

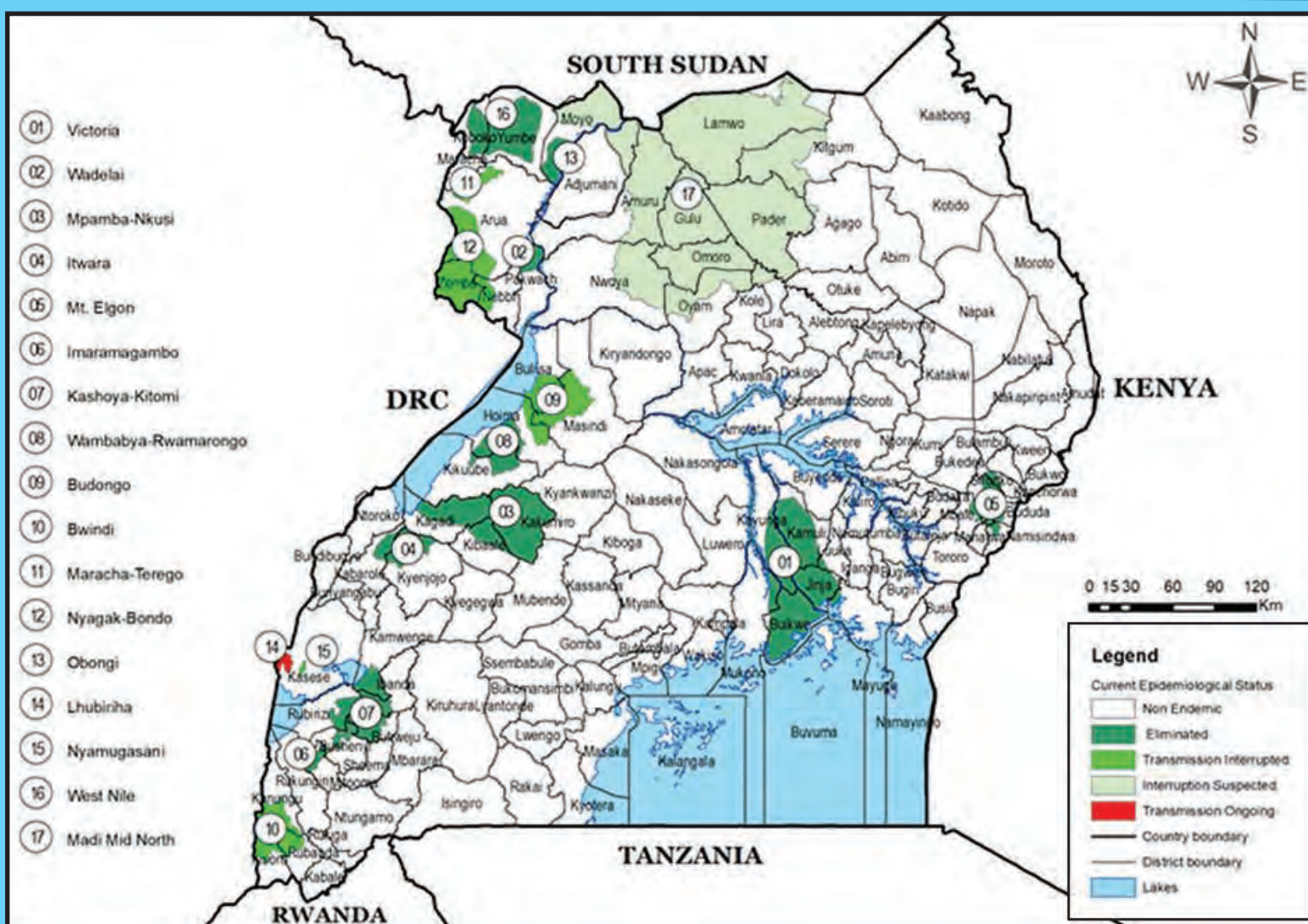


# INSIGHT SPECIAL

## 2020

### Proceedings of the 13<sup>th</sup> Session of Uganda Onchocerciasis Elimination Expert Advisory Committee 04<sup>th</sup> - 06<sup>th</sup> August 2020, KAMPALA - UGANDA

#### A MAP OF UGANDA SHOWING ELIMINATED FOCI AND THOSE TARGETED FOR ELIMINATION 2020









Opening Photo of Some Ugandan PA. From Area L to R - Mutesi, Katamanywa, Matua, Onapa, Rwekigga, Unoba, Habomugisha, Nahabwe, Ndyarugahi, Ochieng and Khainza



# The Carters

The couple whose humble and non-exclusionary disposition and moral, emotional and financial support have made a world of difference in the multi-stakeholder campaign to free Uganda from the age-old fetters of onchocerciasis.



The Carters during a Democratic National Convention in Atlanta, 1988

The Carters at Madison Square Garden, New York, 1976



Mr and Mrs Carter, 2014, Atlanta, at Jimmy's 90th Birthday Anniversary.





# Table of Contents

<b>ABBREVIATIONS</b>	<b>05</b>
<b>PRELIMINARIES</b>	<b>08</b>
<i>Peace Habomugisha</i> , Introduction	08
<i>Thomas Unnasch</i> , Report and Recommendations	11
Uganda Oncho Flag Early August 2020	13
<b>DAY ONE, TUESDAY 04 AUGUST 2020</b>	<b>15</b>
<b>Laboratory Issues</b>	<b>15</b>
<i>Christine Nahabwe</i> , Update from Molecular Laboratory	15
<b>Foci Under Post Treatment Surveillance</b>	<b>17</b>
<i>Dickson Unoba</i> , Wadelai Focus	17
<i>Levy Matua</i> , West Nile Focus	21
<b>DAY TWO, WEDNESDAY 05 AUGUST 2020</b>	<b>25</b>
<b>Foci Under Mass Drug Administration</b>	<b>25</b>
<i>Joseph Wamani</i> , Madi Mid-North Focus, Southern Part	25
<i>David Oguttu</i> , Madi Mid-North Focus, Northern Part	44
<i>Samuel Y. Makoy Logora</i> , Updates from Magwi & Kajo Keji Counties, RSS	63
<b>DAY THREE, THURSDAY 06 AUGUST 2020</b>	<b>69</b>
<b>Foci Under Mass Drug Administration, Cont'd</b>	<b>69</b>
<i>Moses Katarwa</i> , Delineation of Madi Mid North Focus	69
<i>Abraham K. Muhesi</i> , Lhubiriha Focus	74
<b>ANNEXES</b>	<b>79</b>
<b>Annex One: Inaugural Addresses</b>	<b>79</b>
<i>Thomas Unnasch</i> , University of South Florida Professor, Chairman, UOEEAC 2014 to present	79
<i>Yao Sodahlon</i> , Overseer, MDP	79
<i>Mike French</i> , Implementation Director, USAID's Act to End NTDs,   East Program	79
<i>Yonas T. Woldemariam</i> , WHO Envoy to Uganda	80
<i>Gregory Noland</i> , Director, The Carter Center River Blindness, Lymphatic Filariasis, Schistosomiasis and Malaria Programs	83
<i>Jane Aceng</i> , Health Minister, GOU	84

<b>Annex Two: Speeches at Closing .....</b>	<b>86</b>
<i>Lion Sedrace Rwekikiga, Governor District 411B .....</i>	<i>86</i>
<i>Jane Aceng, MOH Uganda, Press Statement .....</i>	<i>87</i>
<i>Jane Aceng, Health Minister, GOU .....</i>	<i>88</i>
<b>Annex Three: Participant Register .....</b>	<b>90</b>
<b>Annex Four: Memorials to Unoba .....</b>	<b>93</b>
<i>Peace Habomugisha, Remembering Dickson Unoba .....</i>	<i>93</i>
<i>Thomson Lakwo, The Unoba I Knew and His Contribution to Uganda's Fight Against Onchocerciasis .....</i>	<i>94</i>
<b>Annex Five: Photo Memories of UOEEAC 2020 .....</b>	<b>96</b>
<i>Peace Habomugisha .....</i>	<i>96</i>



# Abbreviations

**ALB** - Albendazole

**APOC** - African Program for Onchocerciasis Control

**ASCEND** - Accelerated Sustainable Control & Elimination of Neglected Diseases

**CAO** - Chief Administrative Officer

**CBM** - Christoffel Blinden Mission

**CDC** - Centers for Disease Control and Prevention

**CDD** - Community Drug Distributor

**CDTI** - Community Directed Treatment with Ivermectin

**CEO** - Chief Executive Officer

**COVID 19** - Corona Virus Disease

**DBS** - Dry Blood Spots

**DG** - District Governor / District Government / Director General

**DHOs** - District Health Officers

**DLG** - District Local Government

**DOCs** - District Onchocerciasis Coordinators

**Dr.** - Doctor

**DRC** - Democratic Republic of Congo

**EF** - The End Fund

**ELISA** - Enzyme Linked Immunosorbent Assay

**ELMA** - Philanthropist group with a branch in E. Africa

**ESPEN** - Expanded Special Project for the Elimination of Neglected Tropical Diseases

**GOU** - Government of Uganda

**GRBP** - Global River Blindness Program

**GSK** - GlaxoSmithKline

**ICT** - Information, Communication and Technology

**IDP** - Insecurity and Displacement of Population / Internally Displaced Person

**IEC** - Information, Education and Communication

**IVM** - Ivermectin

**KMRI** - Kenya Medical Research Institute

**LC(s)** - Local Council (s)

**LC1** - Local Council I

**LCI** - Lions Clubs International

**LCIF** - Lions Clubs International Foundation

**LCII** - Local Council II

**LCIII** - Local Council III

**LCV** - Local Council 5 Chairperson

**LF** - Lymphatic Filariasis

**LRA** - Lord's Resistance Army

**M & E** - Monitoring & Evaluation

**MDA** - Mass Drug Administration

**MDP** - Mectizan Donation Program

**Merck & Co.** - Donor of Mectizan / Ivermectin

**MF** - Microfilaria

**MMDP** - Morbidity Management and Disability Prevention

**MOH / MoH** - Ministry of Health

**NA** - Not Applicable

**NBS** - National Bureau of Statistics

**NGDO(s)** - Non-Governmental Development Organization

**NTDs** - Neglected Tropical Diseases

**OCP** - Onchocerciasis Control Program (of West Africa)

**OEM** - Onchocerciasis Elimination Mapping

**Oncho / ONCHO** - Onchocerciasis

**OTS** - WHO's Onchocerciasis Technical Advisory Subgroup

**OV / *O. volvulus*** - *Onchocerca Volvulus*

**Ov16** - Process / Machine for Investigation / Analysis of *Onchocerca Volvulus*

**PA** - Physical Attendees

**PC NTDs** - Preventive Chemotherapy NTDs

**PCR** - Polymerase Chain Reaction

**PELF** - Program for Elimination of Lymphatic Filariasis

**PEM** - Participatory Evaluation Meeting

**PHASE** - Preventive Chemotherapy, Health Education, Access to Clean Water, Sanitation Improvement and Environmental Snail Control

**PHC** - Primary Health Care

**PTS** - Post Treatment Surveillance

**Rd 1** - Round 1

**Rd 2** - Round 2

**RDC** - Resident District Commissioner

**REMO** - Rapid Epidemiological Mapping of Onchocerciasis

**RSS** - Republic of South Sudan

**RTI** - Research Triangle Institute International

***S. damnosum*** - *Simulium damnosum*



***S. neavei*** - *Simulium neavei*

**S/c** - Sub-County

**SCI** - Schistosomiasis Control Initiative

***Simulium spp*** – *Simulium* Species

**SOPs** - Standard Operating Procedures

**SSOLFEAC** - South Sudan Onchocerciasis / Lymphatic Filariasis Elimination Advisory Committee

**TAS** - Transmission Assessment Survey

**TCC** - The Carter Center

**UNHCR** - United Nations High Commission for Refugees

**UOEEAC** - Uganda Onchocerciasis Elimination Expert Advisory Committee

**USA** - United States of America

**USAID** - United States Agency for International Development

**UTG** - Ultimate Treatment Goal

**VBNTDD** - Vector Borne and Neglected Tropical Diseases Division

**VCD-MOH** - Vector Control Division - Ministry of Health

**VCOs** - Vector Control Officers

**VHTs** - Village Health Teams

**WG** - Working Group

**WHA** - World Health Assembly

**WHO** - World Health Organization

# Preliminaries

## Introduction: UOEEAC Secretariat Speaks



*Peace Habomugisha*

August 4<sup>th</sup>-6<sup>th</sup> (2020) was not business as usual! Not like what the past years, 2008 -2019, had always seen every August. With fear of COVID 19 still hovering over the whole world, with the globe still reeling from the unfortunate unfolding consequences of this pandemic (infections and deaths included),<sup>1</sup> and with several countries still struggling to find a cure by developing a vaccine(s) with potency to save those not yet fallen to this disease, there were indicators by June 2020 that the UOEEAC would not convene as physically as it used to do until August 2019. The annual Atlanta GRBP review meeting, finding itself cornered in a similar situation in 2020's first quarter, had moreover already invoked and implemented change in the conduct of program review events within The Carter Center and Carter Center-affiliated activities: by a virtual procedure where invited guests face, discuss, agree and/or disagree with each other and recommend a course of action. The virtual means was adopted by UOEEAC in August 2020: Working online our participants from the USA, DRC, RSS and Uganda did what was thought necessary, following a common agenda, to re-appraise onchocerciasis elimination activities in the East African country. Needless to observe, American, Congolese and Sudanese participants attended from their respective countries. America-based Ugandan Moses Katarwa participated from a USA location.<sup>2</sup>

In Uganda, most home-based Ugandans present at what was a 3 day event chose to physically come together. They met not at the usual places, Sheraton, Serena or Imperial Royale, but at the VCD-Carter Center premises, plot 15, along Uganda's Bombo Road, in the country's city of Kampala.<sup>3</sup> Two spaces served this purpose – the conference room at the Brian Duke wing of the 1996/2003 complex and the boardroom of

the new Carter Center sponsored building completed late 2018.<sup>4</sup> Some of the participants attending from the Bombo Road grounds had their own (personal or official) laptop for reasons of relaying forth and back the proceedings of the meeting; each of the assembly rooms, however, was equipped with a large communication screen for the same purpose for those who did not bring computers with them. Those present in person strictly observed what is now widely termed SOPs, standard operating procedures - behavioural guidelines issued by the country's ministry of health since about March 2020: mask wearing, hand sanitization, reading of an individual's temperature by a "gun", enough physical distancing, avoidance of handshakes and open coughing, and others.<sup>5</sup> Almost every aspect of this activity - the minimal number of invited persons, even group photographs, etc. - demanded a sense of this carefulness so as to prevent the possible spread of COVID-19. Microphone sharing, from one speaker to another, which used to be a notable characteristic of pre-2020 UOEEAC meetings was totally absent.

Unlike in the bygone years, there was very limited hospitality on the Ugandan side: no shared meals or drinks (be it lunches, dinners or cocktails, apart from bottled mineral water and snacks) were ever served over the three days. People invited would come, usually very early in the afternoons, participate and then go back to their respective residences (permanent or hired temporarily for the occasion) and report the following afternoon for the next session.

The full list of who attended the virtual meeting (and the various capacities in which they were present) can be accessed at annex three in the closing pages of this report.

This report now takes you to the opening session to see who did what to set off the review meeting. The committee chairman Thomas Unnasch was the first to talk. After him there were remarks by Dr. Yao Sodahlon (MDP chief), Mike French (from ACT to End East), Dr. Yonas Tegegn Woldemariam (of WHO and whose remarks were delivered by Dr. Bayo Fatunmbi who stood in for him),<sup>6</sup> and Carter Center's Dr. Gregory Noland. Lastly, we received the Uganda Health Minister Dr. Jane Aceng's speech, which marked the formal opening of the meeting. This address was read by Dr. Patrick Tusiime, a commissioner at the country's MOH headquarters, at Wandegaya, in the Department of Communicable Diseases, Prevention and Control.<sup>7</sup> See annex one for the full report.

Our format, for this proceedings report, which we have been following for a long time, requires that after these introductory statements we present UOEEAC 2020's recommendations to Uganda's Ministry of



Health for the nation's onchocerciasis program in 2021. The introduction and recommendations have "Preliminaries" as their common head. The meeting's main presentations are reported under two headings: Some as "Foci Under Post Treatment Surveillance", and these were presented on the first day. Others are published as "Foci Under Mass Drug Administration", and these were given on the meeting's second and third days.

The meeting ended with two speeches – the first (non-ministerial one) by Lion Sedrace Rwekikiga,<sup>8</sup> and the final one being the one that was made by Uganda's Minister for Health Jane Aceng who was represented by Dr. Alfred Mubangizi, an Assistant Commissioner in charge of MOH Uganda's department of Vector Borne and Neglected Tropical Diseases, VBNTDD, previously named VCD in Kampala's Nakasero neighbourhood.<sup>9</sup> Note that in between both speeches, there was the reading of the press release, regarding the meeting and its outcomes, that was done by Dr. Tusiime. The closing addresses and the press statement have here been published as annex two.

At annex four we have two short commemorative texts - written to remember the life and work of Mr. Dickson Unoba. He was a member of the UOEEAC committee for several years up to his sudden death in late 2020. Unoba had dedicated himself to the control and elimination of river blindness in Uganda. The final appendix i.e. annex five is a set of pictures from UOEEAC 2020. Not only do these images show us some of the people that were in attendance, they also reinforce our memories of the events and circumstances of the meeting, like the difficult COVID 19 situation in which we held the assembly.

Noland, a name we heard of already, is the new TCC's Health Program Director for Onchocerciasis, Schistosomiasis and Lymphatic Filariasis.<sup>10</sup> He replaced Dr. Frank Richards who left the center on 1<sup>st</sup> June 2020. He came to his latest job with some great background of many years of epidemiological work within Carter Center since 2011. A holder of a bachelor's, master's and doctoral degrees (from three US universities) in science related fields, Noland has previously done research related tasks with some institutions in his country (including Centers for Disease Control and Prevention, CDC) and the Kenya Medical Research Institute, KMRI.<sup>11</sup> To Noland we, in Uganda, extend a very big hearty welcome, and look to successful cooperation with him in the elimination from Uganda of onchocerciasis and its vectors.

Uganda's onchocerciasis elimination program has achieved a lot, and is still succeeding more, even in the face of COVID-19<sup>12</sup> and the stringent three-time instituted measures to counter it,<sup>13</sup> a context where it has shown considerable resilience and even run faster in many circumstances. Big thanks to the great strides in communication technologies that enable us in the

hardest of times, e.g. during very tough lockdowns,<sup>14</sup> to keep in touch with our field officers, the affected various countryside communities and concerned district administrations. This and other reasons – hard work, being well organized, good continuous funding, and functional partnership with our national government and other participating NGOs, have kept Carter Center at the steering wheel.

## NOTES

1. The dis-ease was declared a pandemic by WHO, remember, on 11 March of 2020.
2. By June 2021, by the way, history seemed to be repeating itself on the Ugandan landscape. On the night of Sunday 8th that month, President Yoweri K Museveni in a COVID-19 edict imposed on his country a partial lockdown. Inter-district travel, which is a major determiner of the successful implementation of our national onchocerciasis program's field work, was banned with few exceptional cases: the order took effect from Thursday the 12<sup>th</sup> of that June. Among much else, the shutdown, of 42 days, limited public gatherings to not more than 20 people each. Public failure to adhere to the COVID-19 proclamation (and relevant earlier regulations), threatened the president, would lead to total shutdown. These were signs that come August 2021, the UOEEAC meeting might again take place virtually or not happen at all if the threat came true. Almost a week later, in the late evening of Friday June 18, 2021, the president was back on the national rostrum to talk to the country on COVID-19. The dis-ease had struck more, worsening the health situation. On that day, he slapped on Uganda a very nearly complete closure of activities across the country for forty two days, starting that night at 10:00 p.m. (2200 hrs) East African time. The tightening of boundaries between the country's districts was a lot severe this time, life and work (including travel) even in every district (in villages, towns and cities, like Kampala where Carter Center has its head offices) became more demanding. Worries that a physical UOEEAC convention in 2020 was a remote possibility looked to be becoming more and more credible.
3. Some individuals however did it differently: Thomas Rubaale participated from his distant Fort Portal city in Kabarole District in Uganda's West. Patrick Tusiime and Stella Agunyo, to give two more cases, did so from other locations in the Greater Kampala area. Bayo Fatunmbi, who performed a special duty at the meeting, see note 6, did similarly.
4. With very restricted numbers of Ugandans and Uganda based aliens expected to attend, it was

- cost effective to avoid hosting the event at the usually high priced four- or five-star hotels.
5. Mandatory examination for presence or absence of COVID-19 in a person's body was not a requirement, partly because the world had not yet adopted the position of mass testing, and also because exam fees were prohibitive.
  6. Bayo, a Nigerian national who has for quite some time worked with WHO, is currently posted at the organization's offices in Kampala, Uganda, as a medical officer.
  7. Tusiime stepped in for the minister because the latter was away coordinating national programs to contain the spread of COVID-19.
  8. District Governor (District 411B).
  9. Known in the beginning, in colonial times, as the Department of Entomology.
  10. Also has some malaria assignment there.
  11. [https://www.google.com/url?esrc=s&q=&rct=j&sa=U&url=https://www.cartercenter.org/about/experts/greg\\_noland.html&ved=2ahUKEwjVqNHZvaPxAhUSqxoKH eKUAqwQFjAAegQIBxAB&usg=AOvVaw0-lZy13WMiFVCiWcGg4k63](https://www.google.com/url?esrc=s&q=&rct=j&sa=U&url=https://www.cartercenter.org/about/experts/greg_noland.html&ved=2ahUKEwjVqNHZvaPxAhUSqxoKH eKUAqwQFjAAegQIBxAB&usg=AOvVaw0-lZy13WMiFVCiWcGg4k63).
  12. A dis-ease that has overshadowed and somehow disrupted, more than any other dis-ease in the more recent times, the fight of all other diseases.
  13. See note 2.
  14. Ibid.

### Venues for UOEEAC 2020



Barnley House

New TCC - GOU Complex





## Report and Recommendations from the 13th Meeting of the Uganda Onchocerciasis Elimination Expert Advisory Committee, UOEEAC



*Thomas R. Unnasch*

### Overview

The 13th meeting of the UOEEAC was held from August 4 through 6, 2020. Due to restrictions imposed as a result of the COVID19 pandemic, the meeting was held in a virtual format. Because the participants were spread across many time zones, the meeting was held on a shortened time schedule, running from 14:00 until 16:30 Kampala time each day. Due to the limited amount of time available, the agenda of the meeting was focused primarily on the two foci where transmission is still ongoing in Uganda and on the current situation in onchocerciasis endemic areas near Uganda's borders in the Republic of South Sudan (RSS) and the Democratic Republic of the Congo (DRC).

### Recommendations

1. The committee was pleased to hear of all of the collaborative activities that were conducted between the Ugandan program and the program in RSS. The committee was pleased to hear of the field-based entomological and epidemiological surveys, slash and clear interventions and the assistance provided by the Uganda program in analyzing black fly and serological samples. The committee was also gratified to hear of the efforts of the Uganda program in providing training to individuals from RSS. The committee hopes that these activities will continue and be strengthened in the coming year.
2. The committee recommended that the entomological collection data be presented in a form that is normalized for the number of collection days that occurred. The committee recommends that the program consider using the monthly per person biting rate calculation for this purpose.
3. The UOEEAC was pleased to hear of the progress that has been made in drafting a joint multi-disease health plan/protocol/communique with Uganda's neighbors that includes river blindness elimination, with special reference to onchocerciasis endemic areas near Uganda's borders. While recognizing the bureaucratic challenges involved with finalizing bilateral protocols between national governments, the UOEEAC expressed its hope that plans/protocols/communiques will be signed as soon as possible in order to enable effective coordination of activities approved by the RSS, DRC and Ugandan ministries of health.
4. The UOEEAC recommended that Uganda continue to provide laboratory and field-based support to the RSS and DRC programs as time and resources permit, with priority given to samples collected from the special intervention zones. The committee felt that one aspect of providing quality control and quality assurance to laboratories in DRC interested in contributing to the onchocerciasis elimination effort in DRC might be to divide the individual dried blood spots collected in DRC so the same samples can be analyzed in parallel in the DRC and Uganda laboratories. To accomplish this goal, the UOEEAC requested that the DRC Onchocerciasis Elimination Expert Advisory Committee identify potential collaborating institutions in DRC and work in coordination with the respective Ministries of Health to expedite transfer of samples. UOEEAC also noted that similar support might be requested from RSS to develop its own onchocerciasis laboratory as well and encouraged the Ugandan program to assist in this effort if requested to do so.
5. The committee noted that the current status and extent of transmission in the areas of RSS near the northern border of the Ugandan Madi mid-North focus remains unclear. The committee recommended that the Uganda program cooperate with RSS to conduct ecological, epidemiological, and entomological studies in these areas of RSS to ensure that these areas are not endemic. The UOEEAC noted that there were security issues in these areas that have resulted in major population movements. Noting security concerns, the UOEEAC urged safety in conducting such cooperative activities in DRC and RSS.
6. The UOEEAC recommends that programmatic activities be allowed to resume as soon as possible, following nationally prescribed COVID-19 precautions. If necessary, the UOEEAC recommends that the government consider allocating funds to permit activities to continue,



given the delay in securing approval to resume activities by a major donor to the program.

7. The UOEEAC recommended that the Uganda Ministry of Health confirm to DRC that Uganda is willing to continue the collaboration with DRC to address onchocerciasis in border regions. In this regard, the committee hoped that the government of Uganda would see fit to open the area bordering the Lhubiriha focus from the Uganda side in order to allow the DRC-Uganda cooperative activities to resume. The UOEEAC was also pleased to note that evaluation of the application to the DRC Ministry of the Environment to consider Abate safe for use by the DRC onchocerciasis program is proceeding. The UOEEAC emphasized that recommending the use of larviciding in DRC for control of *Simulium* vectors ought to be considered by the DRC onchocerciasis elimination committee and is not part of the purview of the UOEEAC.
8. The UOEEAC noted that the requested presentation of the assessment of the borders of the Madi mid-North (MMN) lacked solid support from data as to why certain areas were excluded from treatment. UOEEAC recommended that the program collect and present solid data supporting why certain sub-counties in the MMN districts were excluded from ivermectin MDA treatment, as this will be a question that will likely be raised by the WHO verification committee. The UOEEAC recommended that the program develop a standard operating procedure (SOP) to support this process. The SOP should be consistent with the current guidelines for mapping onchocerciasis as recommended by WHO's Onchocerciasis Technical Sub-committee (OTS). The UOEEAC recommended the program consider a three-step process to meet the OTS recommendations: 1. Exclusion mapping to eliminate areas ecologically unsuitable for *O. volvulus* transmission (e.g. arid areas, areas with no rivers or wetland areas); 2. Entomological surveys to demonstrate the absence of vectors in areas not excluded due to the local ecology; and 3. Serological surveys using the Ov16 ELISA to confirm that treatment is not needed (following the OTS recommended procedures) in those areas with a suitable ecology and entomological evidence for the presence of vector flies.
9. The UOEEAC recommended that the program review existing entomological data to determine where each of the different forms of vector control interventions (chemical and vegetation clearance) might be implemented to complement MDA in the Madi mid- North focus in order to accelerate onchocerciasis elimination and where supplementing MDA with vector control might be necessary to achieve elimination. Where

necessary, the UOEEAC also recommended that the program continue to provide assistance to the bordering countries for entomological activities. Technical assistance in implementing vector control, if requested by the country's MOH, should follow discussions with its national elimination committee. The UOEEAC recommended that Uganda provide such assistance only when it is assured that all local and national clearances are obtained by the programs of the countries requesting assistance, and in the case of Abate treatment that the countries requesting assistance have made arrangements to obtain the necessary supply of insecticide. In this regard, UOEEAC reiterated that its charge was to provide advice to the MOH of Uganda and not to MOHs of bordering countries (DRC and RSS), and therefore it cannot make direct recommendations regarding activities that should be carried out in these countries.

