1.89	2	1.89
2011	Mokoloyoro	105	4	3.81	2	1.90
2011	Angwarapi	133	3	2.26	0	0.00
	Total	**419**	**9**	**2.15**	**5**	**1.19**
2014	Elugu Central	44	0	0	0	0.0
2014	Ogolo North	102	1	0.98	0	0.0
	Total	**146**	**1**	**0.68**	**0**	**0.0**

NB: In 2011, microfilaria prevalence was 2.15% with 1.19% nodule carrier rate, while in 2014, the microfilaria rate had reduced to 0.68% and 0% nodule carrier rate. This was attributed to high Ivermectin treatment coverages.

Larviciding

- Two rivers (Ayugi and Cheri) in the district support the breeding of S. *damnosum*. Unlike Ayugi, Cheri is seasonal.
- Vector collection started in 2014 at 3 catching sites on monthly basis and was halted in 2017 and re-introduced in 2018 when larviciding started.
- Larviciding had a good impact on the vector fly till January 2019 when it was halted. Fly population thereafter seems to be re-emerging.

Trend of *S. Damnosum* Flies Caught during Larviciding from Sites along Dosed Rivers in Adjumani, April 2018 – July 2019



Month (2018)	Abate (ltrs)
Jan	
Feb	
Mar	0.8
Apr	3
May	5.5
Jun	3.2
Jul	3.6
Aug	
Sep	2.9
Oct	5.7
Nov	
Dec	2
Total	26.7

Results of Ov16 ELISA in Adjumani District in 2018

Sub-County	Parish	Village	No. of Children Assessed	No. Positive (%)	No. of Adults Assessed	No. Positive (%)
Dzaipi	Logoangwa	Mukoloyoro	84	0 (0%)	49	4 (8.2%)
Dzaipi	Logoangwa	Obu	51	0 (0%)	36	2 (5.6%)
Total			**135**	**0(0%)**	**85**	**6(7.1%)**

NB: 135 children were examined for ov16 and none was positive. Of the 85 adults examined, 6(7.1%) were found positive. All this suggests that there have been no recent exposures.

General Challenges and Recommendations for Omoro, Oyam, Nwoya, Amuru and Adjumani

Challenges

- Halting larviciding may increase vector population and eventually this may lead to recurrence of transmission due to refugee influx and free movement of farming population within the focus.
- Unstable population settlements in some communities due to land conflicts is posing difficulties in program implementation.
- Inadequate logistical support from the Ministry of Health and District Local governments for Onchocerciasis control activities is likely to reduce supervision.

Recommendations

- The Ministry of Health should allocate resources for larviciding as a quick method to control/ eliminate Onchocerciasis vectors in the focus.
- The Ministry of Local Government/cultural leaders should quickly resolve the land disputes in the affected communities.
- The Ministry of Health should carry out advocacy in the districts for program sustainability.

Conclusions

- The districts between 1994 and 2013 applied the strategy of annual treatment with Ivermectin. In 2013, they switched to bi-annual treatment.
- On average, all the districts apart from Omoro, have achieved at least 8 consecutive rounds of effective treatment with Ivermectin.
- PCR and OV16 results from the districts were all negative except for Omoro, whose results were positive.
- A decision for "interruption of transmission" of Onchocerciasis cannot be made until all the blood spots and flies in the laboratory have been analysed and results are negative.

Way Forward

- Prospection should be halted in Okike, Arii, Ocipi and Adidi river systems in the districts of Amuru and Adjumani.
- Since OV16 results for children showed transmission is still on going in Omoro district, CDTI and vector control activities should continue in these districts.

♦ Galex Ochieng's work team included: Godfrey Kaija, Godfrey Kibwola, Isaac Leku, Denis Loum, Constantine Owoo, James Katamanywa and Joseph Wamani

The program would like to thank

River Blindness Foundation, National Onchocerciasis Control Program, MDP, District Health Teams, Presenter's Team members, Lions Clubs of Uganda, M.O.H. Uganda, Local governments of Omoro, Adjumani, Oyam, Nwoya and Amuru districts, Focus vector control officers, Entomological assistants and Vector collectors and General community for the high level of cooperation.

WHO Uganda is glad to know of the active participation and commitment by RSS and DRC governments.
- Yonas Tegnen Woldermariam

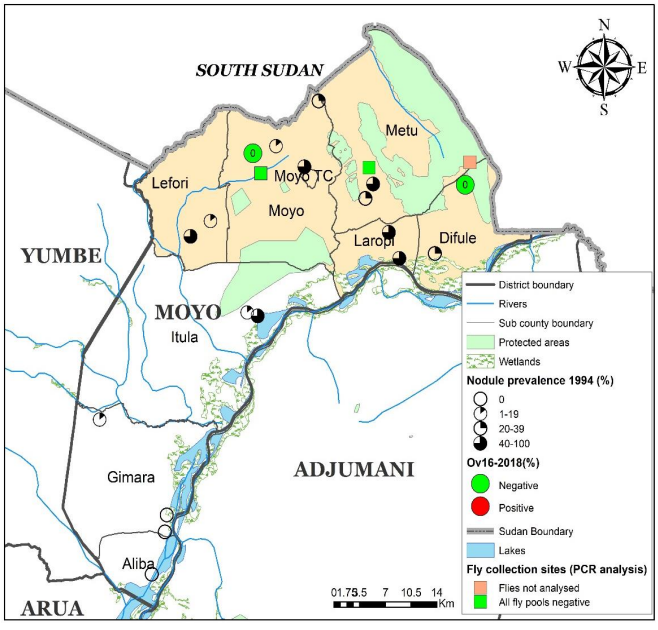


Joseph Wamani et al♦

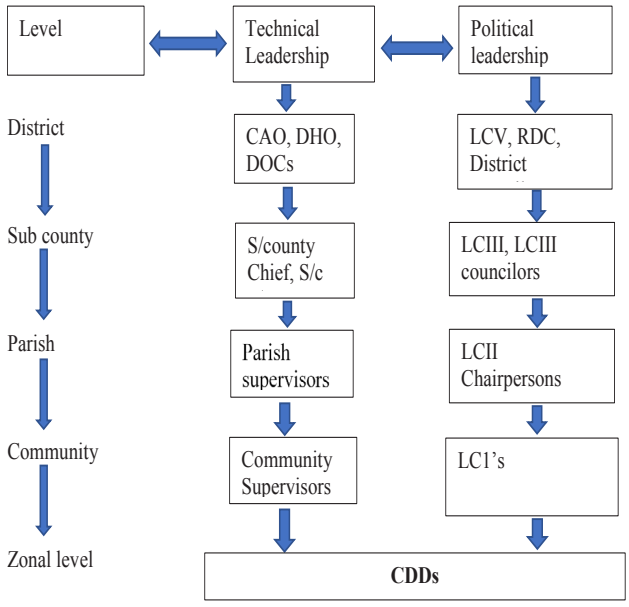
Background

- Moyo District is located in the West Nile sub-region bordered by South Sudan to the North and East, Adjumani to the East and South and Yumbe to the West.
- The district has 9 sub-counties of which six (Moyo, Lefori, Dufule, Laropi, Metu and Moyo town council) are found in Madi-Mid North focus and are under MDA while the other three (Gimara, Ariba and Itula) are found in Obongi focus which is now under PTS.
- The district as of 1 July 2019 has been divided to form Obongi and Moyo districts.
- Kajo-Keji county in RSS forms the northern border with Moyo and is known to be onchocerciasis endemic.
- Due to the civil unrest in RSS and DRC, Moyo with a population of 147,997 also hosts 120,081 (45%) refugees in Parorinya refugee settlement (UNHCR, 2019).
- Recent cross border entomological surveys show that, there is high potential for cross boundary onchocerciasis transmission between Moyo and RSS.

Map of Moyo District showing Endemic Sub-counties, Sentinel sites, Fly Collection and Dosing Sites



CDTI Implementation Structure

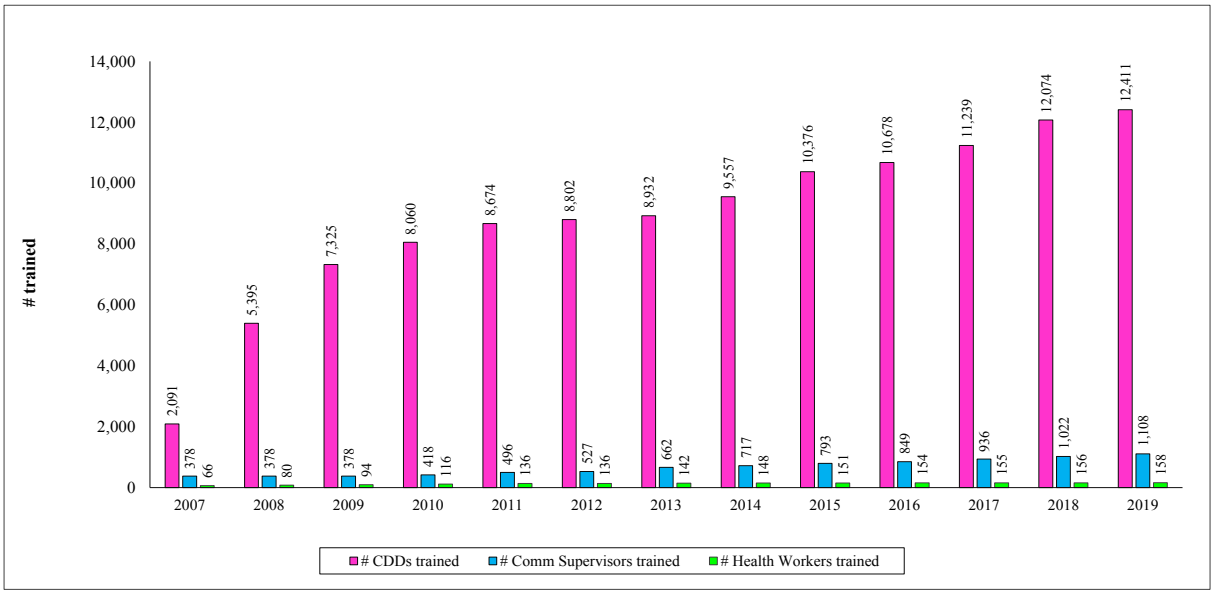


Baseline Results of Skin Snipping for Adults (Microfilaria & Nodules) in Moyo, 2014

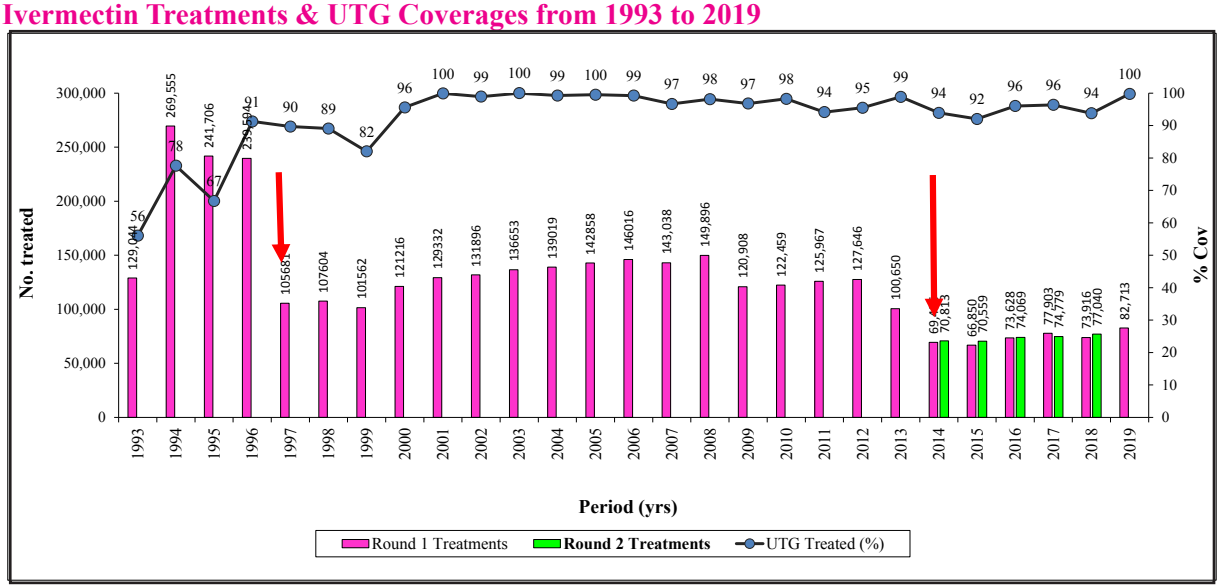
Sub-county	Parish	Communities	No. Examined	No. Positive with mf	%age mf	No. Nodules	%age Nodules
Moyo	Vurra	Madulu	131	0	0	0	0.00
Lefori	Masoloa	Masoloa	110	0	0	0	0.00
Moyo	Ebikwa	Lamogi	123	1	0.81	0	0.00
Dufile	Arra	Pakarukwe	104	10	9.62	0	0.00
Metu	Pameri	Gweri Luzira	173	3	1.73	1	0.58
Moyo	Logoba	Afogi	106	0	0	0	0.00
Metu	Pajakiri	PacunakiPaleuore	82	1	1.22	5	6.10
Metu	Pamujo	Gbari	81	4	4.94	8	9.88
Total			910	19	2.1	14	1.5

NB: A total of 910 people were skin sniped for mf and only 19 (2.1%) (Range: 0 – 9.6) were found positive while the prevalence of nodules was 1.5% (Range: 0 – 9.9).

CDTI Trainings in Moyo District from 2007 to 2019



Ivermectin Treatments & UTG Coverages from 1993 to 2019

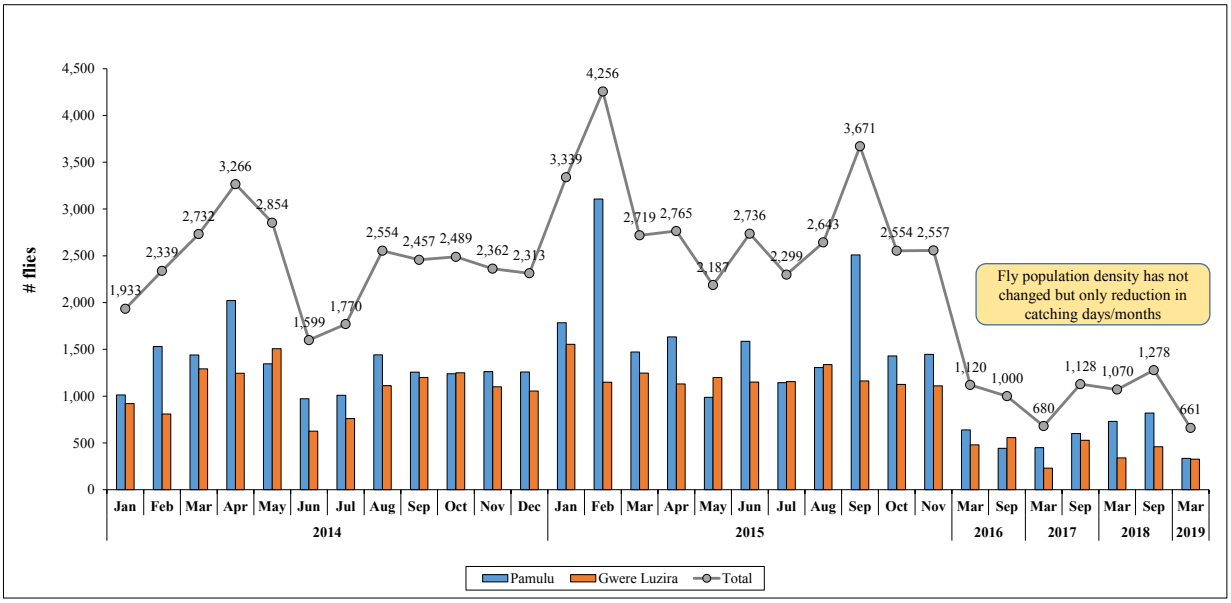


NB: In 1997, Adjumani broke off from Moyo district. In 2014, Obongi became a sub-focus. Moyo district has achieved over 10 consecutive effective rounds (>90%) of treatment from 2014 to date.

Hydrology Related to Onchocerciasis

- Moyo District has several rivers including Amua, Lea, Ayo and the Nile. These rivers originate from Metu hills where Lea & Ayo flow Northwards to Kajo-Keji in RSS and to the Nile while Amua river flows Southwards to the Nile.
- *Simulium* fly catching started in January 2014 on monthly interval up to November 2015 when it was scaled down to semi-annual collections up to today.
- There has been no vector control interventions in Moyo District.

Graph Showing *Simulium* Fly Catches from 2014 to 2019



Simulium PCR Results for all Flies Collected in Moyo District from 2014 to 2017

Year	District	Site	River	No. of flies collected	No. of flies analyzed	Pool size	No. of pools	No. pools positive
NA	Moyo	Gwere Luzira	Amua		400	200	2	0
NA	Moyo	no site	Site not specified		800	200	4	0
Total					**1200**		**6**	**0**
2014	Moyo	Gwere Luzira	Amua	12876	1000	200	5	0
2014	Moyo	Pamulu	Oluvo	15792	390	200 & 190	2	0
Total					**1390**		**7**	**0**
2015	Moyo	Gwere Luzira	Amua	13321	3200	200	16	0
2015	Moyo	Pamulu	Oluvo	18405	200	200	1	0
2015	Moyo		Oluvo		6097		31	0
2015	Moyo	Madi sub focus	Site not clear		2000	200	10	0
2015	Moyo	Obongi	Site not clear		200	200	1	0
2015	Moyo	no site	Site not specified		672	200(3 pools) &72	4	0
2017	Moyo	Pamulu	Oluvo	1050	800	200	4	0
Total					**13169**		**67**	**0**
TOTAL					**15759**		**80**	**0**

A total of 80 pools with 15,759 flies were analyzed using PCR and none was positive.

Results of Ov16 ELISA from Moyo District in 2018

Sub- County	Parish	Village	#Children screened	#Positive (%)	#Adults screened	#Positive (%)
Metu	Pajakiri	Izzi	69	0(0%)	51	2(3.9%)
Metu	Pajakiri	Pamulu	119	0(0%)	50	3(6%)
Dufile	Arra	Ramogi North	135	0(0%)	50	5(10%)
Dufile	Arra	Ramogi south	115	0(0%)	51	2(3.9%)
Total			**438**	**0(0%)**	**202**	**12(5.9%)**

NB: All the 438 children that were screened for Ov16 in 2018 were found negative. Of the 202 adults screened, 5.9% (Range: 3.9 – 10) were found positive.

Challenges

- Breeding sites that were thought to exist in rivers of Amua in Moyo District cannot be traced.
- High numbers of *Simulium damnosum* flies continue to bite in Moyo District.
- If activities done in Moyo are not done at the same time in Kajo-Keji county in the Republic of South Sudan, then eliminating Oncho in Moyo may be hard.

Conclusion

- Moyo has had high UTG treatment coverage of >90% in all MDAs.
- PCR results from the flies so far analyzed were negative.
- Ov16 results in children from sentinel sites were all negative.
- The focus still has a high number of *S.damnosum* whose breeding source is not yet known in the region. This could possibly be from Kajo-Keji county in the Republic of South Sudan.

Way Forward

- Negative results for children and flies indicate that the district can move to "suspected interruption" category or even "interruption of transmission".
- There is need to collect blood spots for serology outside sentinel sites.
- Continue entomological surveillance in Moyo and Kajo-Keji.
- Continue bi-annual treatment with ivermectin.

Prospected Site



Prospected Site



♦ As his co-workers, Joseph Wamani had: Michael Nyaraga, Christopher Asiokpwo, Lauriano Hakiri, Denis Loum and Consintatine Owoo.

The program would like to thank

River Blindness Foundation, Uganda National Onchocerciasis Control Program, MDP, Moyo District Health Team, My fellow team members, Lions Clubs of Uganda, M.O.H. Uganda, Local government of Moyo district, Focus vector control officers, Entomological assistants and Vector collectors and Community members for the high level of cooperation.

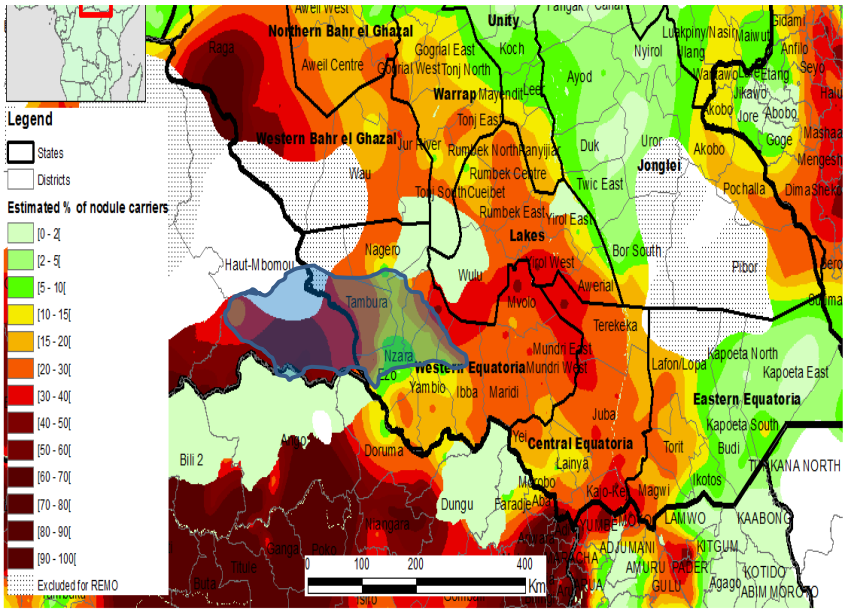
Status of Onchocerciasis in Counties of RSS Adjacent to Madi-Mid North

Samuel Yibi Makoy Logora



Republic of South Sudan
Ministry of Health

Onchocerciasis Endemicity Map for South Sudan



History of CDTI Activities in the Counties Adjacent to the Madi Mid-North Focus

Year	Communities/Villages					Population				
	Total # of communities/villages in the meso/hyper-endemic areas (H_1)	Annual treatment objective (H_2)	Number of communities/villages treated (H_3)	Geographical coverage (%) H_3/H_1*100	ATO coverage (%) (H_3)	Total population of the meso/hyper-endemic areas (H_6)	Annual treatment objective (H_7)	Number of persons treated (H_8)	Therapeutic coverage (%) H_8/H_6*100	ATO coverage (%) H_8/H_7*100
2002	2,289	1,102	620	27%	56%	1,253,000	502,800	437,666	35%	87%
2003	2,289	1,102	70	3%	6%	1,285,000	600,000	386,755	30%	64%
2004	4,777	655	485	10.1%	74%	3,476,632	825,076	327,271	9.4%	40%
2005	5,118	845	572	11.1%	67.6%	3,476,632	825,076	611,296	18%	74%
2006	5,424	1,623	1,335	24.6%	82.2%	3,625,332	1,050,624	936,375	26%	89%
2007	7,103	6,124	1,965	27.6%	32.1%	3,625,332	1,545,909	1,370,246	38.0%	89.0%
2008	9,426	7,327	6,576	69.8%	89.8	5,189,269	2,177,344	2,029,828	39.1%	93.2%
2009	6,473	5,438	5,701	88.1%	104.8	5,605,726	3,019,766	3,012,058	53.7%	99.7%
2010	6,511	6,511	5,615	86%	86%	5,707,127	4,203,193	3,010,375	53%	71.6%
2011	6,728	6,728	5,526	82%	82%	5,707,037	4,360,075	3,477,340	61%	80%
2012	6,728	6,728	5,526	82%	82%	5,707,037	4,496,018	2,506,693	43.9%	55.8%
2013	7,704	7,704	4,106	53.3%	53.3%	6,250,635	5,044,065	2,271,979	36.3%	45.0%
	No Vector control activities since start of CDTI in South Sudan									
2014	1,271	1,271	513	40.4%	40.4%	6,460,053	5,168,043	1,236,619	19.1%	23.9%

Cross Border Meeting in Gulu - May 2018



JOINT COMMUNIQUE from the meeting between Uganda and RSS on elimination of cross-border onchocerciasis transmission held on 15th and 16th May 2018 at Bomah Hotel, Gulu, Uganda



Mapping of Onchocerciasis Transmission in Counties of South Sudan Bordering Districts within the Madi Mid-North Focus in Uganda (June - December 2018)				
Main Activities	**Description of Activities**	**Time**	**Place**	**Responsible Persons**
Advocacy and Sensitization	Presentation of the cross border meeting to the NTD taskforce for review	May 30th 2018	Juba	Makoy Logora
	Letter from the Ministry of Health to SMoH and CHD on the advocacy and sensitization meeting regarding the Cross-border meeting	May 30th 2018	Juba	Oncho coordinators for Central and Eastern Equatoria Regions
	Conduct advocacy and sensitization workshop for County Commissioners, CHD Officers, Payam Health Officers, Security, Customs Officers and counterparts for border districts in Uganda	May 30th 2018	Juba	MoH South Sudan, Carter Center, RTI, Sightsavers
		June 7th - 8th 2018	Nimule	DHOs (Moyo Adjumani, Lamwo, Gulu, Amuru), RDCs, District Chairpersons

Mapping of Onchocerciasis Transmission in Counties of South Sudan Bordering Districts Within the Madi Mid-North Focus in Uganda (June - December 2018)				
Main Activities	**Description of Activities**	**Time**	**Place**	**Responsible Persons**
Selection and training of personnel for training, entomology, serology and parasitology	Selection of Health workers for training on Entomology and Laboratory tests	June -August	Moyo-Adjumani-Amuru-Gulu	MOH NTD program, SMOH, County Health Department, Payam Health Officers, RDCs, District Chairpersons, RSS Security Personnel, Immigration Officers
	Training of the health workers (sanitary overseers and Public Health Officers) as vector control officers	2018	Kajo-Keji (Liwolo & Kangapo counties) - Pageri/Nimule	
	Training of laboratory technicians		Lamwo	

High Level Advocacy Meeting in Juba

Participant List

- Deputy Governor – Torit State
- Members from the NTLA
- Chief of Immigrations
- Chief of Customs
- Chief of Wildlife Conservation Forces
- Chief of Military Intelligence
- Chief of Military Operations
- Chief of National Security
- Senior Officials from Ministry of Health
- Media



- Adapted resolutions of the Joint Communique of the cross-border meeting.
- Approved the Joint Action Plan for Onchocerciasis Elimination in border counties.
- Approved the facilitation of movement of technical teams and supplies to enhance cross-border activities (Visa, Customs, security etc.)