10. The Wadelai and West Nile foci will be conducting their final post treatment surveillance (PTS) surveys in September, 2020. The committee looks forward to the results of these surveys, and with the agreement of the Ministry of Health, proposes holding a virtual meeting before the August 2021 UOEEAC meeting to consider these results, and, assuming that PTS surveys uncover no evidence of transmission, to re-classify these foci as "transmission eliminated".

#### Priorities for the Coming Year

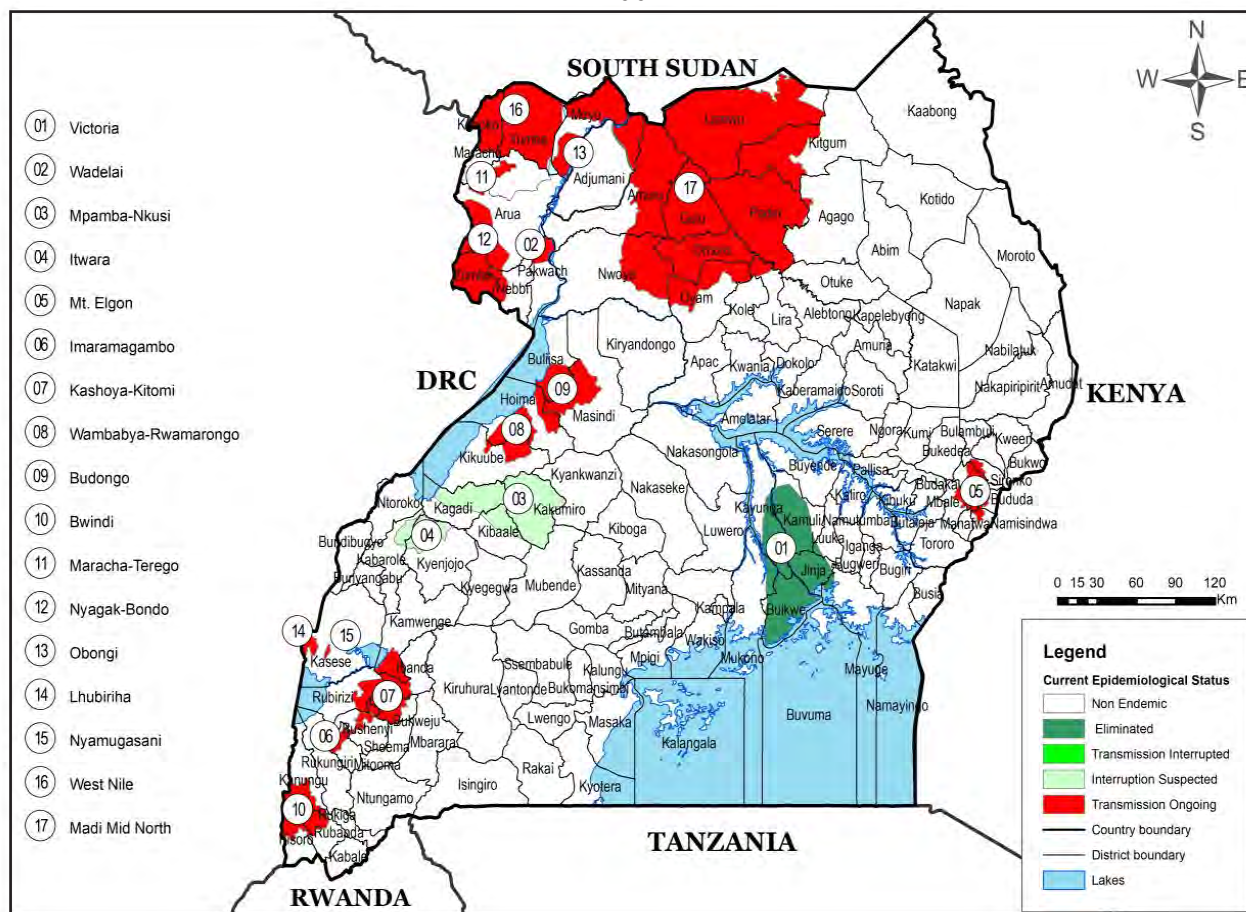
Activity	Priority
PTS of Wadelai and West Nile Districts	1
Collection and processing of flies and DBS from cross border areas in RSS and DRC	2
Complete analysis of DBS from children from Lhubiriha focus	2
Complete analysis of DBS from children from villages surrounding Lhubiriha focus	2
Complete analysis of DNA from 11,140 flies from Madi mid North	2
Entomological prospection of Madi mid North sub-counties to determine borders of the transmission zone	1
Resume MDA and surveillance activities as soon as local health conditions permit	1
Resume cross border activities in Lhubiriha/Beni (Mutwanga, Kamango and Oicha areas)	1

# UGANDA ONCHO FLAG: UOEEAC RECOMMENDED PLAN - EARLY AUG 2020

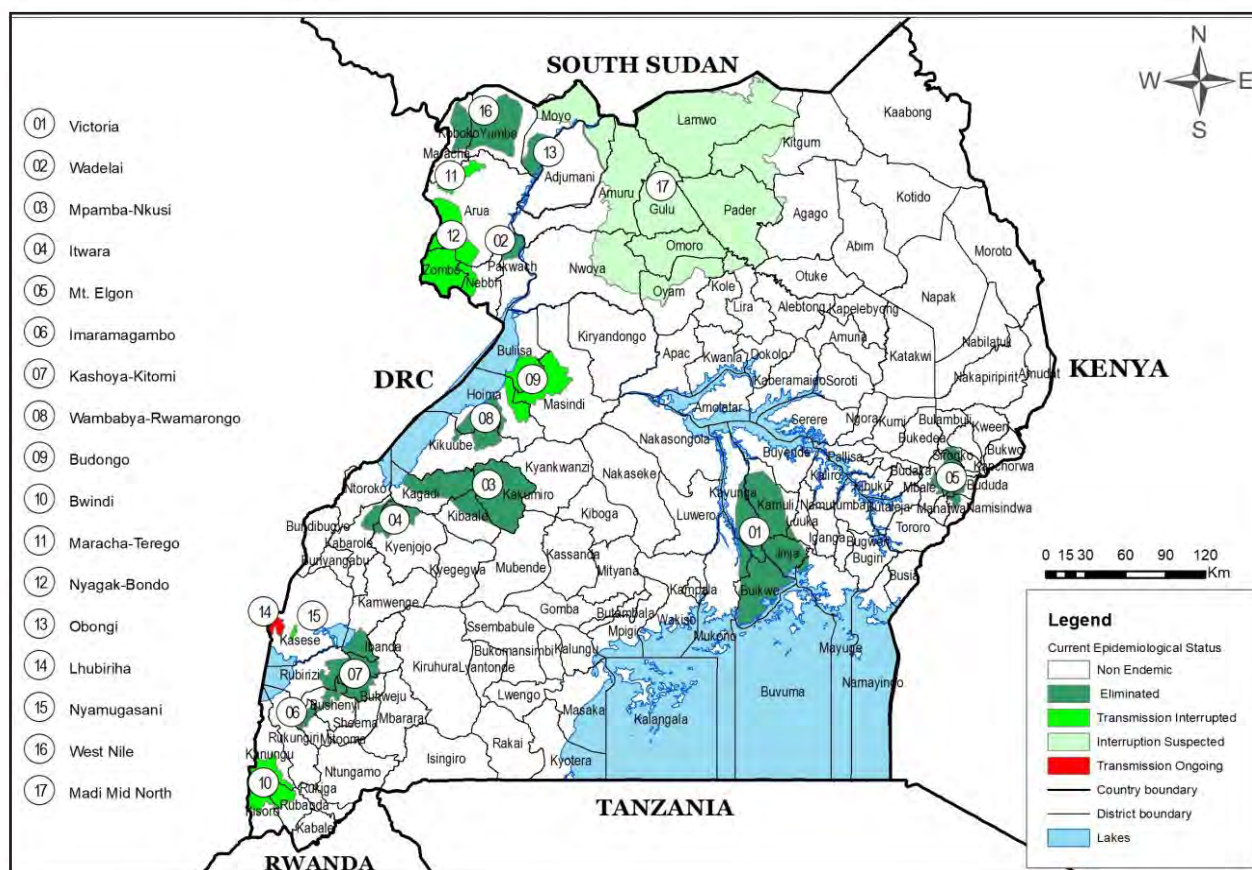
ID #	Focus	Vector	District	# MDA Annual Rounds	Total Pop 2020	Planned UTG1 Tks 2020	Planned UTG2 Tks 2020	Status of Transmission	Year Eliminated	Plan for MDA Treatment	Larviciding (Years)	LF Status	TAS1 Date	Date of PTS Start	Cross Border	Remarks
1	Victoria	S. damnosum	Jinja	N/A	607,210			Eliminated	1973	None	Vector Elimination (??-??)	NA	NA			Source of data (UBOS)
			Mukono	N/A	669,943			Eliminated	1973	None	Vector Elimination (??-??)	NA	NA			Source of data (UBOS)
			Kamuli	N/A	610,220			Eliminated	1973	None	Vector Elimination (??-??)	NA	NA			Source of data (UBOS)
			Mayuge	N/A	565,998			Eliminated	1973	None	Vector Elimination (??-??)	NA	NA			Source of data (UBOS)
			Kayunga	N/A	416,724			Eliminated	1973	None	Vector Elimination (??-??)	NA	NA			Source of data (UBOS)
		Total		5	2,870,095											
3	Maamba-Mkusi	S. mevevi	Kibale	17	243,419			Eliminated	2016	None	Vector Elimination	NA	NA	Nov 2012		Treatment stopped in 2012 (projected by 3.5%)
4	Iwara	S. mevevi	Kabarole	20	42,050	35,743		Eliminated	2016	None	Vector Elimination	NA	NA	Nov 2011		Treatment stopped in 2009 (projected by 3.5%)
			Kyenjojo	20	87,487	74,364		Eliminated	2016	None	Vector Elimination	NA	NA	Nov 2011		Treatment stopped in 2009 (projected by 3.5%)
5	Mt. Elgon	S. mevevi	Manafwa	15	51,937			Eliminated	2016	None	Vector Elimination	NA	NA	Nov 2011		Treatment stopped in 2011 (projected by 3.5%)
			Mbale	15	64,279			Eliminated	2016	None	Vector Elimination	NA	NA	Nov 2011		Treatment stopped in 2011 (projected by 3.5%)
			Sironko	15	97,691			Eliminated	2016	None	Vector Elimination	NA	NA	Nov 2011		Treatment stopped in 2011 (projected by 3.5%)
6	Imaramagambo	S. mevevi	Bududa	15	206,741			Eliminated	2016	None	Vector Elimination	NA	NA	Nov 2011		Treatment stopped in 2011 (projected by 3.5%)
			Bushenyi	18	130,698	111,094		Eliminated	2016	None	Vector Elimination	NA	NA	Nov 2012		Treatment stopped in 2011 (projected by 3.5%)
7	Kashoya-Kitomi	S. mevevi	Buhweju	16	71,948			Eliminated	2017	None	Vector Elimination	NA	NA	Nov 2013		
			Rubirizi	16	92,241			Eliminated	2017	None	Vector Elimination	NA	NA	Nov 2013		
			Ibanda	16	31,217			Eliminated	2017	None	Vector Elimination	NA	NA	Nov 2013		
8	Wambabya-Kwamarong	S. mevevi	Kamwenge	18	54,480			Eliminated	2017	None	Vector Elimination	NA	NA	Nov 2013		
			Hoima	16	90,429			Eliminated	2017	None	Vector Elimination	NA	NA	Nov 2013		
13	Obongi / Moyo	S. mevevi / S. damnosum	Hoima	20	44,824	38,100		Eliminated	2019	None	Vector Elimination	NA	NA	Jan 2016		Treatment stopped in 2013
		Total		14	237	1,309,441	259,301	1,707,447								
2	Wadiali	S. mevevi	Nebbi	15	25,157			Interrupted (2010)		None	None	LF	2016	Aug 2017		Treatment stopped in 2008 (projected by 3.5%)
11	Maracha-Terego	S. mevevi / S. damnosum	Maracha-Terego	19	217,878	185,196		Interrupted (2012)		None	None	LF	2019	Aug 2019		Treatment stopped in 2011 (projected by 3.5%)
15	Nyamugasaani	S. delvye	Kaseke	21	13,179	11,202		Interrupted (2015)		None	None	NA	NA	Apr 2018		
16	West Nile	S. mevevi / S. damnosum	Yunbe	22	342,233	290,898		Interrupted (2017)		None	None	2016	2016	Aug 2017		Yes (RSS)
9	Budongo	S. mevevi	Koboko	22	199,497	169,573		Interrupted (2018)		None	None	2016	2016	Aug 2017		Yes (DRC & RSS)
			Maandi	17	59,008			Interrupted (2018)		None	Vector Elimination	NA	NA	Jan 2019		
			Bulisa	17	37,564			Interrupted (2018)		None	Vector Elimination	NA	NA	Jan 2019		
			Hoima	17	90,170			Interrupted (2018)		None	Vector Elimination	NA	NA	Jan 2019		
10	Bwindi	S. mevevi / S. damnosum	Rubanda	17	36,369			Interrupted (2018)		None	Vector Control	NA	NA	Jan 2019		
			Kamungu	17	62,897			Interrupted (2018)		None	Vector Control	NA	NA	Jan 2019		Yes (DRC)
			Kisoro	17	44,828			Interrupted (2018)		None	Vector Control	NA	NA	Jan 2019		Yes (DRC)
12	Nyakak Bondo	S. mevevi	Nebbi	22	151,550			Interrupted (2019)		None	Vector Control	LF	2016	Jan 2020		Yes (DRC)
			Zombo	22	275,474			Interrupted (2019)		End 2019	Vector Control	LF	2016	Jan 2020		Yes (DRC)
			Arua	22	199,441			Interrupted (2019)		End 2019	Vector Control	LF	2019	Jan 2020		Yes (DRC)
		Total		14	267	1,755,245	656,869	1,670,177								
17	Madi Mid North		Pader	9	206,784			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF	2017			
			Kitgum	9	105,666			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF				Yes (RSS)
			Lamwo	9	155,404			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF				Yes (RSS)
			Gulu	22	147,839			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF				
			Omoro	22	191,058			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF				
			Amuru	22	255,081			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF	2017			Yes (RSS)
			Nwoya	22	172,155			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF	2015			
			Oyam	22	28,080			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF	2015			
			Uira	7	79,889			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF	2013			Yes (RSS)
			Moyo	23	99,012			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF	2015			Yes (RSS)
			Adjumani	23	30,615			Interrupted Suspected		Semi-Annual	Vector Control Feasibility	LF	2015			Yes (RSS)
		Total		11	1,471,583	0	2,551,000									
14	Lubirinja	S. delvye & S. kilbanum	Kaseke	23	140,659	0	242,462	Ongoing		Semi-Annual	Vector Control	NA	NA			Yes (DRC)
	Total			23	140,659	0	242,462									
	GRAND TOTAL			717	7,547,023	0	6,171,086									

## Progress of River Blindness Elimination

2007



2020



Tremendous Progress Has Been Made



## Laboratory Issues

### Update from Molecular Laboratory



**Christine Nahabwe**

### Recommendations from the 12<sup>th</sup> UOEEAC 2019 Meeting

Field/Lab Activity	Priority	Status
Ov16: Complete 1958 DBS from Nyagak Bondo focus	1	Focus reclassified as "transmission interrupted"
OV16 and fly PCR: Kajo Keji (RSS)	1	DONE
OV16 and fly PCR: Lhubiriha	2	Partially done
OV16: Collect, analyze DBS needed to delineate Madi Mid North focus limits	2	DONE
OV16: Analyze Madi Mid North focus DBS in the lab (beyond sentinel sites)	3	Partially done

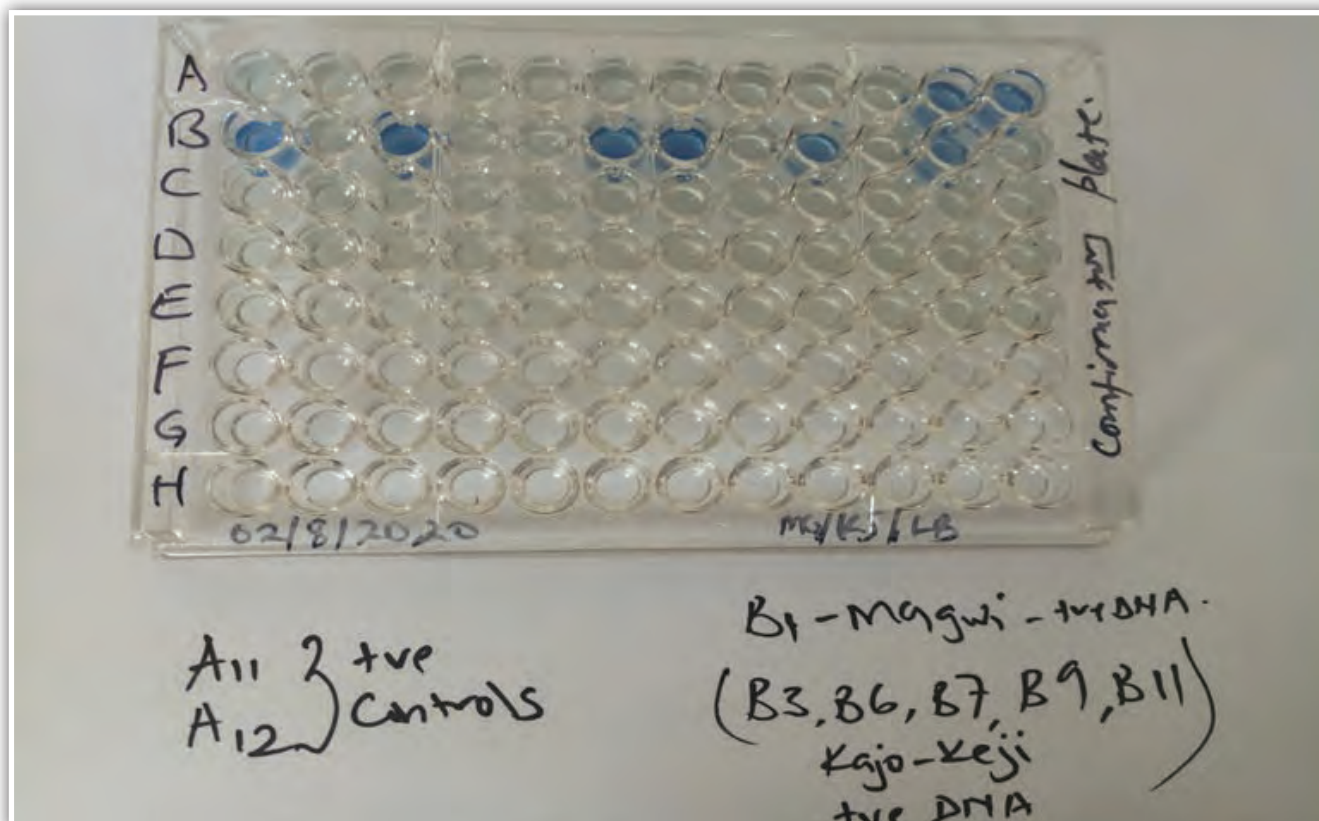
### Children Under 10 Years: Ov16 Results

Focus	DBS Collected	Number of DBS Analyzed (%)	# Positive	% Positive
Nyagak Bondo	3182	3182	0	0%
Kajo Keji	2081	2080	0	0%
Lhubiriha	3102	2166	3	0.14%
Madi Mid North delineation limits	3498	3152	0	0%
<b>TOTAL</b>	<b>11863</b>	<b>10580</b>		

### Fly PCR Results

Focus	Number of Flies Analyzed	Year of Collection	Number of Flies	Number of Pools	Number Positive Pools
Magwi	Ngolo bot bridge	2019	96	1	0
Magwi	Jama palwa bridge	2019	263	3	0
Magwi	Owiny kibul	2019	323	4	1
Magwi	Agata bridge	2020	30	1	0
Sub Total			712	9	1
Kajo Keji	Gbari	2019	322	3	1
Kajo Keji	Gbari	2020	505	8	2
Kajo Keji	Kibo bridge	2019	1,100	11	0
Kajo Keji	Kibo bridge	2020	1,029	10	0
Kajo Keji	Sokare gobur	2019	1,241	13	2
Kajo Keji	Sokare gobur	2020	659	7	0
Kajo Keji	Moiyo	2019	272	3	0
Kajo Keji	Moiyo	2020	141	2	0
Sub Total			5,269	57	5
Lhubiriha	Isango	2018	203	2	0
Lhubiriha	Isango	2019	17	1	0
Lhubiriha	Kisolholho	2017	241	3	0
Lhubiriha	Kisolholho	2018	207	2	0
Lhubiriha	Kisolholho	2019	100	1	0
Sub Total			768	9	0
<b>Total</b>			<b>6,749</b>	<b>75</b>	<b>6</b>

## Elisa Plate (MG, KJ, LB)



## Children Under 10 years - OV16 Backlog

Focus	DBS Collected	DBS Analyzed	Balance
Lhubiriha	3102	2166 (69.8%)	936
Madi Mid North focus (beyond sentinel sites)	7351	3217 (43.76%)	4134
<b>Total</b>	<b>10453</b>	<b>5383 (51.5%)</b>	<b>5070</b>

## PCR Backlog

Focus	Number of Flies not Analyzed	Number of Flies with DNA Extracted
Ituri North – DRC (adjacent to Nyagak Bondo focus)	89	0
Nyamugasani	53	0
Madi Mid North	44,204	11,140
<b>Total</b>	<b>44,346</b>	<b>11,140</b>

## Challenges

- Due to COVID-19 the lab did not receive OV16 and PCR reagents expected in April 2020.
- COVID-19 lockdown restrictions halted lab activities March - May 2020.

## Recommendations

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

## Acknowledgements

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

- Her co-presenters were Monica Ngabirano, Paul Akampurira and David Oguttu.

# Foci Under Post Treatment Surveillance

## Wadelai Focus

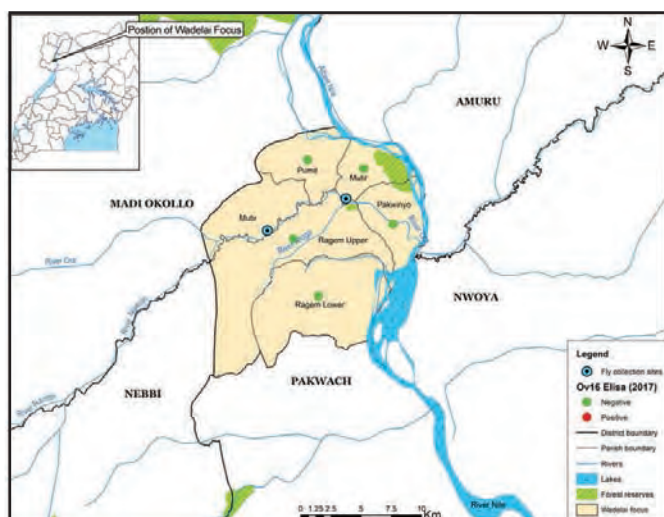


**Dickson Unoba**

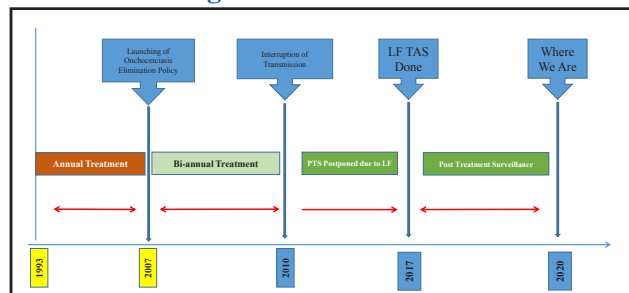
### Background

- This focus was located in the eastern part of Nebbi District (now Pakwach District) adjacent to the Albert Nile.
- The vector fly was *Simulium damnosum*.
- CDTI: annual treatment began in 1993 while bi-annual treatment was done from 2006 until 2010.

### Map of Wadelai Onchocerciasis Focus



## Timeline of Program Activities



*Onchocerciasis was co-endemic with LF and Post Treatment Surveillance (PTS) could not commence when ivermectin for LF was still being administered.*

### UOEEAC Observations in 2017

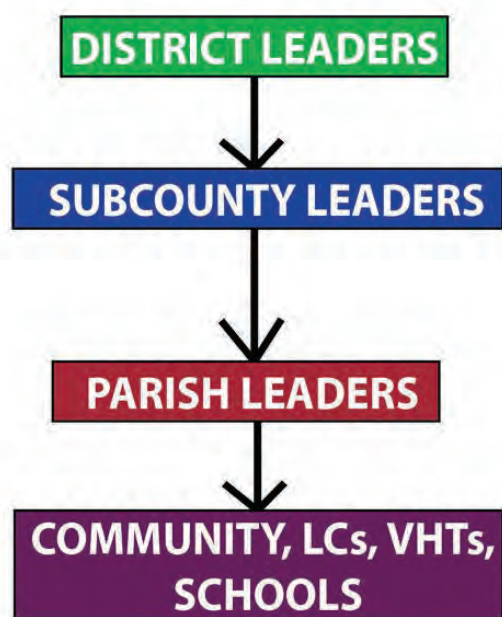
- For many years, there has been no evidence of transmission in the focus (2010-2017), but a decision to move it to “transmission interrupted” was deferred due to ongoing drug treatment by the LF program.
- However, the focus recently passed TAS for LF.
- The committee recommended that Wadelai focus be re-classified as “transmission interrupted” and PTS for onchocerciasis be started.

### What Was Done During 3-year PTS Period

- The Ministry of Health informed the district about interruption of transmission in Wadelai focus.
- The district with support from MOH & Carter Center began sensitizing local leaders and communities of Wadelai and telling them the reason as to why a decision to stop MDA was made.
- PTS education materials were produced and distributed in the focus.
- Sensitization meetings with leaders and communities commenced.
- Communities were informed of their responsibilities during PTS among other things.
- Entomological surveillance went on for the last 3 years.



## Organogram for District Sensitization on Interruption of Transmission in Wadelai Focus



### UOEEAC Recommendation 2019

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 that allow this focus to be re-classified as “eliminated”.
- Until this is done the focus remains classified as “transmission interrupted”.

### Sensitization and Education During PTS

1. Sensitization and education targeted the following:
  - Community leaders.
  - School children and teachers.
  - Religious leaders.
2. The methods employed during sensitization and education:
  - Radio talk shows and jingles.
  - Community meetings with local leaders and community members.
3. The objectives of sensitization were to highlight:
  - Reasons for stopping MDA.
  - Why surveillance will be continued.
  - Responsibility of the communities during PTS (reporting cases of people with the disease to health workers).

### IEC Materials Used During Sensitization



## Sensitization of Leaders on Stopping MDA for Onchocerciasis



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

## Training Health Workers to Sensitize Local leaders and Communities During PTS Period



Level	Number that attended
Parish	10
Communities (LCs, VHTs)	60

## PTS Education in Schools



*Evidence of health information coming well from up down up to the point where it was passed on to pupils and teachers.*



*More health education was given, such as at Paten Primary School.*

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



## Community Participatory Evaluation Meetings (PEMs)



*A PTS meeting for some men from Aguu North.*



*A PTS gathering for some women from Ajei West*

- Most men were aware that ivermectin treatment had stopped but had not received formal communication as to why it had been stopped.
- Majority of the women were not informed – not by anybody in the communication chain. For women, as for men, therefore, the need for communication (including through community meetings) is paramount.