Cross Border High Level Advocacy Meeting between Uganda and South Sudan at Nimule – July 2018

Onchocerciasis Elimination Plan for Counties in Great Magwi County (Pageri, Ayaci and Magwi) September – October 2018

Main Activities	Category of Personnel	Timeline	Requirements	Cost	Responsible Persons
Training / Pre-Control Surveys (Mapping)					
River prospection (16 days)	8 VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers acting as vector control officers - Martin Eruaga, PHO Pageri - Emmanuel Madra, PHO Pageri - James Opio, PHO Magwi - Michael Komakech, PHO Magwi	Sept 2018	• Aerial draft map of the County • GPS to conduct map coordination • Training personnel • Hand lenses • Custom clearance • Visa for 2 people • Security personnel		Kampala group
River dosing	8 VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers as vector control officers		• Abate • Sprayers • Flow meter • Protective gears • Security personnel • Motorized boats • Life jackets		8VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers as vector control officers

Onchocerciasis Elimination Plan for Counties in Greater Magwi County (Pageri, Ayaci and Magwi) September – October 2018 (Cont'd)

Main Activities	Category of Personnel	Timeline	Requirements	Cost	Responsible Persons
Training / Pre-Control Surveys (Mapping)					
DBS collection / Skin Snipping (16 days)	4 laboratory technicians from RSS and 2 Ugandans	Sept 2018	3 Microscopes 4 Laboratory technicians Lancet Surgical blades Sample containers Disinfectants Security personnel OV16 collection materials		County laboratory technicians
Sample analysis	2 Lab technicians from RSS		Passport Visa Transport facilitation OV16 reagents ELISA plates		Trained responsible persons / Kampala lab. team

Onchocerciasis Elimination Plan for Counties in Greater Magwi County (Pageri, Ayaci & Magwi) September – October 2018 (Cont'd)

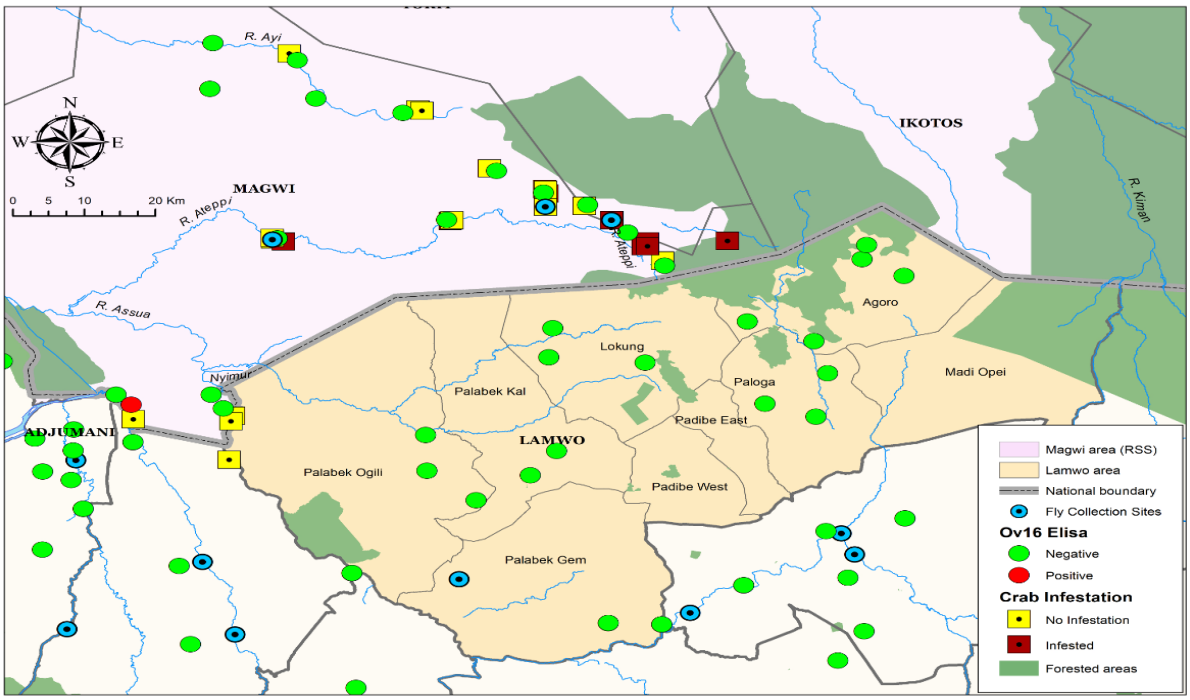
Main Activities	Category of Personnel	Timeline	Requirements	Cost	Responsible Persons
Training / Pre-Control Surveys (Mapping)					
Actual Vector Control / Elimination					
Establishment of fly monitoring sites (fly catching sites)	8 VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers as vector control officers		• Abate • Sprayers • Flow meter • Protective gears • Security personnel		8 VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers as vector control officers
Establishment of dosing points	8 VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers as vector control officers		• Abate • Sprayers • Flow meter • Protective gears • Security personnel		8 VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers as vector control officers
River dosing	8 VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers as vector control officers		• Abate • Sprayers • Flow meter • Protective gears • Security personnel • Motorized boats • Life jackets		8 VCOs - 2 VCOs from Uganda, 6 RSS Public Health Officers as vector control officers

River Prospection in Magwi County Adjacent to Lamwo - Madi Mid-North





Magwi - Lamwo Ov16 Map



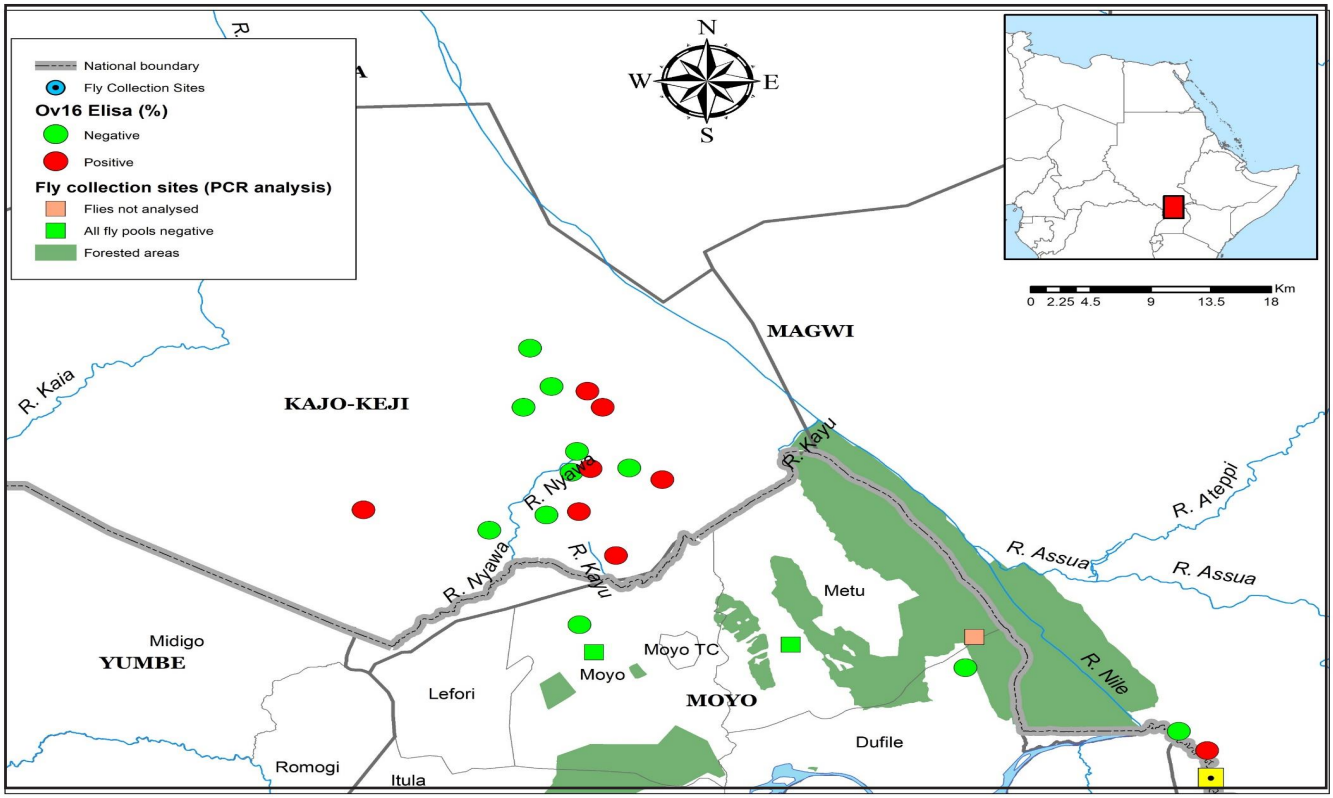


MoH Personnel from Uganda and South Sudan Posing for a Photo after Completion of Serological and Entomological Mapping in Kajo-Keji – Moyo SIZ



Ov16 Blood Samples being Collected in Kangapo County, South Sudan

Map of Kangapo (Greater Kajo - Keji) and Moyo Showing where Ov16 Samples were Collected



Conclusion

Pageri (Greater Magwi) - Lamwo SIZ:

- Low breeding of *S. neavei* and *S. damnosum* on Ateppi river system.
- Ov16 shows no current transmission of onchocerciasis.

Kangapo (Greater Kajo - Keji) – Moyo SIZ:

1. Results from adults showed that there was high level of transmission in the whole of Greater Kajo-Keji County.
2. Blood samples from children should be analyzed to determine the current status of oncho in Kajo - Keji.
3. According to entomological surveys, vector breeding is high in most river systems.

Recommendation I: Implement Twice Yearly Treatment with Ivermectin in Greater Kajo - Keji and Greater Magwi

Assumptions:

- MDP will approve the drugs for twice a year treatment.
- The Carter Center will provide financial support for MDAs.
- All communities to be accessed as said by county commissioners.
- RSS refugees in Uganda should be treated by the Uganda Oncho Program.
- Greater Kajo-Keji targets about 100,000 people for twice per year treatment.
- Greater Magwi targets about 200,000 people for twice per year treatment.

Recommendation II: Implement Appropriate Vector Control and Monitoring in Greater Kajo - Keji and Greater Magwi

Assumptions:

- Enough Abate to be provided for targeted river dosing in Kangapo.
- The Carter Center to provide financial support for vector control and monitoring.
- Complete the river prospection in Kajo - Keji in order to determine breeding sites.

Kangapo (Greater Kajo - Keji)

- Complete river prospection and identification of fly catching sites.
- Conduct limited river dosing in selected sites.
- Conduct vector monitoring activities.

Pageri (Greater Magwi)

- Continue vector monitoring activities.

The MoH – South Sudan Acknowledges the Unwavering Support from the following Partners;

THE END FUND | ENDING NEGLECTED DISEASES

cbm together we can do more

Sightsavers

THE CARTER CENTER

MERCK INVENTING FOR LIFE



MECTIZAN® DONATION PROGRAM

World Health Organization

ESPEN EXPANDED SPECIAL PROJECT FOR ELIMINATION OF NEGLECTED TROPICAL DISEASES

THE MENTOR initiative

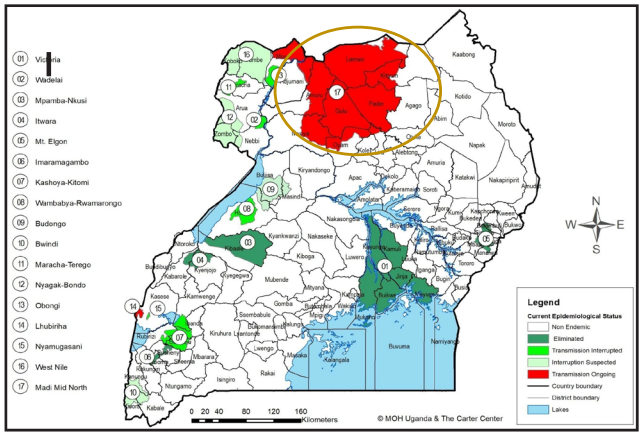
Lions Clubs in Uganda is still growing and we call upon those who have a heart to serve to join us so that collectively we can make a difference in the lives of others. This means a lot to the lives of those we touch. Come join us so that we help those who are in need.

- Sedrace Rwekikiga

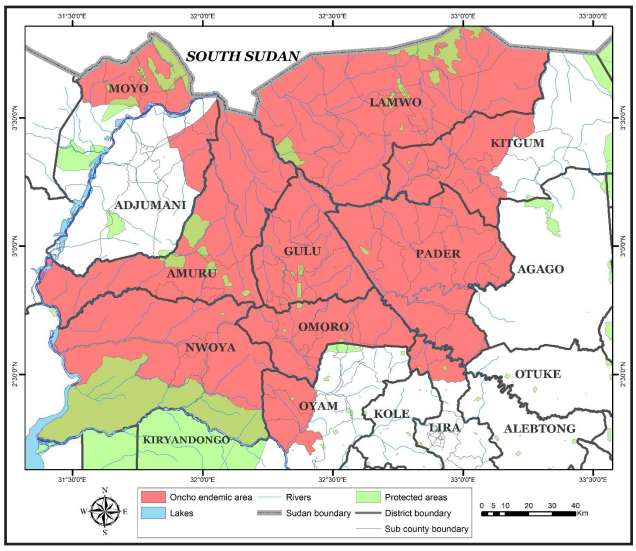
Progress towards Onchocerciasis Elimination in Madi-Mid North Focus

David Oguttu

Location of Madi-Mid North Focus



Map of Madi Mid North Focus (Covers 11 districts)

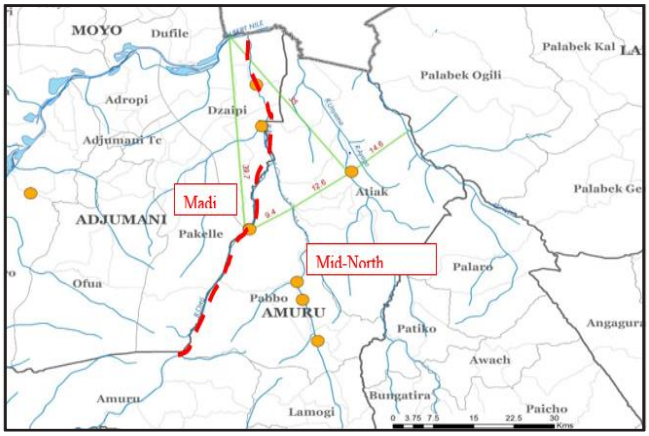


Madi and Mid-North originally different foci

- Before 2014, Madi was a distinct focus adjacent to Mid-North focus.
- A study by Prof Rory Post suggested that these two foci were too close to each other and therefore should be merged.
- This conclusion was based on the breeding of vectors at Seri bridge, Ayugi bridge, and Unyama Pwomunu sites between Madi and Mid-North.

The UOEEAC of 2014 recommended thus: "Madi was not a distinct focus, but part of the Mid-North focus and recommended that the Mid North and Madi foci be combined into a single focus called Madi Mid-North focus. The classification of the combined focus remains in red color of the Oncho flag meaning that "transmission is still ongoing."

Map showing Merged Focus of Madi Mid-North



Armed Conflicts 1984 - 2012

- Northern Uganda suffered from civil unrest from 1984 to 2012.
- Many people were killed, about 400,000 left homes and moved to internally displaced people's camps (IDPCs) seeking security.
- Throughout this period, Adjumani and Moyo districts were not directly involved in the conflict, but major roads to these districts passed through war zones which made it hard for people to access these places.
- Occasionally, the LRA attacked the Madi people, robbed and killed them.
- IDP's camps were gradually closed for a three year period (2010 – 2012).
- People returned to their original villages when peace was restored in the area.
- The entire focus is now peaceful.

Refugee Settlements in Lamwo and Adjumani Districts in Madi Mid-North Focus

Settlement	Estimated Population	Host Sub-county
Ayilo i	28000	Pakele
Ayilo ii	10000	Pakele
Boroli	10000	Pakele
Olua i	5000	Pakele
Olua ii	3000	Pakele
Mireyi	6000	Ofua
Mungula i	10000	Itirikwa
Mungula ii	7000	Itirikwa
Maaji i	10000	Okisijon
Maaji ii	10000	Okusijon
Maaji iii	10000	Okusijon
Agojo	4000	Ciforo
Oliji	3000	Pacara
Alere	6000	Pacara
Baratuku and Elema	9000	Dzaipi
Nyumanzi	32000	Dzaipi
Pagirinya main	27000	Dzaipi

History of CDTI in Madi Mid-North

- Treatments began in 1994 in Adjumani, Oyam (which at that time was a section of Apac), Gulu, and Moyo districts.
- By then, Kitgum (including what now are Lamwo and Pader districts) were in a war zone.
- Mass treatment began in Pader and Kitgum districts in 2011.
- From 2009 to 2012, the population was unstable as people were highly mobile moving from protected camps and their indigenous villages in search of food and going back.
- By 2013, peace had been restored and people had already settled in their indigenous villages.

Baseline: Epidemiology

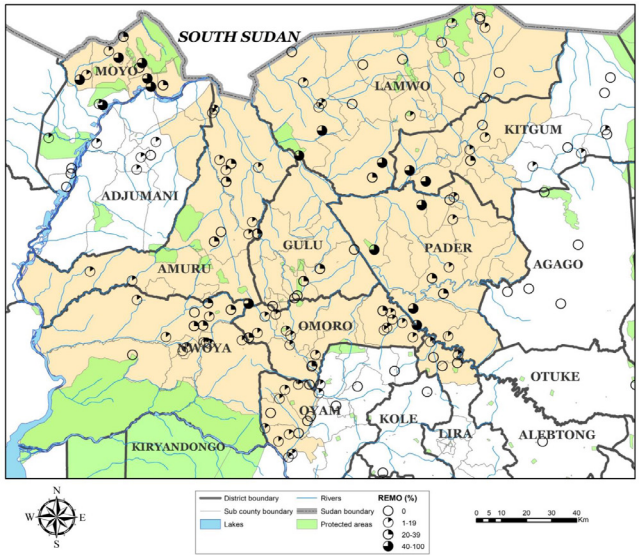
- Conducted in districts in different years due to security issues: i.e. it was not possible to undertake epidemiological activities at once.
- REMO for nodule prevalence was done.
- The results for Skin snip microfilaria prevalence were obtained.

Nodule Prevalence in 1993, 2009 and 2011

Year	District	# Communities	Number of People Assessed	Total Positive for Nodules	Percent Positive for Nodules
1992/93	Adjumani	4	160	17	10.6
1992/93	Oyam	15	615	32	5.2
1992/93	Gulu	41	1730	302	17.4
1992/93	Kitgum	6	272	11	4.0
1992/93	Lira	2	80	0	0.0
1992/93	Moyo	13	500	173	34.6
1992/93	Pader	2	69	0	0.0
Sub Total		**83**	**3426**	**535**	**15.6**
2009	Kitgum	17	780	197	25.3
2009	Pader	13	634	153	24.1
2009	Oyam	7	331	2	0.6
2009	Amuru	8	400	10	2.5
Sub Total		**45**	**2145**	**362**	**16.9**
2011	Kitgum	4	174	10	5.7
2011	Lamwo	6	225	3	1.3
2011	Lira	5	266	7	2.6
Sub Total		**15**	**665**	**20**	**3.0**
Total		**143**	**6236**	**917**	**14.7**

NB: Nodule prevalence was assessed during the conflict period when people were very mobile and as such some people may have not been examined resulting in underestimation of the true status of nodule prevalence.

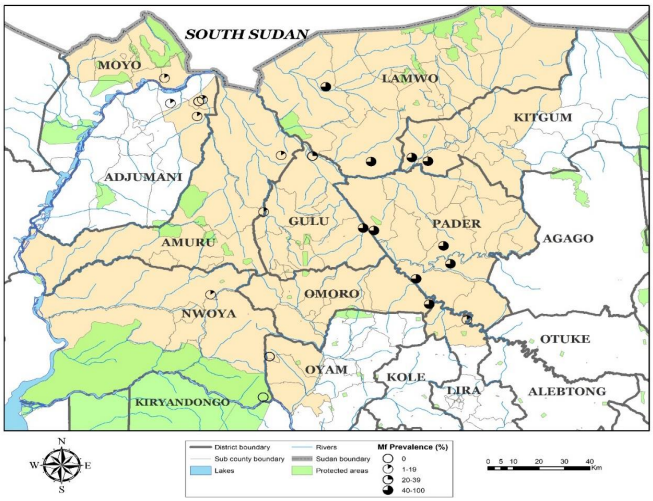
Nodule Prevalence 1993, 2009 and 2011



Skin Snip Microfilaria Prevalence Obtained at Different Times

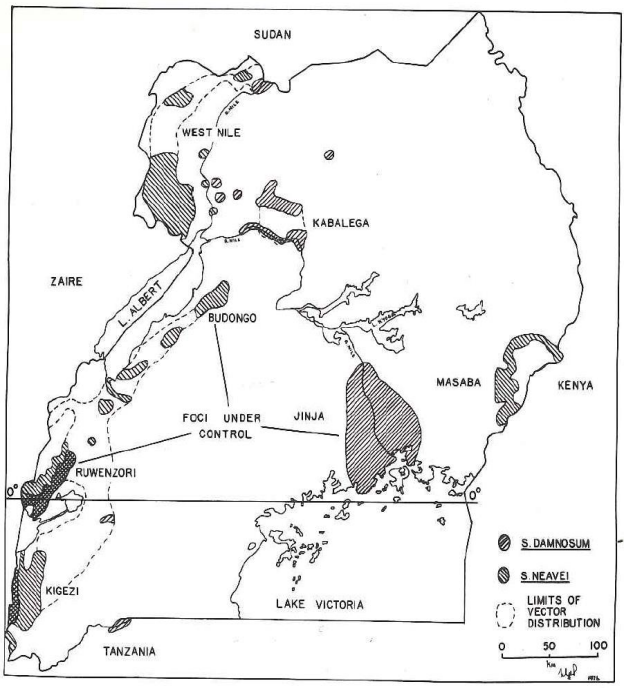
		Adults				Children			
Year	**District**	**# Communities**	**Total Number Assessed**	**Total Positive**	**Percent Positive**	**# Communities**	**Total Number Assessed**	**Total Positive**	**Percent Positive**
2008	Kitgum	4	200	113	56.5				
2008	Pader	4	200	125	62.5				
Sub Total		**8**	**400**	**238**	**59.5**				
2009	Moyo	3	976	18	1.8				
Sub Total		**3**	**976**	**18**	**1.8**				
2011	Adjumani	4	283	4	1.4	3	6	0	0.0
Sub Total		**4**	**283**	**4**	**1.4**	**3**	**6**	**0**	**0.0**
2012	Nwoya	2	124	1	0.8	1	1	0	0.0
2012	Lira	1	33	3	9.1	1	3	0	0.0
2012	Oyam	1	20	0	0.0	1	2	0	0.0
2012	Gulu	3	113	40	35.4	3	25	6	24.0
2012	Amuru	2	84	8	9.5	1	1	0	0.0
Sub Total		**9**	**374**	**52**	**13.9**	**7**	**32**	**6**	**18.8**
2014	Moyo	8	839	19	2.3	8	71	0	0.0
2014	Adjumani	2	137	1	0.7	2	9	0	0.0
Sub Total		**10**	**976**	**20**	**2.0**	**10**	**80**	**0**	**0.0**
2015	Amuru	4	416	2	0.5				
2015	Nwoya	4	324	0	0.0				
2015	Gulu	5	468	73	15.6				
Sub Total		**13**	**1208**	**75**	**6.2**				
Total		**47**	**4217**	**407**	**9.7**	**20**	**118**	**6**	**5.1**

Microfilaria Prevalence 2008 - 2015



Endemic Sub-counties by District

District	Total Number of Sub- counties	Number of Oncho endemic Sub-counties	Percentage of Oncho endemic Sub-counties
Adjumani	10	2	20
Moyo	6	6	100
Gulu	10	10	100
Omoro	7	7	100
Amuru	5	5	100
Pader	12	12	100
Kitgum	12	9	75
Lamwo	12	12	100
Lira	17	2	11.8
Oyam	12	3	25
Nwoya	8	8	100
Total	**111**	**76**	68.5



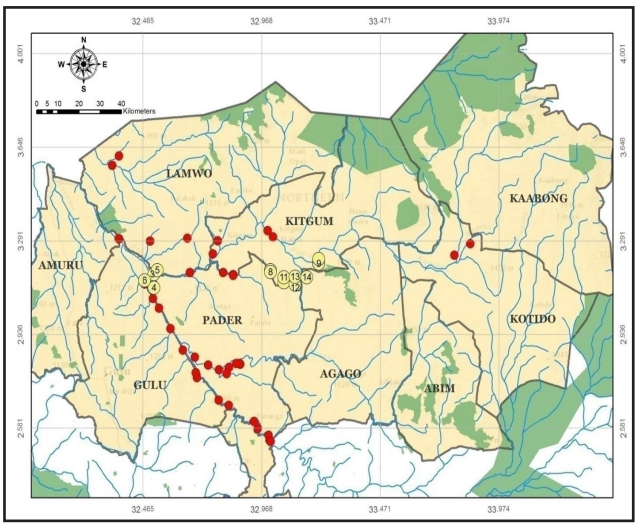
- Vector control was attempted in 1959 along the Nile River section (in this region) which by then was referred to as Kabalega focus, an area covering the region that would later be split into the districts of Nakasongola, Hoima, Buliisa, Masindi, Kiryandongo, Nwoya, Amuru and Gulu. The blackfly control program was conceived because the British Colonial Government wanted to build a power generating dam at Murchison Falls.
- The dam plans were shelved, but 12% DDT oil solution was dripped into River Nile, at the falls (Murchison) through a perforated pipe suspended across it.
- Complete killing of larval stages of *S. damnosum* was achieved over 85kms length of the infested river at 0.2ppm for 30 minutes.
- There was, however, vector re-infestation from tributaries.
- Interest in vector control was dropped after the plan for construction of the dam was not deemed important.
- By then, the population was very sparse and Madi Mid-North focus was unknown.