## A Community PTS Interaction in Aroga Village



## Current Entomological Situation

### Simulium Fly Catches, 2017 - 2020

YEAR	Month	No. of Flies Caught
2017	Jan	0
	Feb	0
	Mar	0
	Apr	0
	May	0
	Jun	0
	August	0
	Sep	0
	Oct	0
	Nov	0
	Dec	0
2018	Mar	0
	Jun	0
	Sep	0
	Dec	0
2019	Mar	0
	Jun	0
	Oct	0
2020	Jan	0
	Mar	0

*No fly was caught during PTS period (Aug 2017 to Mar 2020)*

## 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

- Conduct a final OV16 serosurvey in children as soon as the 36-month PTS period ends (to be done in Sep 2020).
- If successful, focus be re-classified as “eliminated”.

## Appreciation

Ministry of Health-Uganda, River Blindness Foundation, The Carter Center, APOC/WHO, LCIF/ Uganda Lions, National Onchocerciasis Control Program of Uganda, USAID/Envision/RTI, MDP/ Merck & Co., District Health Team and Community members of the focus.



## West Nile Focus

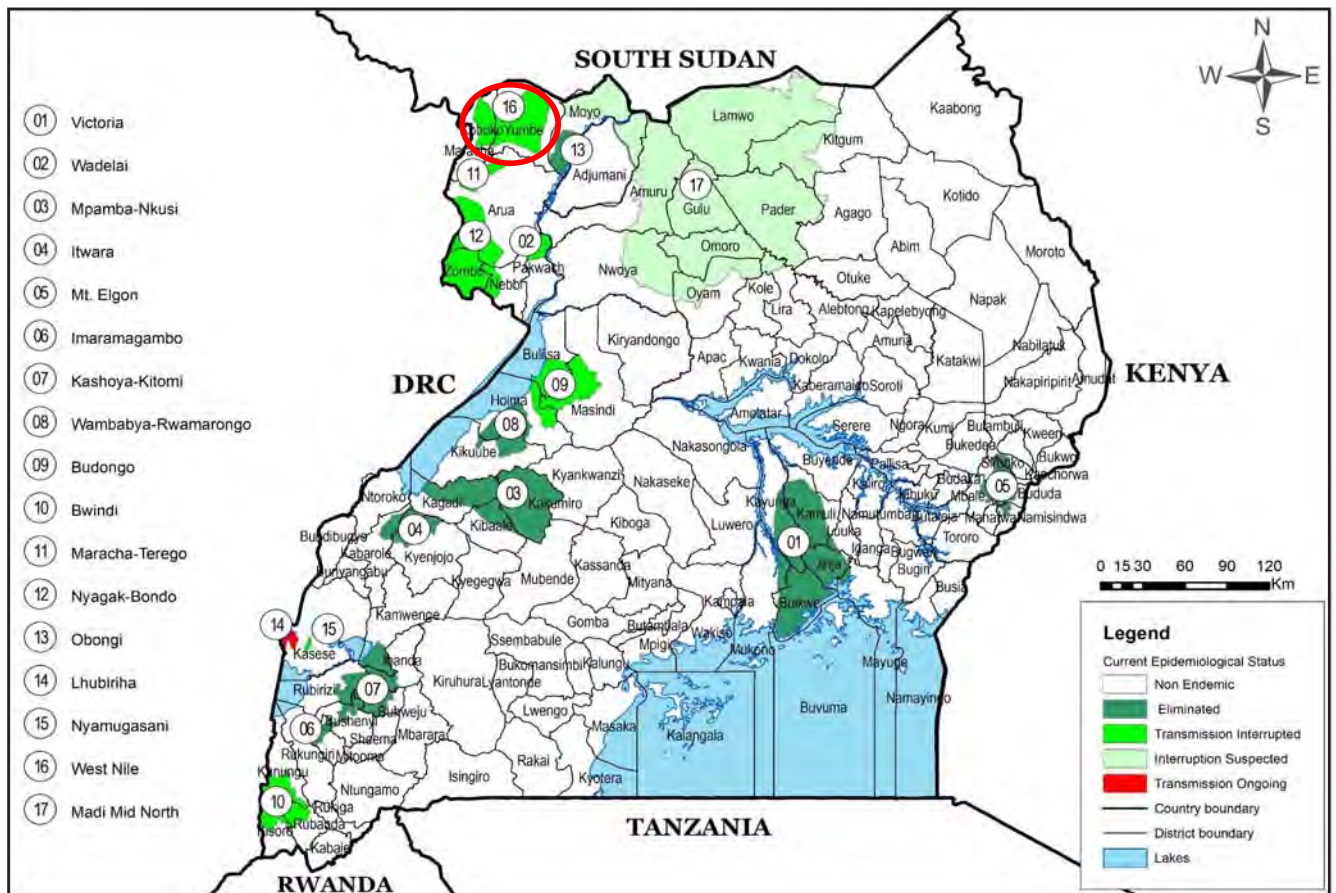


**Levy Matua**

The Government of Uganda in collaboration with neighbouring countries, the Democratic Republic of Congo and the Republic of South Sudan, continues to promote cross-border river blindness elimination activities.

*Minister Jane Ruth Aceng*

**Map of Uganda Showing the Location of West Nile Onchocerciasis Focus**



## Map of West Nile Focus



### Background

- Located in Koboko and Yumbe districts, extreme north west of Uganda.
- REMO was done in 1994/5 by River Blindness Foundation and refined in 2010 by Envision/RTI/USAID.
- Annual treatment began in 1994.
- Vectors involved were assumed to be *S. damnosum* complex and *S. neavei*.
- This focus was endemic for LF.



- From 2012 to 2017, there was no evidence of *Simulium* vectors.

### History of Entomological Studies in West Nile Focus

- Consultancy entomological study conducted in 2010 (Walsh 2010).
- Key river systems were prospected: Rivers Kaya and Kochi with their tributaries.
- *Simulium* vector breeding was found unlikely in Kaya and Kochi river basins
- Lack of *S. damnosum* or *S. neavei* breeding poses no threat of Onchocerciasis transmission.



### OV16 Results from West Nile Focus

Age Group	2013			2014		
	Number Screened	Positive IgG4 (%)	95% CI	Number Screened	Positive IgG4 (%)	95% CI
1-4	1766	1(0.06)	0-0.3	577	0(0.00)	0-0.6
5-9	1421	1(0.07)	0-0.4	1783	0(0.00)	0-0.2
<b>TOTAL</b>	<b>3187</b>	<b>2(0.06)</b>	<b>0-0.2</b>	<b>2360</b>	<b>0(0.0)</b>	<b>0-0.2</b>

NB: The two positive children have a history of living in DRC.

OV16 in 2014 targeted border parishes on the recommendations of the 6th session of UOEEAC



## Recommendations during the 10th UOEEAC Meeting in 2017.

- The focus has had many years with no evidence of transmission but a decision to move it to “transmission interrupted” was deferred due to ongoing drug treatment by the LF program.
- However, the focus passed TAS for LF in 2017.
- The committee recommends that West Nile focus be re-classified as “transmission interrupted” and the onchocerciasis PTS clock be started.

## Post Treatment Surveillance (Aug 2017 to Aug 2020)

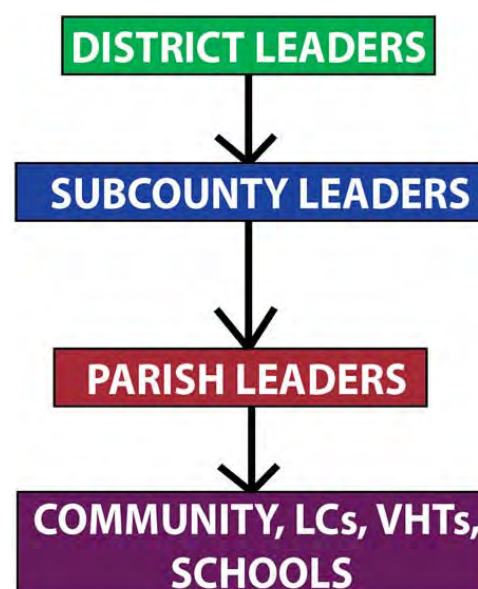
### Targeted Activities

- MOH informed the district authorities about reclassification of West Nile focus from “interruption of transmission suspected” to “transmission interrupted”.
- The district with support from MOH & Carter Center began sensitizing local leaders and communities of West Nile about the reason for the decision of stopping MDA along with OV transmission interruption.
- PTS education materials were provided.
- Sensitization meetings with leaders and communities commenced.
- Communities were informed about their responsibilities during PTS.
- Entomological surveillance went on for the last 3 years.

## Sensitization and Education

- Sensitization and education targeted the following:
  - Community leaders.
  - School children and their teachers.
  - Religious leaders.
  - District and sub-county leaders.
- The methods employed during sensitization and education:
  - Radio talk shows and jingles.
  - Community meetings with local leaders and community members.
- The objectives of sensitization were to highlight:
  - Reasons for stopping MDA.
  - Continued surveillance.
  - Role of the communities during PTS (reporting disease cases to health workers).

## District Sensitization on Interruption of Transmission in West Nile Focus.



## IEC Materials Used during Sensitization





## Sub-county Leaders' Sensitization/Advocacy on Onchocerciasis 2018



Meeting at Romogi sub-county, Yumbe District



Meeting at Abuku sub-county, Koboko District

### Achievements

- All communities visited during PTS period appreciated the treatment given to them.
- They were happy to know that river blindness is no more in their communities.

### Adult Fly Catches from 2012 to 2020 (West Nile Focus)

	Year	Number of Fly Catching Sites	Number of <i>S. neavei</i> Caught
Before PTS	2012	4	0
	2013	4	0
	2014	4	0
	2015	6	0
	2016	6	0
	Before Aug 2017	6	0
During PTS	From Aug 2017	6	0
	2018	6	0
	2019	6	0
	2020	6	0

- No *Simulium* vectors were observed in the focus.
- Most rivers in this focus have been degraded and cannot support *Simulium* breeding.
- There is no sign of breeding on river Kaya, the river forming the Uganda-South Sudan border.

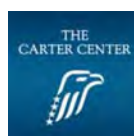
### Conclusion

- No evidence of Onchocerciasis vector breeding within West Nile focus.
- There is no breeding in the major Kaya river system along the Uganda-South Sudan border. There is no danger of re-infection from South Sudan and DRC.

### Way Forward

- Conduct a final OV16 serosurvey in children as soon as the 36-month PTS period ends (to be done in Sep 2020).
- If successful, focus be re-classified as "eliminated".

### The program would like to thank



Lions Clubs of Uganda, M.O.H Uganda, John Moores, Kuluva Hospital, CBM Support, Local governments of Yumbe & Koboko districts, Focus vector control officers, Focus entomological assistants and Vector collectors, Focus general community for the high level cooperation

## Foci Under Mass Drug Administration

### Madi Mid North Focus, Southern Part - Lira, Oyam, Nwoya, Amuru, Omoro & Gulu Districts

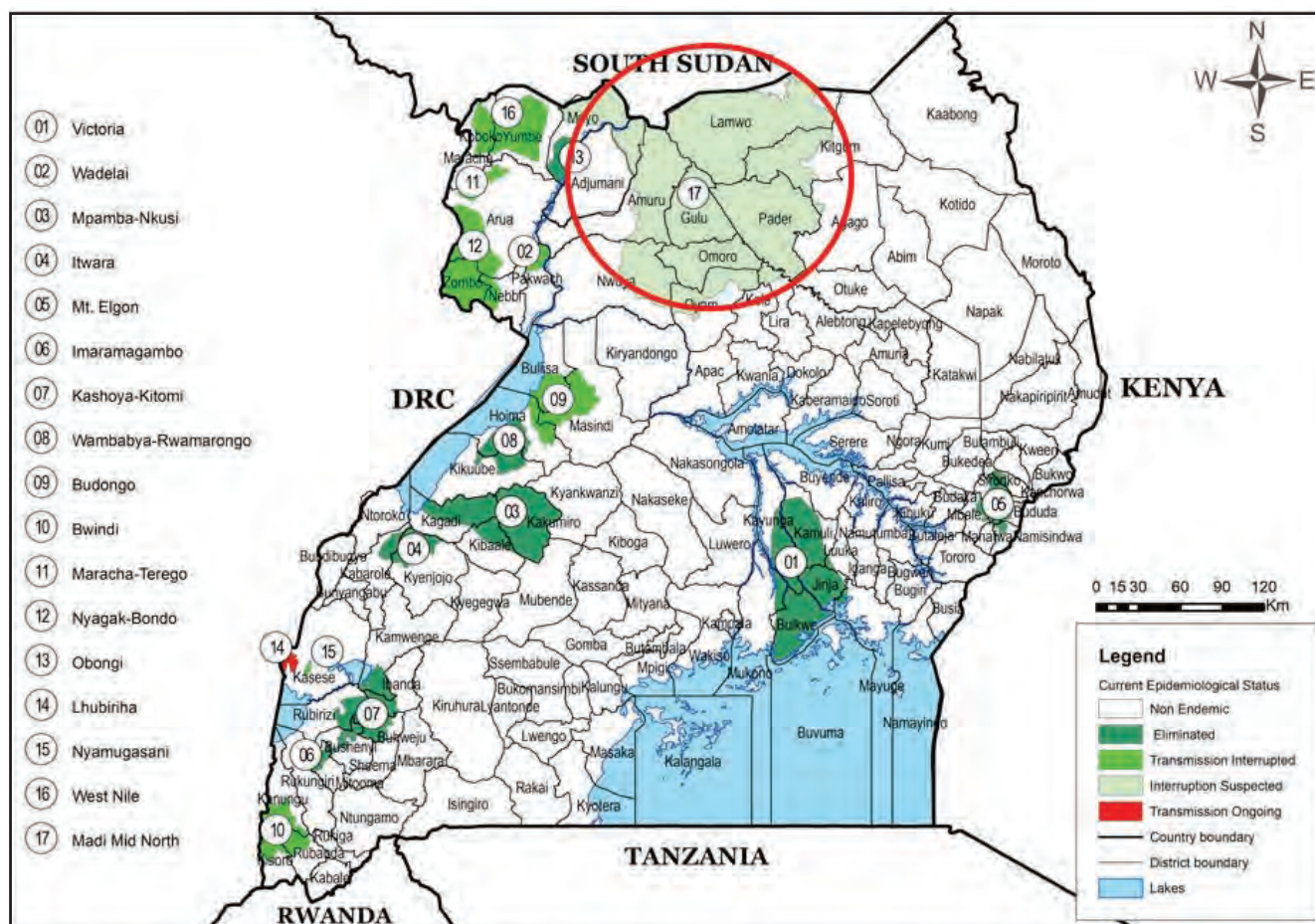


Joseph Wamani

### UOEEAC 2019 Recommendations on Madi Mid-North.

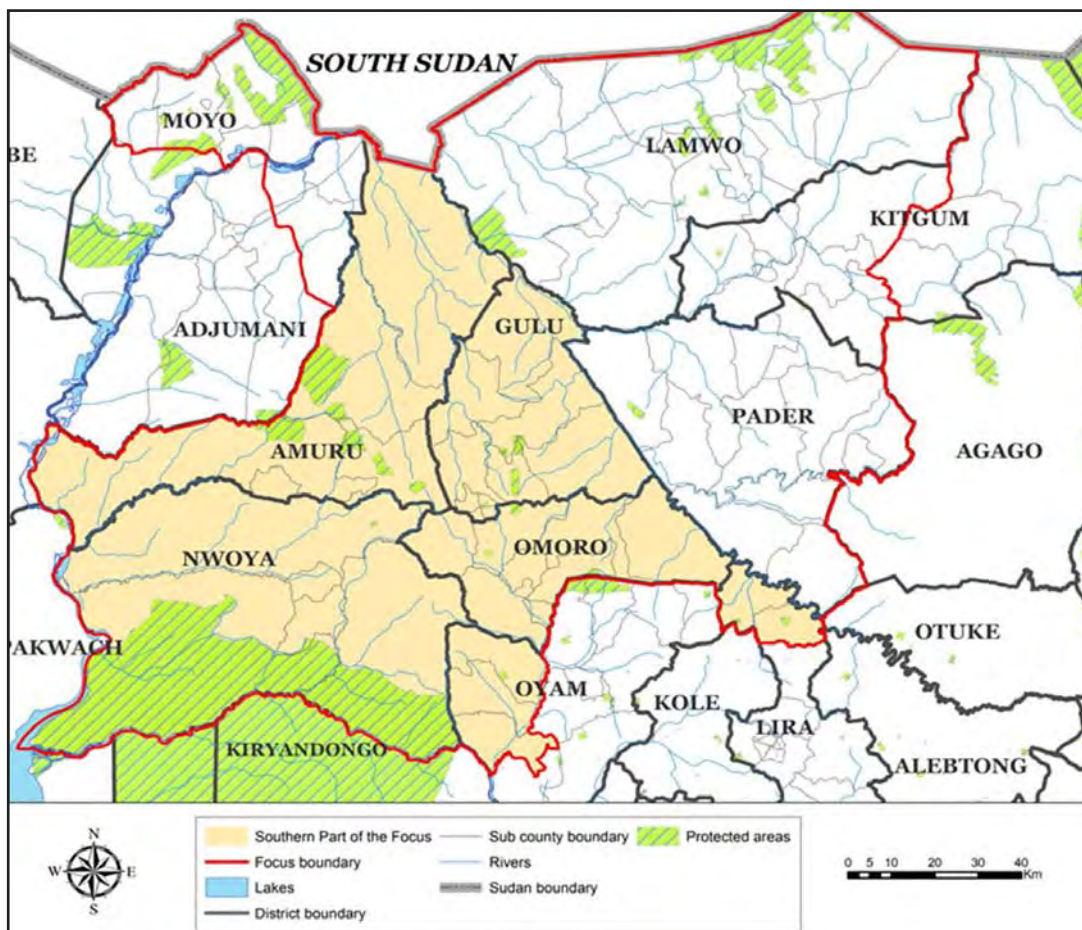
- Should be reclassified as “interruption of transmission suspected”.
- Twice per year treatment with ivermectin should continue in the focus.
- The program should undertake a thorough analysis of the number of high coverage, twice per year treatments that have been conducted throughout this focus, accounting for administrative re-organizations that have occurred and the insecurity that challenged the region until 2014.
- Treatments should continue throughout the focus until all communities in the focus receive a minimum of 13 consecutive twice per year treatments at high coverage rates.

### Location of Madi Mid-North Focus



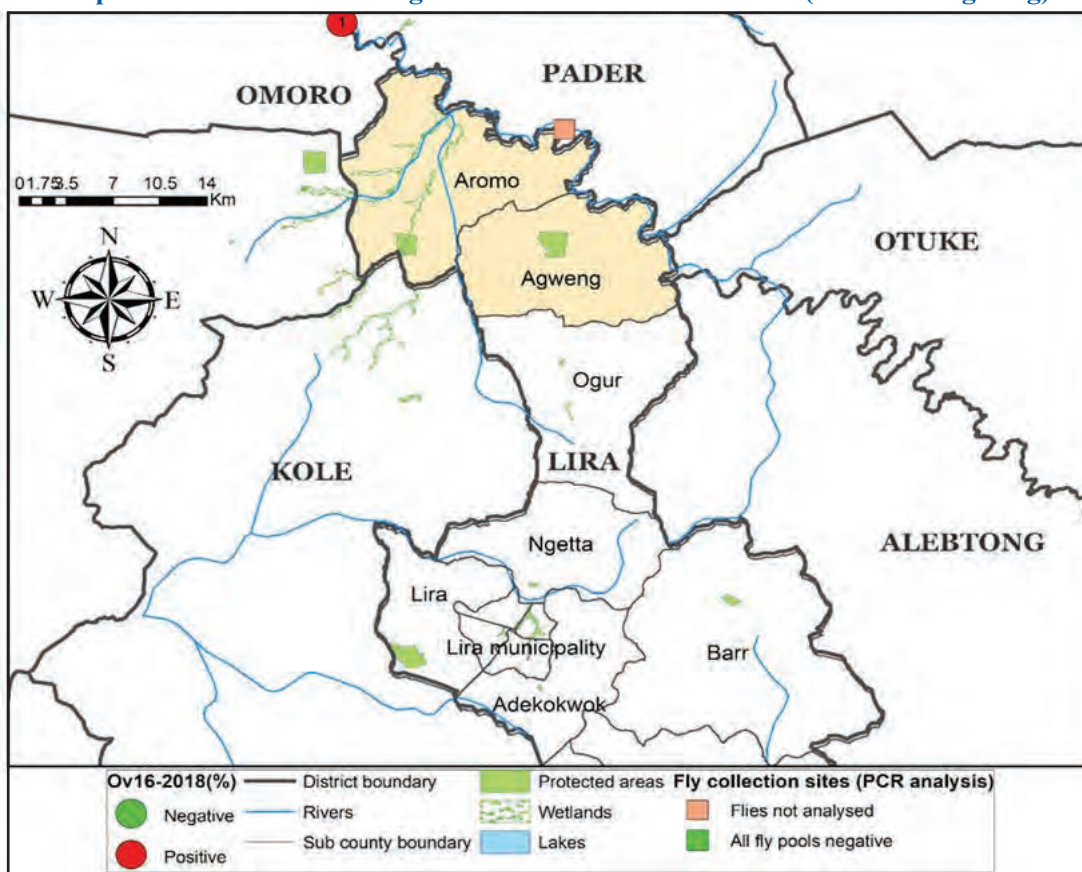


### Map of Madi Mid North - Southern Part of the Focus



### LIRA DISTRICT

#### Map of Lira District Showing Oncho-endemic Sub-counties (Oromo & Agweng)

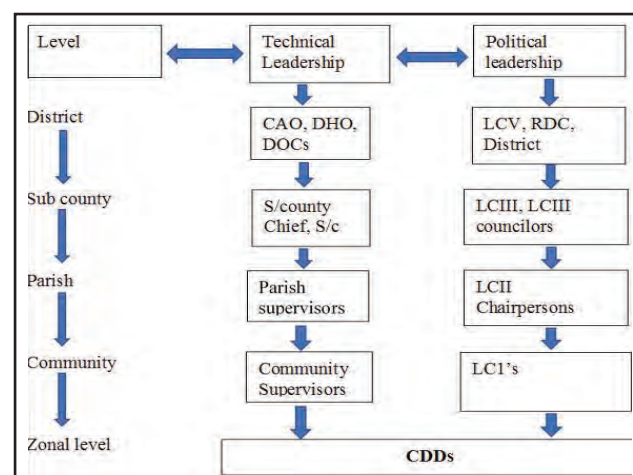




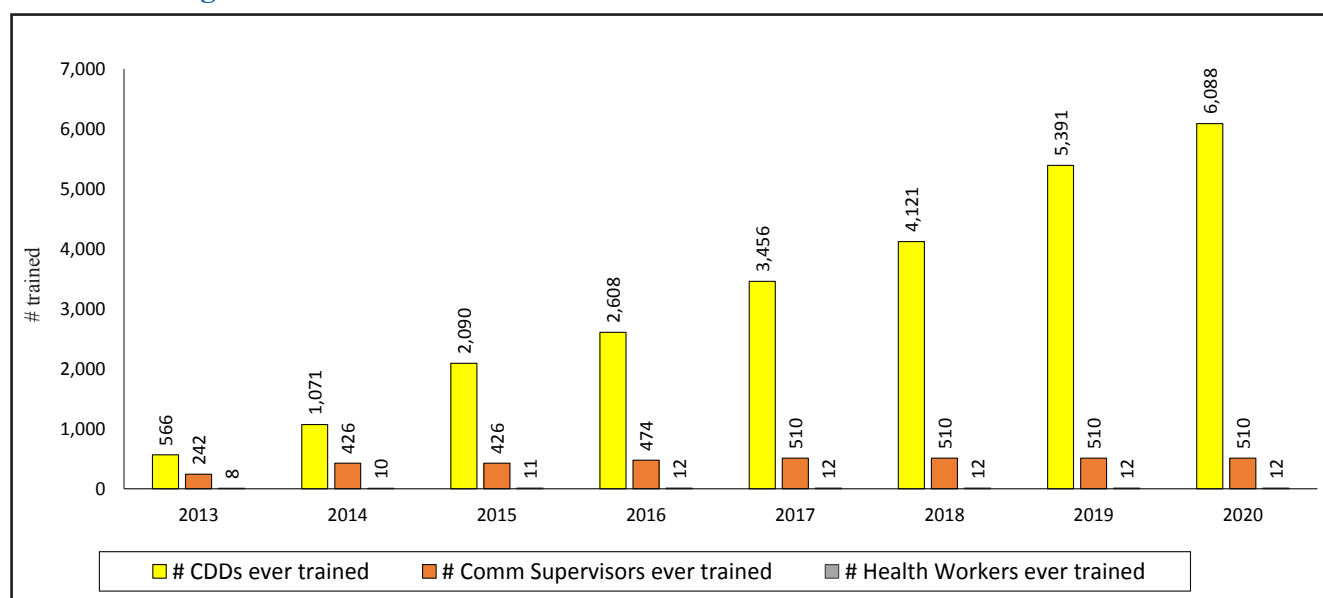
## Introduction

- Lira District is situated in Lango sub-region.
- It has 10 sub-counties of which only two are Onchocerciasis endemic.
- The two sub-counties have a population of 79,889.
- Bi-annual treatment with ivermectin started in 2013.
- The main river in Lira District is R. Aswa located in the North-western part of the district.
- Vector monitoring is conducted at Puranga bridge in Pader District.