Aerial Spraying using Abate in Madi Mid-North Launched by President Museveni in 2013

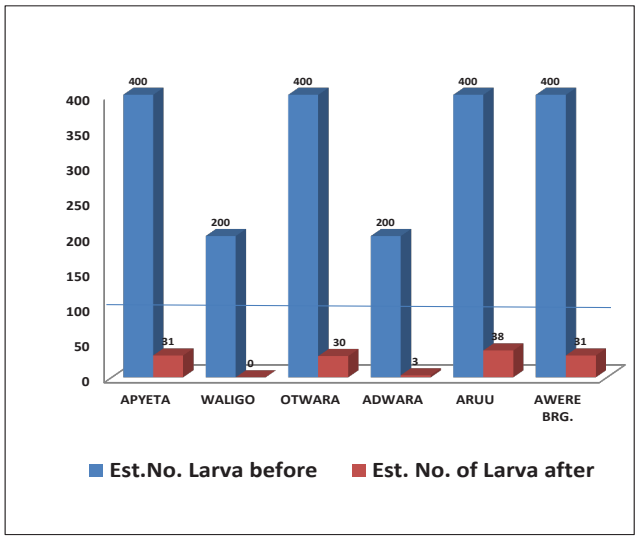


Results of Aerial Spraying

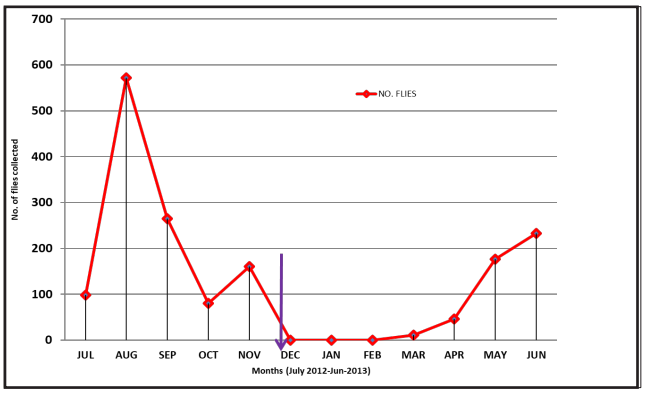
Abate applied in rivers reduced vector population



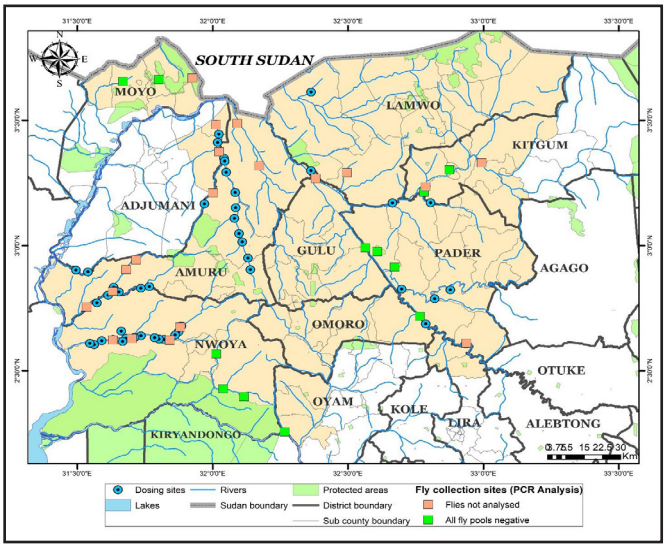
Reduction of *S. damnosum* young stages



Adult Fly Reduction after Aerial Spraying

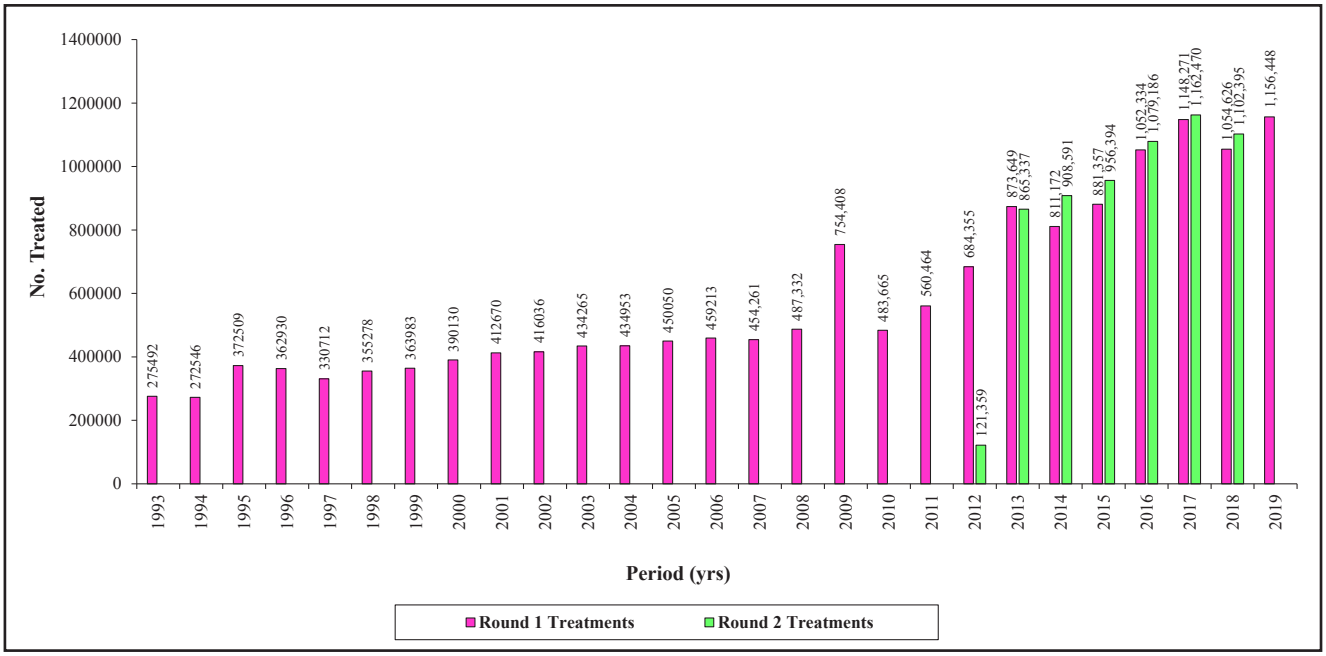


Map of Madi Mid-North Showing Ground Larviciding and Vector Collection Sites

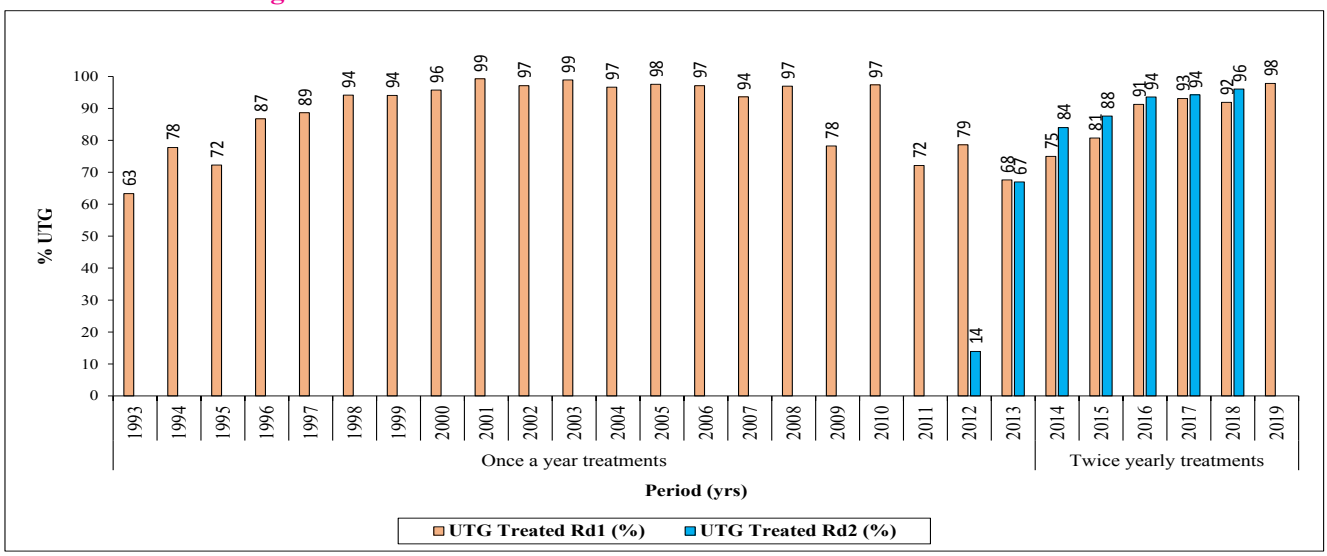


- Ground larviciding support from partners stopped in 2018.
- Vector collection is ongoing and all flies are sent to the lab for PCR analysis.

History of UTG / Eligible Population from 1997 to 2019



UTG Coverage for Madi Mid North from 1993 to 2019



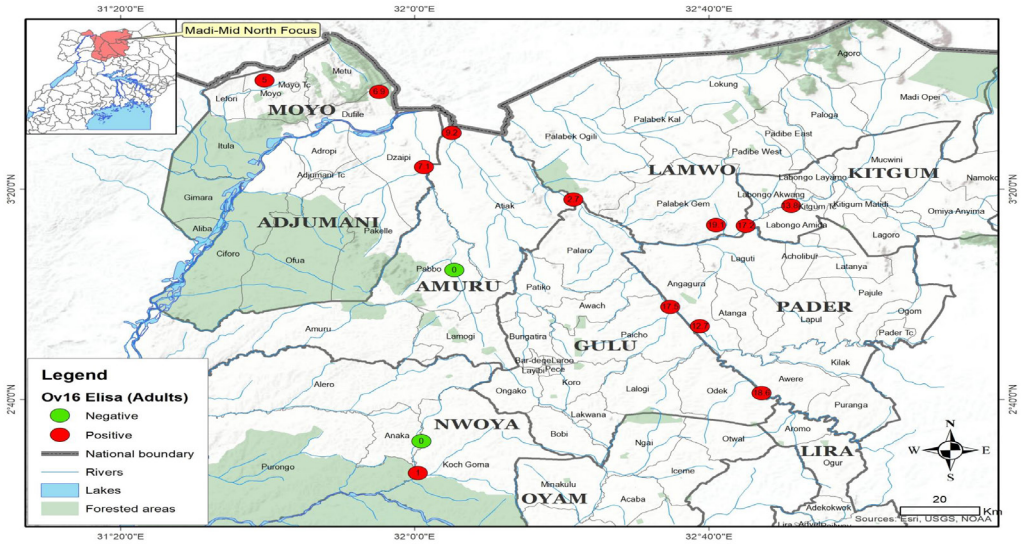
Recommendations of 11th UOEEAC

- Updated epidemiological and entomological information on the current status of *onchocerca volvulus* transmission from 9 districts out of the 11 (excluding Oyam and Lira) should include entomological collections from the 16 established catching sites and epidemiological data collected from sentinel communities in the focus.
- Independent coverage surveys should be conducted in this focus.
- Continue supporting DRC and RSS in the implementation of cross border OV elimination activities when requested.

Epidemiology and Entomological Assessments Show Good Progress Towards Interruption of Transmission OV16 Results for Adults in Sentinel Communities, 2018

SN	District	Sub-county Name	Community name	Total Number Assessed	Total Analyzed	Total Positive	Percent Positive
1	Moyo	Metu	Izzi	51	51	2	3.9
2	Moyo	Metu	Pamulu	50	50	3	6.0
3	Moyo	Dufile	Ramogi North	50	50	5	10.0
4	Moyo	Dufile	Ramogi south	51	51	2	3.9
5	Amuru	Atiaka	Elegu West	48	48	0	0.0
6	Amuru	Atiaka	Pacilo east	50	50	9	18.0
7	Amuru	Pabo	Oguru	45	45	0	0.0
8	Amuru	Pabo	Pericu	40	40	0	0.0
9	Adjumani	Dzaipi	Mukoloyoro	49	49	4	8.2
10	Adjumani	Dzaipi	Obu	36	36	2	5.6
11	Pader	Angagura	Lapaya	51	51	9	17.6
12	Pader	Angagura	Abilnino	51	51	4	7.8
13	Kitgum	Akwang	Bola	37	37	7	18.9
14	Kitgum	Akwang	Tumanguu	50	50	8	16.0
15	Kitgum	Akwang	Adyee	37	37	8	21.6
16	Kitgum	Akwang	Libia	50	50	4	8.0
17	Lamwo	Palabek gem	Abam	50	50	11	22.0
18	Lamwo	Palabek gem	Agwata	39	39	6	15.4
19	Gulu	Palaro	Ongendo	49	49	0	0.0
20	Gulu	Paicho	Lakwela	25	25	4	16.0
21	Gulu	Palaro	Oroko	25	25	2	8.0
22	Gulu	Paicho	Dwere	15	15	3	20.0
23	Omoro	Odek	Akoyo	50	50	16	32.0
24	Nwoya	Koch goma	Gonycogo (Ayago)	51	51	1	2.0
25	Nwoya	Koch goma	Gonycogo (Te-okutu)	51	51	0	0.0
26	Nwoya	Koch goma	Agong B (Jali)	51	51	0	0.0
27	Nwoya	Koch goma	Agong B (Amayokoma)	51	51	0	0.0
28	Omoro	Odek	Awaliwanglobo	36	36	0	0.0
				1239	1239	110	8.9

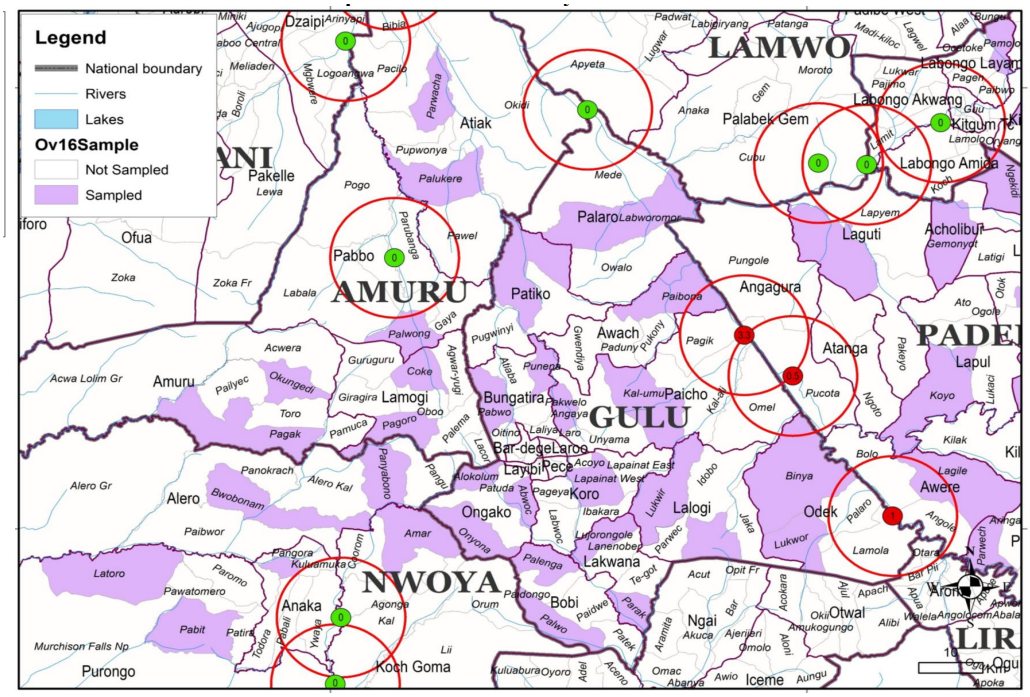
OV16 Adults Map



OV16 Results for Children below 10 years in Sentinel Sites 2018

S/N	District	Sub-county Name	Community Name	Total Number Assessed	Total Analyzed	Total Positive	Percent Positive	Percent Positive (95%CI)
1	Moyo	Metu	Izzi	69	69	0	0	0 (0%-0.053%)
2	Moyo	Metu	Pamulu	119	119	0	0	0 (0%-0.024%)
3	Moyo	Dufile	Ramogi North	135	135	0	0	0 (0%-0.035%)
4	Moyo	Dufile	Ramogi south	115	115	0	0	0 (0%-0.04%)
5	Amuru	Atiaka	Elegu West	122	122	0	0	0 (0%-0.038%)
6	Amuru	Atiaka	Pacilo east	100	100	0	0	0 (0%-0.037%)
7	Amuru	Pabo	Oguru	76	76	0	0	0 (0%-0.06%)
8	Amuru	Pabo	Pericu	147	147	0	0	0 (0%-0.032%)
9	Adjumani	Dzaipi	Mukoloyoro	84	84	0	0	0 (0%-0.055%)
10	Adjumani	Dzaipi	Obu	51	51	0	0	0 (0%-0.087%)
11	Pader	Angagura	Lapaya	94	94	1	1.1	0.011 (0%-0.049%)
12	Pader	Angagura	Abilnino	98	98	0	0	0 (0%-0.047%)
13	Kitgum	Akwang	Bola	71	71	0	0	0 (0%-0.064%)
14	Kitgum	Akwang	Tumanguu	90	90	0	0	0 (0%-0.051%)
15	Kitgum	Akwang	Adyee	76	76	0	0	0 (0%-0.06%)
16	Kitgum	Akwang	Libia	71	71	0	0	0 (0%-0.064%)
17	Lamwo	Palabek gem	Abam	68	68	0	0	0 (0%-0.067%)
18	Lamwo	Palabek gem	Agwata	48	48	0	0	0 (0%-0.092%)
19	Gulu	Palaro	Ongendo	66	66	0	0	0 (0%-0.069%)
20	Gulu	Paicho	Lakwela	49	49	1	2.0	0.021 (0%-0.122%)
21	Gulu	Palaro	Oroko	39	39	0	0	0 (0%-0.011%)
22	Gulu	Paicho	Dwere	11	11	1	9.1	0.091 (0%-0.429%)
23	Omoro	Odek	Akoyo	103	103	2	1.9	0 .019(0%-0.075%)
24	Nwoya	Koch goma	Gonycogo (Ayago)	46	46	0	0	0 (0%-0.096%)
25	Nwoya	Koch goma	Gonycogo (Te-okutu)	72	72	0	0	0 (0%-0.063%)
26	Nwoya	Koch goma	Agong B (Jali)	78	78	0	0	0 (0%-0.059%)
27	Nwoya	Koch goma	Agong B (Amayokoma)	69	69	0	0	0 (0%-0.066%)
28	Omoro	Odek	Awaliwanglobo	96	96	0	0	0 (0%-0.048%)
				2263	2263	5	0.2	0.002 (0%-0.006%)

Sampled Areas for Ov16 beyond Sentinel Sites



Selection of Ov16 Survey areas beyond the Sentinel Sites in Madi Mid North Focus

- Sample collection was based on the parishes that are either at least 10km from the current sentinel sites or those that were strategically located along rivers.
- Survey was done in two entomological zones (one zone comprising Kitgum, Pader & Omoro districts and the second zone comprising Gulu, Nwoya & Amuru).
- At least 3000 blood spots from children less than 10 years of age were collected from each zone.

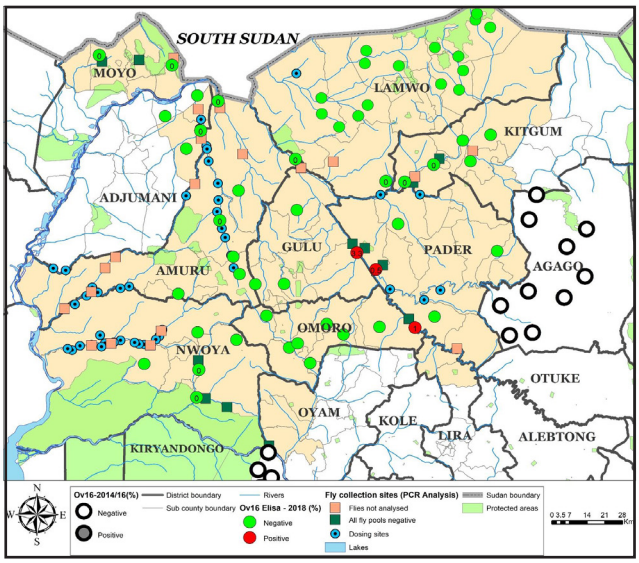
OV16 Results Beyond Sentinel Sites

District	# Parishes	# Collected	# Analyzed	# Positive
Adjumani	7	1543	318	0
Amuru	7	923	614	0
Gulu	7	821	238	0
Kitgum	5	375	371	0
Nwoya	6	1011	415	0
Omoro	11	1543	917	0
Pader	9	1135	344	0
Lamwo	7	2840	2840	0
Total	**59**	**10191**	**6057**	**0**

O - 150 Pool Screen PCR of Vectors

Year	District	Community	Site	Sentinal Site	River	Lat	Lon	No. of flies collected	No. of flies analysed	Pool size	No. of pools	No. pools positive	Confidence Interval
NA	MOYO	Gwere Luzira	Gwere Luzira	No	Amua	3.66253	31.80142		400	200	2	0	
NA	MOYO	Site not specified	no site	NA	Site not specified	NA	NA		800	200	4	0	
NA	Nwoya	Adibuk	Ceke	No	Adibuk River	2.39653	32.11519		200	200	1	0	
NA	Nwoya	Gonycogo	Ayago	Yes	Ayago River	3.67936	31.65939		200	200	1	0	
NA	Nwoya	Site not specified	no site	NA	Site not specified	NA	NA		200	200	1	0	
NA	Pader	Lapaya	Aruu	Yes	Aswa River	2.89792	32.64719		245	200 & 45	2	0	
NA	Pader	Latek West	Awere	No	Aswa River	2.89792	32.64719		187	187	1	0	
NA	Pader	Pabit	Pabit	No	Abuku stream	2.97611	32.60768		57	57	1	0	
Total									**2289**		**13**	**0**	
2014	Kitgum	Adyee	Adwara	Yes	Pager River	3.07656	32.08989	12	12	12	1	0	
2014	Kitgum	Bola	Otwara	Yes	Pager River	2.68742	32.78650	509	600	200	3	0	
2014	MOYO	Gwere Luzira	Gwere Luzira	No	Amua	3.66253	31.80142	12876	1000	200	5	0	
2014	MOYO	Pamulu	Pamulu	No	Oluvo	3.67936	31.65939	15792	390	200 & 190	2	0	
2014	Pader	Latek West	Awere	No	Aswa River	2.89792	32.64719	2194	200	200	1	0	
Total									**2202**		**12**	**0**	
2015	MOYO	Gwere Luzira	Gwere Luzira	No	Amua	3.66253	31.80142	13321	3200	200	16	0	
2015	MOYO	Pamulu	Pamulu	No	Oluvo	3.67936	31.65939	18405	200	200	1	0	
2015	MOYO	Pamulu		Yes	Oluvo	3.67936	31.65939		6097		31	0	
2015	MOYO	Site not clear	Madi sub focus	NA	Site not clear	NA	NA		2000	200	10	0	
2015	MOYO		Obongi	NA	Site not clear	NA	NA		200	200	1	0	
2015	MOYO	Site not specified	no site	NA	Site not specified	NA	NA		672	200 (3 pools) & 72	4	0	
2015	Nwoya	Adibuk	Ceke	No	Adibuk River	2.39653	32.11519	4053	2590	200 (12 pools) & 95 (2 pools)	14	0	
2015	Nwoya	Agonga B	Ademola	Yes	Ayago River	2.53281	32.01500	396	200	200	1	0	
2015	Nwoya	Gonycogo	Ayago	Yes	Ayago River	3.67936	31.65939	3192	2800	200	14	0	
2015	Nwoya	Site not clear	Nyoya	NA	Site not clear	NA	NA		400	200	2	0	
2015	Nwoya	Site not specified	no site	NA	Site not specified	NA	NA		200	200	1	0	
Total									**18559**		**95**	**0**	
2016	Nwoya	Adibuk	Ceke	No	Adibuk River	2.39653	32.11519	14946	555	200 (2 pools) & 155	3	0	
2016	Nwoya	Agonga B	Ademola	Yes	Ayago River	2.53281	32.01500	8264	1197	200 (5 pools) & 197	6	0	
2016	Nwoya	Gonycogo	Ayago	Yes	Ayago River	3.67936	31.65939	19979	1173	200 (5 pools) & 173	6	0	
2016	Oyam	Akuridia	Akundea	No	R.Nile	2.25557	32.26575	2239	635	200 (3 pools) & 35	4	0	
Total									3560		19	0	
2017	Amuru	Site not specified	no site	NA	Site not specified	NA	NA		148	148	1	0	
2017	MOYO	Pamulu	Pamulu	Yes	Oluvo	3.67936	31.65939	1050	800	200	4	0	
2017	Nwoya	Adibuk	Ceke	No	Adibuk River	2.39653	32.11519	4710	78	78	1	0	
2017	Nwoya	Agonga B	Ademola	Yes	Ayago River	2.53281	32.01500	2544	187	187	1	0	
2017	Nwoya	Gonycogo	Ayago	Yes	Ayago River	3.67936	31.65939	7464	187	187	1	0	
2017	Omoro	Lakwela	Lapuda	No	Aswa River	2.95961	32.57922	120	35	35	1	0	
Total									1435		9	0	
2018	Amuru	Site not clear	R. Achwa	NA	Site not clear	NA	NA		1290	200 (6 pools) & 90	7	0	
Total									1290		7	0	
GRAND TOTAL									**29335**		**155**	**0**	

No Cross - Border Transmission, Magwi-Lamwo to Adjumani



Results of Epidemiological Assessments in Refugee Camps

District	Refugee Settlement	Population	No Screened	No Positive	% Positive	Remarks
Adjumani	Pagirinya	190,000	245	0	0	No infection (No vectors)
Obongi	Palorinya	180,000	301	27	9.0	The area is free from *Simulium* vectors
Total (OV16)		**370,000**	**546**	**27**	**4.9**	
Lamwo	Palabek Refugee Settlement	52,000	733 skin snipped	0	0	No infection (No vectors)

NB: The refugees in Adjumani and Lamwo districts were free from onchocerciasis.
Kajo-Keji refugees in Moyo District require treatment though camps are located in non-onchocerciasis endemic areas.

Conclusions

- There has been high annual and semi-annual mass treatment coverage (>90%) for many years.
- Aerial spraying and ground larviciding reduced and kept the vector population low.
- Based on PCR results in sentinel sites, it seems that vectors in this focus are free from O. volvulus. However, we need to analyze the backlog in the laboratory using PCR.
- No cross border transmission between Mid North and Magwi county.
- There is no recent exposure of children in Magwi county.
- Oversampling of OV16 samples in Lamwo and RSS border sub-counties shows no recent exposure among children.
- Refugees in Palabek settlement in Lamwo based on mf prevalence were free of Onchocerciasis. There is no risk of refugees re-introducing O.volvulus transmission in the focus.
- In case of an increase in vector population after stopping larviciding, this might constitute a biting nuisance to some communities.
- Both Epi and Ento assessments suggest that there is no ongoing transmission in Madi-Mid North focus except in Moyo district where more information is required since the district borders Kajo-Keji county in RSS with likely ongoing transmission.

Way Forward

i. This focus should be considered as "interruption of transmission" achieved if the remaining blood spots and flies in the laboratory test negative.
ii. Moyo District should be given special classification as a transmission zone and be separated from the rest of Madi Mid-North focus.
iii. Moyo District should be reclassified as "interruption suspected" if all flies remaining in the laboratory become negative.
iv. Kajo-Keji county is likely to be a source of re-infection.
v. The Ministry of Health team should be prepared to control and eliminate *Simulium* biting nuisance when need arises.

The program would like to thank

Lions Clubs of Uganda, Local Governments of the endemic districts and Community members.

Progress in Program for Eliminating Lymphatic Filariasis

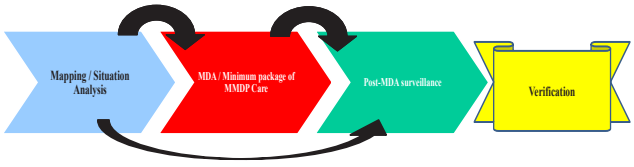


Gabriel K. Matwale

General Information

- Lymphatic Filariasis in Uganda is caused by *Wuchereria bancrofti.*
- The parasite is transmitted by different species of Anopheles notably Anopheles gambiae group and Anopheles *Funestus* group.
- The major clinical manifestations are: Hydrocele, Lymphoedema and Elephantiasis.
- The disease is targeted for elimination using elimination strategy.
- Elimination strategy has two pillars: Interruption of transmission and Alleviation of suffering due to LF infection.

General Information: Key Programmatic Steps



1. **MAPPING:** Uganda's 63 affected districts now generally enjoy an enviable standing in their fight against LF. However to get to their current high level status after disruption of transmission, this being the reason why most of them now deserve to be described as "previously endemic for LF", mapping was successfully done.
2. **MDA:** 100% geographical coverage was the target, and this has been done on the whole.
3. **END TO MDA:** 57 districts stopped MDA, and Post-MDA surveillance was done (TAS 2: 49; 5+3 TAS 1).
4. **PRE-TAS:** 6 districts have done pre-TAS (and passed).