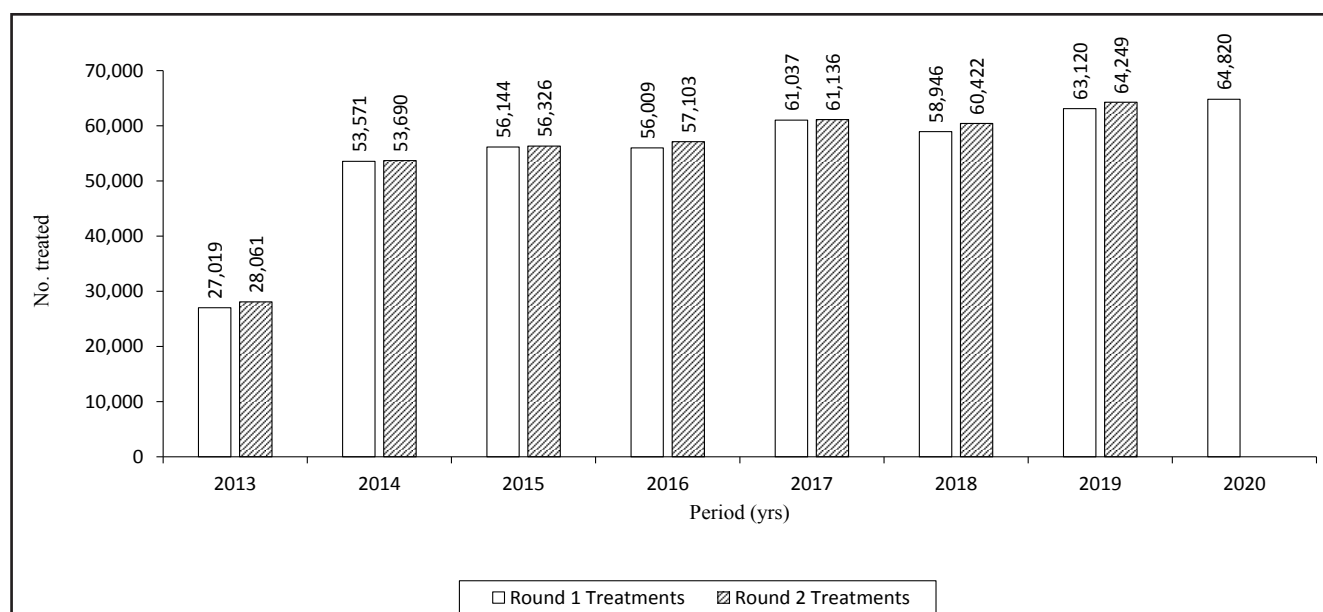
## CDTI Implementation Structure



## CDTI Training in Lira District since 2013 to Date

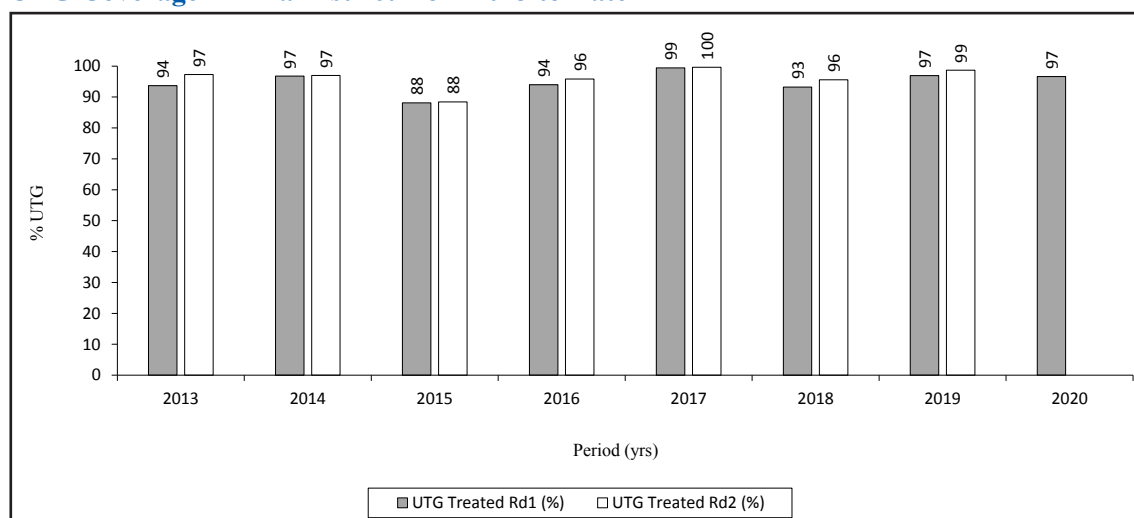


## Number of Treatments in Lira District from 2013 to Date



Lira District did MDA before COVID-19 lockdown in (2020) and it is not part of Act to End East supported area.

## UTG Coverage in Lira District from 2013 to Date



The district has had 13 effective rounds of treatment (>90%) since 2013 to date.

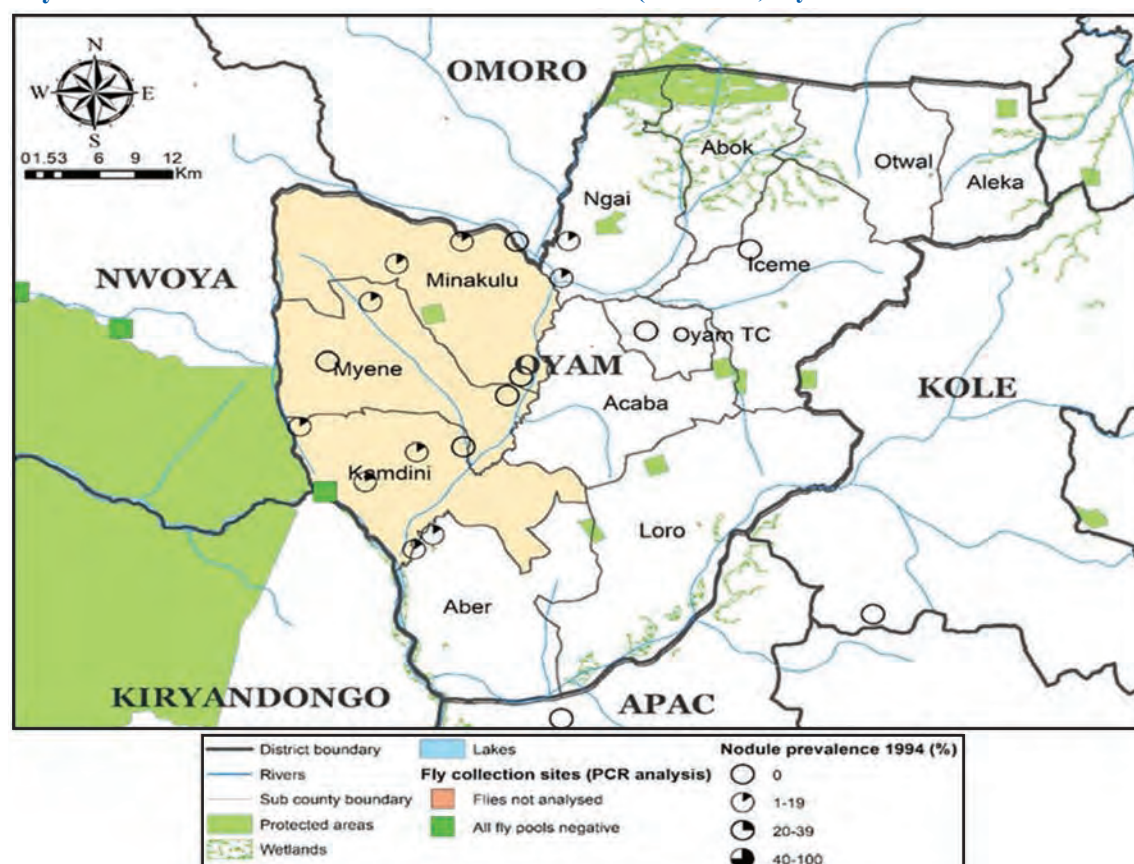
Lira district did MDA before COVID-19 lockdown and it is not part of Act East supported area.

## Baseline Data: Skin Snip in 2012

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

## OYAM DISTRICT

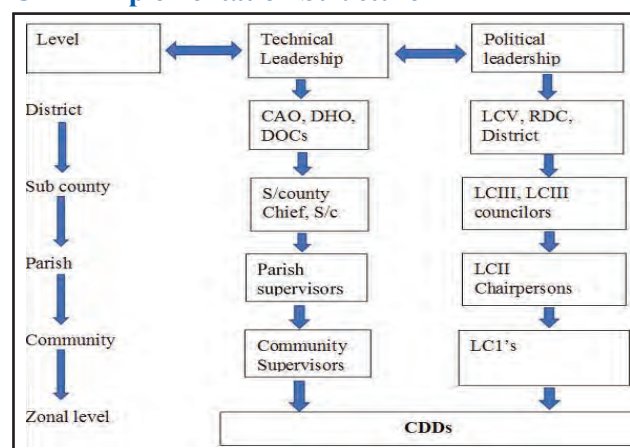
### Oyam District area Under Ivermectin Treatment (Minakulu, Myene & Kamdini Sub-counties)



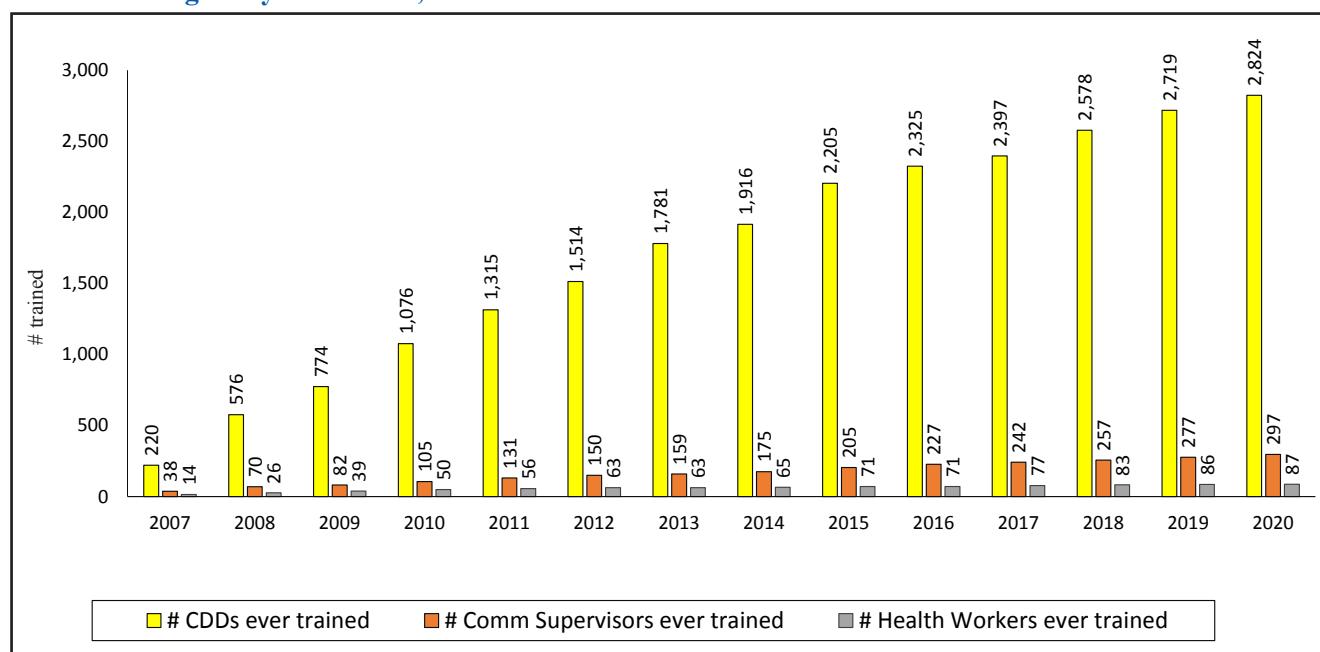
## Introduction

- Oyam District was carved out of Apac in 2006.
- The district suffered the Kony insurgency which lasted for two decades, but it is now peaceful.
- The district comprises 12 sub-counties, of which only 3 (Kamdini, Minakulu and Myene) are endemic for onchocerciasis. A total of 6 parishes and 35 communities are so affected. A population of 28,080 are at risk of the disease.
- There are no refugee camps here.

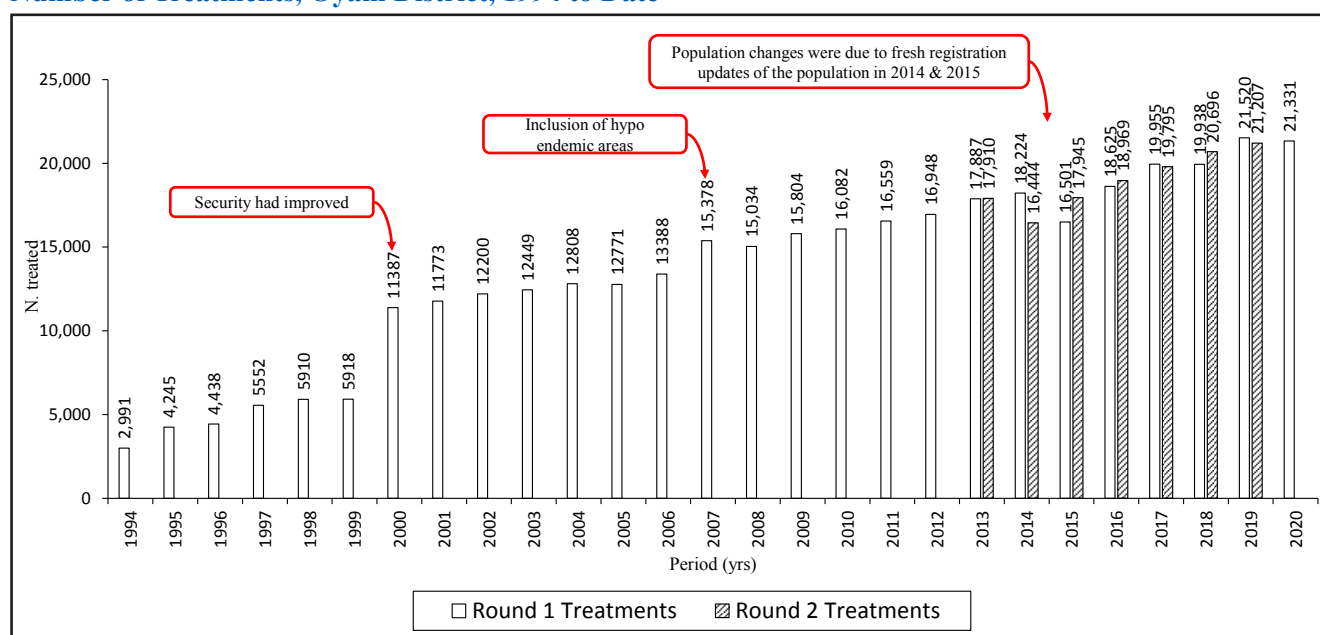
## CDTI Implementation Structure



## CDTI Training in Oyam District, 2007 to Date



## Number of Treatments, Oyam District, 1994 to Date

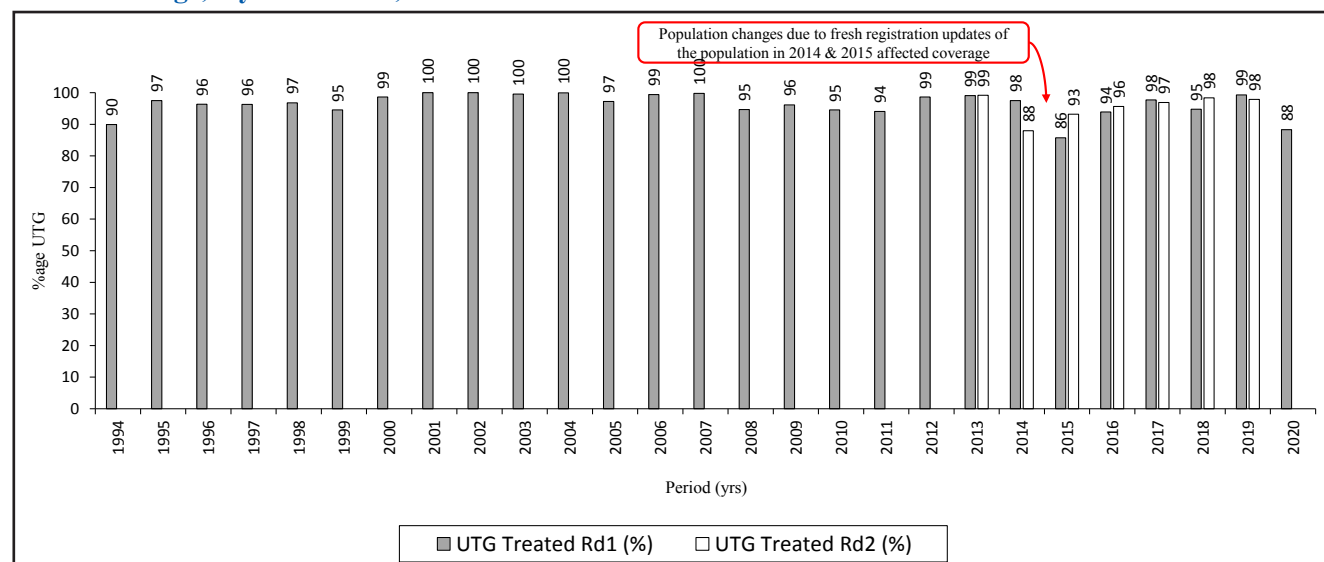


Annual treatment was from 1994 to 2012, Bi-annual treatment started in 2013 to date

Oyam District did MDA before COVID-19 lockdown and it is not part of Act to End East supported area. The data for 2020 is partial



## UTG Coverage, Oyam District, 1994 to Date



12 effective treatment rounds (>90%) have been achieved since elimination was launched in 2013

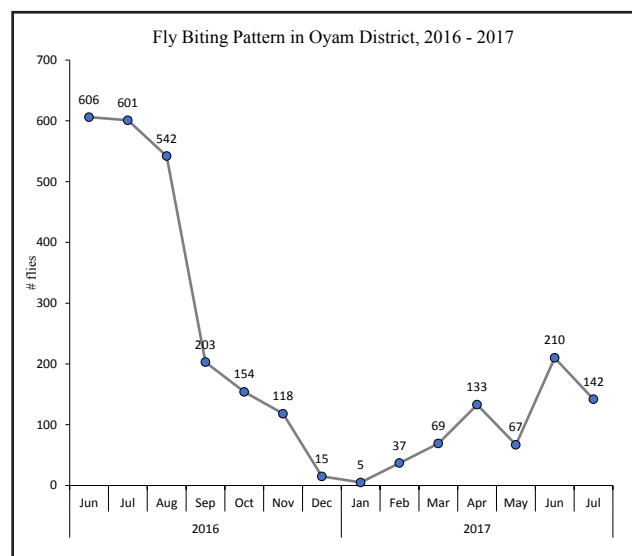
Lira District did MDA before COVID-19 lockdown and it is not part of Act to End East supported area. The data for 2020 is partial

## Nodule Rates in Oyam District

District	Community	Year	Number Examined	Number with Nodules	% with Nodules
Apac (now Oyam)	Te-Tochi	1992/3	30	1	3.3
Apac (now Oyam)	Bobo	1992/3	30	1	3.3
Apac (now Oyam)	Olwio	1992/3	30	3	10.0
Apac (now Oyam)	Panyjok	1992/3	50	5	10.0
Apac (now Oyam)	Te-Nam	1992/3	30	3	10.0
Apac (now Oyam)	Kongo	1992/3	50	7	14.0
Apac (now Oyam)	Akuridia	1992/3	30	4	13.3
Apac (now Oyam)	Onea	1992/3	50	8	16.0
<b>Total</b>			<b>300</b>	<b>32</b>	<b>10.7</b>
Oyam	Ayila "A"	2009	36	0	0.0
Oyam	Arukulong	2009	50	0	0.0
Oyam	Acekwere "A"	2009	50	1	2.0
Oyam	Akatakata	2009	50	0	0.0
Oyam	Tegony	2009	50	0	0.0
Oyam	Aryebi	2009	45	0	0.0
Oyam	Apala "B"	2009	50	1	2.0
<b>Total</b>			<b>331</b>	<b>2</b>	<b>0.6</b>

## Vector Control

- In 1959, *Simulium* vector control was done on the section of R. Nile using DDT.
- The intervention was successful (Brown 1962).
- The two major rivers in the district are Tochi and the Nile. However it is only the Nile that is known to support breeding of *S. damnosum*.
- Since then no other control measure has been applied on the Nile, thus re-infestation has occurred over time.
- In 2016 a fly monitoring site was established at Akuridia near Karuma falls.



## NWOYA DISTRICT

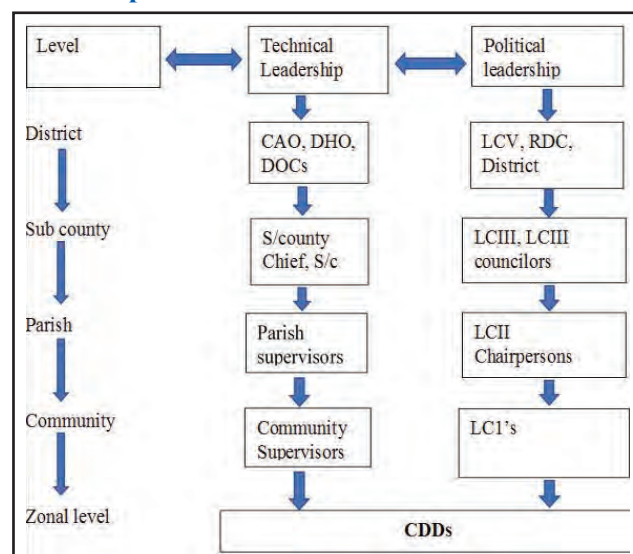
### Nwoya District area Under Ivermectin Treatment and Larviciding



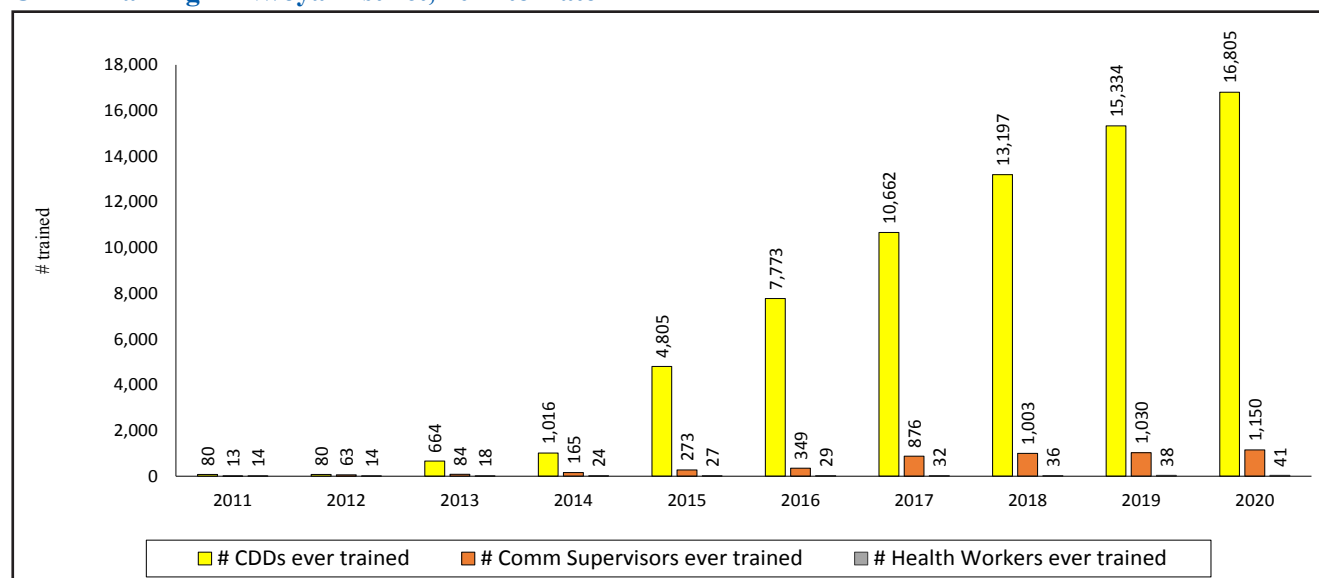
#### Introduction

- Nwoya was carved out of 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) and all are onchocerciasis endemic.
- There are 32 parishes and 103 communities all endemic with onchocerciasis, with a total population of 172,155 at risk of the disease.
- Murchison Falls National Park covers half of the district to the South.
- The district suffered LRA civil unrest but is currently peaceful without refugee camps.

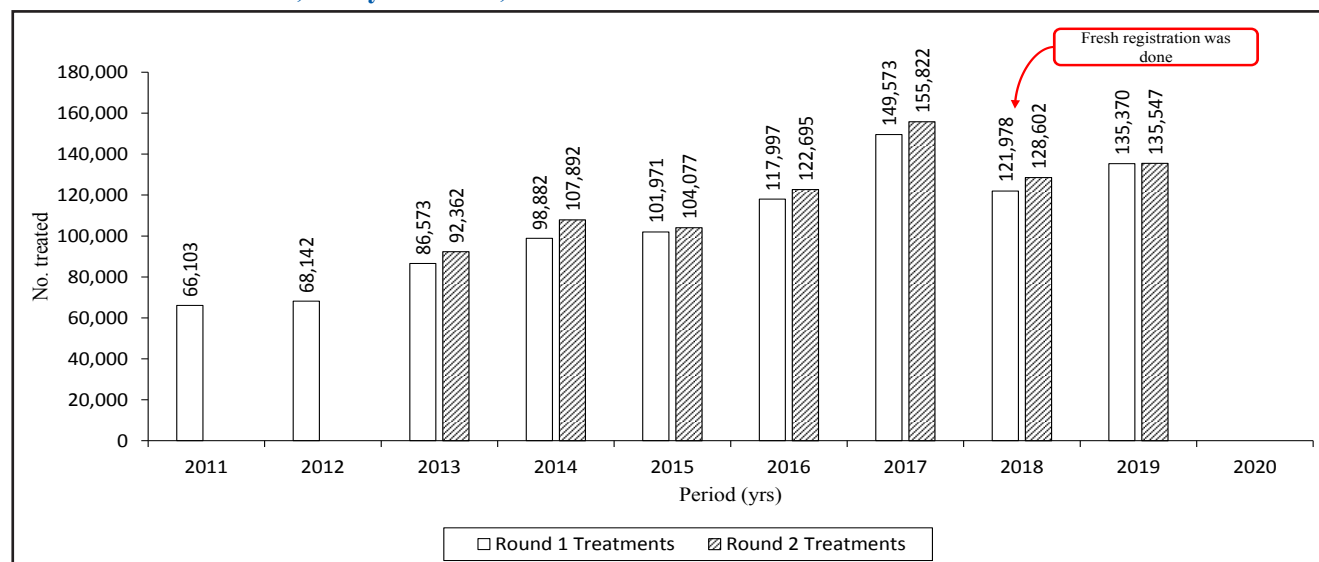
#### CDTI Implementation Structure



## CDTI Training in Nwoya District, 2011 to Date

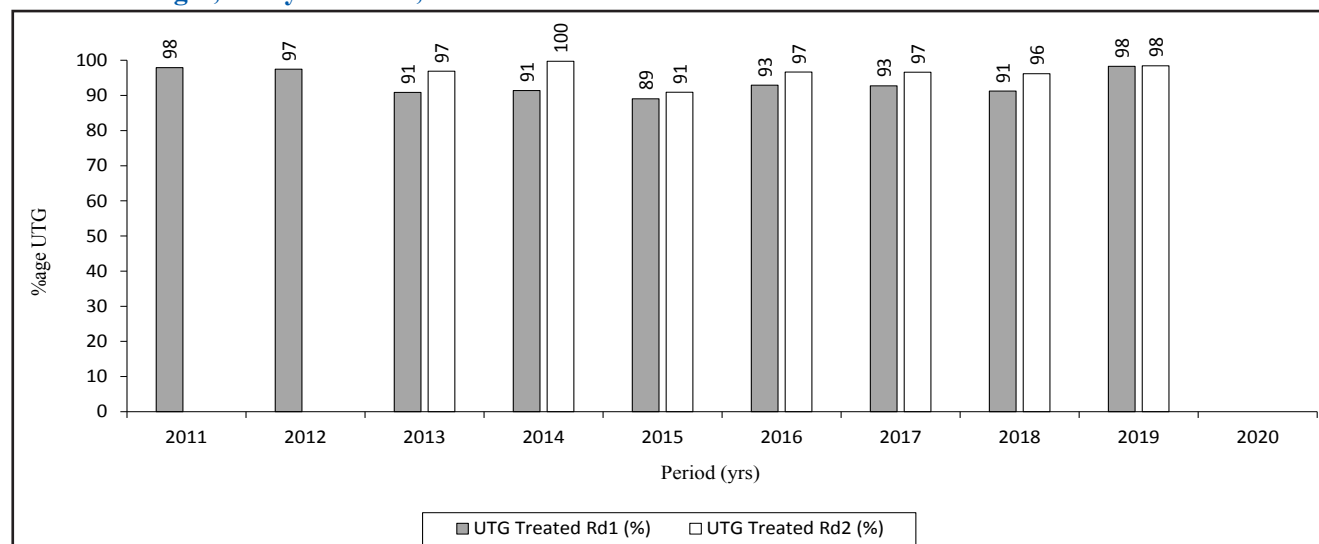


## Number of Treatments, Nwoya District, 2011 to Date



- Since 2017, there have been many people moving from one area to another looking for farmland between Nwoya and Amuru districts.
- MDA for 2020 waiting approval from Act To End East.

## UTG Coverages, Nwoya District, 2011 to Date



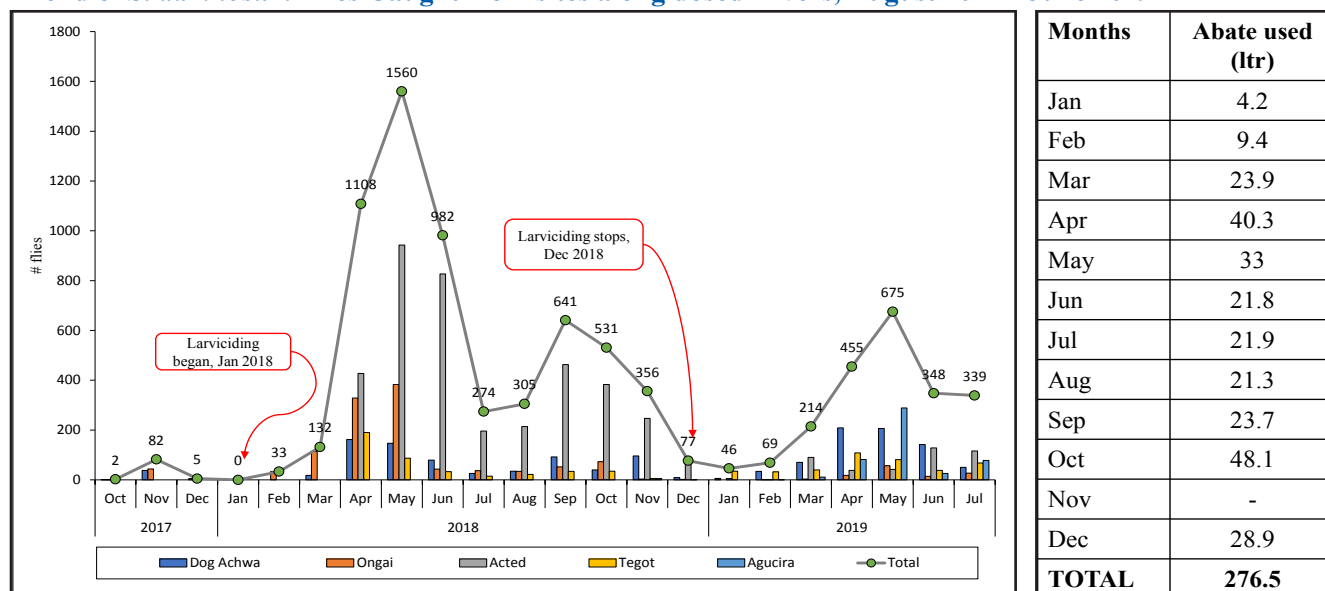
NB: The district has had 13 rounds of effective treatment since 2013 to date.



### Skin Snip Results from Nwoya District, 2012

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

### Trend of *S. damnosum* Flies Caught from sites along dosed Rivers, August 2017 - June 2019



Flies drastically reduced during larviciding but were not eliminated

### PCR Results from Nwoya District 2015 - 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	Nwoya	Site not clear	400	200	2	0
2015	no site	Site not specified	200	200	1	0
<b>Sub Total</b>			<b>6190</b>		<b>32</b>	<b>0</b>
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
<b>Sub Total</b>			<b>2925</b>		<b>15</b>	<b>0</b>
2017	Ceke	Adibuk River	78	78	1	0
2017	Ademola	Ayago River	187	187	1	0
2017	Ayago	Ayago River	187	187	1	0
<b>Sub Total</b>			<b>452</b>		<b>3</b>	<b>0</b>
<b>Total</b>			<b>9567</b>		<b>50</b>	<b>0</b>

NB: All the 10,167 flies analyzed were negative for onchocerca volvulus

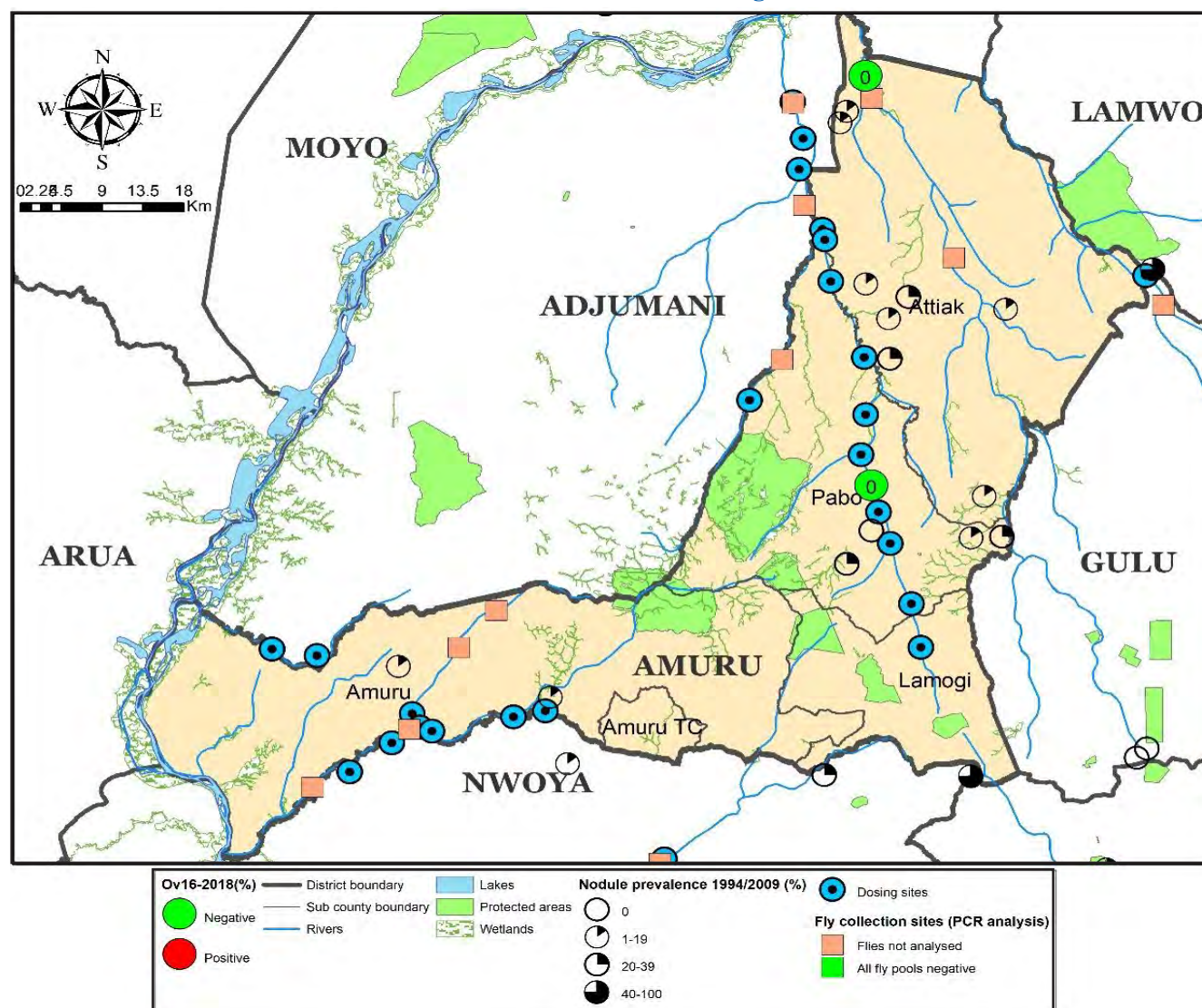
### Ov16 Elisa Results in Nwoya District, 2018

Sub-county	Village	#Children screened	#positive (%)	95% CI	#Adults screened	#positive (%)	95% CI
Koch goma	Gonycogo (Ayago)	46	0(0%)	0-0.077	51	1(2%)	0.004-0.103
Koch goma	Gonycogo (Te-okutu)	72	0(0%)	0-0.051	51	0(0%)	0-0.07
Koch goma	Agong B (Jali)	78	0(0%)	0-0.047	51	0(0%)	0-0.07
Koch goma	Agong B (Amayokoma)	69	0(0%)	0-0.053	51	0(0%)	0-0.07
<b>TOTAL</b>		<b>265</b>	<b>0(0%)</b>	<b>0-0.014</b>	<b>204</b>	<b>1(0.5%)</b>	<b>0-0.027</b>

All the 265 children screened for Ov16, none of them was positive, however out of the 204 adults that were screened for Ov16, 1(0.5%) was positive, hence no current exposure

## AMURU DISTRICT

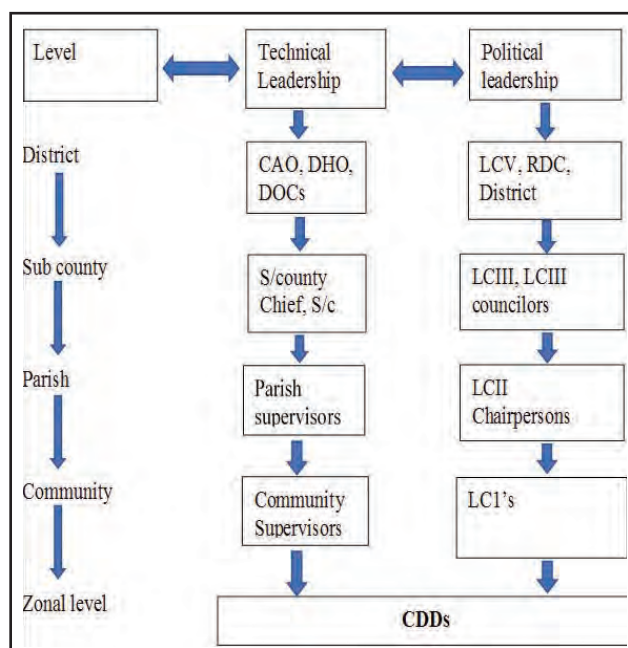
### Amuru District area Under Ivermectin Treatment and Larviciding



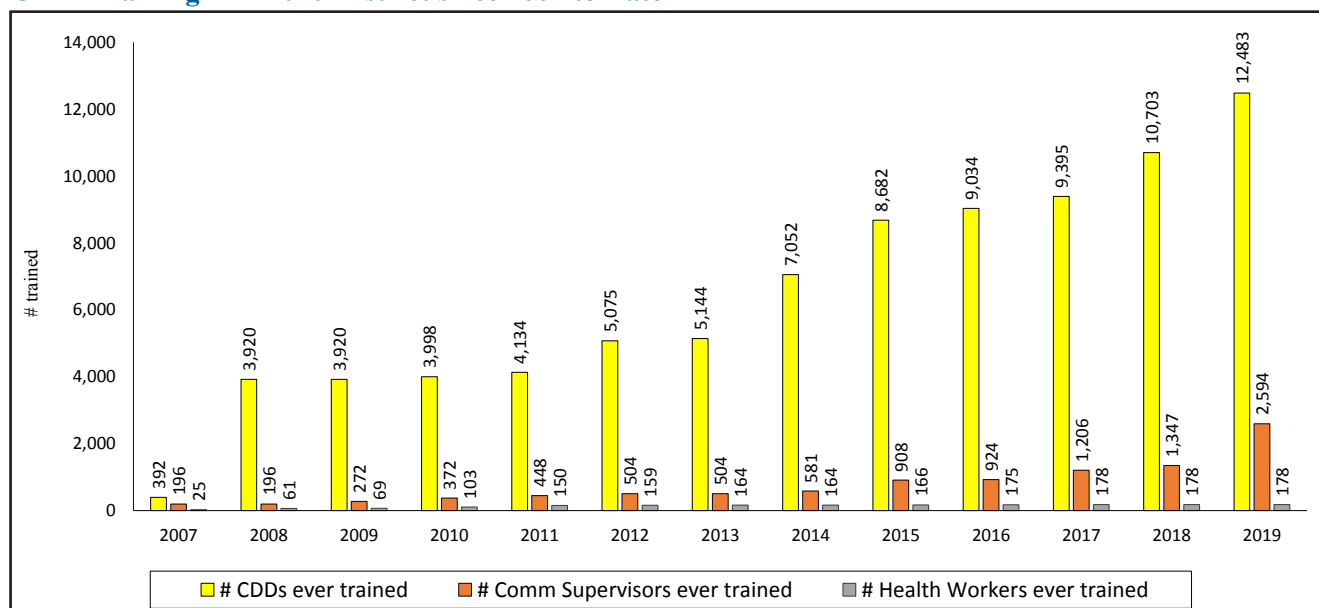
### Introduction

- Amuru District was carved out of Gulu in 2006. This was further split in 2010 to form the new District of Nwoya.
- The district was severely affected by the LRA civil war. However, the district is peaceful, and people are no longer in IDP camps.
- The district has a total of 5 sub-counties which include: Pabbo, Lamogi, Amuru, Atiak and Otwe Town Council, 33 parishes and 67 communities all endemic with onchocerciasis, with a total population of 255,081 at risk of the disease.
- The rivers known to breed Onchocerciasis vectors in the district include: Omee, Apaa, Cheri, Lakang, Ayugi and Okiki.
- The known Onchocerciasis vector in the district is *S. damnosum*.

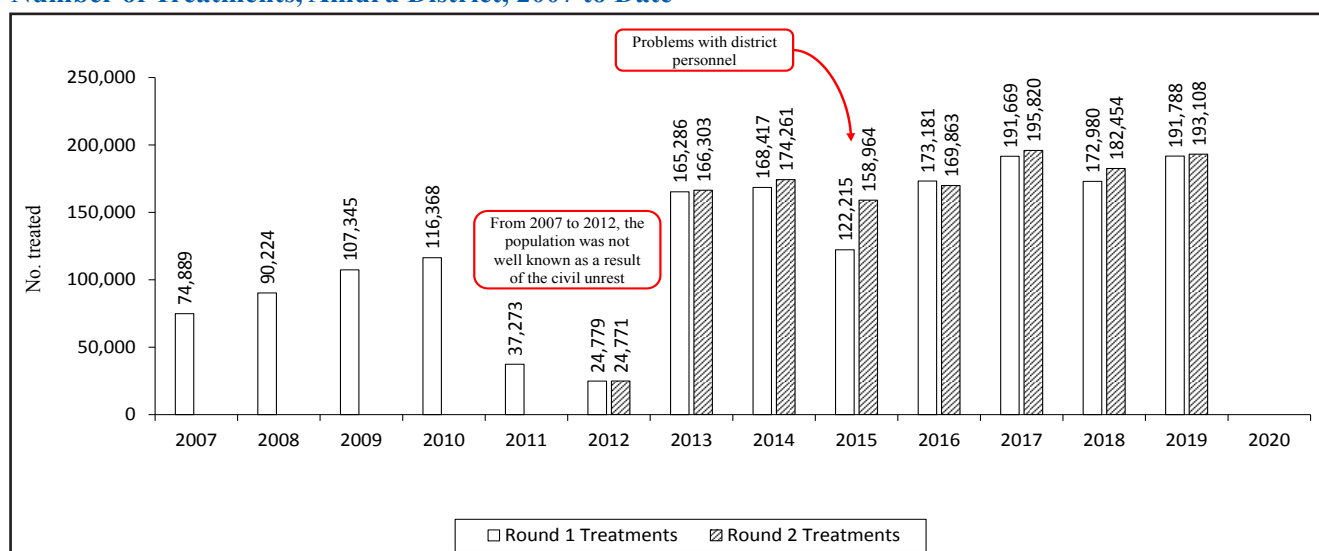
### CDTI Implementation Structure



## CDTI Training in Amuru District since 2007 to Date

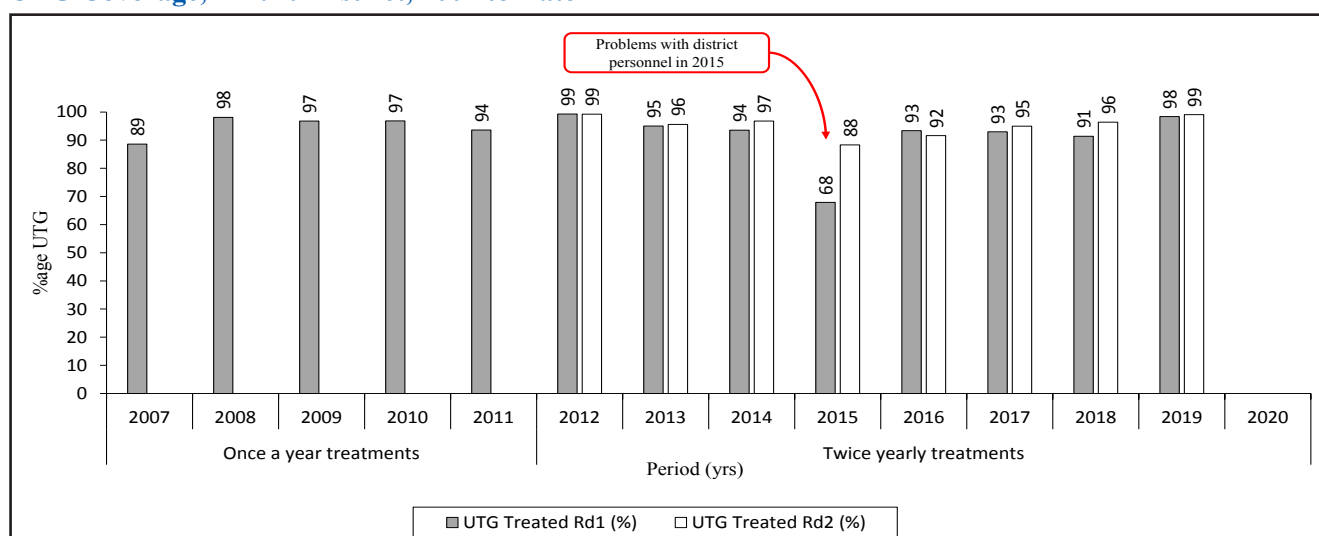


## Number of Treatments, Amuru District, 2007 to Date



NOTE: From 2007 to 2012, the population was not well known as a result of the civil unrest.  
MDA for 2020 waiting approval from Act To End East.

## UTG Coverage, Amuru District, 2007 to Date



NOTE: Amuru District started treatment in 2007, and has had 14 effective rounds of treatment (>90%) since 2012.



## Status of MF Prevalence Rates (Skin Snip Microscopy), 2012

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

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

## Entomology

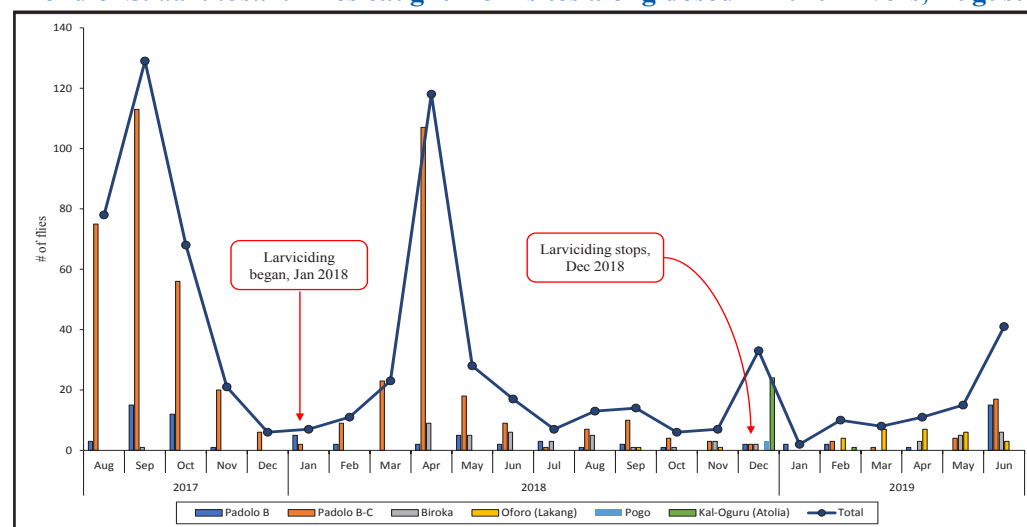


Vector control officers gauging River Omee.



Vector control officer dosing River Omee.

## Trend of *S. damnosum* Flies caught from sites along dosed Amuru Rivers, 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
<b>TOTAL</b>	<b>27</b>	<b>154.9</b>

*S. damnosum* population has been reduced but not eliminated.

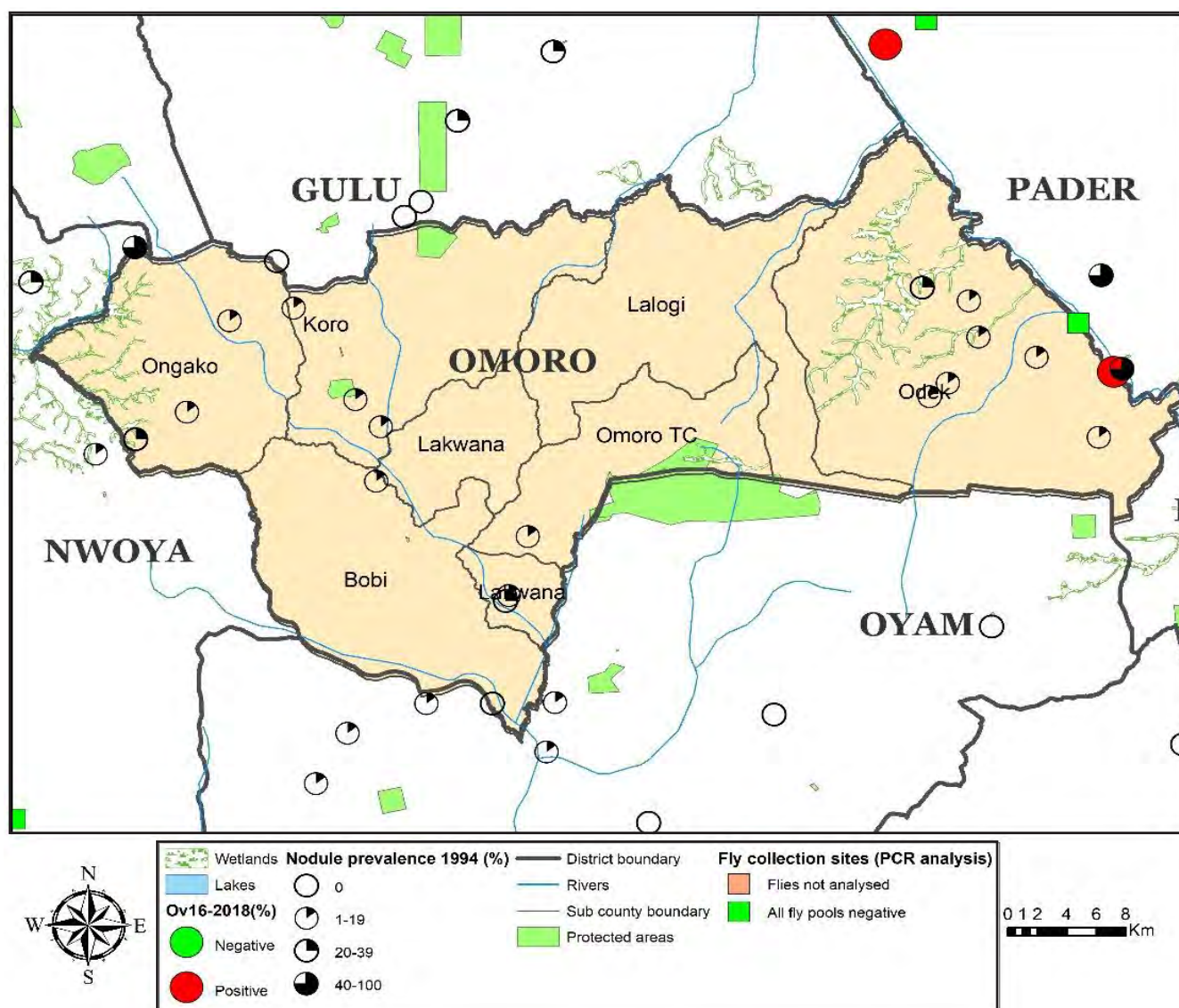
## Results of Ov16 Elisa from Sentinel Communities (Sept 2018)

Subcounty	Village	No. of children screened	No. positive (%)	95% CI	No. of Adults Screened	No. positive (%)	95% CI
Atiak	Elegu West	122	0(0%)	0-0.033	48	0(0%)	0-0.074
Atiak	Pacilo East	100	0(0%)	0-0.037	50	9(18%)	0.098-0.308
Pabbo	Kal Oguru	76	0(0%)	0-0.048	45	0(0%)	0-0.078
Pabbo	Perecu	147	0(0%)	0-0.026	40	0(0%)	0-0.088
		<b>445</b>	<b>0(0%)</b>	<b>0-0.009</b>	<b>183</b>	<b>9(4.9%)</b>	<b>0.026-0.091</b>

- All the 445 children screened for Ov16 in 2018 were negative.
- Out of the 183 adults that were screened for Ov16, 9 (4.9%) were positive.

## OMORO DISTRICT

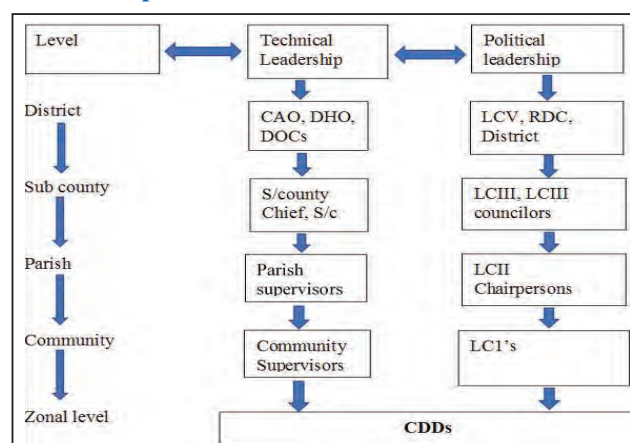
### Omoro District Area Under Ivermectin Treatment



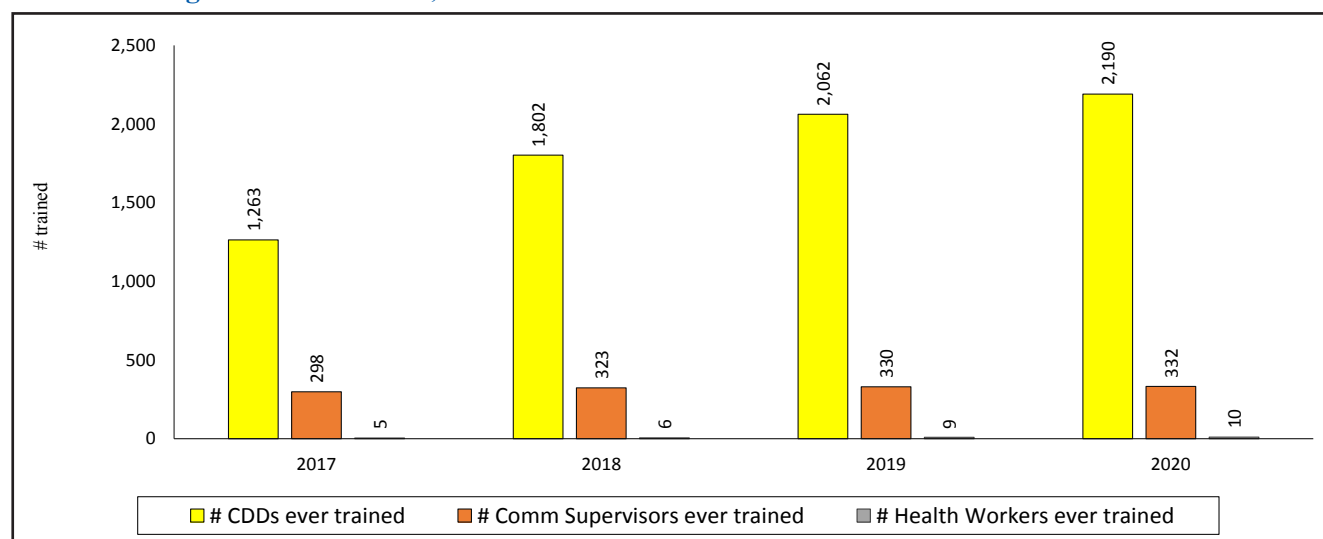
### Introduction

- Omoro District was carved out of Gulu with effect from 1st July 2016.
- The district has 7 sub-counties (Koro, Larogi, Odek, Bobi, Ongako, Omoro Town Council and Lakwana), 33 parishes and 149 communities, and all are onchocerciasis endemic, with a population of 191,058 at risk of onchocerciasis.
- Suffered civil unrest for over 20 years but currently is peaceful.
- This district had cases of nodding syndrome.