Districts Endemic

Region	District	Region	District
Eastern	Bugiri	Eastern	Soroti
Eastern	Namayingo	Eastern	Serere
Eastern	Mayuge	Eastern	Kumi
Eastern	Tororo	Eastern	Ngora
Eastern	Pallisa	Eastern	Bukedea
Eastern	Butebo	Eastern	Iganga
Eastern	Kibuku	Eastern	Luuka
Eastern	Budaka	Eastern	Namutumba
Eastern	Butaleja	Eastern	Kamuli
Eastern	Kaberamaido	Eastern	Buyende

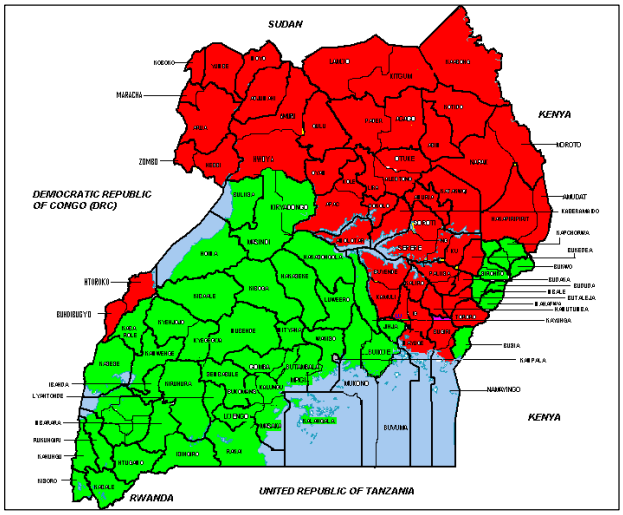
Region	District	Region	District
Eastern	Kaliro	Northern	Agago
Eastern	Katakwi	Northern	Amuru
Eastern	Amuria	Northern	Nwoya
Northern	Arua	Northern	Yumbe
Northern	Maracha	Northern	Koboko
Northern	Kitgum	Northern	Nebbi
Northern	Lamwo	Northern	Pakwach
Northern	Gulu	Northern	Zombo
Northern	Omoro	Northern	Adjumani
Northern	Pader	Northern	Moyo

Districts Endemic (Cont'd)

Region	District
Northern	Apac
Northern	Kole
Northern	Oyam
Northern	Dokolo
Northern	Amolatar
Northern	Lira
Northern	Alebtong
Northern	Otuke
Northern	Kotido
Northern	Kaabong

Region	District
Northern	Abim
Northern	Nakapiripirit
Northern	Amudat
Northern	Moroto
Northern	Napak
Western	Bundibugyo
Western	Ntoroko

LF Status 2002

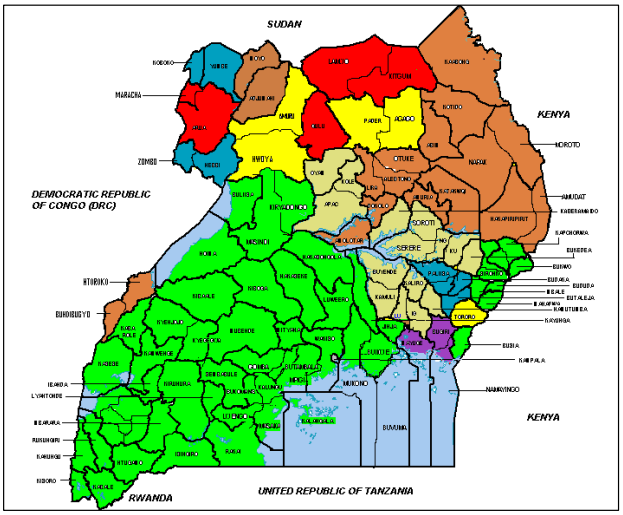


Key

Non-Endemic

Endemic - MDA

LF Status June 2019



Key

Endemic - TAS 1 2017

Endemic - TAS 2 2017

Endemic - TAS1 2019

Endemic - TAS 2 2018

Endemic- TAS 2 2019

Pre-TAS 2019

L F Assessment in Refugee Settlements

Program undertook LF assessment in refugee settlements

- Moyo: Itula sub-county (Parishes - Palorinya, Paluoja, Legu, Kali and Waka).
- Yumbe: Bidibidi scattered in 5 sub-counties.
- Arua: Imvepi and Rhino camp.
- Koboko: Imvepi.
- Lamwo: Palabek.
- Adjumani: 7 settlements.

L F Assessment in Refugee Settlements

District	Settlement	Number Tested	Number Positive	Origin
Moyo	Itula	486	3	Kajo-Keji (Central Equatoria)
Yumbe	Bidibidi	481	2	Yei (Central Equatoria)
Koboko	Lobule	203	0	-
Arua	Rhino Camp	598	0	-
	Imvepi	277	0	-

L F Assessment in Refugee Settlements

District	Settlement	Number Tested	Number Positive	Origin
Lamwo	Palabek	960	1	Not indicated
Adjumani	Different settlements	840	1	Not indicated

•All those found positive were treated with IVM and Albendazole according to height.
•Actions: More assessment required to determine where mass drug administration is required.

Progress on Interventions to Control / Eliminate the Disease (MMDP).

- Morbidity management and disability prevention is the second pillar of LF elimination strategy.
- Targets 4 districts (Lira, Pader, Lamwo, Amuru) with support from UKAid through Sightsavers.
- Hydrocelectomies were carried out, the burden reduced by 38%.

Hydrocelectomies Done

District	Cases confirmed	No. of cases operated	No of hydroceles	Coverage (%)
Lira	430	248	298	57.7
Pader	120	95	108	79.2
Lamwo	51	48	58	94.1
Amuru	96	42	52	43.8
Total	**697**	**433**	**516**	**62.1**

Trainings on Lymphoedema Management

- Trainings were carried out in the 4 Sight Savers targeted districts.
- One health worker from each Health Centre (HCIII and II) received training on Lymphoedema management.
- Facilitation was done by PELF Lymphoedema management trained staff.
- The venues were health centers (HCIII or II) near identified patients.
- A total of 123 health workers were trained.

Training / Re-Orientation on Lymphoedema Management

- The trainees were educated about mobilization of patients within their catchment areas.
- The team visited these stations at designated dates and time to supervise.
- During the supervisory visits, care takers were also trained on how to take care of the patients.
- Start-up Lymphoedema management packs were given to patients who attended.
- The pack had the following: a basin, soap, towel, vaseline and bandage.

Challenges

- Positive cases which appear during TAS 2.
- Post treatment feedback and surveillance.
- Sustainability.
- LF morbidity burden assessment.
- LF morbidity management and disability prevention.

Recommendations

- Targeted surveys especially where positive cases are found (operation research).
- Intensify community dialogue to improve on community participation and ownership.
- Post treatment meetings (why stop MDA and what is expected?).
- Undertake LF burden assessment.
- High level advocacy for districts targeted for MMDP.

Acknowledgements

USAID, RTI ENVISION, WHO, Pharmaceutical Companies, TFGH, IHRD/DBL, SightSavers, Uganda Government, District Local Governments and Community Members.

The presence of the Congolese and South Sudanese delegations at this meeting clearly demonstrates the growing awareness of the need to combine efforts for the elimination of onchocerciasis in our respective countries as well as in the Sub-region.

- Patrick Mwira Karamura

I highly commend the ongoing cross-border efforts in Onchocerciasis elimination with South Sudan and I hope that all planned activities with DRC will resume as soon as Ebola outbreak stops.

- Jane Ruth Aceng

Maracha-Terego Onchocerciasis Focus

Patrick Dramuke et al♦

UOEEAC 2012 Recommendations

» Focus re-classified as 'transmission interrupted'.
» Clinic based individual treatments to continue.
» Program to provide information concerning the geographical locations from which the samples for sero-survey were collected.

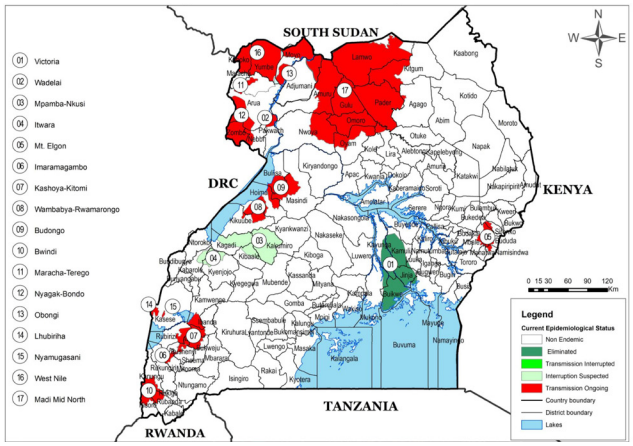
UOEEAC 2018 Recommendation

• Continue with annual MDA for Lymphatic Filariasis (Ivermectin + Albendazole).

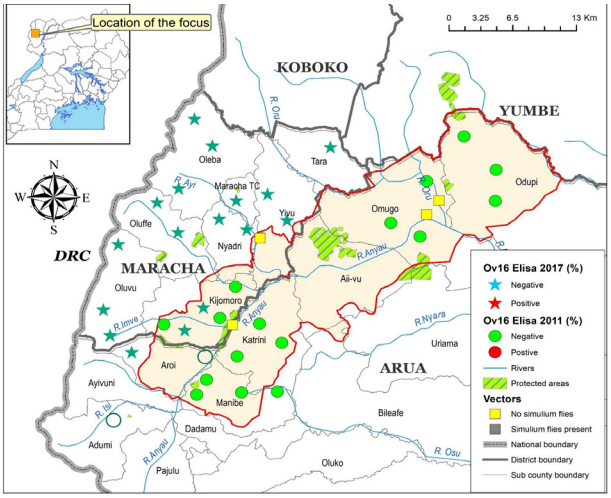
Background

➢ Maracha-Terego focus is located in West Nile Region.
➢ It lies in the upper and lower reaches of Inyau river system.
➢ The focus straddles the former counties of Arua (Ayivu, Maracha and Terego).
➢ In the 1950s – 1960s onchocerciasis was more severe in Terego County.
➢ Vectors involved have been assumed to be both *S. damnosum* complex and *S. neavei*.
➢ Ivermectin mass administration started in the 1990s by Kuluva Hospital with CBM (NGOs).
➢ Entomological and epidemiological reviews of the focus were done in 2009 and 2011.
➢ The focus was declared "transmission interrupted" in 2012 and is still on annual Ivermectin MDA due to LF co-endemicty.

Map of Uganda Showing The Location of Maracha - Terego Onchocerciasis Focus



Map of Maracha - Terego Onchocerciasis Focus



Historical Data

Microfilariae Assessment in Terego Sub-focus (1993 & 2007)

District	Village	1993			2007		
		Number Examined	No. Positive with mf	% mf	Number Examined	No. Positive with mf	% mf
Terego	Anyangba	50	48	96	50	0	0
Terego	Oguvu	50	NA	NA	50	0	0
	Totals	**100**	**48**	**48**	**100**	**0**	**0**

Microfilariae Assessment in Aivu Maracha Sub-county Focus (March 2011)

District	Village	Adults			Children		
		Adults Examined	No. Positive with mf	% mf	No. Examined	No. Positive with mf	% mf
Arua	Aliba	70	0	0	35	0	0
Maracha	Ayiko	80	0	0	30	0	0
	Totals	**150**	**0**	**0**	**65**	**0**	**0**

Nodule Prevalence in Terego Sub-Focus (1993 & 2007)

District	Village	1993			2007		
		Number Examined	No. Positive with Nodule	% Nodule	Number Examined	No. Positive with Nodule	% Nodule
Terego	Anyangba	50	38	76	50	2	4
Terego	Oguvu	50	33	66	50	1	2
	Totals	**100**	**71**	**71**	**100**	**3**	**3**

Nodule Prevalence in Aivu Maracha Sub-focus (March 2011)

District	Village	Adults Examined	No. Positive with Nodules	% Nodule
Arua	Aliba	70	0	0
Maracha	Ayiko	80	1	1.3
Totals		150	1	0.7

OV16 Results

Period	No. Screened	Number Positive	% Positive	95% Confidence Interval (CI)
2012	6634	0	0	0 - 0.0007
2017	3094	0	0	0 - 0.0015

Activities Implemented - Aug 2010 – July 2019

1. Entomological investigation

- Continued with annual river prospection.
- Continued with annual fly catches 5-10 days in the three established sites from 2018.

2. Conducted TAS for LF

Investigations for *Simulium* vector immature stages in Maracha-Terego focus August 2018 – July 2019



Crab trapping for *S. neavei*



Search for *S. damnosum*





Sites compatible with *S. damnosum* & *S. neavei* but no breeding detected.

Results

- Weekly full day catches of 4 days a month, yielded no single fly between May 2010 and 2017, and later during 10 days in July 2018 and over the same number of days in July 2019.
- River prospections in potential *Simulium* breeding sites revealed neither *S. neavei* nor *S. damnosum* early stages.
- Pre-TAS for LF conducted this year 2019; had negative results.

Trend of Crab Catches and Examination for *S. neavei* Immature Stages

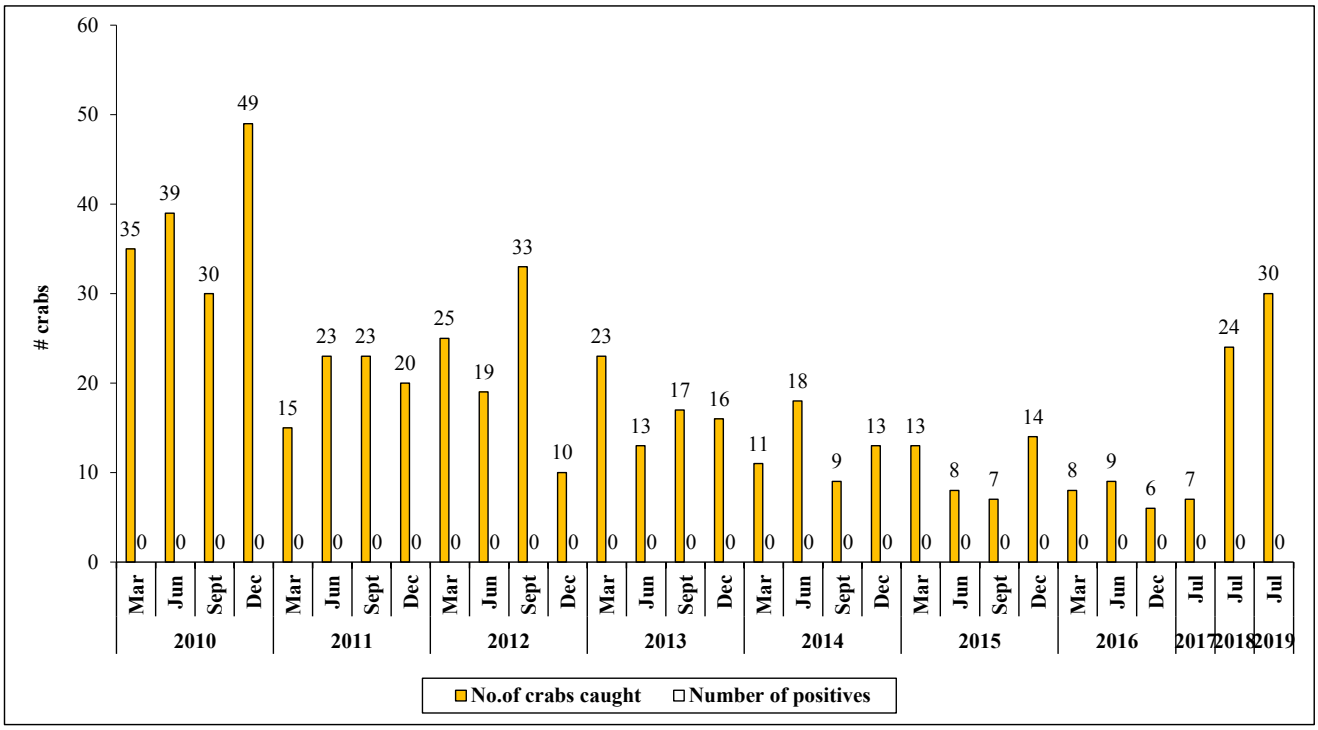


Table Showing Adult Fly Catches from May 2010 to July 2019

Year	No. of fly catching sites	No. of *S. neavei / damnosum* caught
2010	3	0
2011	3	0
2012	3	0
2013	3	0
2014	3	0
2015	3	0
2016	3	0
2017	3	0
2018	3	0
2019	3	0

NB: No *S. neavei* fly was observed.

Encroachment on river banks



Conclusion

- 9 years with no evidence of the vectors.
- OV16 results: In 2017, out of 3,094 children, none{0%}was positive.
- Pre-TAS-LF for 2019 passed.

Way Forward

Re-classify focus from "transmission interrupted" to "onchocerciasis eliminated".

♦ Patrick Dramuke worked hand in hand with: Ephraim Tukesiga, Andreas Etole, Steven Azabo and Levi Matua.

The program would like to thank

Lions Clubs of Uganda; M.O.H. Uganda; Local government of Maracha District; Focus Vector Control Officers; Entomological assistan ts and Vector collectors and general community for the high level of cooperation.

Progress of Slash and Clear and EWT Activities in Northern Uganda - Amuru and Nwoya Districts



Denis Loum et al♦

Introduction

(A) Slash and Clear: is a strategy of vegetation removal of blackfly breeding habitats.

- This is an ongoing research in the bank and other surrounding areas of R. Unyama which started on 9th May 2017.
- The hypothesis was that once breeding habitats of black flies are removed or destroyed, it would delay the repopulation of this vector.
- In the absence of black flies or very low population, transmission of the disease will eventually be interrupted.
- Madi Mid-North focus is one of the two foci in Uganda still with ongoing transmission.
- Preliminary results that emanated from previous studies were very promising; however, efforts to understand better this strategy are still ongoing in the shores of R. Unyama.

(B) Esperanza Window Trap (EWT): is also one of the vector control approaches that has been under trial in Nwoya District since 2016.

- Simple materials are used for construction of EWT and can be manned well by the affected communities.
- Several designs using this trap have been tried to assess their performance in the local settings in Uganda.
- Its performance in terms of size, color and width of stripes has been reported.
- Other characteristics related to their deployment in public places is further being assessed.
- This presentation will focus on the performance of slash and clear strategy during dry seasons in Amuru District and EWT performance along R. Ayago in Nwoya District.

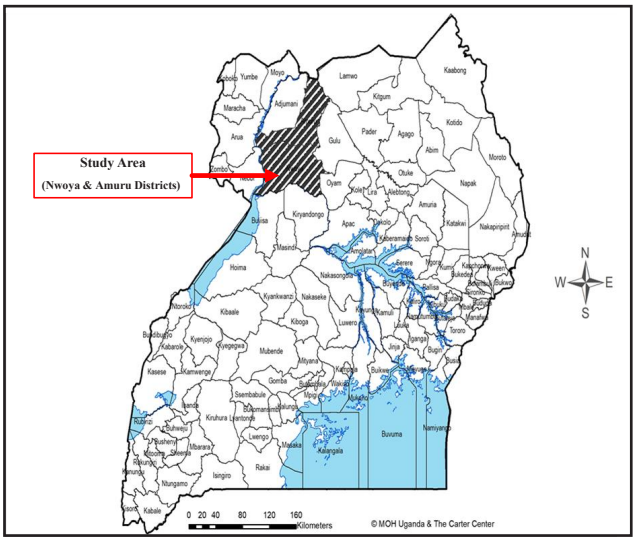
Hypothesis & Objectives

Hypothesis

- Community-directed treatment with Ivermectin and vector control efforts using optimized traps, local reduction of breeding habitats or some combination of these methods together with MDA will reduce micro filarial worms and vector biting rates to a point where *O. volvulus* may be eliminated.

Specific Objectives

1. To optimize the EWT in order to maximize collection of savanna dwelling *S. damnosum sensu lato*, and to test if the hypothesis that optimized EWTs will significantly reduce vector density.
2. Community based vector control measures based upon larval habitat removal and optimized traps will result in long term reductions in vector biting rate.



Methodology- Slash by Distance

- The slash by distance study was carried out in three communities.
- The protocol was to conduct a baseline survey of the biting rates and then conduct a slash and intervention on the breeding sites located within 1 km of the intervention communities.
- This was followed by fly collection for a month; then there was conduction of a second slash and clear and this time extending it to 2 km from the village.
- After waiting for another month, slash and clear was done for the third time extending it to 3 km from the village.
- Fly collection continued for another month (the 4th).

Some Members of Slash and Clear Team in Action on R. Unyama





Methodology: EWT Trap Optimization Studies

- The performance of different trap designs was evaluated in a pairwise fashion.
- Three pairs of sites were identified in each village where the traps were set up.
- The trap sites were at least 50m apart, to ensure that they were independent from one another.
- Traps were kept within 500m of the major black fly breeding site found in each community.
- One trap design was placed at one of each of the pair of sites, while the second design was placed at the second site in each pair.
- The position of the trap designs in each pair of sites was switched weekly, to eliminate position effects.
- The number of trials ranged from 12 to 30, depending on the trial.
- Designs evaluated in each study were normalized to the total number of flies collected from both trap designs on each day.

Methodology: School-Based Evaluation of the EWT

- Two primary school classes in the village of Gonycogo, Nwoya District were selected.
- One thatch roofed building open to the outside on one side and second class was an open air under a tree.
- A human landing collector was placed at the periphery of the classes.
- Baseline data collections were carried out daily in the absence of the traps for a week.
- External HLC point, 100 metres from the two classes, was established.
- Two narrow black stripe traps were then set up near each of the classes and collections were continued for an additional one week.
- Collection numbers were normalized to those obtained from a human landing collection team located roughly 200m from the school.

Gonycogo Community School - Nwoya District



Grass Thatched Class

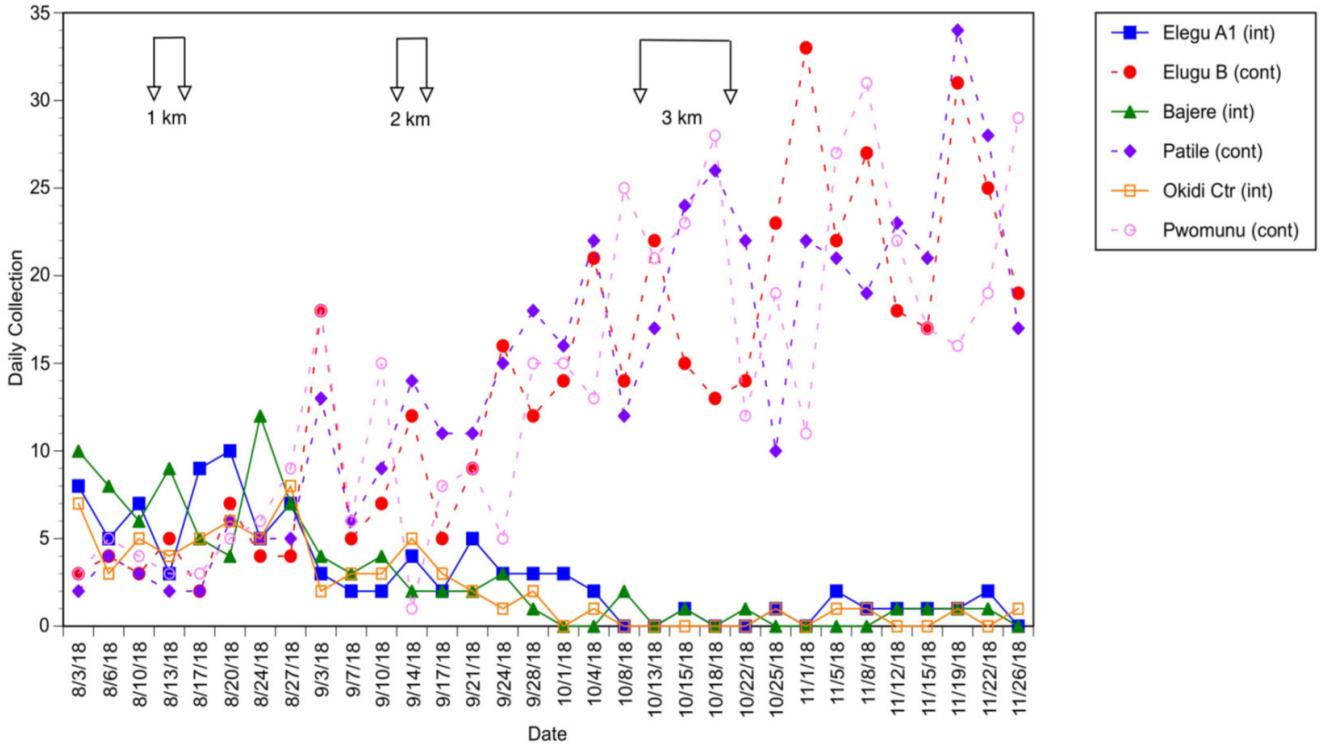


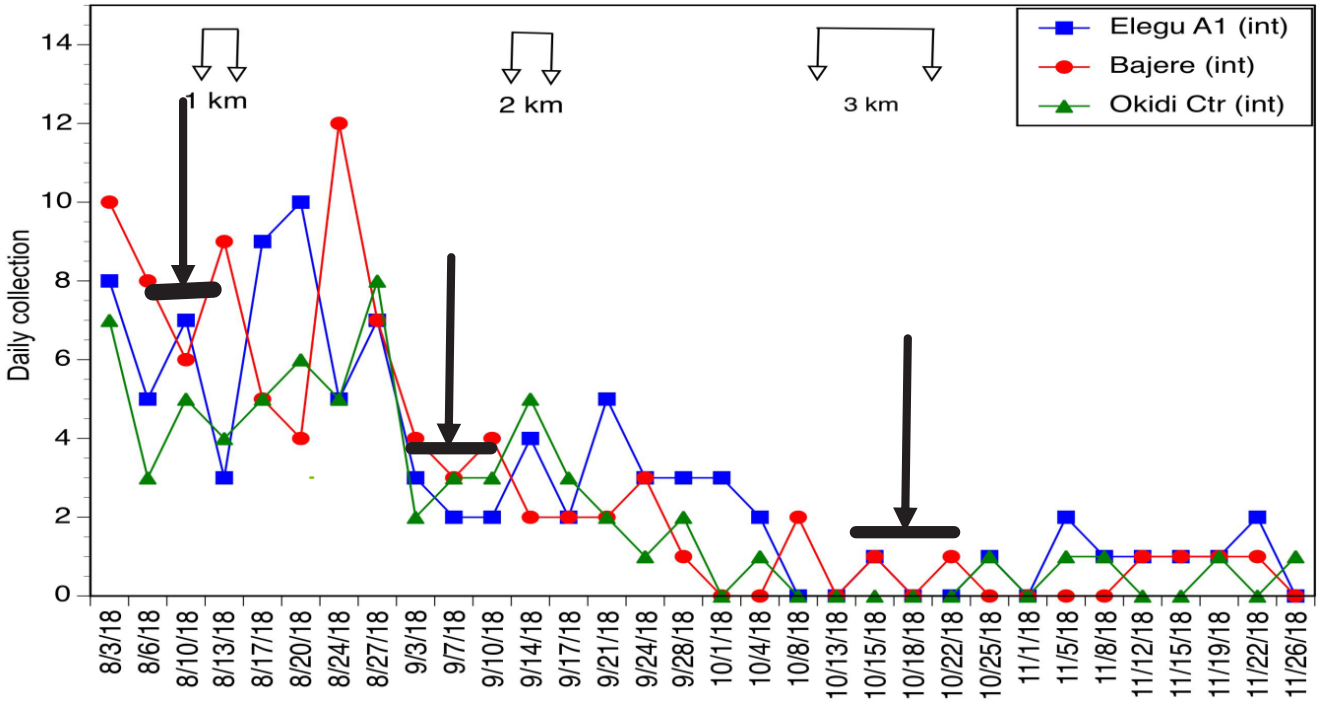
Open Air Class Under Tree

Results

- It is clear that the slash interventions resulted in a dramatic decline in biting rates.
- The biting rates in the control villages increased during the course of the study *while those in the intervention dramatically decreased.*

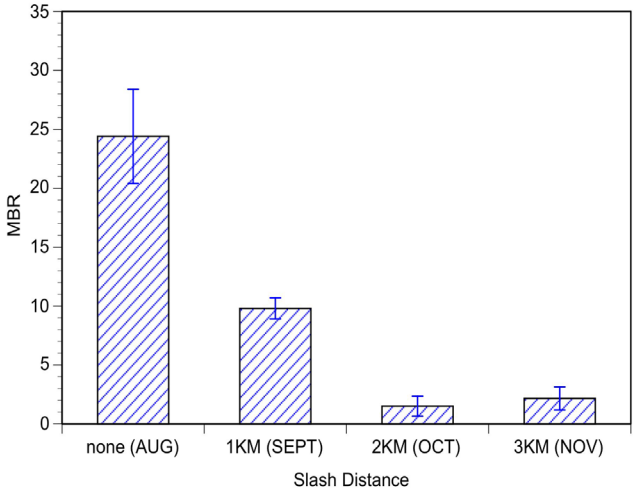
- The difference between the control and intervention villages in regard to decline in biting rate was so big.