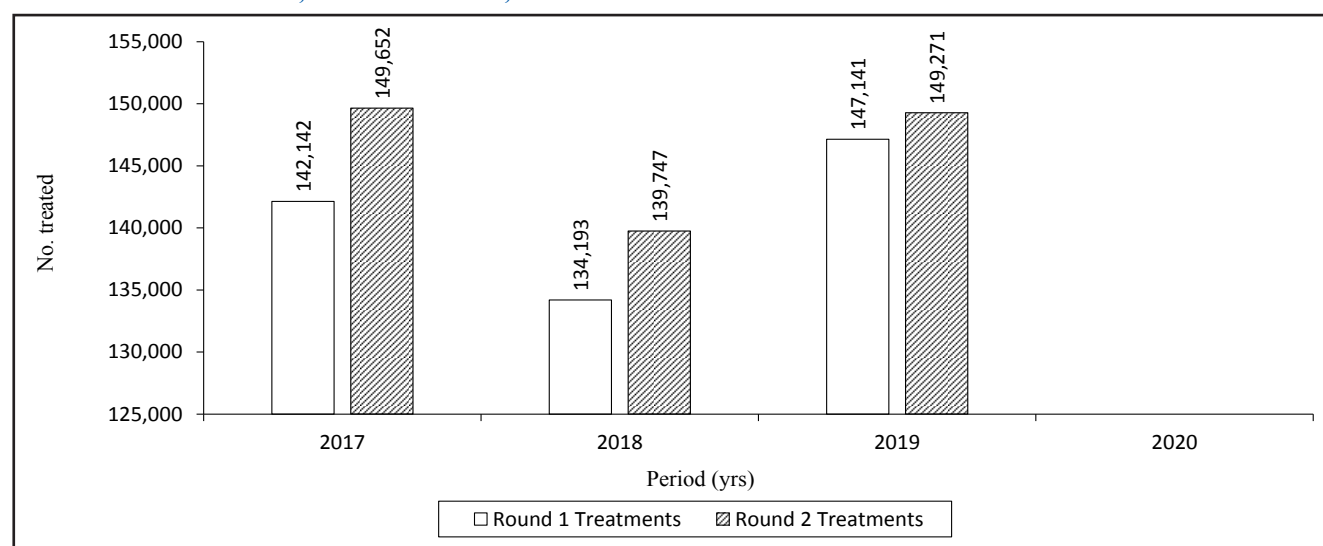
### CDTI Implementation Structure



## CDTI Training in Omoro District, 2017 to Date

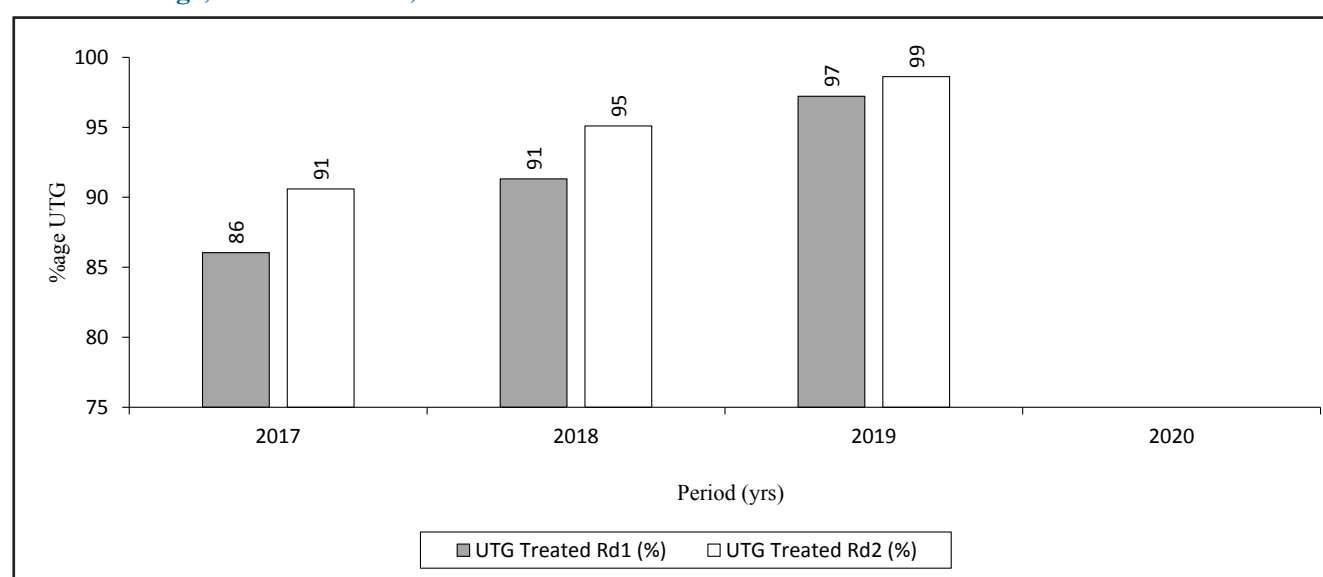


## Number of Treatments, Omoro District, 2017 to Date



MDA for 2020 waiting approval from Act To End East

## UTG Coverage, Omoro District, 2017 to Date



NB: The district has had 8 rounds of effective treatment to date. The two rounds of 2016 come from when Omoro was part of Gulu District



## Skin Sniping (Adults, 20 yrs & above) Results from Omoro District, 2012

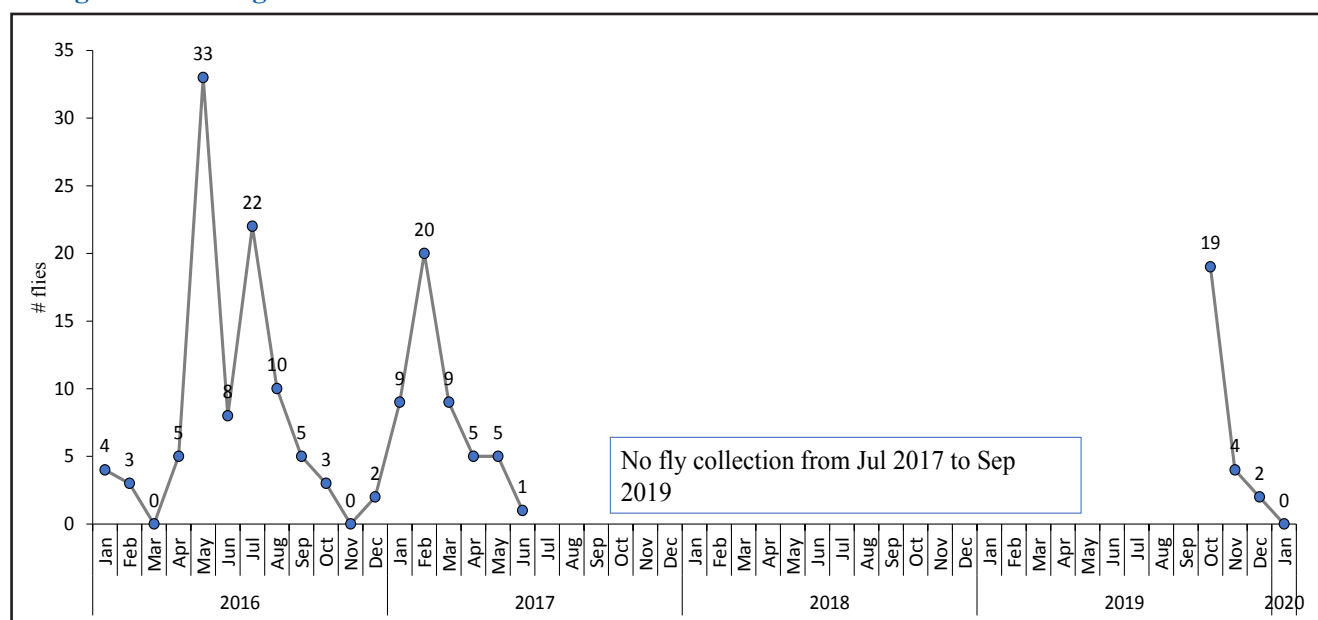
Year	District	Subcounty	Parish	Communities	No. Examined	No. Positive for mf	% mf	No. Nodules	% Nodules
2012	Omoro	Odek	Palaro	Akoyo	94	45	47.87	2	2.13

NB: Of the 94 people examined, 45(47.8%) were positive for *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 onchocerciasis vector (*S. damnosum*).
- Vector control through aerial spraying was done in 2012, and later switched to ground larviciding due to costs involved.
- The district has one fly catching site (Lapuda) at Awere bridge, which is also a sentinel site for entomological and epidemiological surveillance.
- 35 flies out of 120 collected in 2017 were analyzed with PCR and were all negative.

### Biting Pattern along R. 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

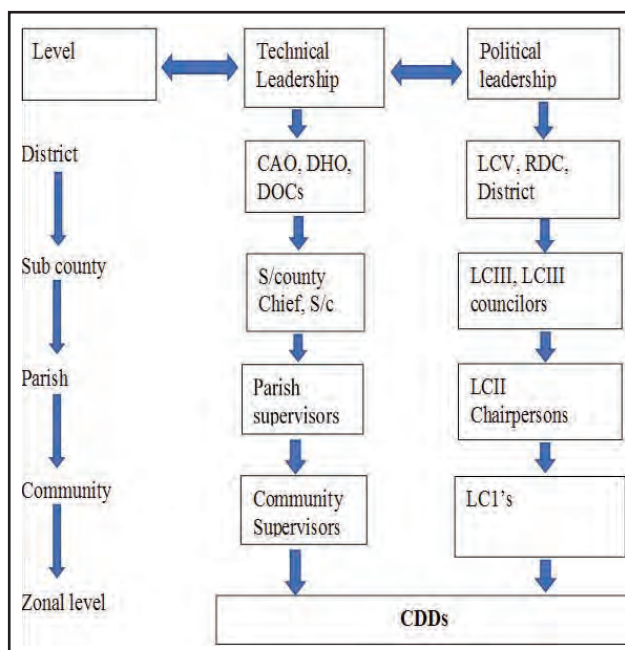
Subcounty	Village	#Children Screened	#Positive (%)	95% CI	#Adults Screened	#Positive (%)	95% CI
Odek	Akoyo	103	2(1.9%)	0.005-0.068	50	16(32%)	0.208-0.458
Odek	Awaliwanglobo	96	0(0%)	0-0.039	36	0(0%)	0-0.096
Total		199	2(1.0%)	0.003-0.036	86	16(18.6%)	0.118-0.281

## GULU DISTRICT

### Introduction

- Gulu District is bordered by Lamwo District to the North, Pader District to the East, Oyam District to the South, Nwoya District to the Southwest and Amuru District to the West.
- Gulu was further sub-divided to form the districts of Amuru (2006) and Omoro (2017).
- It has six sub-counties namely: Bungatira, Unyama, Awach, Patiko, Paicho, Palaro, Aswa, and Gulu Municipality and all are endemic.
- Two river systems of Aswa and Unyama 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.

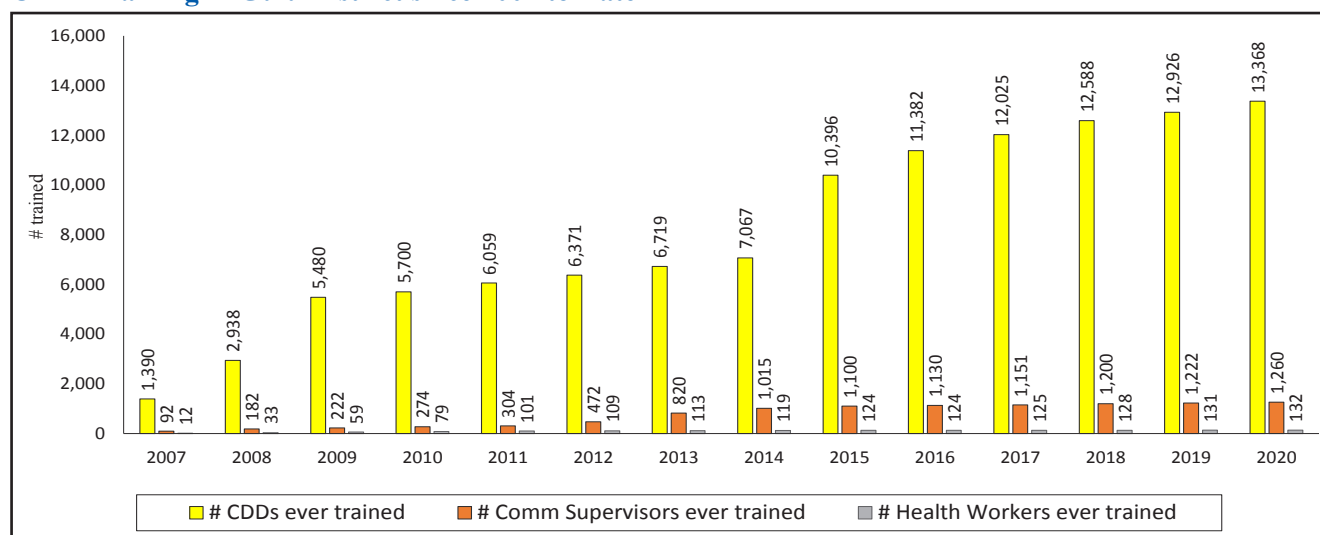
### CDTI Implementation Structure



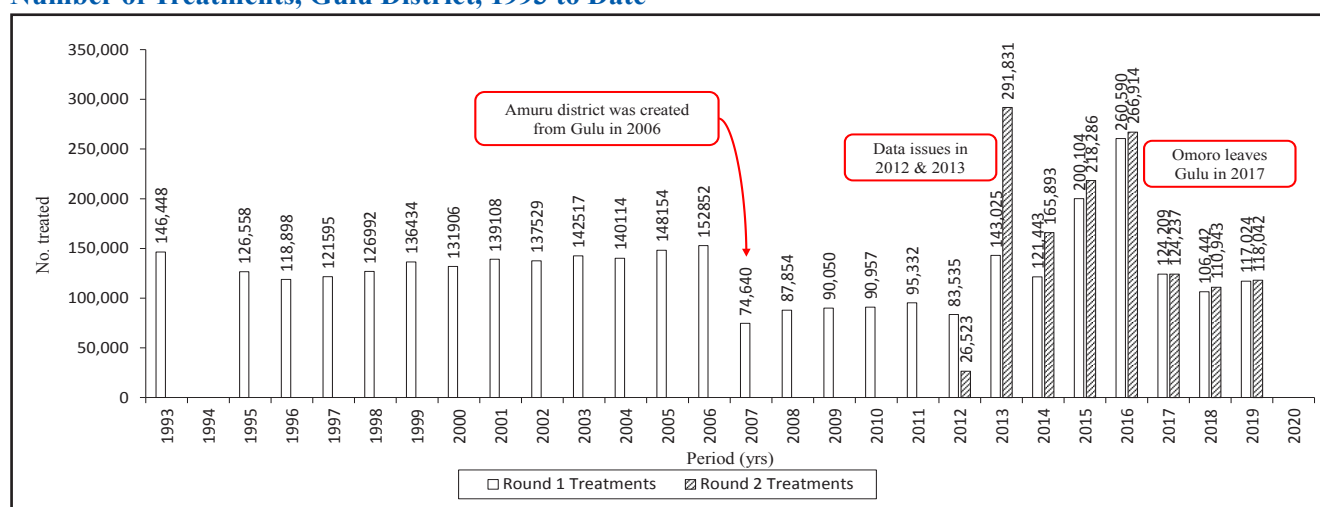
### Map of Gulu District



## CDTI Training in Gulu District since 2007 to Date



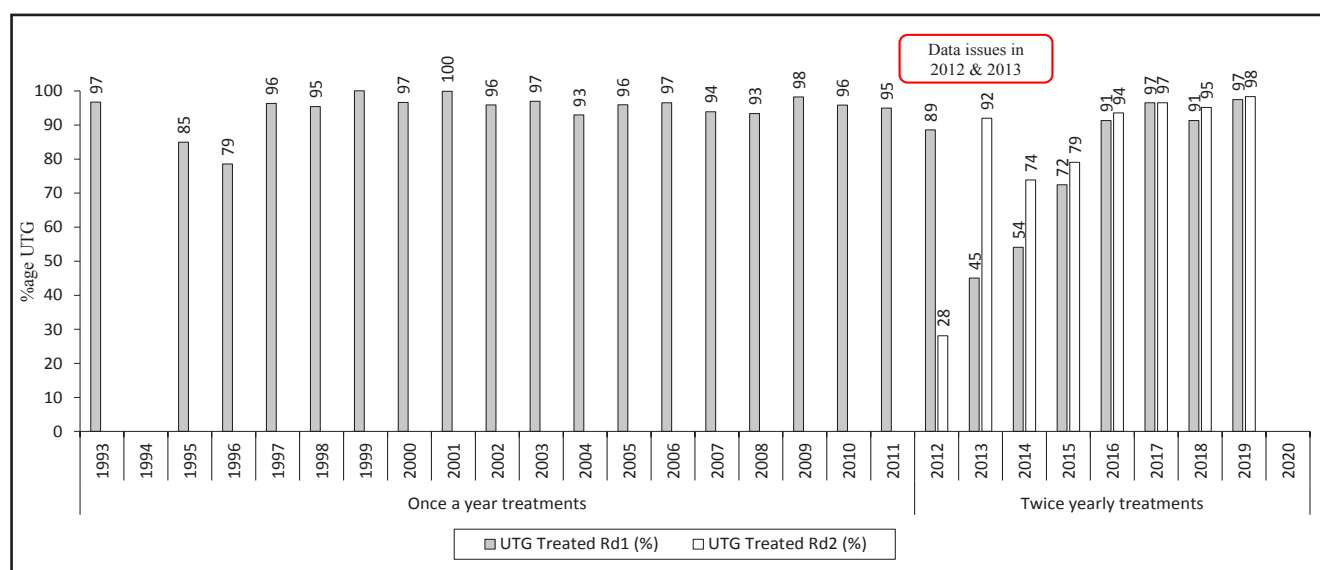
## Number of Treatments, Gulu District, 1993 to Date



Note: In 2006, Amuru District was created from Gulu. In 2013, there was no proper population registration. In 2017, Omoro District was created from Gulu.

MDA for 2020 waiting approval from Act East.

## UTG Coverage, Gulu District, 1993 to Date



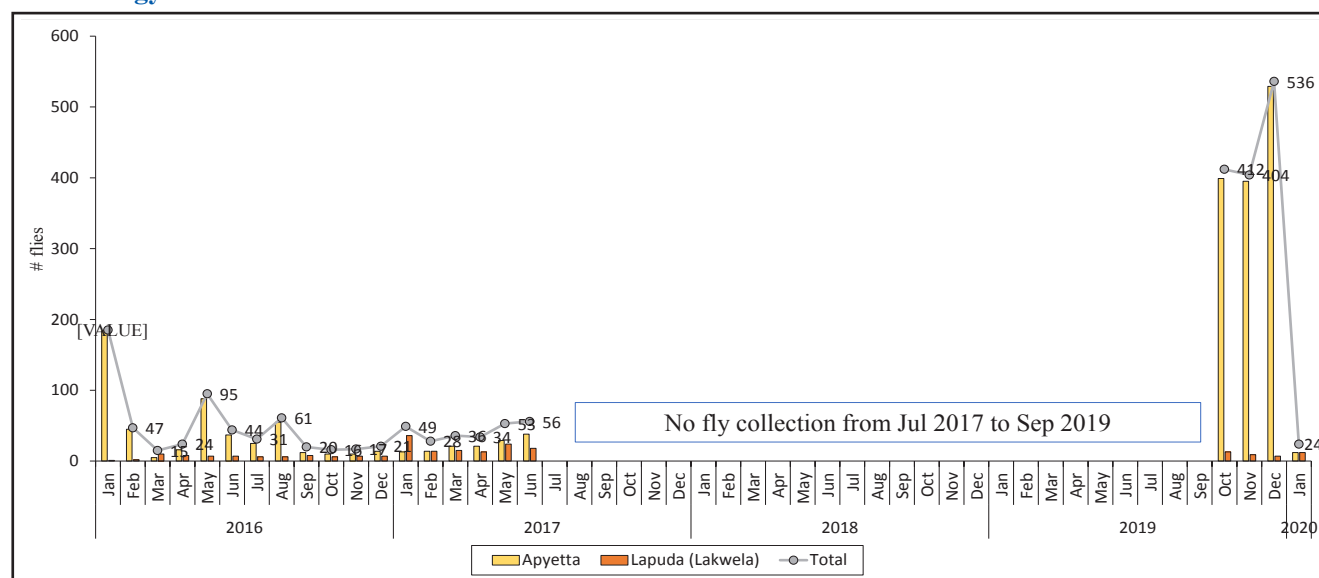
- Gulu District started treatment in 1993
- Has had 8 effective rounds of treatment (>90%) since 2016 to date



## Epidemiology - Skin Snip Results: 2012 & 2015

Communities	2012			2015		
	No. Examined	No. Positive for mf	% mf	No. Examined	No. Positive for mf	% 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, 2018 in Sentinel Sites

Subcounty	Village	#Children Screened	#Positive (%)	95% CI	#Adults Screened	#Positive (%)	95% CI
Palaro	Ongendo	66	0(0%)	0-0.055	49	0(0%)	0-0.073
Paicho	Lakwela	49	1(2%)	0.004-0.105	25	4(16%)	0.064-0.346
Palaro	Oroko	39	0(0%)	0-0.089	25	2(8%)	0.022-0.249
Paicho	Dwere	11	1(9.1%)	0.016-0.377	15	3(20%)	0.071-0.452
		165	2(1.2%)	0.003-0.043	114	9(7.9%)	0.042-0.143

## Summary of PCR Results

Year	No. of flies Analyzed	No. of Pools	No. Pools Positive
Nwoya	10167	53	0
Omoro	35	1	0
	10202	54	0

## Summary of Ov16 Results, 2018

District	Subcounty	Village	#Chn Screened	#Positive (%)	95% CI	#Adults Screened	#Positive (%)	95% CI
Nwoya	Koch goma	Gonycogo (Ayago)	46	0(0%)	0-0.077	51	1(2%)	0.004-0.103
	Koch goma	Gonycogo (Te-okutu)	72	0(0%)	0-0.051	51	0(0%)	0-0.07
	Koch goma	Agong B (Jali)	78	0(0%)	0-0.047	51	0(0%)	0-0.07
	Koch goma	Agong B (Amayokoma)	69	0(0%)	0-0.053	51	0(0%)	0-0.07
Amuru	Atiak	Elegu West	122	0(0%)	0-0.033	48	0(0%)	0-0.074
	Atiak	Pacilo East	100	0(0%)	0-0.037	50	9(18%)	0.098-0.308
	Pabbo	Kal Oguru	76	0(0%)	0-0.048	45	0(0%)	0-0.078
	Pabbo	Perecu	147	0(0%)	0-0.026	40	0(0%)	0-0.088
Omoro	Odek	Akoyo	103	2(1.9%)	0.005-0.068	50	16(32%)	0.208-0.458
	Odek	Awaliwanglobo	96	0(0%)	0-0.039	36	0(0%)	0-0.096
Gulu	Paloro	Ongendo	66	0(0%)	0-0.055	49	0(0%)	0-0.073
	Paicho	Lakwela	49	1(2%)	0.004-0.105	25	4(16%)	0.064-0.346
	Paloro	Oroko	39	0(0%)	0-0.089	25	2(8%)	0.022-0.249
	Paicho	Dwere	11	1(9.1%)	0.016-0.377	15	3(20%)	0.071-0.452
			<b>1074</b>	<b>4(0.4%)</b>	<b>0.001-0.01</b>	<b>587</b>	<b>35(6.0%)</b>	<b>0.043-0.082</b>

### Challenges

- Increased vector population as a result of halting larviciding 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.

### Conclusions

- All districts are under biannual treatment.

- The number of effective treatment rounds was between 8 and 14.
- PCR fly results were all negative.

### Way Forward

- Vector control where fly population is increasing should continue.
- Continue treatment until all districts have attained 13 rounds of effective treatment coverage.

## The program would like to thank



Lions Clubs of Uganda, M.O.H. Uganda, River Blindness Foundation, National Onchocerciasis Control Program, District Health Teams, Local governments of Lira, Oyam, Nwoya, Amuru, Omoro & Gulu districts, Focus Vector Control Officers, Entomological assistants and Vector collectors and general community for the high level of cooperation

## Madi Mid North Focus, Northern Part - Adjumani, Moyo, Kitgum, Lamwo & Pader

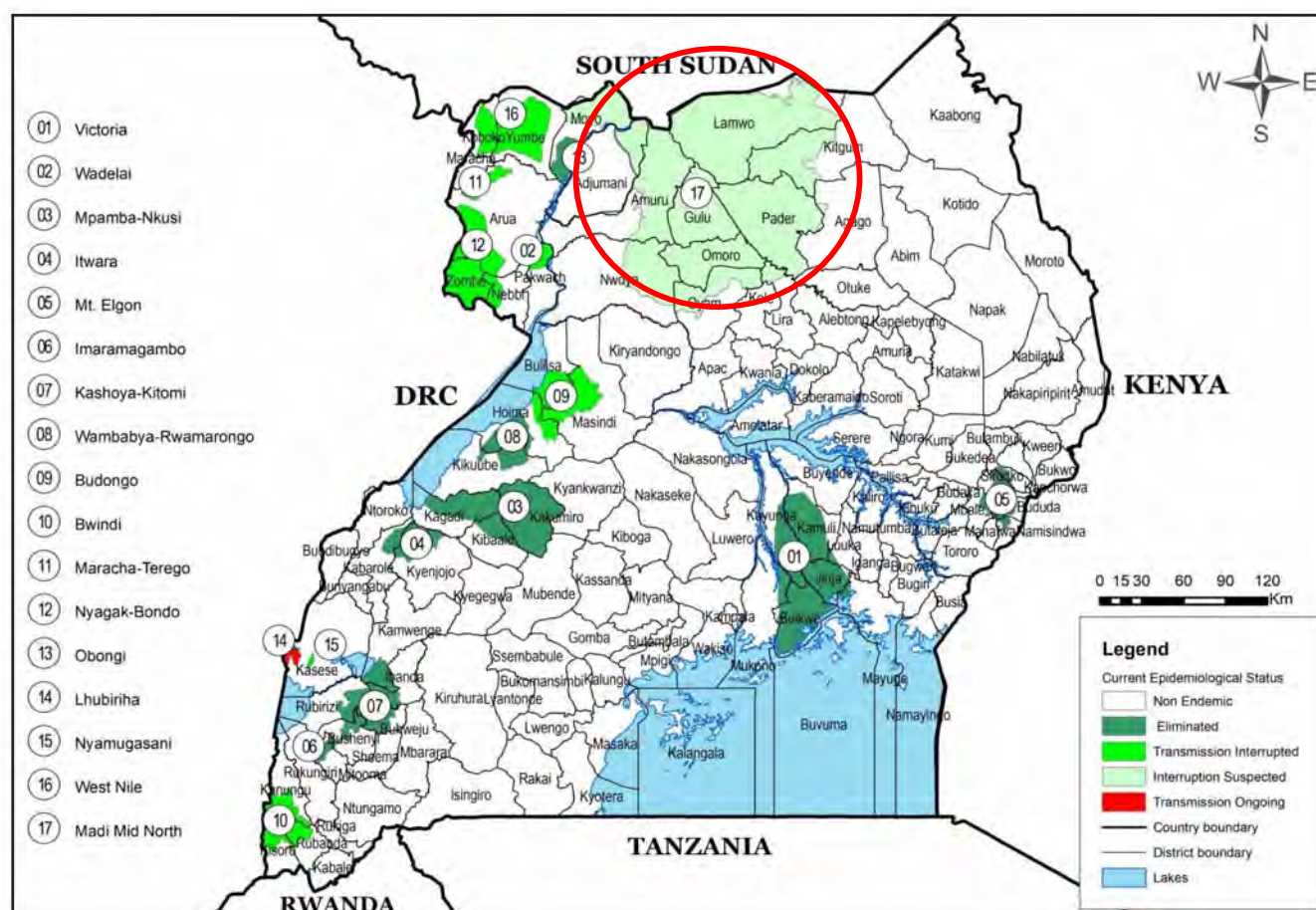


David Oguttu

### UOEEAC 2019 Recommendations on Madi Mid-North

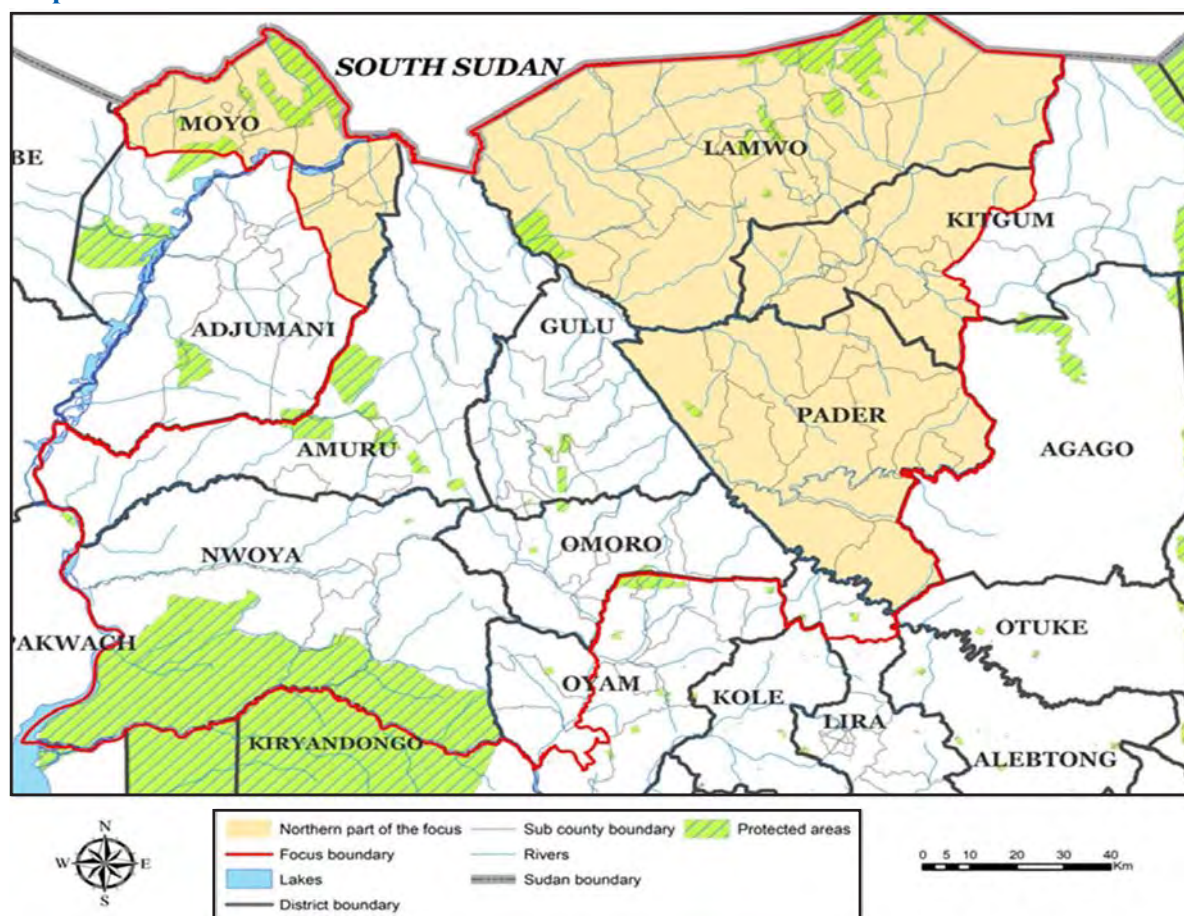
- Should be re-classified as “interruption of transmission suspected”.
- Twice per year treatment with ivermectin should continue in the focus.
- The program should undertake a thorough analysis of the number of high coverage, twice per year treatments that have been conducted throughout this focus, accounting for administrative re-organizations that have occurred, and the insecurity that challenged the region until 2014.
- Treatments should continue throughout the focus until all communities in the focus receive a minimum of 13 consecutive twice per year treatments at high coverage rates.

### Location of Madi-Mid North Focus



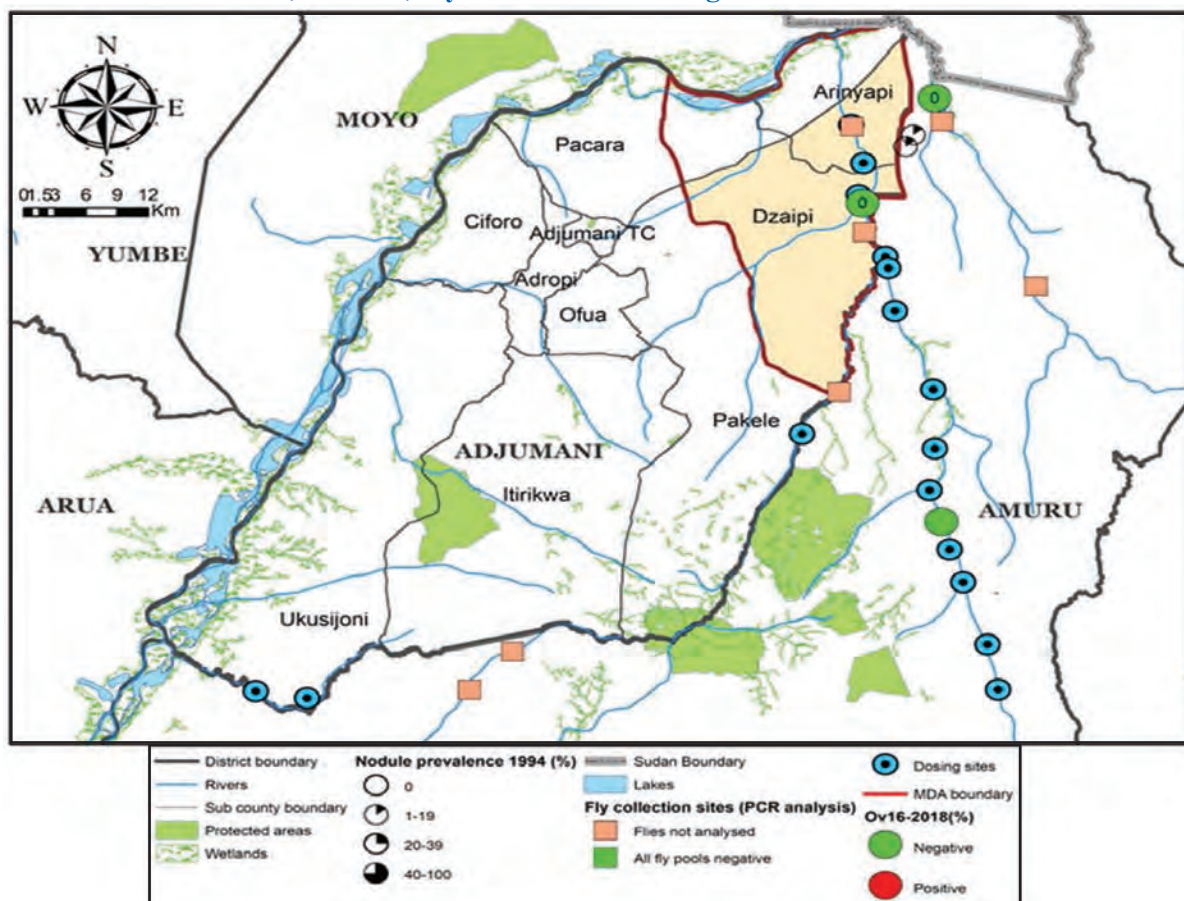


## Map of Madi Mid North Focus - the Northern Part



## ADJUMANI DISTRICT

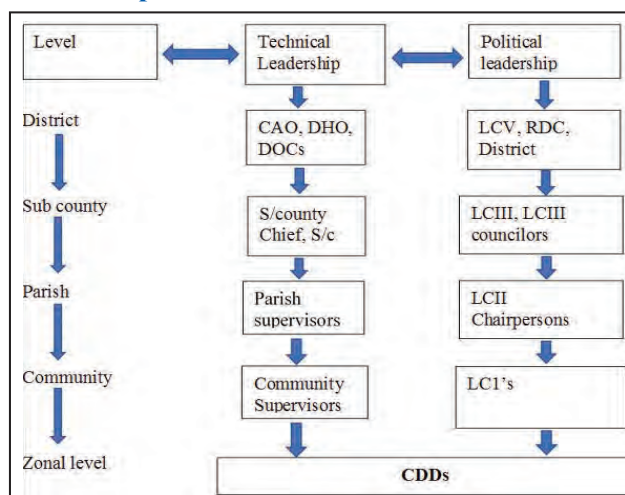
### Endemic Sub-counties, Sentinel, Fly Collection & Dosing Sites



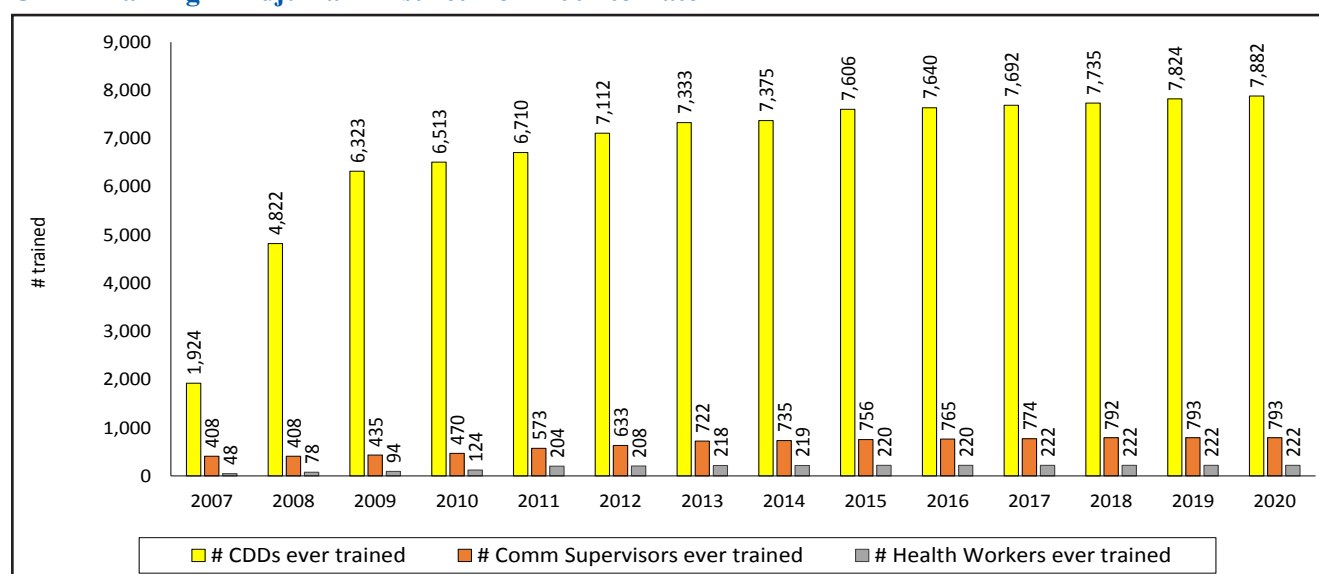
## Introduction

- Adjumani was carved from Moyo District in 1997.
- Only 2 out of 10 sub-counties (Dzaipi and Arinyapi) are onchocerciasis endemic.
- There are 10 parishes and 43 communities that are endemic with a total population of 30,615 people at risk of being affected by the disease.
- The district suffered over 2 decades of civil unrest but is currently peaceful.
- Hosts over 190,000 South Sudanese refugees with 3 of the camp sites in Oncho endemic areas.

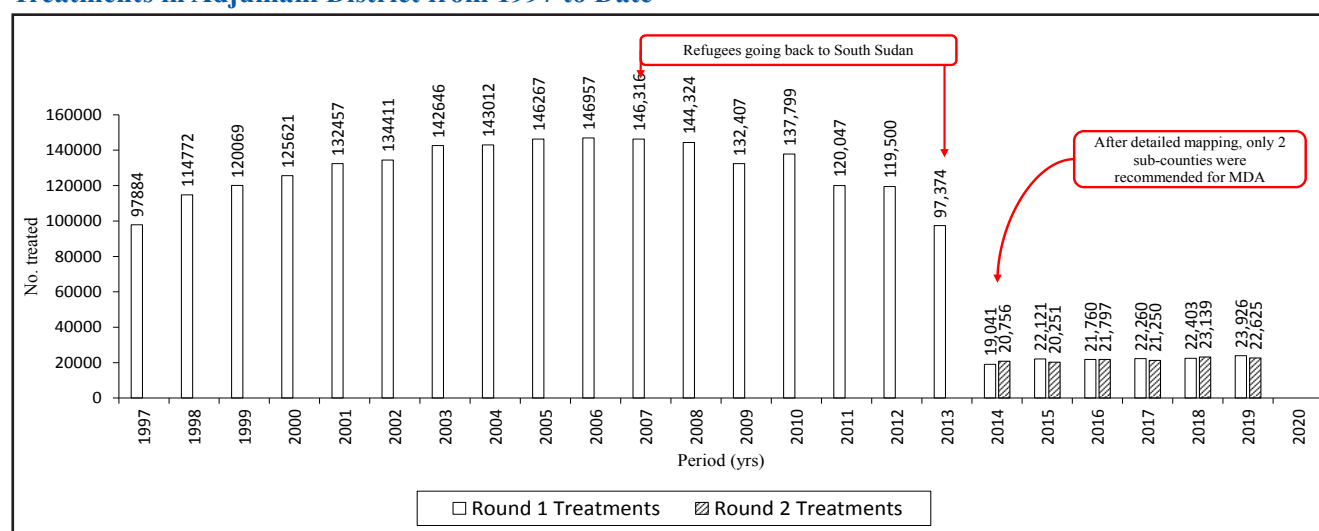
## CDTI Implementation Structure



## CDTI Training in Adjumani District from 2007 to Date

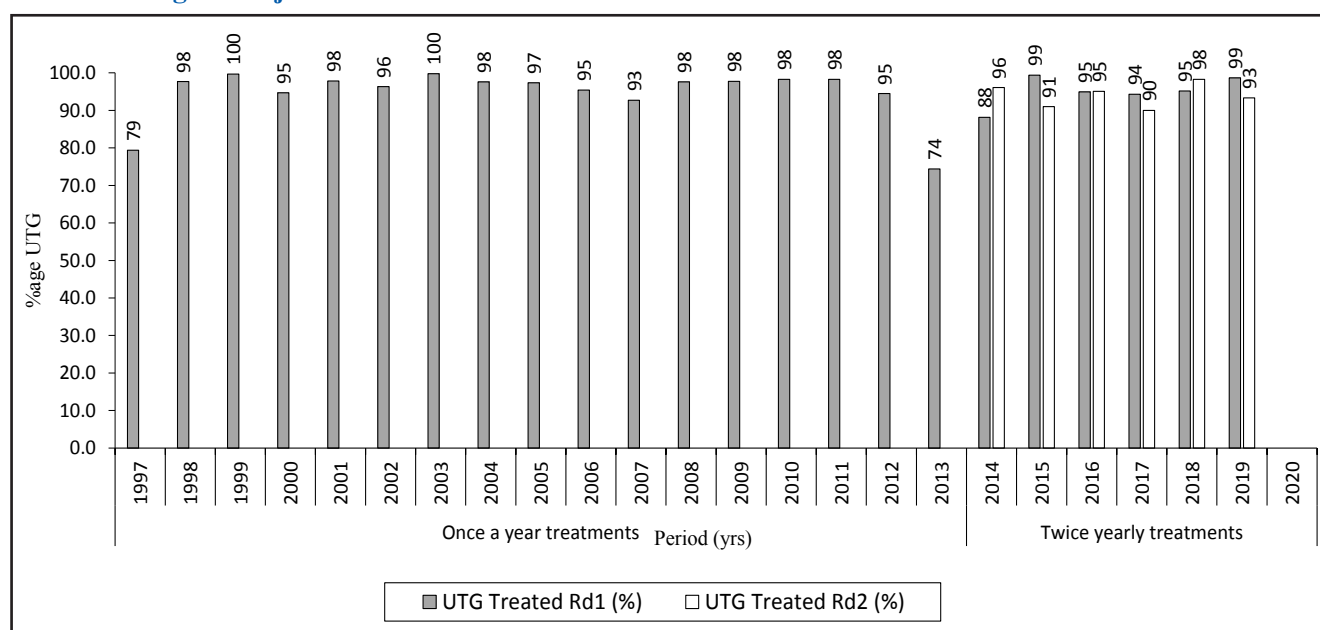


## Treatments in Adjumani District from 1997 to Date



- MDA for 2020 waiting approval from Act To End East.
- Annual treatment in Adjumani District was conducted from 1993-2013. This included even the refugees.
- Adjumani was split from Moyo District in 1997.
- Before 2014, the entire district was treated. After detailed mapping, only 2 sub-counties were recommended for MDA.
- Bi-annual treatment then started in 2014 to date.

## UTG Coverage in Adjumani District from 1997 to Date



- 11 rounds of effective ivermectin treatment (>90%) have been achieved.
- In 2013, refugees were going back to South Sudan affecting the population.

## Results of Skin Snip Microscopy in 2011 & 2014

Year	Communities	No. Examined	No. Positive for mf	% 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
	<b>Total</b>	<b>419</b>	<b>9</b>	<b>2.15</b>	<b>5</b>	<b>1.19</b>
2014	Elugu Central	44	0	0	0	0.0
2014	Ogolo North	102	1	0.98	0	0.0
	<b>Total</b>	<b>146</b>	<b>1</b>	<b>0.68</b>	<b>0</b>	<b>0.0</b>

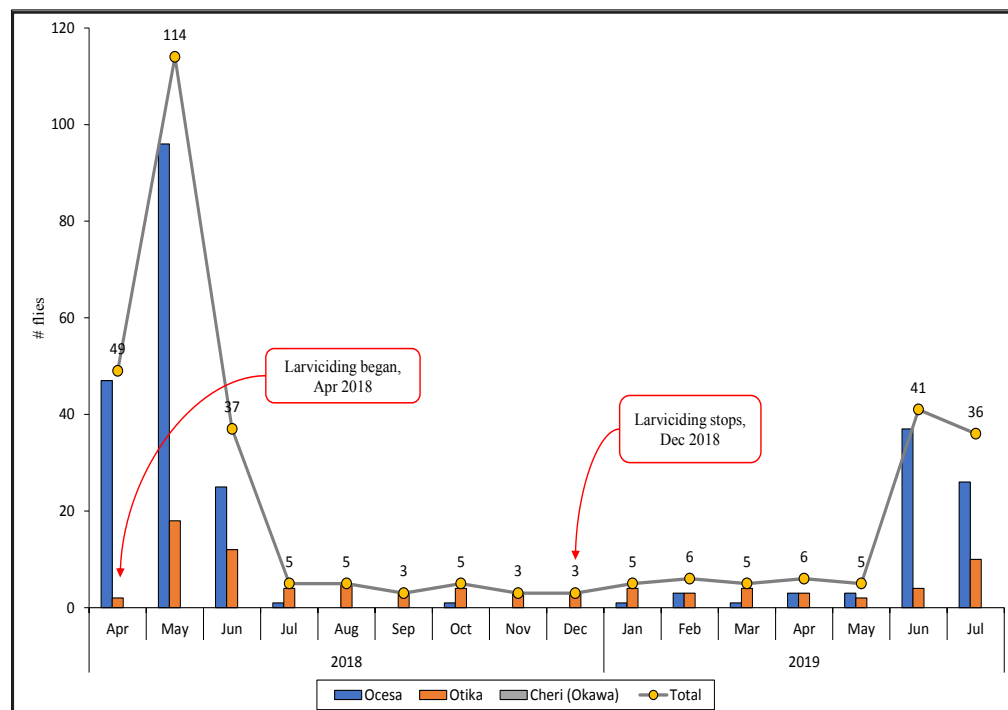
NB: In 2011, microfilaria prevalence was 2.15% with 1.19% nodule carrier rate, while in 2014 the microfilaria rate was 0.68% and the nodule carrier rate was 0%, which was attributed to high ivermectin treatment coverages.

## Entomology

- Two rivers (Ayugi and Cheri) in the district support the breeding of *S. damnosum*. River Cheri is seasonal.
- Vector collection on monthly basis started in 2014 on 3 catching sites and was halted in 2017 and re-introduced in 2018 when larviciding started.
- Larviciding reduced vector population rapidly during Jan-Dec 2018.
- Since vector control was halted in Jan 2019 the vector fly population has been re-building slowly.



### Trend of *S. damnosum* Flies caught during Larviciding from sites along dosed Adjumani Rivers, April 2018 to 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

Subcounty	Village	No. of Children Assessed	No. Positive (%)	95% CI	No. of Adults Assessed	No. Positive (%)	95% CI
Dzaipi	Mukoloyoro	84	0 (0%)	0-0.04	49	4 (8.2%)	0.032-0.192
Dzaipi	Obu	51	0 (0%)	0-0.07	36	2 (5.6%)	0.015-0.182
		135	0(0%)	0-0.028	85	6(7.1%)	0.033-0.146

Out of 135 children examined for ov16, none was positive and of 85 adults examined, 6(7.1%) were found positive; hence no recent exposure.

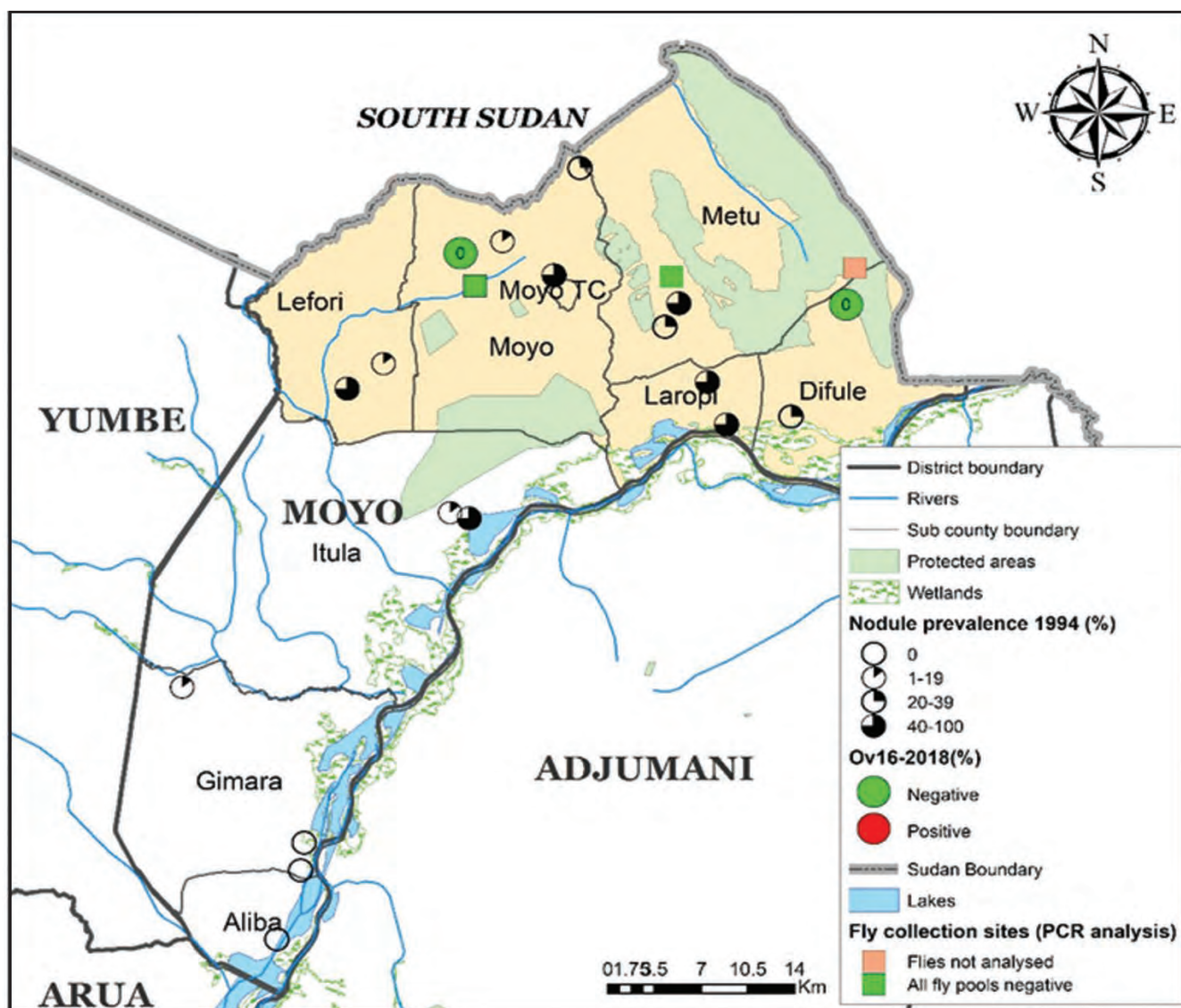
### Results of Ov16 ELISA from Adult Refugees in Dzaipi Sub-county in 2018

Refugee Settlement Cluster	Country of Origin	Area of Origin	No of Refugees Hosted	Ov16 Result Ranges among Adult Refugees
Ayilo	RSS	Kajo Keji	NA	0.0% (n=125)
Olua	RSS	Kajo Keji	NA	0.0% (n=32)
Pagirinya base	RSS	Kajo Keji	NA	0.0% (n=88)
<b>Total</b>			<b>190,000</b>	<b>0.0% (n=245)</b>

NA= Not Available

## MOYO DISTRICT

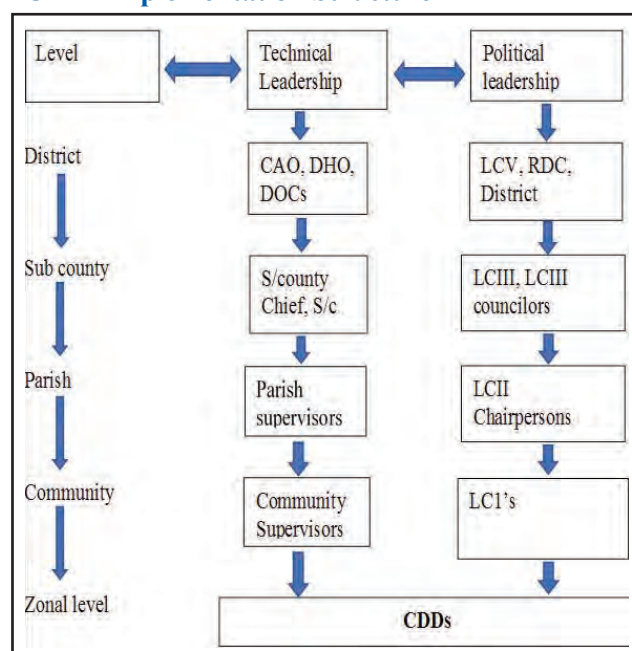
Map of Moyo District Showing Endemic Sub-counties



### Introduction

- Moyo District is located in West Nile sub-region bordered by South Sudan to the North and East, Adjumani to the East & South, Yumbe to the West.
- The district has six sub-counties of Moyo, Lefori, Dufule, Laropi, Metu and Moyo town council that are oncho endemic.
- It has 28 parishes and 169 communities with at risk population of 99,012.
- July 2019 - Obongi county was cut from Moyo to form a new district.
- Moyo shares a transmission zone with Kajo-Keji county of South Sudan.
- The 2019 cross border entomological surveys showed there is high potential for cross border onchocerciasis transmission between Moyo and RSS.