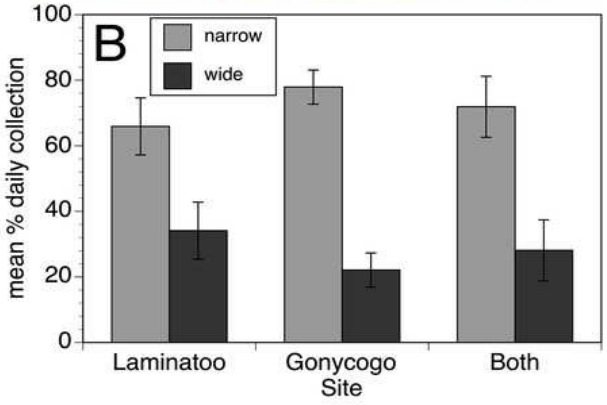
Monthly Biting Rates During Slash by Distance Study

- First slash resulted in 60% reduction in biting rate.
- Second slash resulted in about 90% reduction in biting rate.
- The third slash did not have any additional effect.



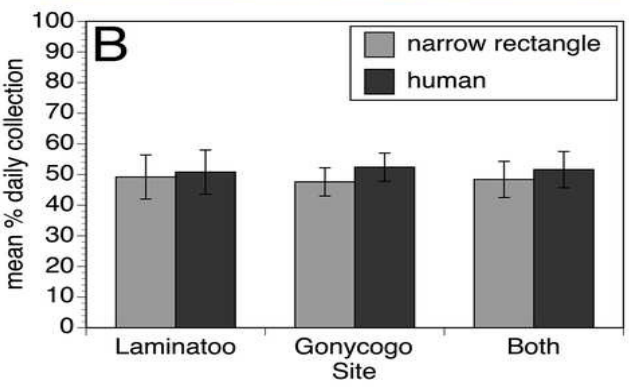
Performance of 1 meter Traps with Wide and Narrow Black Stripes



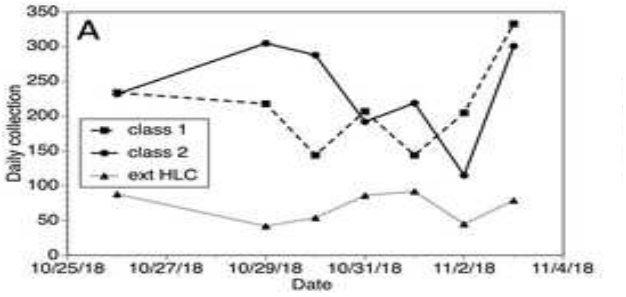


Performance of Simple and Human Shaped Stripe Designs

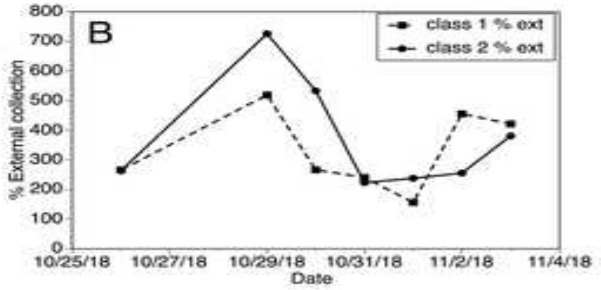




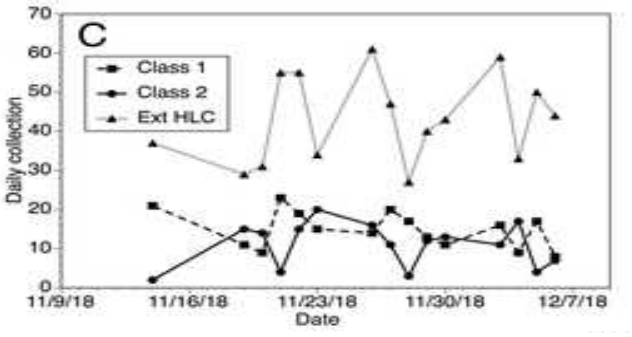
Ability of the Optimized EWT to Reduce Biting in a School Setting



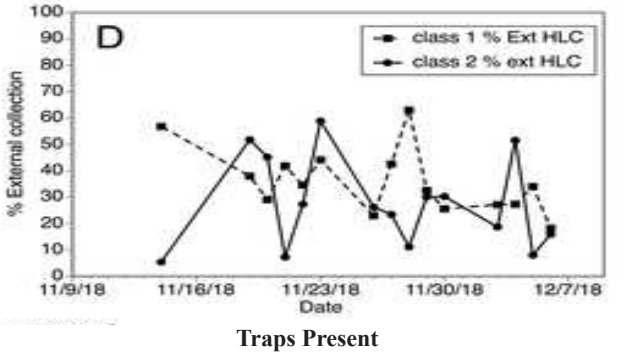
Baseline



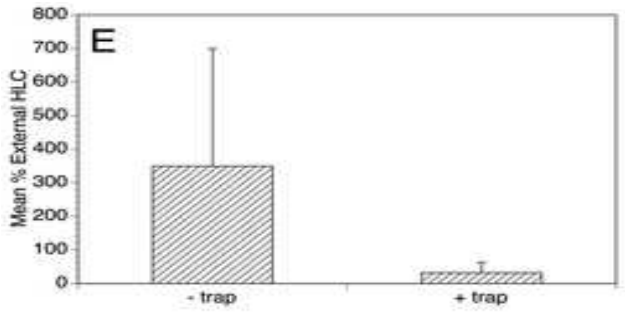
Baseline



Traps Present



Traps Present



For more on the reduction of biting rates, consult: Denis Loum, D. Cozart, Thomson Lakwo, Peace Habomugisha, Benjamin Jacob, Eddie W Cupp, and Thomas R Unnasch. "Optimization and Evaluation of EWT to Reduce Biting Rates of *S. damnosum* in Northern Uganda", *PLoS Negl. Trop. Dis, 13(7): e0007558, July 16 2019.*

Conclusion

Slash by distance

- The first and second slash by distance rounds resulted in significant reduction in the biting rate while in the third slash there was no additional effect.

Esperanza Window Trap

- The optimized EWT appeared to have potential for protecting groups of people from the bites of vector black flies.

Ongoing field activities: 2019

Monitoring:

(a) Slash and clear activities in rainy and dry seasons at three sites along R. Unyama system.

(b) Slash and clear activities by distance at two sites on R. Unyama system.

(c) EWT deployment in schools in Gonycogo and Laminlato river systems.

Planned Activities: 2019

- Field trials of isolated compounds from sweat samples collected from vector collectors in Gonycogo area.
- Testing local materials as sources of insect glue in local settings.
- Development of guidelines for slash and clear strategy is in progress.

Acknowledgements

National Institute of Health, USA; University of South Florida, Tampa, USA; VBNDD, Ministry of Health, Uganda;
The Carter Center, Uganda & Atlanta offices; Amuru District Local Government; Nwoya District Local Government; Coordinators, supervisors and
vector collectors of Amuru and Nwoya districts.

Thank You.



♦ Jacob Benjamin, Tom Lakwo, Christopher Katongole, Godfrey Kibwola, Peace Habomugisha and Thomas R Unnasch were some of the people that worked with Denis Loum.

Plan to Scale up Evaluation of Slash and Clear as a CD *Simulium* Vector Control Intervention

David Oguttu et al♦

Recommendation of 11th UOEEAC 2018

Conduct further evaluations of the slash and clear method in comparison with Abate ground application.

Background

- Vector control / elimination and CDTI were adopted as strategies for onchocerciasis elimination.
- Application of Abate in rivers led to faster interruption of transmission in 6 foci.
- Larviciding reduced S. *damnosum* population in Madi Mid-North focus until TCC support for Abate stopped in 2018
- Slash and clear trial under research on R. Unyama has produced good results too.
- Plan to scale up evaluation of this strategy (slash & clear) as a community-driven intervention is imperative.

Plan for Further Evaluation

- Learn the best practices from the slash and clear study.
- Apply some principles of CDTI approach to communities where slash & clear activities are being carried out.
- Identified rivers (Okike and Acii) in Amuru District for slash & clear work.
- Both rivers (Okike and Acii) support S. *damnosum* breeding and have never been larvicided.
- Do thorough prospection to identify suitable and assessible sites for slash and clear activities.

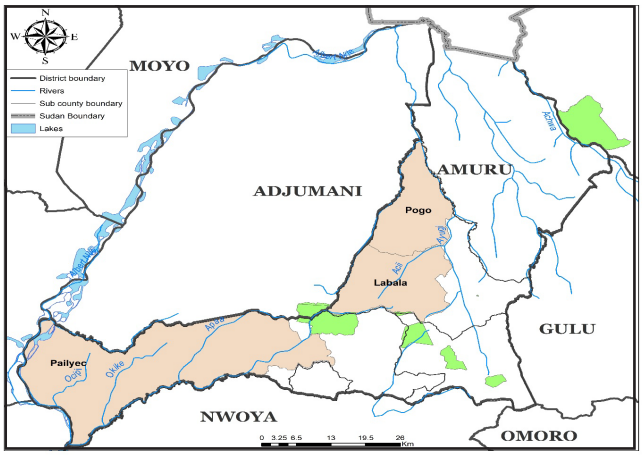
Starting Community Directed Slash and Clear Activities

- Advocacy meetings with district, sub-county, parish and community leaders will be held.
- Community leaders will join program personnel to sensitize community on slash and clear.
- Mobilization and sensitization of targeted communities on using locally available household level tools such as *pangas* etc.
- Train community leaders and selected individuals to guide others in the planning and implementation of activities.
- Maximum participation of community members is expected if they are operating within a 2 km distance on either side of the river (as anything beyond 2 km may result in the demand for monetary incentives).
- After one year of community implementation, community-directed slash and clear activities, should be established in other river systems of districts and communities that are suitable for such an intervention.
- Establish slash and clear activities using community resources in line with self-help initiatives in every community in Uganda.
- The program shall only provide technical support to communities.

Measuring Vector Control Success

- Baseline activities to ascertain the initial vector biting status.
- Reduction of the biting nuisance throughout the year.
- Interruption of transmission based on PCR *Simulium* fly analysis.
- Reduction of exposure to onchocerciasis among children below 10 years of age.
- Positive assessment of the status of onchocerciasis elimination by the community members, indicating reduced effects and impact of the disease on the community.

Location of Rivers Under Slash Evaluation



Budget for Planned Slash Activities for 2 years

Activity	1st Year ($)	2nd Year ($)	Total $
Prospection, mapping of breeding sites and identification of affected communities	7,317	4390.3	11,707
Advocacy meetings	1,578	946.5	2,524
Sensitization and health education meetings	4,566	2739.4	7,305
Recruitment / selection and training of vector collectors and site supervisors	3,995	2397.3	6,393
Baseline data collection (2 months)	6,300	3780	10,080
Slash and clear intervention activity for 2 cycles (1 year)	6,300	3778	10,078
Vector monitoring and supportive supervision by MoH	4,216	2268	6,484
Grand total	**34,272**	**20,299.5**	**54,571**

♦ David Oguttu worked with Christopher Katongole to put together the contents of this presentation.

What we have here is a compendium of the statements that were the starting point(s) of the committee's most up to date re-visitation of Uganda's more than 65 year old sometimes straight, at times disrupted crusade to unfetter its affected populations and regions from the dreadful effects of the blackfly menace. For sure the trek has oftentimes been long and hard, not alone for the suffering populace, but also for the country's frontline healthcare and other responders as well as their foreign partners – individuals and or organizations. In times gone by, many victims - children, youths and adults - were embattled by, lived in the wrath of onchocerciasis and died regretting why they were born. In very sharp contrast, the speeches hereunder have a special ring running through them – on a happier and more promising note, they beckon the at risk communities to possible short, medium and long term hope of liberation from the disease. To some extent, the speeches are even a celebration, even if Uganda is still to arrive at the finishing line. Let us read on.

Thomas Unnasch - UOEEAC Chair & USF Professor

I would like to thank all of you for coming to the 12th meeting of the Uganda Onchocerciasis Elimination Expert Advisory Committee. I joined this committee in 2008 and at that time there were 17 foci in Uganda where we still did not know the extent of onchocerciasis in details. Since then, we have witnessed that a powerful combination of vector control/elimination and semi-annual mass drug distribution with Mectizan that has been employed by the Uganda program has dramatically reduced onchocerciasis in the country. Today, we are facing a situation where transmission is still ongoing in only two (Lhubiriha and MMN) of the seventeen original foci. Last year, we were able to review results from post treatment surveys that allowed us to bring the number of foci in Uganda where onchocerciasis has been eliminated to six. We saw that collaborations between Uganda and the onchocerciasis programs of DRC and RSS were bearing fruit; as a result of the epidemiological surveys conducted in collaboration with DRC, the situation with three districts of the cross-border foci was clarified, allowing us to re-classify the Bwindi focus as "transmission interrupted". As we begin this meeting, onchocerciasis has been eliminated in 7 foci, protecting over a million people from this infection. Another 7 foci where 1.1 million people reside are in their post treatment surveillance period. But we still have work ahead of us. The population in the two foci where onchocerciasis transmission is still ongoing is a home to over 1.5 million people. I look forward to working with you over the coming three days to review the current status of onchocerciasis in Uganda and to formulating recommendations to the program as to how most efficiently we can carry out the activities in the coming year.

Gabriel Matwale - Office of the ACHS MOH Uganda (VBNDD) & National Coordinator NTDs

Hon Minister of Health, The Chair UOEEAC, Your Excellency the Ambassador of DRC, Country Representative WHO Uganda, Delegation from WHO, Representative from The Carter Center Atlanta, Hon Minister of Health DRC, Commissioners and Program Officers from the Republic of South Sudan, Partners, invited guests, ladies and gentlemen. On behalf of Vector-Borne and Neglected Disease Division formerly Vector Control Division where NTD elimination program falls, I warmly welcome you to Uganda, the pearl of Africa. On a special note I would like to welcome our neighbors from the RSS and DRC. I thank everyone here present for accepting the invitation to attend this meeting.

The month of August is becoming so special for the NTD family in Uganda. No wonder Ugandan hotels where most of the key onchocerciasis related decisions have been taken are referred to as wonder houses. In the month of August, experts in Onchocerciasis elimination gather in Uganda under the UOEEAC to hear how the Uganda Onchocerciasis program is faring. At the same time, they share their experience and critically review reports presented focus by focus. Decisions are made in the presence of observers who are stakeholders in the elimination process. A decision for any action to be taken is democratically made by majority vote. This is commendable.

Among the observers, we are privileged to have political and technical leaders from some of the affected districts. The presence of Chief Administrative Officers who are the accounting officers at the districts, Resident District Administrators who represent the president in their respective districts with special mobilization skills and LCV chairpersons who are the political leaders in the districts signifies the good

spirit of working together. I believe, decisions which will be taken during these three days, will be owned by the local authorities and the affected communities which they are representing. This shows transparency and creates a better platform to promote and advocate for sustainability.

Uganda is on track to eliminate targeted NTDs especially those amenable to preventive chemotherapy. Trachoma districts have drastically reduced to the extent that only one district still requires MDA. All the 63 Lymphatic Filariasis districts have stopped MDA. I believe that by the end of this meeting, more districts affected by Onchocerciasis will also stop MDA. Our biggest challenge however, is how to control Schistosomiasis. Since it is associated with occupational activities like fishing and rice growing, those who get treatment receive re-infection at a faster rate. We need to do things differently including ensuring intensified behavioral change and improved hygiene. Another challenge within the targeted NTDs is on morbidity management and disability prevention - due to chronic manifestation of LF. We really need both technical and other supporters who are experts on these two critical conditions. I know that the expertise from the Onchocerciasis Elimination Program will be borrowed to address the conditions of the two diseases mentioned above.

As I close, allow me to thank all those who are partnering with us to see to it that Uganda is NTD free. In a special way I want to thank the Mectizan Donation Program who are spearheading the donation of ivermectin as long as it is needed. On a happy note, I want to assure you that we may soon reduce on ivermectin requests to give room to other countries who still need the medicine. I would also like to thank The Carter Center whose support always makes this meeting a success. To you all, allow me to say: we shall win, and we are winners! I wish all of you fruitful deliberations.

Benjamin Binagwa - Chief of Party, Act to End NTDs/East and RTI



The Hon. Minister of Health, Uganda, The Chair of UOEEAC, WR in Uganda, Representatives of NTD partner organizations and agencies, the Uganda NTD team, Observers from the RSS and DRC, the Deputy Head of Mission of the RSS, distinguished ladies and gentlemen. It is a pleasure for me and on behalf of Act to End NTDs/East & RTI to welcome you all to the 12th session of UOEEAC. I wish to congratulate the Uganda team and partners for the achievements so far recorded. I am glad that RTI will continue to be part of this meeting and the fight against Onchocerciasis for the next four years directly through RTI or the Carter Center. We thank USAID for having given RTI the opportunity to continue support to the Onchocerciasis program in Uganda and other preventive chemotherapy NTDs following the end of the Envision project in Uganda.

Take note that one of the recommendations at the 11th meeting was the need and urgency for collaboration between the RSS and DRC. For Uganda to make good progress towards elimination, peace and security will be critical. The impact of insecurity on health programs is known globally and in our region. We hope that the efforts of the Ministry of Health, Uganda, to reach out and provide support to neighboring countries will be met with a conducive environment to allow the partnership to achieve its desired results. Finally, USAID recognizes that Uganda is on track to reach its 2020 elimination goals for LF and Trachoma and for Oncho elimination target in 2025. I am glad to report that we have one district still a problem with trachoma out of the 50 previously endemic districts. All the 63 districts endemic for LF have stopped MDA. We need to establish robot surveillance systems that will monitor the disease and ensure that the disease does not re-occur in areas where elimination has

been achieved. Again, on behalf of RTI/Act to End, I wish to thank the Hon. Minister of Health for her continued support to the NTD Program in Uganda. Thank you Honorable Minister and we hope that you will continue to support these programs. As RTI & Act to End-East, we treasure the relationship we have with the Ministry of Health as well as Government of Uganda and we will continue with our technical, logistical and financial support to the program until 2023. I wish you good deliberations.

Yao Sodahlon - Director MDP



I express my congratulations to Uganda for the tremendous achievements for the elimination of both onchocerciasis and LF. MDP and its team are proud to be Uganda's strong partners in the elimination of river blindness.

I want to commend the Ministry of Health for the strong cross border collaboration with the Democratic Republic of Congo and the Republic of South Sudan. This will safeguard the achievements Uganda has made. Special thanks go to the Honorable Minister of Health, Dr. Jane Aceng, for her support to a new world health assembly resolution calling for the global elimination of the transmission of onchocerciasis. However, sadly, onchocerciasis is not yet included in the draft of the 146th executive board agenda. As the WHO's department of NTD is proposing a more comprehensive resolution to facilitate the implementation of the new 2020-2030 NTD roadmap, I humbly invite Uganda to send a request to the DG of the WHO for the inclusion of the NTD as a discussion item in the 146th executive board assembly.

I wish you fruitful deliberations.

Clement Deng Akech - Deputy Head of Mission, RSS



The Hon. Minister of Health, Uganda, The Chair of UOEEAC, My colleague the Ambassador of DRC, The Representatives of Carter Center, Representatives of WHO in Uganda, The Representatives of Lions Clubs, All participants from other parts of the world, thank you for being here to discuss the health of our people.

Allow me to introduce my three colleagues who have represented the people of South Sudan for the last three years: Mr. Makoy Samuel Yiibi Logora of the Ministry of Health in Juba and the two County Commissioners, Henry Sabuni and Emilio Igga.

On behalf of the people of South Sudan and on my own behalf, I am happy to be here in Uganda to participate in this important meeting. We appreciate the people of Uganda who have been there for us. I commend your efforts in supporting us through difficult times we have been passing through as one of the youngest nations of the UN. We commend H.E the President of South Sudan for entrusting young people with leadership positions. The people of South Sudan are learning from Uganda's UOEEAC and I would like to request the Chair to bring such a meeting to Juba. I am sincerely grateful that we have not been left behind and we need your continued support more than any other country in the world. We shall continue participating and learning more from you. Thank you so much Uganda Ministry of Health officials. As people who are building from scratch, we count on you for your support. We are thankful to your great nation, Uganda, for having accommodated over 1.9 million South Sudanese nationals. As a country (RSS), we pledge to work closely with you so that we do not become an obstacle to the achievements you have already registered. God bless Uganda.

Christian Katoto - On behalf of Ambassador DRC



Her Excellency, Minister of Health in Uganda, Chairman of UOEEAC, Deputy Head of Mission, South Sudan Embassy in Uganda, Representative of the Carter Center, Representative of World Health Organization, WHO, Mr. Steve Sengida, DIRCABA and representing His Excellency Governor of Ituri Province, Dr. Patrick Karamura, Minister of Health and Social Affairs of Ituri province, Dr. Naomi Awaca, Director of the National Program for Neglected Tropical Diseases and Preventive Chemotherapy (MTN / CTP), Dr. Leonard Lopay, Coordinator of the MTN / CTP Ituri-Nord Project, Dr. Pablo Kanyamihigo, Chief Medical Officer (MCZ) of Rwanguba, North Kivu Province, Dr. Tony Ukety, Representative of Lions Clubs, Ladies and Gentlemen.

The WHO issued a report during its 38th Technical Committee meeting in Ouagadougou, Burkina Faso, on 10th -15th March 2014, regarding the African Program for Onchocerciasis Control (APOC) where it was agreed that cross-border meetings should be conducted on a regular basis with support of partners and governments. Countries that share borders should step up efforts to synchronize treatments and where required conduct mapping of border communities. I wish to extend my congratulations to the Minister of Health, Uganda, Hon. Jane Ruth Aceng, for the efforts she has put in to help our countries including RSS and DRC to work together in the elimination of Oncho. That is why we have been invited to share experiences of eliminating the disease. Thank you for the kind invitation. The cross-border meetings appeal for the contribution of our regional member governments. That is why we should give a round of applause for those who crossed the borders for this August assembly. We thank The Carter Center for supporting the meeting and the other organizers of this event.

The global burden of this disease in 2017 was 20.9 million. When our government was sensitized about the dangers of this disease, we accepted the invitation to attend. Every government must give financial support to eradicate this disease. We appreciate Uganda for the progress made in the fight of this disease. We need to work together as a team to improve the economic livelihood of our citizens. Dignity does not have a price. Social stigma amongst the affected people should be discouraged in our communities since there is hope as a result of the great work being done by doctors/experts all over world. Therefore, let us stand firm together and consolidate the fight against this disease. I thank you all.

Frank Richards - Head of Carter Center Delegation



Hon Minister of Health Uganda, WR WHO Uganda, UOEEAC Chair, Hon Ambassador DRC, Delegations from DRC and RSS Onchocerciasis Programs, Uganda Ministry of Health staff, RTI/USAID and NGDO partners, the director of the MDP, distinguished guests and colleagues. I bring greetings and good will messages from President and Mrs. Carter and all Carter Center Health programs focused on the fight against Guinea worm, river blindness, lymphatic filariasis, schistosomiasis, soil transmitted helminthiasis and trachoma.

Hon Minister, the UOEEAC needs to pay attention to details by helping the Ministry prepare for an eventual visit by the WHO International Verification Team that will someday come to Uganda to verify elimination of onchocerciasis transmission. Therefore, I hope that the committee will begin to focus more on the details of the Madi-Mid North focus (MMN); this is

the focus where over 90% of Mectizan treatments in Uganda are now being given. The MMN is depicted simply as a large red area in northern Uganda on the map of onchocerciasis of Uganda. Attention to detail means that that focus should be better understood by dissecting it into the river blindness programs in each of its 11 districts and their sub-counties. I have asked the Carter Center's river blindness epidemiologist and member of the UOEEAC, Dr. Moses Katabarwa, and our Uganda office to undertake a 'Strengths, Weaknesses, Opportunities and Threats' (SWOT) analysis for each and every MMN district in order to be properly guided on what is going on. It is a work in progress. I hope the results of the SWOT will be useful to the Ugandan Health Ministry and to the UOEEAC. I look for an opportunity in future where MMN focus will be given enough time to provide detailed information during the next UOEEAC's procession.

Secondly, let me mention migration, displaced people, and refugees in the MMN. Northern Uganda is widely recognized to be a post conflict zone having massive fluxes of people. Many of these are from the Republic of South Sudan and the Democratic Republic of the Congo. These people often come from river blindness endemic areas of their countries; they may be infected; and if they settle in areas of MMN having the black fly, vector transmission can be reintroduced. A WHO International Verification Team will certainly ask about this dynamic area. UOEEAC must help the MOH Uganda to be well prepared to successfully address MMN issues using available data to answer these difficult questions. I am therefore saddened that refugees are not a subject area on this year's UOEEAC agenda.

To conclude ladies and gentlemen, I wish the UOEEAC good deliberations, and I hope that more emphasis will be put on MMN districts, displaced peoples and communities along the borders with the Republic of South Sudan and the Democratic Republic of the Congo.

Thank you.

Yonas Tegegn Woldermariam - WHO Representative in Uganda



Honourable Minister of Health, Dr Jane Ruth Aceng, your Excellences the Ambassadors of DRC and Deputy Head of Mission for South Sudan and members of your delegations, Chairman of Ugandan Onchocerciasis Elimination Experts Advisory Committee (UOEEAC), Professor Tom Unnasch, of the University of South Florida, USA, Colleagues from Ituri and North Kivu and South Sudan MOH officials, Representatives and colleagues from The Carter Center, Lions Clubs, Sightsavers, RTI and other Partners, Distinguished guests, Ladies and Gentlemen, all protocols observed.

Allow me to bring you greetings from Dr. Tedros Adhanom Ghebreyesus the DG of WHO and Dr. Moeti Matshidiso the WHO Regional Director. It gives me great pleasure to address this gathering of experts, advising the government of Uganda on the elimination of a disease that is still endemic and of public health significance in many Sub-Sahara African countries including Uganda. As you all very well know most of the global River Blindness or *Onchocerciasis* occurs in Sub-Saharan Africa including Uganda, it also occurs in Yemen, Venezuela and Brazil. In the Africa Region, the Onchocerciasis Control Program in West Africa (OCP) operated from 1974 to 2002. This was followed by the African Program for Onchocerciasis Control (APOC) which started in 1995 and ended in 2015. The latter targeted endemic countries that were not covered by the OCP. In 2016 the Expanded Special Project for the Elimination of Neglected Tropical Diseases in Africa (ESPEN) was launched. In 2017, more than 142 million people were treated with ivermectin in Africa, using the community-directed treatment with ivermectin strategy developed by APOC. ESPEN will continue to assist onchocerciasis elimination programs in addition to assisting programs for other preventative chemotherapy neglected tropical diseases.

Uganda, as I speak now, rightly deserves to be described as partly (currently), and previously because of huge gains made in interruption of transmission, endemic for Onchocerciasis. The estimated number of individuals in Uganda requiring preventive chemotherapy for Onchocerciasis in 2018 was about 2.7 million (2,669,822) with 2.3 million (2,233,003) individuals reported to have been treated in 2017. The trend of Onchocerciasis in Uganda showed a significant decrease in the number of cases over the past four years. Onchocerciasis will be eliminated from Uganda because it has a long history of eliminating NTDs. No wonder that the achievements of Onchocerciasis elimination have been remarkable.

- A successful elimination campaign of Onchocerciasis from the Victoria Nile focus was launched in 1952 using DDT under the British Protectorate Government of Uganda, which was simply an apparatus of the then sprawling world wide British empire.
- The National Ugandan Program was reasonably re-established by 1992 with mapping of a majority of endemic districts.
- Mass treatment at 1 dose per year was initiated in the final years of the 1980's, mainly by AVSI.
- In 2007, Uganda's National Elimination Policy was launched with twice a year mass treatment with Ivermectin and vector control as pillar interventions*. This resulted in elimination of Onchocerciasis in 7 foci. Now as you have earlier heard only 2 foci remain as "ongoing" (as of UOEEAC 2018 proceedings).
- As of 2018, only in 2 foci transmission continues, in 1 it is suspected to be interrupted, in 7 interrupted and 7 eliminated.
- To reach our goal of Onchocerciasis free Uganda we also require cross-border action.

The gains recorded over the years come with inherent challenges including limited domestic financing. An increase in domestic funding will facilitate sustainability and prevent donor dependency. Another challenge is how to accelerate cross-border collaboration especially in the districts bordering our neighbors. It is with great delight that I recognize, once again, the presence of the Ambassadors from next door neighbors.

To move forward a lot more effectively, there will be need for more and stronger exchange programs between Uganda and countries in the sub-region in addition to the current collaborative measures.

Hon Minister and distinguished Experts**.** The meetings' objectives are clearly defined. Realistic solutions are required for the implementation challenges to be identified. Major among these will be feasible solutions to address cross-border issues. On behalf of WHO, I would like to put on record the immense contributions of the following key partners, among others:

a) The Carter Center, Atlanta Georgia, USA; b) Sight Savers; c) The Lions Clubs (International and Ugandan), and d) RTI – Research Triangle International / Envision.

The cooperation of the host communities in Uganda and neighboring countries with Uganda's national program and partners is highly appreciated. We call for the prioritization of efforts to sustain the current gains by providing significant domestic financing and post elimination surveillance.

We urge the Government of Uganda and partners to embrace the refugees and accommodate the country's integrated NTD Elimination Master Plan in the Uganda National Integrated Health Response Plan for Refugees & Host Communities. WHO will continue to support the articulation of clear guidance for the post-elimination era. We will optimize our convening authority (morally, by persuasion etc.) to strengthen cross border collaboration among concerned Member States and we will follow up on the Uganda's request for WHA Resolution on Onchocerciasis Elimination.• I wish you a fruitful deliberation.

---

* As for elimination, let us note however that this was not an entirely new development in Uganda's bid to free itself from the claws of onchocerciasis. Earlier efforts at elimination had happened in the country's earlier history, with some still ongoing even as the formal national overarching elimination policy was being inaugurated.

• Refer to the above speech by Sodahlon.

THE REPUBLIC OF UGANDA

Jane Ruth Aceng - Minister of Health Uganda



The Chairman, Uganda Onchocerciasis Elimination Expert Advisory Committee, His Excellence, Ambassador of DRC to Uganda, The Country Representative of World Health Organization, Uganda, Delegates from World Health Organization, Representatives from The Carter Center – Atlanta, Hon. Ministers from The Democratic Republic of Congo (DRC) and the entire delegation, Commissioners and program officers from The Republic of South Sudan, Partners, All invited guests, Ladies and Gentlemen.

On behalf of the government of the Republic of Uganda and on my own behalf, it is my pleasure and privilege to welcome you to Uganda and in particular to this meeting. Those that have come to Uganda for the first time, you are most welcome. All the eleven previous meetings have made important recommendations which the Ministry of Health has implemented to make faster progress towards onchocerciasis elimination. The presence of representatives from DRC and RSS in this meeting demonstrates the growing collaborations and Pan African spirit of working together to eliminate diseases in our shared transmission zones and beyond. I am therefore convinced that the outcome of this meeting will consolidate our previous achievements and guide the country to make game ending approaches to the two remaining cross border transmission foci. I am glad to learn that partners supporting NTD elimination in DRC and RSS are present. I appeal to you to increase support for cross border interventions to control and eliminate NTDs and other diseases.

The Ministry of Health - Uganda has continued to give attention to Neglected Tropical Diseases (NTDs). NTD mass treatment and surveillance indicators have been included in the HMIS and NTDs are now recognized as a division in the new structure. This will enable the efficient monitoring of NTDs during interventions and post interventions.

In 2007 Uganda made an ambitious policy shift from onchocerciasis control to elimination. At that time, it looked impossible, but with commitment of the Ministry of Health and uninterrupted support of partners, interruption of transmission has been achieved in 14 out of the 17 originally endemic foci. 24 districts with a population of 3.8 million no-longer require mass treatment with ivermectin. Recent epidemiological and entomological assessments indicate that interruption of onchocerciasis transmission in Madi-Mid North may be possible by 2020. I thank all stakeholders for their input.

Progress made towards onchocerciasis elimination in the world necessitates a World Health Assembly Resolution on Elimination of transmission to guide all endemic countries on embracing the elimination agenda. Uganda together with partners will continue to request for a WHA resolution for global elimination of Onchocerciasis to replace Resolution WHA 47.32 on control of Onchocerciasis.

As a highlight of the NTD performance in Uganda, you may all be aware that Uganda eliminated Guinea worm and was certified in 2009. Recently significant achievements have been realized in combating NTDs in Uganda, for which I would like to recognize the different contributions by the different stakeholders.

As of today, out of the 40 districts which were *formerly* endemic for onchocerciasis (districts constituting Uganda's seventeen foci), only 16 districts are still implementing interventions while the 24 have achieved elimination and stopped mass treatment with ivermectin. Through larviciding of rivers in isolated foci using Temephos, black flies (the vectors of Onchocerciasis) have been eliminated from seven foci. Transmission remains a challenge in two foci bordering Republic of South Sudan and Democratic

Republic of Congo. However, I am informed that joint field operations have commenced, and it is anticipated that both foci will soon interrupt transmission as well. This has been possible because of the country's commitment and support by partners.

Other NTDs:

- **Lymphatic Filariasis:** All the 59 endemic districts have met WHO criteria for stopping MDA. Dossier preparation is in progress.

- **Trachoma:** 49 out of the 50 districts have eliminated trachoma and stopped MDA. Dossier preparation is ongoing**.**

- **Bilharzia:** Continues to be a re-emerging public problem. A lot of efforts to implement the PHASE strategy is required.

As we make progress towards achieving our targets and goals, in eliminating onchocerciasis and other NTDs, we need to be mindful of how these achievements can be preserved. The sector's primary objective is to ensure health for all at all times. Uganda is committed to increasing domestic resources to health care to support universal health coverage, but I must confess that this we cannot do it alone. We still need international and regional support to combat these diseases. Thus, I urge all NTD partners to continue supporting "endemic" countries until the elimination goal is attained. To my colleagues from Ministry of Health and "endemic" districts, a lot more effort needs to be applied to maintain NTD free populations where diseases have been eliminated.

Before I conclude, allow me to comment on the issue of cross-border collaboration and treatment of refugees that are pertinent to our NTD elimination effort in Uganda. I have been informed that implementation of joint cross border elimination activities between Uganda and RSS made huge progress following the 2018 UOEEAC recommendations and I am glad the results will guide the committee to make evidence-led decisions on Madi-Mid North focus. The cross-border plans with DRC were not actualized due to Ebola outbreak.

I want to affirm and laud MoH Uganda's stand of strengthening this collaboration even further. I am confident that the presence of key stakeholders from the DRC and Republic of South Sudan in this meeting will offer this network more opportunity to discuss cross border action plans including post elimination surveillance.

Uganda is one of the countries hosting the biggest number of refugees and I know that some of our sisters and brothers in refugee settlements came from onchocerciasis endemic areas and therefore need mass treatment. The Ministry of Health is working closely with the office of the Prime Minister and UNHCR to ensure that those eligible for mass treatment are served. I request the Mectizan Donation Program to accept our application for medicines to treat refugees from endemic areas when we submit.

Finally, I would like to extend my sincere appreciations to WHO and the Mectizan Donation Program for the enormous support to the program. I thank all the partners - The Carter Center, Sightsavers, RTI/ Envision, Lions Clubs (Ugandan and International) and "endemic" districts for the support they have offered towards this noble course. I also thank our colleagues from DRC and RSS for honoring our invitations and also for showing strong collaboration by facilitating the activities that have so far been accomplished. Last but not the least, I thank the Onchocerciasis Elimination Expert Advisory Committee members for your remarkable contribution made towards the Uganda program. Special thanks go to the Chair of the Committee.

It is now my honor to declare this 12th session of Uganda Onchocerciasis Elimination Expert Advisory Committee officially open. I wish you fruitful deliberations.

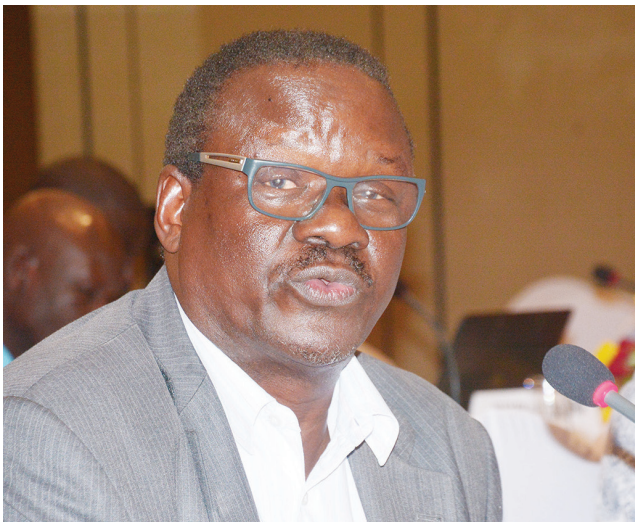
For God and My Country

To Uganda's millions of individuals and communities that have been for long in the hot (real or potential) furnace created by the blackfly, as well as to their well-wishers near and far, the addresses in this part of the report bring from the smaller membership numbers of the committee the message of a final trounce of onchocerciasis in just under seven years from now. Technically the committee's general and focus specific recommendations, which show its concluding positions and forward pointers, are supposed to be here. This is not the case however. Our adopted report format decrees that we place them at the report's forefront where their message(s) as a blueprint is easily eye catching as a roadmap to the reading audience. Suffice it to say that the remaining closing components are not a whit less significant to the reader including the promoters (political, medical etc.) of the vision of an onchocerciasis free Uganda. The following open access to the speeches is now at your fingertips.

Thomas Unnasch

The active presence of everybody involved in this meeting and the significant discussions that we have had on technical issues over the last 3 days gives me great pleasure. I am gratified to see that the largest focus in Uganda, the MMN, has been moved into "transmission interruption suspected" based on the results we have seen in the last days. We only have the small focus of Lhubiriha in Kasese District where transmission may still be on-going. It was a wonderful meeting with our colleagues from DRC and RSS. It has been a very rewarding process of moving from trying to establish collaborative relationships to coming together with our colleagues and getting into technical discussions recognizing that we have solid relationships. We can use these collaborative relationships in place to tackle the cross-border issues. I am optimistic that we are going to see the elimination of Onchocerciasis in East Africa by 2025. Thank you.

Ambrose Onapa - CTA with RTI/Act to End NTDs / East, Member UOEEAC



Thank you, UOEEAC Chairman, Honorable Minister of Health Dr. Jane Ruth Aceng,
WR Uganda, Your Excellencies the Ambassadors here present, Delegations from DRC and RSS, District Leaders and Representatives and all Implementing partners.

I am making these remarks on behalf of my colleagues from RTI who are here – Mike French, our Program Implementation Director…and Benjamin Binagwa, our Project Chief of Party for Uganda.

RTI recognizes the important role of this committee and the excellent work it has done to advise the government of Uganda through the Ministry of Health on key Onchocerciasis elimination strategies using country data. This committee has done a commendable job and RTI feels honored to be part of it, and I personally feel gratified to be representing RTI on this committee.

RTI has been involved in NTDCP in Uganda since 2007. Over the years it has provided financial and technical support to Ministry of Health and districts. It started with the NTDCP in 2008, which was later extended to Envision and now Act to End NTDs / East which ends in 2023. The overall objective of Act to End NTDs is to support Uganda and other endemic countries in sustainable control and elimination of NTDs. Three main focus areas for Act to End NTDs are:

(i) Elimination of trachoma, LF and Onchocerciasis from Uganda. Already tremendous progress has been made towards this goal and elimination dossiers for LF and trachoma are in advanced stages.
(ii) Attainment of sustainable national NTD Program. I am glad that district leaders here present have expressed their support for this result and it is my hope that this will be translated into action and tangible support.
(iii) Continuous capacity building to maintain and operate MDAs and conduct surveillance.

RTI has been a strong partner in PC NTD control and elimination in Uganda, working closely with the NTD Secretariat at VCD (now VBNDD). Besides, RTI has played a key role in supporting and strengthening integration of PC NTD Programs in the country, considered one of the main achievements by MoH.

Over the years, strong capacity has been built at VCD and in the districts, up to community level. We hope this capacity will be adequately utilized at all levels during the ongoing restructuring and re-assignment of staff to their areas of expertise at VCD. Currently, some disease specific programs remain understaffed, some with only a program manager, e.g. PELF, NOCP and Schistosomiasis Programs. This is likely to impact on the capacity of these programs to meet their desired goals. In the past VCD was categorized as a specialized institution in MoH, alongside Natural Chemotherapeutics and others. We hope this will continue to be taken that way.

I would like to appreciate all the NTD implementing partners. It can be affirmed that together we have contributed significantly to NTD elimination in Uganda. RTI will continue to support MoH to fulfil the objectives for which the NTDCP was set up for. I would also like to recognize and thank the Honorable Minister of Health for her interest and commitment towards the NTDCP in Uganda. Her active participation in all these activities is a motivation to us as partners.

Mr. Chairman, thank you very much for your able leadership which has seen this committee grow in strength from year to year. Many other countries are emulating your leadership and setting up similar committees.

Thank you Chair.

Sedrace Rwekikiga - First Vice Governor, District 411B Uganda 2019/2020



Distinguished guests, ladies and gentlemen.

On behalf of Lions Clubs International and Lions members of Uganda, let me take this opportunity to thank the organizers of this meeting and those who have been attending, especially those who came from abroad. Without you all and the efforts of the Ministry of Health of Uganda, we would not have reached where we are currently in the elimination of onchocerciasis.

The passion of Lions is always to serve. We are who we are because "We Serve" and service is why we exist. Creating harmony through service is our major focus and that is why way back in 2000, we partnered with The Carter Center to start a service journey that has brought us this far. Vision is our Lions Clubs International major service activity.
As Lions we are known for our strength and ability to help others. We serve all people in all places. Lions are now concentrating on 5 core activities worldwide namely: Vision, Hunger, Environment, Childhood Cancer and diabetes.

Way back in 1968, Lions Clubs International formed LCIF our charitable arm that raises money to help Lions serve their communities around the world. In Uganda we have had the privilege to benefit from such funds including for trachoma elimination, measles vaccination and onchocerciasis just to mention a few.

Lions Clubs in Uganda is still growing and we call upon those who have a heart to serve to join us so that collectively we can make a difference in the lives of others. This means a lot to the lives of those we touch. Come join us so that we help those who are in

need. Allow me to commend all of you partners for the efforts you have put in to achieve this remarkable success. I thank you all.

Yao Sodahlon

I have noted the conclusions of the UOEEAC 2019 meeting and I congratulate Uganda, the Honorable Minister of Health and the entire team for adding new evidence that onchocerciasis can be eliminated in Africa. The suspicion of the interruption of onchocerciasis transmission in Madi-mid North focus is a huge achievement and a big step for Uganda in freeing the country from river blindness. I will share these great results with MSD leadership which is still committed to donating its Mectizan® (ivermectin) for as long as it is needed and in as many quantities as required until onchocerciasis is eliminated from Uganda.

Benson D Ojara - Representative from Sightsavers



My names are Benson D. Ojara from the Republic of South Sudan - I work for Sightsavers regionally. Dr. Johnson Ngorok, the Country Representative for Sightsavers, is unable to be here in this meeting due to urgent matters. Sightsavers, however, reaffirms its strong commitment to continue supporting PTS (in the Budongo focus) and MoH Uganda in the elimination of onchocerciasis. Thank you.

Clement Deng Akech

The Hon. Minister of Health, Uganda, and Chair of the UOEEAC and the organizers of this meeting, thank you for your hospitality and the wonderful dinner we had last evening. On behalf of the government of the RSS, we thank the Ministry of Health and the Government of Uganda for your highly technical teams that have been able to guide the country in the right direction when dealing with matters of elimination of onchocerciasis in Uganda. This important information will be owned and acted upon by the three respective governments that have been represented in this meeting. Thank you all.

Patrick Mwira Karamura - Provincial Minister of Health & Social Affairs, Ituri Province, DRC



Honorable Minister of Health of the Republic of Uganda, Chairman of the Uganda Onchocerciasis Elimination Expert Advisory Committee, The Representative of the Ambassador of South Sudan to Uganda, The Representative of the WHO in Uganda, The Representative of The Carter Center, and Guests in your respective titles and capacities.

Firstly, allow me to express my sincere thanks to the Government of Uganda for inviting us to participate in this important meeting of Uganda Onchocerciasis Elimination Expert Advisory Committee.

I would like to congratulate the Government of Uganda for the considerable progress made in the process of eliminating onchocerciasis.

I also thank The Carter Center for making the participation of the DRC delegation possible. The

presence of the Congolese and South Sudanese delegations at this meeting clearly demonstrates the growing awareness of the need to combine efforts for the elimination of onchocerciasis in our respective countries as well as in the Sub-region.

The technical advice we have received from the independent experts present at the meeting is a good illustration of the fact that we are not alone in highlighting the importance of eliminating onchocerciasis in the Sub-region.

Finally, I would like to thank everyone, especially the Government of Uganda and all the partners who are with us in the process of eliminating onchocerciasis.

Moses Katabarwa - Epidemiologist Health Programs, The Carter Center Atlanta



Hon Minister, Dr. Ruth Aceng, the Deputy Ambassador, South Sudan, the head of the delegation from DRC, the Honorable Provincial Minister for Health, Ituri Province, dear friends, and all protocol observed.

Let me thank the Hon Minister of Health Uganda for her commitment to onchocerciasis elimination in this country. Her commitment is not recent, she was very keen on elimination even before she became a minister. As the Director General of Health Services, she ensured that Madi Mid-North focus, where performance needed to be improved, received appropriate attention. She attended meetings in the focus and urged district officials and health workers to work hard and defeat onchocerciasis. Even when she became a minister, she continued diligently being involved in onchocerciasis activities including officiating at UOEEAC meetings. I would like to inform you that she is committed to the NTDs including schistosomiasis disease that has not been doing well. Recently, during a meeting held at her office, she called upon a senior official in the ministry to follow up with Schistosomiasis issues and I was really impressed.

I would also like to thank the district LC5 Chairpersons, Resident District Commissioners (RDCs), Chief Administrative Officers (CAOs), District Health Officers (DHOs) and all health workers for a job well done. We could not have succeeded without them.

Let me thank the delegation from DRC, the Honorable Minister, Ituri Province, the Director in the Governor's office, Mr. Steven Sengida Batchulu, our sister Dr. Naomi from Ministry of Health, Kinshasa, *Afwoyo binu* (you are welcome). For my brothers from the Republic of South Sudan, Mr. Logora, the Director NTDs, Mr. Sabuni, Commissioner, Kajo-Keji County and Mr. Igga, Commissioner, Magwi County, your presence is highly appreciated.

It is close to 27 years of fighting onchocerciasis since the revival of this mission, but things started moving in the right direction in 2007, when the President of Uganda declared a nationwide policy of onchocerciasis elimination. Witnessing the largest onchocerciasis focus, Madi mid North, reclassified from "ongoing transmission" to "interruption of transmission suspected", I was moved with tears of joy. I look forward to the disappearance of the red color entirely and witnessing the declaration of the nationwide elimination of onchocerciasis. Dear friends, I would like to reassure you that The Carter Center pledges its commitment until onchocerciasis is defeated. God bless you, *aluta continua*.

* Although Frank Richards was the head of the Carter Center delegation (USA & Uganda), he did not give the closing remarks, instead he requested Moses Katabarwa to do so. Talking to the Hon Minister, Ruth Aceng, Richards said: "All protocol observed, the revised onchocerciasis map here today is good news worth a thousand words. I wish to thank the Carter Center team in Uganda for the work done and request… Moses Katabarwa, The Carter Center Epidemiologist and the son of Uganda, with your permission, to make a few remarks."

Yonas Tegegn Woldermariam

Protocol: All protocols duly observed.

Recap of the past two days:

- Based on the meeting's objectives[1], the past 2 days have witnessed fruitful discussions and the committee has agreed on key recommendations.

Key issues:

- **Review of elimination activities**
  - Obviously, there has been significant progress towards elimination of individual foci and of all affected foci across the country.
  - Nevertheless, the road to elimination will require increased commitment. This should be translated into tangibles: resources and actions in the foci districts (originating from within and from without) need stepping up in magnitude and quality ahead of post elimination surveillance, and even as we work towards elimination itself through PTS.
  - We at WHO Uganda, are happy to note the evidence-based re-classification (re-stratification) of some of the foci as indicated in the UOEEAC chairman's report for 2019.
  - Definitely, this will inform and significantly affect efforts to update Uganda's national plan of action.

- **Problems and challenges in program implementation**
  - Sustainability of current gains through domestic financing, etc.
  - Addressing capacity building issues in the remaining uneliminated foci of Uganda as well as in the neighboring countries of DRC and RSS.
  - Acceleration of cross border collaboration – There is need to engage with other programs such as IDSR, Immunization, Refugee and Host community response and WHE among others, in order to optimize the existing political commitment, technical capacity and partnership.

- **Way forward**
  - This is clear and doable. All that is required is to establish what needs to be done more, when, and who leads the support?
  - Classified in time: What is it that needs doing immediately? What in the medium and long terms?
  - Reviewing, updating and strengthening of mechanisms of following up on implementation of recommendations.
  - Progress towards elimination of the disease needs further evaluation, at convenient periods, using appropriate procedures.

- **Cross-border collaboration**
  - WHO Uganda is glad to know of the active participation and commitment by RSS and DRC governments.
  - Uganda has Pan-Africanism as part of its foreign policy, and this inherent trait is a huge stepping pad toward the badly needed collaboration with affected sister African countries.
  - We will optimize the lessons and experiences learnt from other health and development programs to facilitate the new elimination drive.

WHO – Response and Action

Upon receipt of your recommendations, WHO will: 1) continue to support the Government of Uganda, partners and key stakeholders in the implementation of what has been recommended, 2) continue to support the articulation of clear guidance for post-elimination activities, 3) optimize our convening power to strengthen cross border collaboration among concerned member states, and 4) follow up on the country's request for WHA resolution on onchocerciasis elimination.

Appreciation

- We thank government of Uganda for spearheading the onchocerciasis program.
- We appreciate the communities as recipients of interventions; we thank them also for their cooperation and support to the program.
- We recognize the immense contributions of the following key partners, among others: The Carter Center, Atlanta Georgia, USA; Sight Savers; The Lions Clubs International, and RTI – Research Triangle International / Envision.

1 12th UOEEAC meeting's objectives: Review recommendations from the 11th UOEEAC session; Review elimination activities in all endemic foci; Assess problems and challenges in program implementation and discuss way forward; Discuss cross border collaborative activities.

I wish you the very best as you implement the meeting's recommendations. As for now have safe return journeys, and see you soon.

Gabriel Matwale - Ag. Commissioner HS in charge of VB&NDD

All protocol observed. This is the 12th meeting of the expert committee on onchocerciasis which started on 6th August 2019 and is ending today 8th August 2019. It has attracted people from different walks of life who have come to witness and contribute to the discussions affecting the "endemic" communities and entire NTD fraternity. The meeting was blessed to have high level experts in onchocerciasis elimination. I believe the affected communities were ably represented by District Health Officers, Resident District Commissioners, Chief Administrative Officers, Vector Control Officers and District Onchocerciasis Coordinators. The Republic of South Sudan and the Democratic Republic of Congo have been represented by strong delegations of high-profile people who can take decisions on eliminating onchocerciasis in their respective countries.

There were key highlights from which I picked special interest:

Presentations on use of OV16 and PCR to give guidance on action to be taken as far as the onchocerciasis flag is concerned show the role which high tech diagnostics play in decision making. Decisions on some foci were deferred until all samples still in the laboratory are examined. In elimination programs, we need not leave any space for doubt.

We appreciate that Uganda hosts displaced people from neighboring countries. Some of these people come from NTD, more so, onchocerciasis endemic areas. Surveys have identified positive cases of PC-NTDs in some camps especially in Kajo-Keji, which is one of the sources of refugees entering Uganda. The point of "leaving no one behind", is enshrined in the Universal Health Coverage (UHC). The conclusion made during this meeting to include refugees in the comprehensive action plan of fighting onchocerciasis in our sub-region, not only complies with the UHC, but also fosters the elimination strategy. A window of opportunity has opened up from the Mectizan Donation Program. Their acceptance to receive applications for additional ivermectin to address treatment of refugees in their camps was a kind gesture.

The formation of the elimination committees in the Republic of South Sudan and the Democratic Republic of Congo has been applauded as a good direction for tackling this disease. The Republic of South Sudan is hereby commended for having an expert committee critically reviewing both Onchocerciasis and Lymphatic Filariasis. It is called South Sudan Onchocerciasis and Lymphatic Filariasis Expert Advisory Committee (SSOLFEAC). RSS has come up with a robust road map geared towards elimination of onchocerciasis by 2030. RSS has been cited as the first country to support NTD road map 2021-2023.

Presentations made on Obongi, Wadelai, Bwindi and Nyagak-Bondo foci demonstrated gaps; therefore, more surveillance is still required in that respect to have a change in their status color on the onchocerciasis elimination flag. Regarding Lhubiriha, 6000 flies must be examined in order to have a concrete decision. The decision of amalgamation of Moyo focus with the main Madi Mid North needs to be revisited, basing on the fact that the rivers in that area flow differently.

Jane Ruth Aceng, Press Statement » »

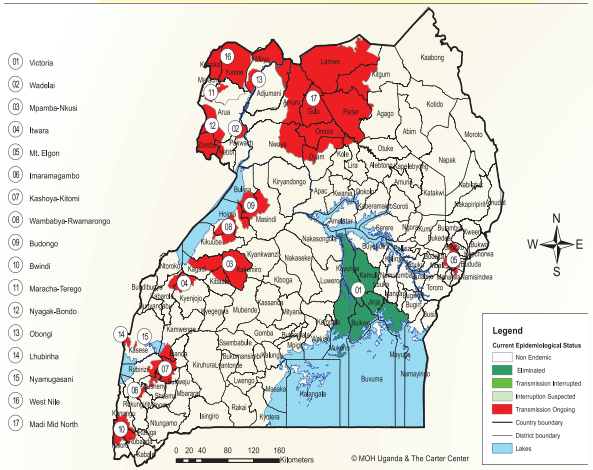
THE REPUBLIC OF UGANDA

MINISTRY OF HEALTH

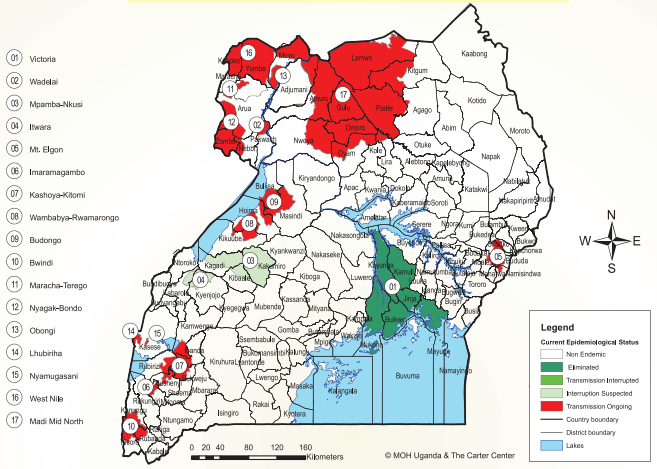
UGANDA LEADS THE FIGHT IN AFRICA IN SUCCESSFUL ELIMINATION OF RIVER BLINDNESS /ONCHOCERCIASIS

Ministry of Health declares elimination of river blindness in Obongi focus and Interruption of transmission in Nyagak–Bondo focus (Nebbi, Zombo and Arua districts)

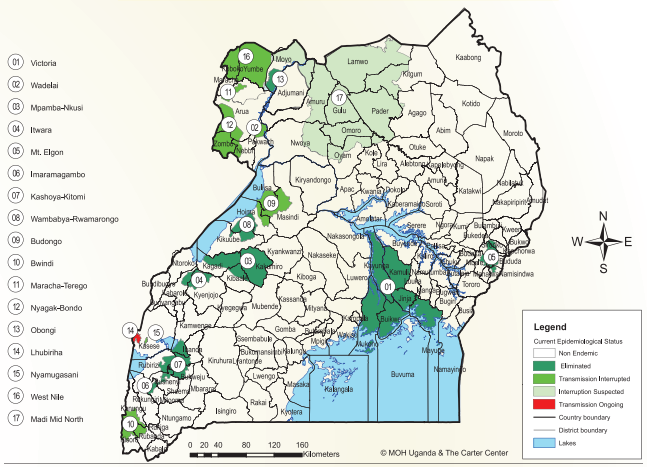
Onchocerciasis status in 1992



Onchocerciasis status in 2007



Onchocerciasis status in 2019



Uganda has stopped interventions among 608,219 people previously treated for river blindness (Onchocerciasis), based on the current World Health Organization (WHO) guidelines, bringing the country closer to achieving its goal of eliminating river blindness nationwide by the year 2020. River blindness has been known as a health problem affecting a significant population of Uganda since early 1950's. It wasn't until 2007, when the Government of Uganda declared a national wide elimination policy.

River blindness is a vector borne disease that is transmitted by the black flies which breed in fast flowing rivers. It causes serious eye and skin disease that may result in blindness. The disease was originally endemic in 40 districts in Uganda with about 4.6 million people at risk, excluding districts in the Victoria Nile focus that eliminated the disease in the early 1970's.

The strategy for elimination of river blindness from Uganda is mass treatment of affected communities with ivermectin and vector control/elimination. The twelfth meeting of the Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC) of the Ministry of Health held from 6th to 8th August 2019, concluded that another river blindness transmission zone, the Obongi focus (Obongi District) with a population of 43,518, has met the WHO criteria for eliminating river blindness. Since the launch of the elimination program in 2007, Obongi is the 7th foci to achieve elimination, joining the current foci of Itwara (Kyejojo and Kabarole districts); Elgon (Mbale, Sironko, Manafwa and Bududa districts); Mpamba-Nkusi (Kagadi district); Wambabya-Rwamarongo (Hoima, and Kikuube districts); Kashoya-Kitomi (Kamwenge, Rubirizi, Buhwenju, and Ibanda districts); Immaramagambo (Bushenyi and Mitooma districts), excluding Victoria Nile (Jinja, Mukono, Kamuli, Mayuge and Kayunga districts), which was eliminated in the early 1970's.

It is estimated that this has added a total of 1.3 million people that are no longer at risk of onchocerciasis to the 2.8 million people living in the Victoria focus, where onchocerciasis was eliminated prior to the start of the program.

In total, river blindness has been eliminated in 8 out of the 17 foci and over 4 million Ugandans living in these districts are no longer at risk of acquiring the river blindness disease. In addition to the eight foci where elimination has been confirmed, seven other foci (Wadelai, Maracha-Terego, Nyamugasani, Budongo, Bwindi, West Nile and Nyagak-Bondo) are believed to have been protected from onchocerciasis and are awaiting final confirmation. The Madi-Mid North focus comprising of Pader, Lamwo, Kitgum, Gulu, Omoro, Amuru, Nwoya, Oyam, Lira, Adjumani, and Moyo districts, with a population of approximately 1.5 million, has changed from Transmission Ongoing to Interruption Suspected. The status of Lhubiriha focus (Kasese district), with a population of 139,087 remains unchanged as Transmission Ongoing.

The Nyagak-Bondo focus (Nebbi, Arua and Zombo districts) has been reclassified as Transmission Interrupted and Mass Drug Administration (MDA) interventions will stop in October 2019 among 608,219 people. Nyagak-Bondo now joins Maracha-Terego (Arua district); Nyamugasani (part of Kasese district); Wadelai (Pakwach district); West Nile (Koboko and Yumbe districts); Bwindi (Kisoro, Kanungu and Rubanda districts); Budongo (Hoima, Buliisa and Masindi districts) foci that are undergoing post-treatment surveillance. This means approximately 4.2 million treatments for Onchocerciasis have been stopped.

The largest river blindness focus in Uganda, Madi-Mid North (Moyo, Adjumani, Amuru, Gulu, Omoro, Pader, Kitgum, Lamwo, Lira, Oyam and Nwoya districts), has moved from the status of Transmission Ongoing to Interruption Suspected.

The Government of Uganda, in collaboration with neighboring countries, Democratic Republic of Congo (DRC) and Republic of South Sudan (RSS) continues to promote cross-border river blindness activities. Uganda continues to register success in the fight against river blindness, through the effort of the Ministry of Health's River Blindness Elimination Program, with the support of partners including; The Carter Center, Sightsavers, Act to End NTD | East, the Lions Clubs International Foundation, Lions of Uganda, Merck, Mectizan Donation Program, BASF, World Health Organization, and the Governments of Democratic Republic of Congo and the Republic of South Sudan. This accomplishment is evidence that total elimination of River Blindness is possible in Africa.

FOR GOD AND MY COUNTRY

Dr. Aceng Jane Ruth
Minister for Health

Corrigendum: Note that the word Buhwenju in the press statement is ordinarily written as Buhweju. Also "national wide" should read as nationwide, while "comprising of " ought to be simply "comprising".

THE REPUBLIC OF UGANDA

Jane Ruth Aceng - Minister of Health Uganda



The Chairman, Uganda Onchocerciasis Elimination Expert Advisory Committee, The Representative of World Health Organization, Uganda, Head of Mission Republic of South Sudan, Hon. Minister for North Kivu Province, Democratic Republic of Congo, County Commissioners from Republic of South Sudan, Director Mectizan Donation Program, Representatives from The Carter Center Atlanta and RTI international,
Delegates from The Republic of South Sudan and The Democratic Republic of Congo, All Partners, All invited guests and participants, Ladies and Gentlemen.

On behalf of the Government of the Republic of Uganda I would once again like to warmly welcome you to Uganda and to this important meeting. I wish to thank every single participant and presenter; your presence and contribution have ensured that this meeting was both a success and another pivot in our response to the elimination of Onchocerciasis and other Neglected Tropical Diseases in the country. Thank you for honoring our invitation and I hope you have enjoyed the 3 days.

I am sure that you will all join me in thanking the NTD Secretariat, The Carter Center, the Committee chair, Professor Thomas Unnasch and his team for a well-organized meeting. The success of this meeting is illustrated by participation of key experts, partners, countries within the region (DRC and South Sudan), scientists, policy makers and "endemic" districts. Strong collaboration and partnership of all key stakeholders is a synergy to accelerate achievement of NTD elimination in Uganda and the Africa region. The success registered in the last 11 years of hosting this meeting makes Uganda a model for other endemic countries implementing elimination strategies in Africa.

During the three days you have discussed a wide range of issues on progress towards Onchocerciasis elimination and you have been able to make important recommendations. I have the honor to comment on important issues which will enable the country achieve elimination of onchocerciasis and other NTDs faster.

1. The 2020 Elimination Goal

Uganda is on course to achieve the 2020 target of onchocerciasis elimination. Implementation of the WHO global vector control response 2017 - 2030 gives us opportunity to eliminate and prevent vector borne diseases. The government is committed to the call of achieving goals of "the Regional Strategy on Neglected Tropical Diseases in WHO Africa Region" resolution of the Ministers of Health and "Regional Strategic plan for NTDs in the African Region 2014 – 2020". The significant progress reported during this meeting has to be sustained and challenges to elimination efforts addressed. The Onchocerciasis Elimination Program now needs more resources to facilitate documentation of success, elimination verification in 8 foci which have achieved elimination, post intervention surveillance activities and intensification of implementation activities in the 11 districts with suspected interruption and in Kasese district with ongoing transmission. The Ministry of Health is developing a comprehensive entomological surveillance and response system to address threats of the biting nuisance of vectors which may arise after stopping interventions. Uganda also needs more support for control and elimination of other NTDs especially schistosomiasis.

Cross - border control collaboration for elimination
We recognize that vectors and diseases do not respect country borders. Uganda, South Sudan and DRC share common climatic and ecological conditions that favor cross border transmission of diseases. Strong cross border collaborations are therefore imperative to enhance regional disease control efforts.

I have learnt that some cross-border activity plans were actualized, and the impressive results obtained have been important to provide evidence for decision making by this committee.
Success of cross border collaborations with RSS and DRC is a reference lesson for other countries in the region. Synchronizing elimination activities is expected to yield great success in these three countries.

In this respect, I highly commend the ongoing cross-border efforts in Onchocerciasis elimination with South Sudan and I hope that all planned activities with DRC will resume as soon as Ebola outbreak stops. Improving security in South Sudan and DRC will allow us to share experiences and make headway in tracking NTD elimination challenges in the region.
I am aware that a communique on cross border onchocerciasis elimination was developed between Uganda and South Sudan NTD Control Programs and needs official endorsement to be authentic.

2. Refugees and elimination of NTDS
Uganda is one of the countries hosting the largest number of refugees in the world. Some of the refugee settlements are in areas where we have stopped mass treatment and others where mass treatment is ongoing. This influx presents a humanitarian crisis but has huge implications on the health sector in terms of averting possible disease outbreaks and importation of diseases that are close to elimination. Some of the refugees are from known NTD endemic areas and need to be treated. However, recent surveys conducted by the NTD control program indicate that the current refugee populations are not a huge risk that can sustain onchocerciasis transmission because of low infection and elimination of the vector in areas they are settled in. The Ministry of Health will work with the Office of the Prime Minister to plan for mass treatment of refugees coming from endemic areas of South Sudan and DRC.

As we have done in the last 11 years, today, we have another opportunity in front of us. I therefore, urge the NTD program to take seriously the conclusions and recommendations that emanated from this meeting as a step in accelerating elimination and ending the suffering of millions of Ugandans.

On behalf of the Government of Uganda and on my own behalf, I take this opportunity to appreciate The Carter Center, RTI, Sight Savers, Mectizan Donation Program and other pharmaceutical companies, and all other partners for their enormous contributions towards control and elimination of NTDs.

I would again like to re-affirm our commitment as a sector and I pledge to do my best to make sure that we give more visibility to NTDs.

I now have the pleasure and honor to declare this 12th session of Uganda Onchocerciasis Elimination Expert Advisory Committee meeting officially closed.

Thank you

In total, river blindness has been eliminated in 8 out of the 17 foci and over 4 million Ugandans living in these districts are no longer at risk of acquiring the river blindness disease.
- MOH Press Statement 2019

Appendix C: List of Participants

No	Name	Status	Institution	Title	Email Address	Phone Contact
1	Dr. Jane Ruth Aceng	Member	MOH Uganda	Minister of Health	jaceng@gmail.com	
2	Prof. Dr. Thomas R. Unnasch	Member	USF USA	UOEEAC Chair	tunnasch@health.usf.edu	
3	Dr. Moses Katabarwa	Member	TCC USA	Senior Epidemiologist	moses.katabarwa@cartercenter.org	
4	Mr. Joseph Wamani	Member	Kamwenge DLG Uganda	Member	wamanij@yahoo.com	+256(0)772368682
5	Mr. Gabriel Kayira Matwale	Member	MOH Uganda	Ag NTD Coordinator	gkmatwale@gmail.com	+256(0)772487431
6	Mr. Dickson Unoba	Member	Nebbi District Uganda	VCO	unoba2@gmail.com	+256(0)773785309
7	Dr. Ambrose Onapa	Member	RTI/ACT to end NTDs	CTA	onapa@rti.org	+256(0)772497180
8	Ms Peace Habomugisha	Co-secretary	TCC Uganda	Country Representative	peace.habo@cartercenter.org	+256(0)702414982
9	Mr. David W. Oguttu	Co-secretary	VBNDD-MOH Uganda	PM-NOCP	dguttu@gmail.com	+256(0)782498847
10	Mr. Frank Richards	Special Observer	TCC USA	Director RB	frank.richards@cartercenter.org	
11	Dr. Yonas T. Woldermariam	Special Observer	WHO Uganda	WR	nyangomao@who.int	
12	Mr. Yao Sodahlon	Special Observer	MDP USA	Executive Director	ysodahlon@taskforce.org	
13	Mr. Mike French	Special Observer	RTI	IMP AR	mfrench@rti.org	
14	Dr. Adrian Hopkins	Special Observer	Consultant, USA	DRC OEIAC	adrianhopkinsconsultancy@gmail.com	
15	Ms Lauri Bernard	Special Observer	TCC USA	Senior Program Associate	lauri.bernard@cartercenter.org	
16	Dr. Tony Ukety	Special Observer	W-NEC	Consultant	tony.ukety@gmail.com	+256(0)784687661
17	Dr. Bayo Fatunmbi	Special Observer	WHO	Medical Officer	fatunmbib@who.int	
18	Mr. Christian Katoto	Guest	DRC/ Embassy	1st Counselor	katotochristian@gmail.com	+256(0)752487117
19	Dr. Naomi Uvon Awaca	Guest	DRC-MOH	NTD Coordinator	naopitchouna@gmail.com	(+243)817822166
20	Dr. Patrick Mwira Karamura	Guest	DRC-MOH	Minister of Health, Ituri Province	patkara2002@yahoo.fr	+(243)819615593

21	Mr. Steve Sengida Batchulu	Guest	DRC	Deputy Director of Cabinet of the Governor Ituri / Bunia	ssengida@gmail.com	+(243)812007171
22	Dr. Pablo Kanyamihigo	Guest	MOH-Goma DRC	Coordinator – Rutshuru Goma	jeanlucmedecin@gmail.com	+0997047401
23	Mr. Clement Deng Akech	Guest	Embassy of South Sudan	Deputy Head of Mission	dengakech79@gmail.com	+256(0)776688330
24	Mr. Samuel Makoy Yibi	Guest	MOH-South Sudan	Program Manager	morrelogora@yahoo.com	+211921666989
25	Hon. Emilio Igga	Guest	South Sudan	Commissioner	iggalimas@yahoo.com	+256(0)777560072
26	Hon. Henry Kala Sabuni	Guest	South Sudan	Commissioner	Kalahey53@gmail.com	+256(0)786428804
27	Dr. Leonard Lopay Bay	Guest	Ituri North DRC	NTDs Coordinator DRC	lopaybayleonard@gmail.com	+08210252728
28	Mr. Milton Kato	Guest	Gulu District Uganda	CAO	milton.kato@yahoo.com	+256(0)782702323
29	Mr. John Komakech Ogwok	Guest	LDLG Uganda	LC 5 Chair	johnogwok@gmail.com	+256(0)772388302
30	Dr. Stephen Sebudde	Guest	Kanungu District Uganda	DHO	drsebuddes@doctor.com	+256(0)772900138
31	Mr. Shafik Sekandi	Guest	Kanungu District Uganda	RDC	sekandishafik@mail.com	+256(0)772447074
32	Mr. Christopher Okumu	Guest	Pader DLG Uganda	CAO	okumuchristopher@hotmail.com	+256(0)772494748
33	Dr. George Bhoka Didi	Guest	Adjumani District Uganda	DHO	gdbhoka@gmail.com	+256(0)772869894
34	Mr. Patrick Olila	Guest	Lamwo DLG Uganda	CAO	olilap2@gmail.com	+256(0)774162885
35	Dr. Stephen Nsabiyumva	Guest	Kisoro District Uganda	DHO	snsaba200@gmail.com	+256(0)772601131
36	Mr. Peter Taban Data	Guest	Moyo District Uganda	RDC	dtabanpeter@gmail.com	+256(0)772638990
37	Dr. Franklin Idi Amuli	Guest	Moyo DLG Uganda	DHO	iddiamuli@gmail.com	+256(0)772832822
38	Dr. Patrick O. Odong	Guest	Amuru District Uganda	DHO	p-odong@yahoo.com	+256(0)772840732
39	Mr. Martin Jacan Gwokto	Guest	Kitgum DLG Uganda	CAO	martingwokto@gmail.com	+256(0)772460408
40	Mr. Matthew Akiya Ochen	Guest	Lamwo District Uganda	Guest	ochenakiya@gmail.com	+256(0)771925115

41	Mr. Gore Goffin	Guest	Moyo DLG Uganda	Deputy RDC	goregoffin@gmail.com	+256(0)772840732
42	Mr. Stephen O. Lakwonyero	Guest	Kitgum DLG Uganda	PA CAO	slomwony@gmail.com	+256(0)772619609
43	Ms. Linda Agnes Auma	Guest	Amuru DLG Uganda	RDC	aumalindaagnes@gmail.com	+256(0)775125804
44	Mr. James Kidega	Guest	Lamwo DLG Uganda	RDC	kknabinson1@gmail.com	+256(0)772588642
45	Lion Night Ndyarugahi	Lion	Lions Clubs Uganda	PCC	nibridget@gmail.com	+256(0)701589325
46	Lion Sedrace Rwekikiga	Lion	Lions Clubs Uganda	First Vice DG	rsedrace@yahoo.com	+256(0)772427582
47	Lion Polly K. Ndyarugahi	Lion	Lions Clubs Uganda	PCC	pollybhaikn@gmail.com	+256(0)772431421
48	Dr. Benjamin Binagwa	Observer	RTI / Act to End NTDs	Chief of Party	bbinagwa@ug-ntd.rti.org	+256(0)788945464
49	Mr. Thomson Lakwo	Observer	Slash and Clear Project	Retired Senior Entomologist	tlakwo@gmail.com	+256(0)772438311
50	Dr. Narcis Kabatereine	Observer	ASCEND	Country Head	vcdmoh@gmail.com	+256(0)772492078
51	Ms Christine Nahabwe	Observer	VBNDD	Observer	ch.nahabwe@gmail.com	+256(0)782361229
52	Mr. Lauriano Hakiri	Observer	Kanungu DLG Uganda	Observer	laurianohakiri@gmail.com	+256(0)772561661
53	Mr. Abraham Kibaba Muhesi	Observer	Kasese DLG Uganda	Observer	muhesiak@gmail.com	+256(0)775342434
54	Mr. Ephraim Tukesiga	Observer	Kabarole District Uganda	Retired SVCO	ephraim.tukesiga@gmail.com	+256(0)787675350
55	Mr. Isaac Komakech	Guest	KCCA	Public Health Specialist	isaac.komakech@gmail.com	+256(0)780903710
56	Mrs Vivian N. Serwanja	Observer	MOH Uganda	Communication Specialist	vivianserwanjja@gmail.com	+256(0)772979033
57	Mr. Galex Orukan Ochieng	Observer	Mbale District Uganda	DVCO	Ochiengalex766@gmail.com	+256(0)774265992
58	Mr. Alex Arinaitwe	Observer	TCC Uganda	Program Coordinator	Alex.Arinaitwe@cartercenter.org	+256(0)772335439
59	Mr. Thomson Isingoma	Observer	HDLG Uganda	VCO	isingthomson@gmail.com	+256(0)782090505
60	Mr. Patrick Dramuke	Observer	Zombo District Uganda	VCO	dramuke.patrick@gmail.com	+256(0)774502123
61	Mr. Christopher Katongole	Observer	NOCP-MOH	VCO	ckatongole@gmail.com	+256(0)772492151
62	Ms Abirahmi Kananathan	Observer	MOH	Communication Officer	abirahmik7@gmail.com	+256(0)753151202

63	Mr. Michael Edema Nyaraga	Observer	Moyo District Uganda	VCO	nyagamicheal@yahoo.com	+256(0)773858882
64	Dr. Dominic Okidi	Observer	Pader District Uganda	DHO	dominicokidi@yahoo.com	+256(0)773171304
65	Mr. Emmanuel Ainebyoona	Observer	MOH Uganda	SPRO	emmabyoona@gmail.com	+256(0)779220588
66	Mr. George W. Ssewamala	Observer	MOH Uganda	Administrative Assistant	gwsewamala@gmail.com	+256(0)758748701
67	Ms Darlson Kusasira	Observer	OPM Uganda	CSO	kdarlson2@yahoo.com	+256(0)772524619
68	Mr. Paul Akampurira	Observer	MOH Uganda	Lab Technician	mugyenyipaul@gmail.com	+256(0)781574797
69	Mr. Levy Matua	Observer	Yumbe DLG Uganda	VCO	lematu74@gmail.com	+256(0)772497180
70	Mr. Dennis Loum	Observer	NwFoya DLG Uganda	DVCO	loumdemis2@gmail.com	+256(0)779707614
71	Ms. Monica Ngabirano	Observer	VBNDD	Laboratory Technician	monicakembabazi12@gmail.com	+256(0)703542758
72	Mr. Echord Mwebembezi	Observer	WHO	Comms person	mnebembezi@who.int	+256(0)782962574
73	Mr. Benson Ojara	Observer	SightSavers	Technical Advisor - M&E	bojara@sightsavers.org	+256(0)786752227
74	Mr. Elisa Byamukama	Observer	TCC Uganda	Program Coordinator	elisa.byamukama@cartercenter.org	+256(0)773344311
75	Mr. Martin Klaus Osilo	Observer	RTI	MES	kosilo@rti.org	+256(0)750416229
76	Ms Annet Khainza	Observer	TCC Uganda	RBP PM	annet.khainza@cartercenter.org	+256(0)772650124
77	Mr. Edson Byamukama	Observer	TCC Uganda	Data Manager	edson.byamukama@cartercenter.org	+256(0)706955103
78	Mr. Samuel Dramuke	Observer	TCC Uganda	IT Manager	dramuke.samuel@cartercenter.org	+256(0)773887260
79	Mr. Julius Musigire	Observer	TCC Uganda	Program Coordinator	Julius.Musigire@cartercenter.org	+256(0)783518934
80	Mr. Apollo Nduhukire	Observer	TCC Uganda	Program Coordinator	apollo.nduhukire@cartercenter.org	+256(0)783315987
81	Mr. David Luutu	Interpreter	LKay	Language Expert	dluutu@gmail.com	+256(0)772619561
82	Mr. Enoch Sebuyungo	Interpreter	Makerere University	Language Expert	esebuyungo@gmail.com	+256(0)772424428
83	Mr. Paul Kambugu	Rapporteur		Rapporteur	pkambugu@gmail.com	+256(0)772959325
84	Mr. Justine Ocaka	Secretariat	TCC Uganda	Finance Manager	justine.ocaka@cartercenter.org	+256(0)782205680
85	Mr. Alfred Wakhata	Secretariat	TCC Uganda	Accountant	alfred.wakhatta@cartercenter.org	+256(0)782736239
86	Mr. Gideon Mahesi	Secretariat	TCC Uganda	LTO	gideon.mahesi@cartercenter.org	+256(0)787259177

87	Ms Harriet Nakintu Sengendo	Secretariat	TCC Uganda	PAC	harriet.sengendo@cartercenter.org	+256(0)772515760
88	Ms Jacqueline M. Nabalayo	Secretariat	TCC Uganda	O/A	jacqueline.mukisa@cartercenter.org	+256(0)779523462
89	Mr. Patrick Buyinza	Secretariat	NOCP Secretariat	Data Manager	buyinzapm@gmail.com	+256(0)772878286
90	Ms Tshellor Kitimbo	Secretariat				+256(0)779365623
91	Ms Irene Kiggwe	Secretariat				+256(0)774022630
92	Mr. Denis Munu	Secretariat	TCC Uganda			+256(0)782580083
93	Mr. John Kashaija	Secretariat	TCC Uganda			+256(0)772514559
MEDIA						
1	Mr. Godiver Asege	Media	New Vision			+256(0)778535709
2	Ms. Cecilia Okoth	Media	New Vision			+256(0)774304499
3	Ms Nancy Nanyonga	Media	New Vision			+256(0)788931483
4	Ms Shamim Nateebwa	Media	KFM/ Dembe			+256(0)702410210
5	Mr. Julius Bagenda	Media	Radio One			+256(0)755214045
6	Ms Khawa Kintu	Media	Radio Simba			+256(0)702866314
7	Ms Shamim Nalujja	Media	Bukedde TV			+256(0)758017807
8	Ms Flavia Nassaka	Media	Uganda Radio Network			+256(0)783200257
9	Ms Mariam Nakalema	Media	STV			+256(0)700571132
10	Ms Nakkazi Mirembe	Media	STV			+256(0)754047067
11	Mr. Ronald Kayirigo	Media	Grapevine News			+256(0)751700326
12	Mr. George Bukenya	Media	Observer			+256(0)756749901
13	Ms Patience Ahimbisibwe	Media	Monitor			+256(0)772370556
14	Mr. David Joel Dungu	Media	CBS			+256(0)702175038
15	Mr. Ronnie Mayanja	Media	Prime & NTV			+256(0)774455457
16	Ms Annah Kajumba	Media	UBC – Radio			+256(0)752269787
17	Ms Angella Kyotuwadde	Media	ABS TV			+256(0)758453188

18	Mr. Joshua Henry Mugerwa	Media	Star FM			+256(0)703330177
19	Ms Patricia Namata	Media	Star FM			+256(0)704405414
20	Ms Catherine Nabakooza	Media	Star FM			+256(0)705623934
21	Mr. Godwill Kaizi	Media	Record TV			+256(0)751263551
22	Ms Cynthia Naggayi	Media	Beat FM			+256(0)777964015
23	Mr. Lule Kizindo	Media	Capital FM			+256(0)773267606
24	Ms Barbara Namyalo	Media	Bukedde Radio			+256(0)751416252
25	Mr. John Mulokwa	Media	NTV			+256(0)777136952
26	Mr. Paul Kasagala	Media	Prime Radio			+256(0)788653069

Appendix D: A UOEEAC 2019 Photo Gallery

It will not happen anytime soon: Uganda's long walk to freedom from onchocerciasis still requires quite some good amount of blackfly vector elimination (mainly in the Lubhiriha focus) as well as a large dose of pre-PTS, PTS and post-PTS activities. There is also the issue of possible cross frontier recrudescence of river blindness from our neighbors, especially RSS and DRC. Elimination dossiers and other bits of work are yet to be done.

The considerable numbers of committee and non-committee congregants at UOEEAC 2019, each of whom was a face or an associate or a potential foreign cross-border beneficiary of some onchocerciasis constituency somewhere in Uganda (uneliminated or eliminated though not yet certified by WHO's IVT), demonstrate, however, an overwhelming commitment to eradication of the disease from the country. On a related good note, let us point out that there are strong cross border collaborations between Uganda and the border countries of RSS and DRC. This is reflected by the constant attendance of many UOEEAC sessions (including this very one – the 12th) by representatives from these countries, at least since 2016. To recognize that committed involvement, the varied personal and institutional contributions that go with it, and to encourage ourselves to live and act by its ideals in the future, this annex offers us a choice number of images of participants from the longer list of UOEEAC 2019 attendance. Enjoy the viewing.



Ambrose Onapa (L), Darlson Kusasira (R)



RL - Milton Kato, Stephen Omwony Lakwonyero and Mathew Ocen Akiya



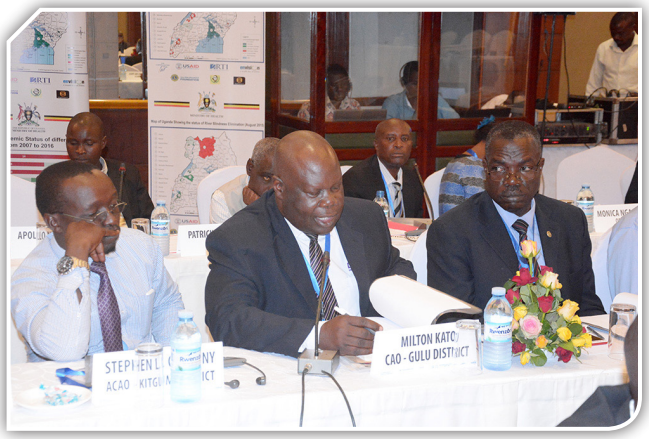
Tony Ukety



Sedrace Rwekikiga



Lauri Bernard



C - Milton Kato.



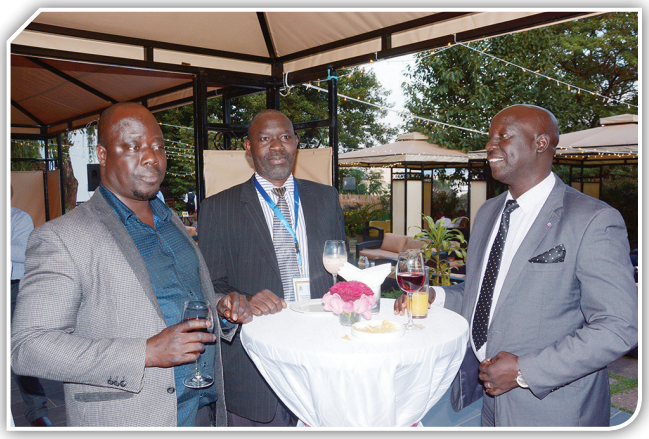
Cranes Cultural Entertainers durung Cocktail



DRC's Pablo Kanyamihigo with MDPs Yao Sodahlon



Christopher Okumu



Dennis Loum (L), Patrick O. Odong (C) & Gore Goffin (R)



First Row, LR- Tony Ukety, Jane Ruth Aceng, Sedrace Rwekikiga and Polly Ndyarugahi; Second Row, LR- Peace Habomugisha and Night Ndyarugahi



George Bhoka (L), Stephen Sebudde (R)



Frank Richards (R) Interacting with three Lions Clubs Members.



L - Naomi P.U Awaca, C - Leonard Bay



Herny Kala Sabuni



Lauri Bernard with Harriet Sengendo (R).



Left Handside - David Oguttu, Right Handside - Peace Habomugisha.



LF - Hon Jane Ruth Aceng, Thomas Unash and Yonas Woldermariam.



LF - Tony Ukety, Harriet Sengendo and Tom Lakwo



LR - Abirahmi Kananathan and Vivian N. Serwanja



LR - Clement Deng Aketch, Christian Katoto, Naomi Awaca and Patrick Mwira Karamura.



LR - Hon Jane Ruth Aceng, Gabriel Matwale, Peace Habomugisha and David Oguttu



LR - Michael French, Ambrose Onapa and Benjamin Binagwa



LR - Michael French, Thomas Unnash and Adrian Hopkins During Coctail.



LR - Moses Katabarwa, Frank Richards, Adrian Hopkins, and Thomas Unnasch.



LR - Moses Katabarwa, Frank Richards, Lauri Bernard, Peace Habomugisha and Annet Khainza



LR - Moses Katabarwa, Yonas T. Woldermariam and Frank Richards



LR - Samuel Dramuke and Edson Byamukama



LR - Tony Ukety, Patrick Dramuke, Abraham Muhesi and Moses Katabarwa



LR- Christoper Okumu, Patrick Odong, Taban Data Peter and Idi Franklin Amuli



LR- Moses Katabarwa, Benjamin Binagwa and Frank Richards



LR- Peace Habomugisha, Tony Ukety, Sedrace Rwekikiga and Night Ndyarugahi



LR- Samuel Makoy, Tom Lakwo, Emilio Igga and Henry K. Sabuni



LR-Frank Richards, Lauri Bernard and Annet Khainza; standing behind, Peace Habomugisha



LR-Henry K. Sabuni, Emilio Igga, Auma Linda Agnes, RDC Moyo



A moment During Coctail Session



Moses Katabarwa



Nacis Kabatereine



Naomi P. Awaca



Part of DRC and RSS Delegations



Also during 12th UOEEAC Cranes Entertainment Evening



R - Linda Agnes Auma



R - Thomson Lakwo



Some Uganda Lions Clubs Members



At a 12th UOEEAC Cranes Entertainment Event

Appendix E: Gallant Giant Steps Aside - Appreciating Frank Richards, MD

Peace Habomugisha



Frank Richards

Frank Richards is an American by citizenship. This text is basically about him as a key personality who has been a great contributor to the fight against onchocerciasis in Uganda. In passing, however, it may be noted that he has shouldered the same mission elsewhere in Africa and beyond, and that his contribution to protect humanity against illness not only revolved around onchocerciasis but also other diseases, mainly Lymphatic Filariasis, Schistosomiasis and Malaria.

A check on his background shows that his objective to be an outstanding healthcare professional, mostly in the area of human parasitic as well as tropical diseases, took shape in the years not long after he had completed his first degree. Later he studied medicine and global public health, graduating with other academic credentials. His bio-data shows that for about a 23 year period, he worked with USA's Centers for Disease Control and Prevention, CDC. It was after he had packed his bags from CDC that he joined The Cater Center, where in 1996 he rose to become the director of the Center's river blindness program. That was the year when Riverblindness Foundation's program, in Uganda, was taken over by The Carter Center. It was during this same year that Richards set foot for the first time ever on Ugandan soil. Since leaving The Carter Center,[1] he has been serving as senior advisor to the organization on issues of onchocerciasis, malaria, schistosomiasis and lymphatic filariasis; he will be doing this until about January 2021.

Richards has had a distinguished career, extending over nearly fifty two years. Besides CDC and The Carter Center, he has been affiliated with quite a number of prominent organizations, many of them of international standing, e.g. WHO and the Global Alliance for Elimination of Lymphatic Filariasis. As he put into practice his dream of freeing humanity from disease, through evidence based research, authorship, advocacy and lobbying, management, innovation and much more, he would receive honors in recognition of some of his outstanding achievements. These awards decorate and illuminate his more than half a century journey of committed global service. It would therefore require several book volumes to speak exhaustively on Richards, be it in the context of Uganda, or from the intercontinental perspective of his life and work. Fortunately, we are heading in the direction of telling you the reader a bare minimum, in few statements, about what he did for and in Uganda: What we have just shared with you was simply a launch pad.

Richards' maiden physical contact with Uganda and his takeover of The Carter Center's Riverblindness Program as its chief administrator and driver coincided with the creation by the World Bank and the WHO of the African Program for Onchocerciasis Control, APOC, in 1996. It is reported that he actually was instrumental in the process of instituting that program. He came to Uganda at the time when APOC was introducing CDTI, a strategy of which he was an enthusiastic proponent. Richards has been a very energetic individual, and this was evident during the many times when he visited Uganda. He would go to the onchocerciasis affected communities to see for himself how the onchocerciasis programs were being run. From district to lower political and health levels, he was almost always keen to interact with the relevant focal persons to get the latest updates on issues of riverblindness – the progress made and the challenges faced. In this continuum he would, among others, check on such records as relevant population registers, accounts of CDD trainings, and data on ivermectin and albendazole uptake. During many such interface opportunities, he wanted to see with his eyes what the entomological teams were doing on the ground. He would move to some foci even in rainy seasons to see whether Abate, the chemical that

1 Frank Richards left his substantial job with The Carter Center on 15th June 2020.

was being used to eliminate or control black flies, was being used well. He would walk long distances at times, especially where there were scanty roads in onchocerciasis endemic areas. Sometimes he used to cross rivers on foot in some places because there were no bridges, or because the makeshift or permanent ones had been broken or washed away.

Until the early 2000's, Uganda had had an onchocerciasis elimination drive since the early 1950's. Apart from the Victoria Nile basin, where success was scored by mid-1970's, in other parts of the country, the control and elimination thrust slowed down, sometimes going into inertia, up to the optimistic years of revival, 1987-1995. It was on top of the great period of resurgence and achievement, 1996 – 2005, in Atlanta Georgia (USA), that a group of people came up with the idea of full-scale non-stop onchocerciasis elimination in Uganda. This was early in 2005 and Frank Richards was one of them; others included Peace Habomugisha, Dr. Richard Ndyomugyenyi, Dr. Ambrose Onapa and Dr. Moses Katabarwa. The planners of the full gear elimination project were mainly from both Uganda's Ministry of Health and The Carter Center, and Richards too participated in this. As the country's major onchocerciasis policy, elimination was finally formalized and publicly launched in 2007, with Richards in active attendance. The much prized UOEEAC, originally known as Uganda Onchocerciasis Elimination Committee, UOEC, was born with his involvement. The younger years of the committee were not generally speaking, an easy period, and Richards was nearly always there to fight for and nurse it. He attended most of its meetings, including the 12th, where he would contribute significantly given his massive expertise in the onchocerciasis disease.

Richards was very committed to his work and he always loved seeing things done timely and in the right way. For that matter he made sure that funds were released within the planned timeline and this enabled all elimination activities to be done in time. No wonder Uganda has, as of now, eliminated onchocerciasis in many foci. During annual review meetings, usually in Atlanta Georgia, Richards would not spare anyone if what they had presented was considered by him as having "gaps". He would correct you and at the same time guide you on the way forward. People with such character are few all across the globe.

From Uganda, we say: adieu Frank Richards! Uganda though will never forget you. You deeply and indelibly, indirectly or directly, touched the hearts, minds and physique - all for good reasons and with generally great results - of many of its people, now living or departed. You remain one of the great people of all time who have made everlasting changes in the country's health history. As long as there are individuals, even one, who tangoed with you as you sped up and down across Uganda to do onchocerciasis and other disease related activities, as long as Uganda Carter Center and other Ugandan onchocerciasis records exist, the name Frank Richards will never be forgotten in this country. You have earned there your eternal place through sympathy and service (to the afflicted), sweat and smarts. As Carter Center Uganda, we are giving an advance invitation to Frank Richards to come to Uganda to celebrate with us the elimination of onchocerciasis from this country about 5-9 years from now.

References

https://www.cartercenter.org/news/features/h/river_blindness/spotlight-frank-richards.html
https://www.cartercenter.org/about/experts/frank_richards.html.
https://www.cartercenter.org/health/lf/staff.html.
Uganda Carter Center Records, 1996 - 2019.

Appendix F: An Overview of Carter Center Milestones in Uganda's Battles on River Blindness & Trachoma♦

Peace Habomugisha

- 1991 The Carter Center started supporting Uganda's MoH in its Guinea Worm eradication project until it was eliminated in 2003.
- Uganda's onchocerciasis control program gained momentum in 1992 under the support of the River Blindness Foundation (RBF) of UK, with The Carter Center taking over this program in 1996.
- Rapid Epidemiological Assessment (REA) – mapping of onchocerciasis endemic areas was undertaken to some good extent in the 1990s.
- From 1996 to 2006, onchocerciasis program activities involved among others the following:
  - Skin snipping and nodule palpation that helped in the identification of oncho patients and with the demarcation of communities that were oncho endemic.
  - Health education and selection of ivermectin distributors, CDDs.
  - Training of CDDs and their supervisors, as well as health workers.
  - Mass annual treatment with ivermectin.

Preliminary RBF Years: the Technical People



The late Dr. Brian Duke, former Medical Director, RBF



Dr. Frank J. Walsh, Consultant Entomology Specialist RBF with Christopher Ruzaza (former VCO, Kisoro)

RBF Staff 1992, later inherited by TCC



Uganda Carter Center Staff (22) as of 2018 Excluding those Encircled in Red



One Key Person in our Oncho Program Since 1996 is Dr. Frank Richards, in Red Circle



Presidential Visit

President Jimmy Carter made a short visit to Uganda where he was a special guest of the country's sitting president in 2000.Fighting of onchocerciasis was among issues that were discussed between the visitor and some government of Uganda and Lions Clubs members.

Some Equipment

Vehicles

- 1992 – 1995: RBF our Predecessor had one vehicle, which was subsequently passed over to TCC.
- 1996 – 2003: We had 4 vehicles.
- 2005: We had 5 vehicles.
- With elimination since 2007 the vehicles increased to a fleet, with older ones being turned over to MoH Uganda, and some new ones to other organizations e.g. SightSavers.

Motor cycles – Over 54 since 2007

NGDOs in Partnership with MoH Uganda and TCC in the Oncho Fight, Now and or Before

1. Christoffel Blinden Mission (CBM) in what was formerly East Ankole Diocese (in what was previously greater Mbarara District) and in formerly greater Bushenyi District.
2. Kuluva Hospital in Arua District.
3. GTZ in Kabarole District.
4. World Vision International in what used to be greater Mbale District.
5. AVIS and Sight Savers International in Kibaale, Hoima and Masindi districts.
6. River Blindness Foundation (RBF), which handed over the program to The Carter Center in 1996 with all the districts it was supporting (Kisoro, Kabale, Rukungiri, Kasese, Nebbi, Moyo, Gulu, and Apac).
7. In 1997 APOC, which introduced CDTI strategy to be used in all endemic communities in Uganda, joined the fray.
8. RTI / ENVISION came in later, after the launch of elimination in 2007.

Elimination of Onchocerciasis in Uganda

Policy inauguration and continuation

- In January 2007, the Government of Uganda with the support of Carter Center, launched elimination of onchocerciasis.
- From that day onwards, The Carter Center committed itself to supporting Uganda with elimination of onchocerciasis in the whole country.

ONCHO ELIMINATION LAUNCH 2007



Two strategies used under elimination

Namely (1) twice per year treatment with ivermectin, which began in 2007, running up to the present time, and (2) vector control and elimination where necessary and feasible. Uganda's Ministry of Health, to put it better, adopted the onchocerciasis elimination policy whereby semi-annual CDTI was combined with the vector elimination strategy (instead of only annual CDTI) in order to achieve interruption of transmission. Consequently:

- A laboratory was set up and fully furnished with all the necessary machines and reagents in 2008 by The Carter Center with the support of Prof. Thomas Unnasch. See illustration below.
- Cross border activities in DRC and RSS, beginning with entomology and OV16, have been part of the scheme for fighting onchocerciasis &
- Donations of Abate have been received and used in foci where it is / was needed.

UOEEAC and its maintenance

The Carter Center also supports the UOEEAC, a committee that was set up in 2008 (both by the Ugandan government and the center) to review elimination progress and to give recommendations to the government to make decisions on the status of each focus. The committee meets once a year in August. Current chair is Prof. Unnasch.

Some Laboratory Equipment





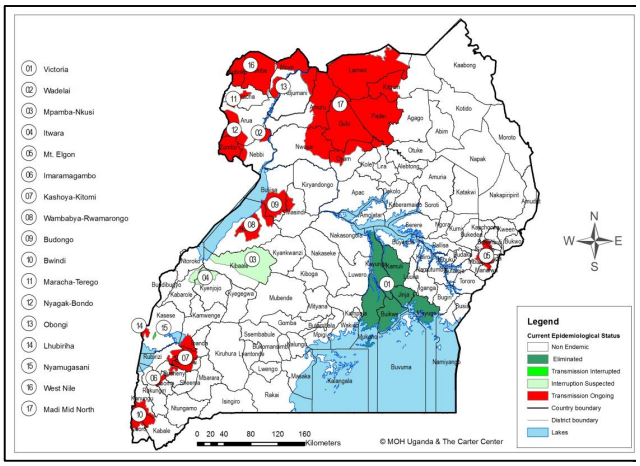
UOEEAC, MoH Officials & Partners Aug 2018



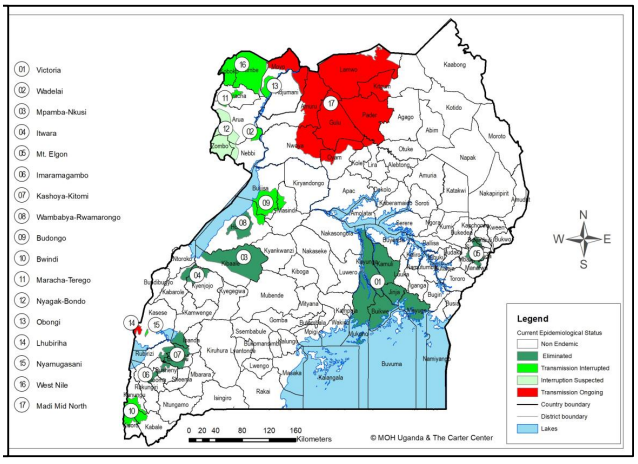
Achievements with the Support of The Carter Center 2007 to 2018

Map of Uganda showing Onchocerciasis Elimination Progress from 2007 to 2018

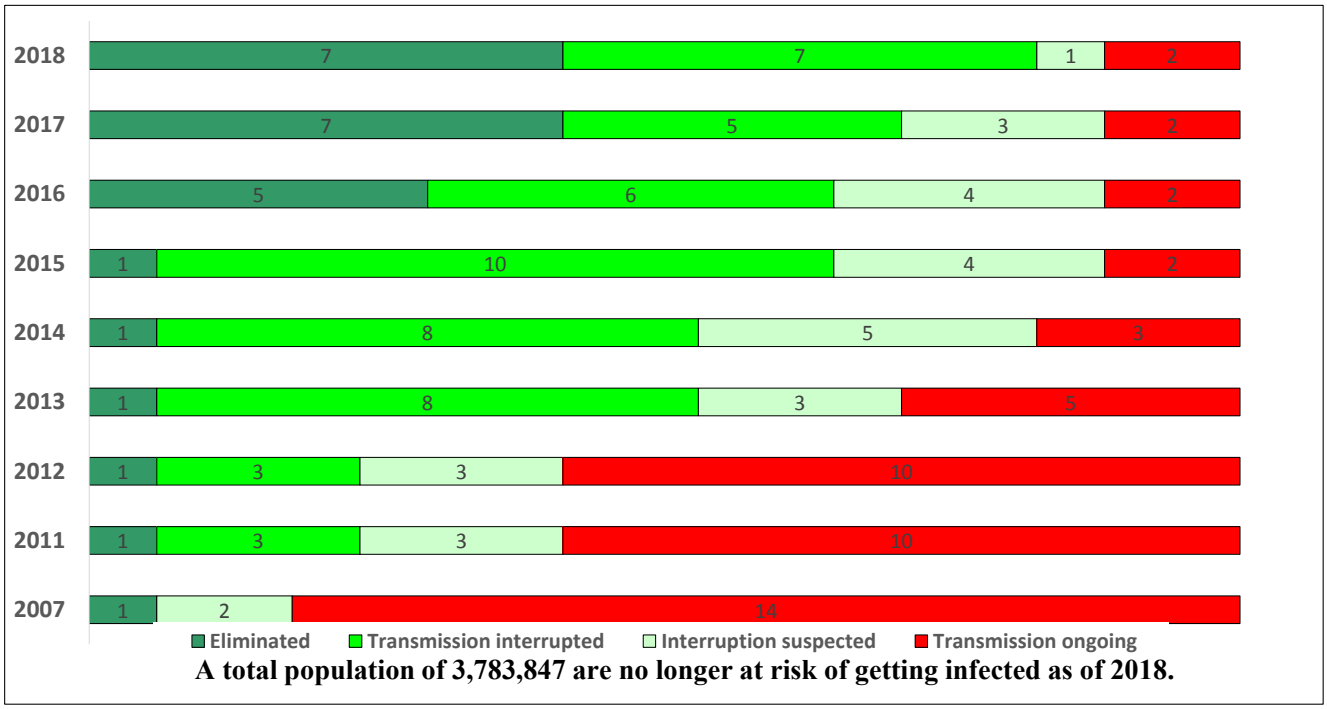
2007



2018



Change in Endemic Status in Foci (n = 17) between 2007 and 2018



A total population of 3,783,847 are no longer at risk of getting infected as of 2018.

The Basis of our Achievements

- Committed government personnel who are supportive of elimination.
- Activity implementation is done by districts.
- Dedicated volunteers in affected communities.
- Committed NGO partners – TCC, SightSavers etc.
- Devoted drug companies (Mectizan co. Inc.).
- Government of Uganda School of Entomology, at VCD, which produces over 25 students every year.

The Carter Center was First Housed by MoH in this Building



Office Construction

- 1996 & 2003 Office blocks at VCD



The New Building with the Support of The Carter Center



Challenges of River blindness Elimination

Cross border issues

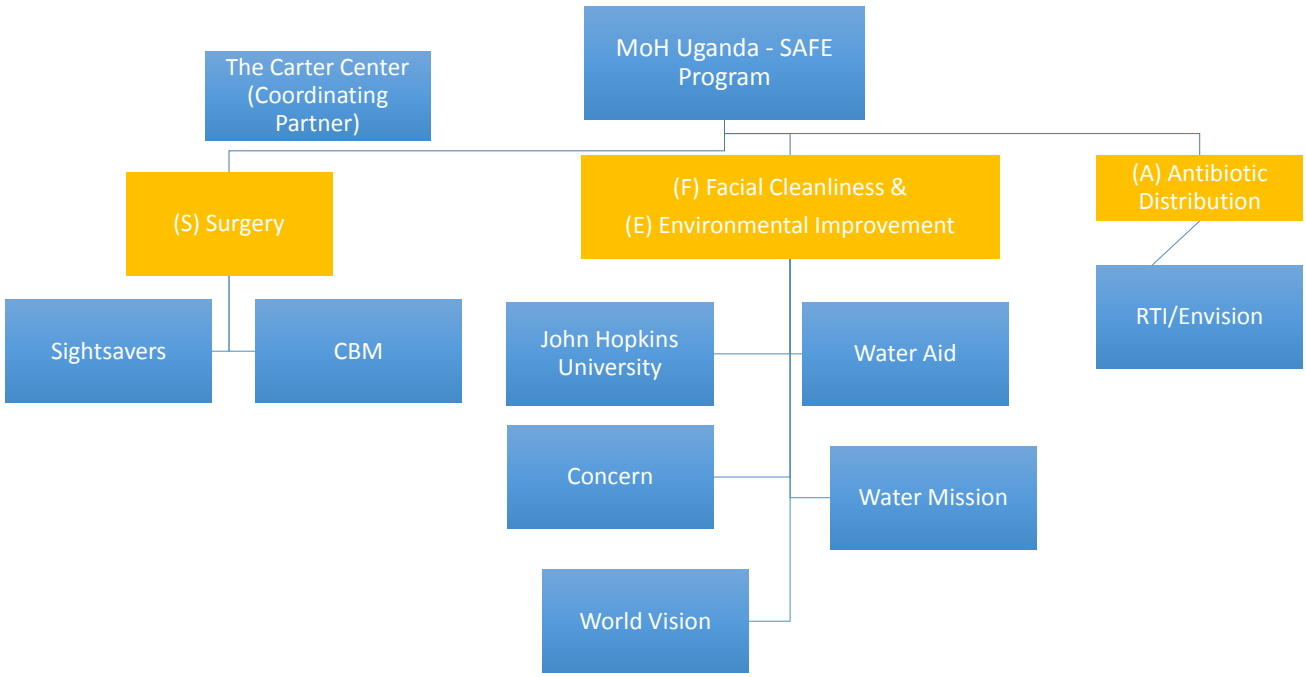
- There is insurgency in some neighboring countries, which limits Uganda's support to them.
- CDI implementation has not yet started in other countries bordering Uganda.

THE QUEEN ELIZABETH DIAMOND JUBILEE TRUST



Trachoma Initiative in Uganda

Uganda Trachoma Elimination Program with Trust Support ICTC Partners



Trachoma Endemic Regions in Uganda

- TT surgical backlog estimated in 2014 at 150,000.
- **1St phase: started 2014**
  - 17 districts (7 in Karamoja region and 10 in the Busoga area) were supported by the Trust to carry out surgeries and F&E activities.
- **2nd phase: started 2017**
  - 16 districts from other endemic regions (Northern, Eastern and West Nile) were brought on board beginning April 2017 based on their TT impact assessment results.

Surgeries Conducted Since Trust Program Began

Year of Trust Implementation	Karamoja	Busoga	Total
Yr 1 (April 2014 - March 2015)	3394	8475	11,869
Yr 2 April 2015 - March 2016	3548	4246	7,794
Yr 3 April 2016 - March 2017	2180	1075	3,255
Yr 4 April 2017 - March 2018	1024	290	1,314
Yr 4 expansion April 2017 - March 2018			831
Yr 5 April 2018 - June 2018	419	730	1,149
Yr 5 Expansion April 2018 - June 2018			196
Grand total surgeries yr. 1 - yr. 5 June 2018			**26,408**

Trachoma has been eliminated as a public health problem (the program ends in March 2019).

Key Encountered Challenges During Implementation

- Cross border movements of nomadic people from Kenya and South Sudan.
- Large influx of South Sudanese refugees from high endemic areas.
- Behavioral change on "F" and "E" is a slow process.
- Limited access to water in Karamoja region.
- Trachoma activities not fully integrated into the health system.

The People Behind all the Above



President Jimmy Carter & his wife Rosalynn

Ambassador Mary Ann Peters (R) Represented The Carter Center Inc. at the Opening of the New Building at VBNDD Nov. 2018. Seen here with Uganda MOH Minister (C) JR Aceng & WHO Bayo Fatunmbi.



We thank all partners, institutions and individuals that have contributed to the success of these programs.

♦ This is a reworked edition of a presentation that was delivered by the writer on the occasion of the official unveiling of a Carter Center supported office block at VBNDD in November 2018.



Jane Ruth Aceng (2nd from left) with some Lions Clubs Members



LR - Moses Katabarwa, Frank Richards and Tom Unnasch