### CDTI Implementation Structure

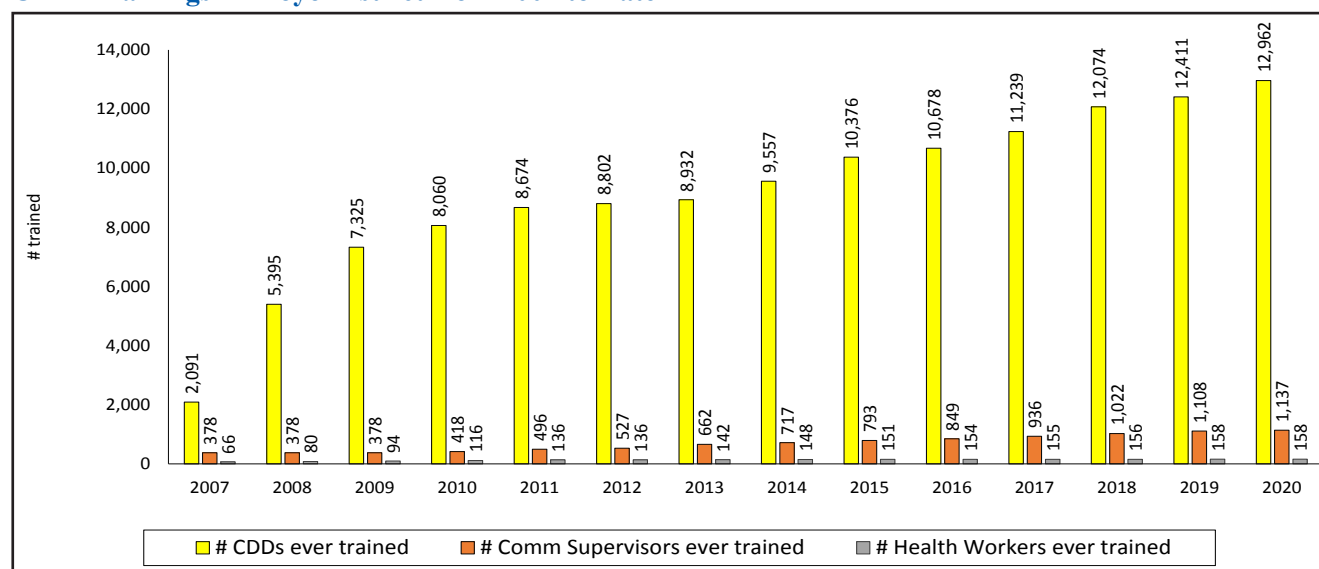


## Baseline Results of Skin Snipping - Adults (Microfilaria & Nodules) in Moyo, 2014

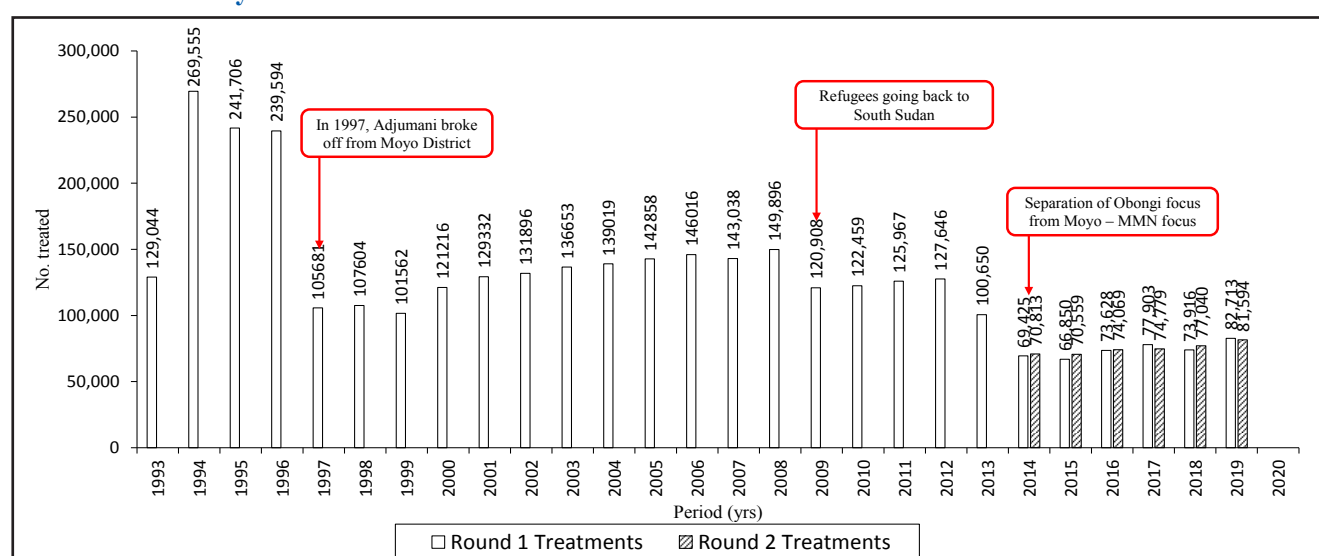
Sub county	Parish	Communities	No. Examined	No. Positive with mf	Percent mf	No. Nodules	Percent Nodules
Moyo	Vurra	Madulu	131	0	0	0	0.00
Lefori	Masoloa	Masoloa	110	0	0	0	0.00
Moyo	Ebikwa	Lamogi	123	1	0.81	0	0.00
Dufile	Arra	Pakarukwe	104	10	9.62	0	0.00
Metu	Pameri	Gweri Luzira	173	3	1.73	1	0.58
Moyo	Logoba	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
			<b>910</b>	<b>19</b>	<b>2.1</b>	<b>14</b>	<b>1.5</b>

A total of 910 people were skin snipped 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 Date



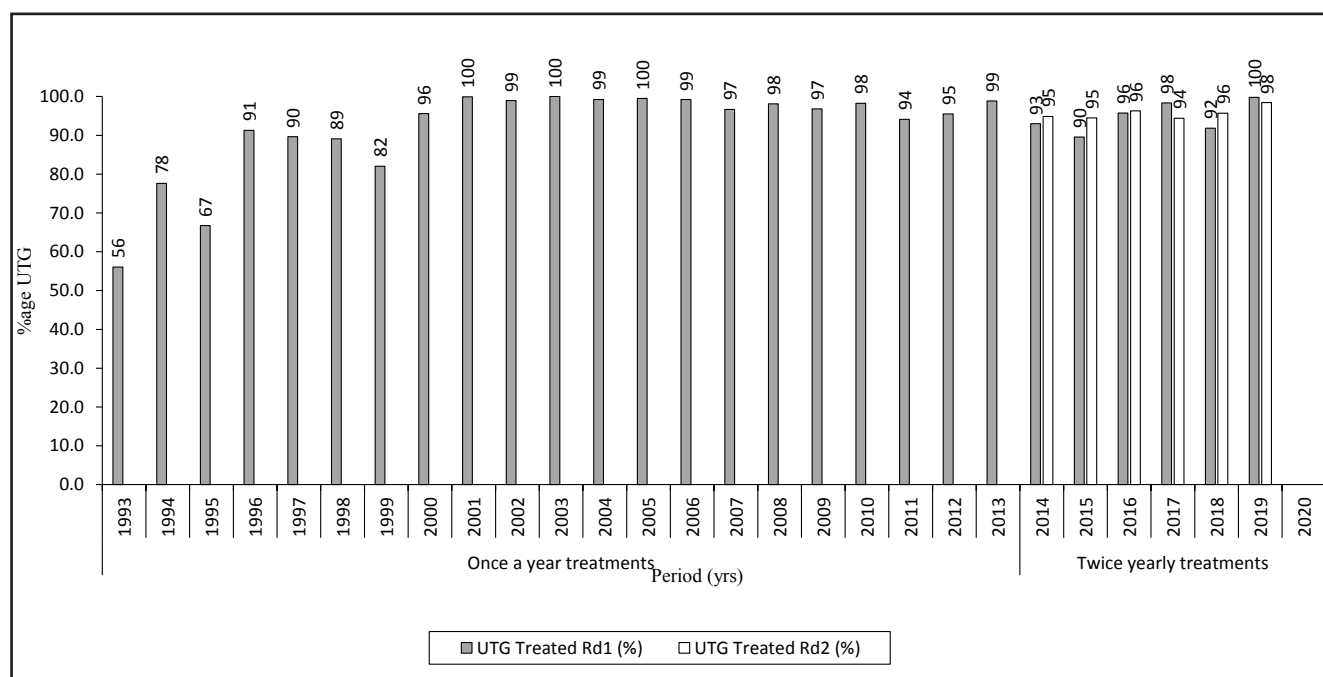
## Treatments in Moyo District from 1993 to Date



- MDA for 2020 waiting approval from Act East



## UTG coverage in Moyo District from 1993 to Date



Moyo District has achieved 12 effective rounds (>90%) of treatment since 2014

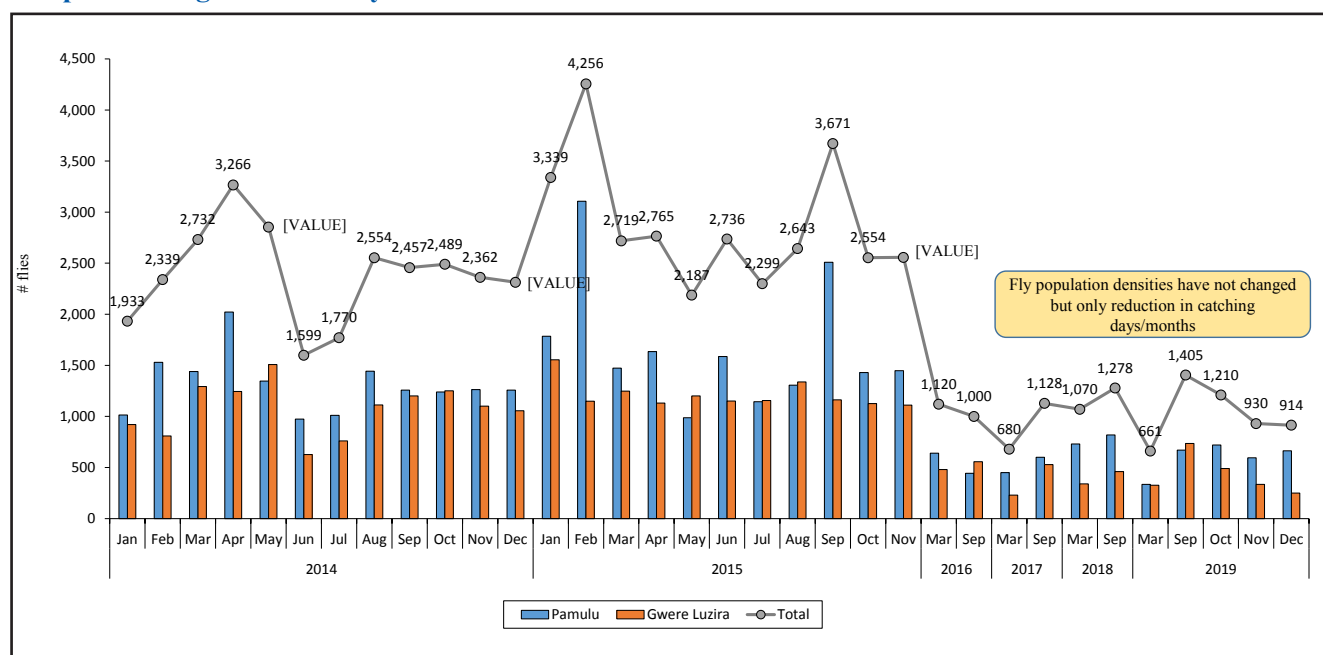
### Entomology

- 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 flows only southward to the Nile. No breeding has been observed.
- However, *Simulium* flies have been caught in Moyo District. Catching started in January 2014

on monthly interval up to November 2015 when it was scaled down to semi-annual collections up to date.

- Flies are suspected to be coming from South Sudan.
- There has been no vector control interventions in Moyo District since the program began.

### 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. of Pools Positive
NA	Moyo	Gwere Luzira	Amua		400	200	2	0
NA	Moyo	no site	Site not specified		800	200	4	0
<b>Total</b>					<b>1200</b>		<b>6</b>	<b>0</b>
2014	Moyo	Gwere Luzira	Amua	12876	1000	200	5	0
2014	Moyo	Pamulu	Oluvo	15792	390	200 & 190	2	0
<b>Total</b>					<b>1390</b>		<b>7</b>	<b>0</b>
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
<b>Total</b>					<b>13169</b>		<b>67</b>	<b>0</b>
<b>TOTAL</b>					<b>15759</b>		<b>80</b>	<b>0</b>

A total of 80 pools (15,759 fly heads) were analyzed using O-150 PCR and all were negative

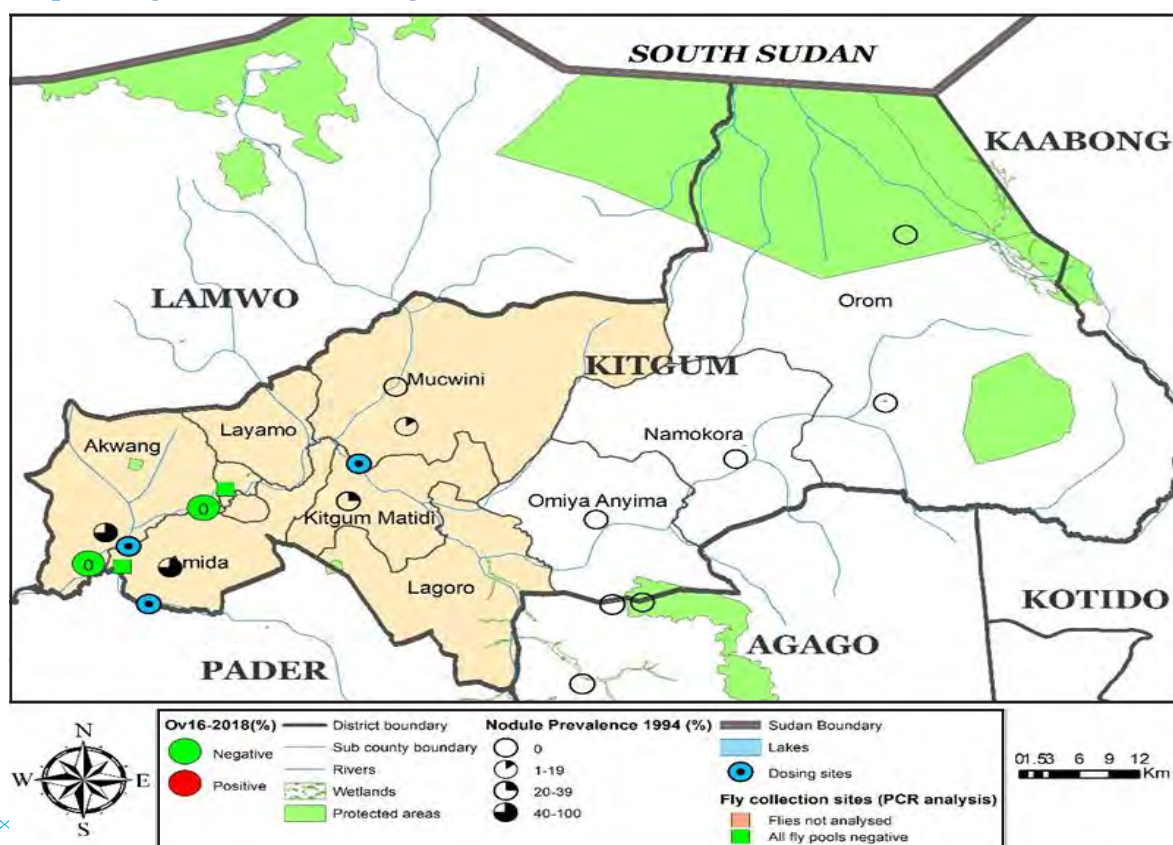
### Results of Ov16 ELISA from Moyo District, 2018

Sub-county	Village	#Children Screened	#Positive (%)	95% CI	#Adults Screened	#Positive (%)	95% CI
Metu	Izzi	69	0(0%)	0-0.053	51	2(3.9%)	0.011-0.132
Metu	Pamulu	119	0(0%)	0-0.031	50	3(6%)	0.021-0.162
Dufile	Ramogi North	135	0(0%)	0-0.028	50	5(10%)	0.043-0.214
Dufile	Ramogi South	115	0(0%)	0-0.032	51	2(3.9%)	0.011-0.132
		<b>438</b>	<b>0(0%)</b>	<b>0-0.009</b>	<b>202</b>	<b>12(5.9%)</b>	<b>0.034-0.101</b>

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.

## KITGUM DISTRICT

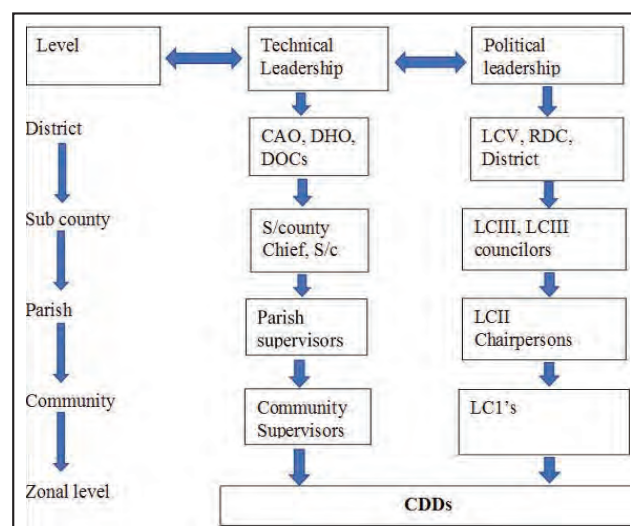
### Map of Kitgum District Showing Oncho Endemic Sub-counties



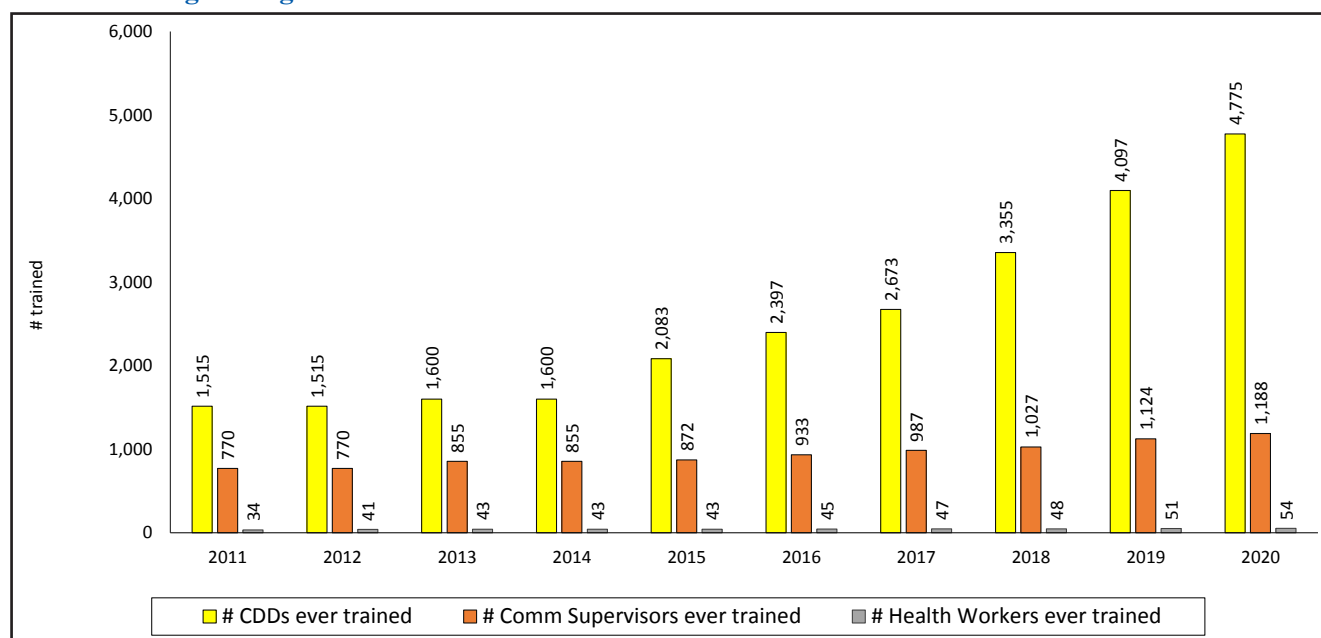
## Introduction

- Kitgum is 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 Southeast, Agago District to the South, Pader District to the Southwest and Lamwo District to the Northwest.
- It has 9 sub-counties and 3 municipal divisions
- Onchocerciasis is endemic in 6 sub-counties and the 3 municipality divisions.
- No refugee settlements are in Kitgum district.
- Pager is the main river with tributaries of Aringa & Lanyadyang flowing to River Aswa .

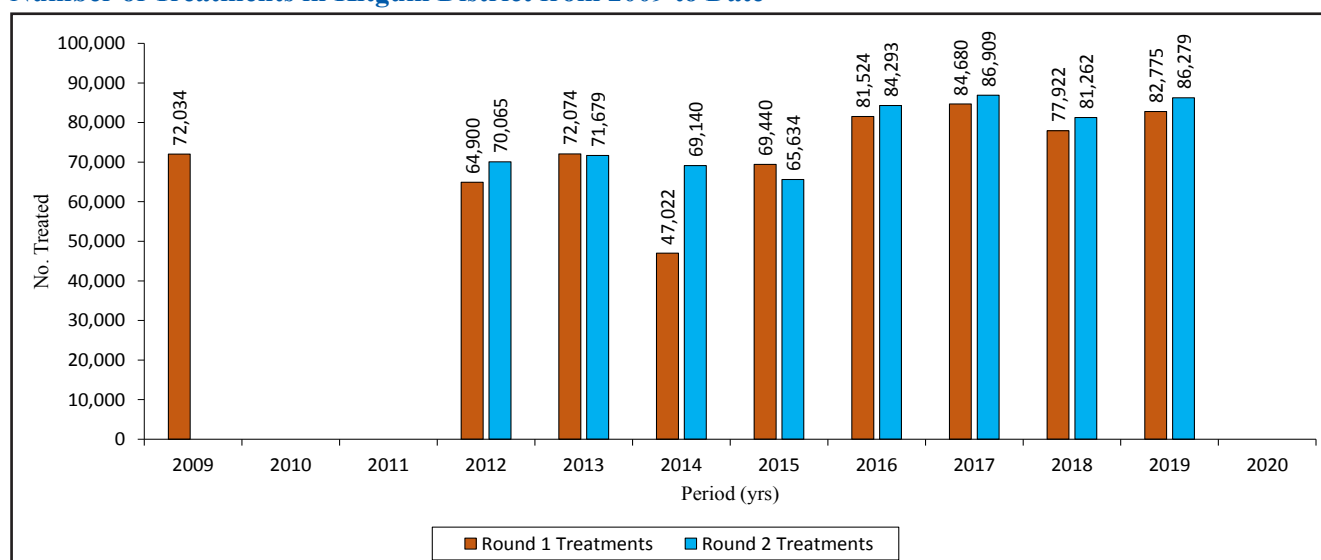
## CDTI Implementation Structure



## CDTI Training in Kitgum District since 2011 to Date



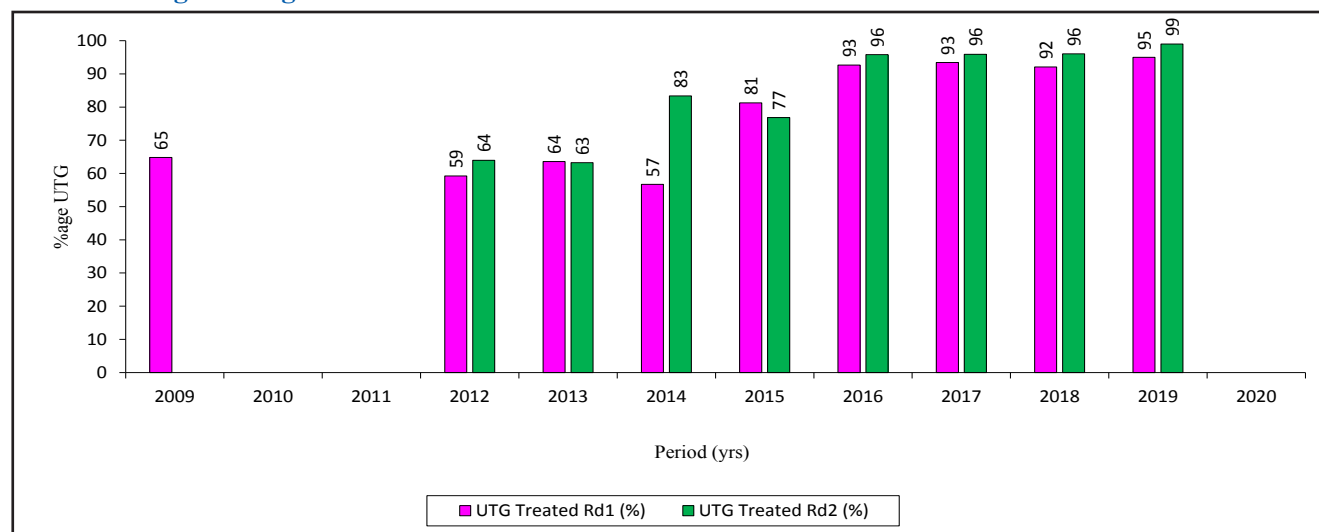
## Number of Treatments in Kitgum District from 2009 to Date



- In 2010 & 2011, treatment was not done because the district had not yet established a proper CDTI system
- MDA for 2020 waiting approval from Act To End East.



## UTG Coverage in Kitgum District from 2009 to Date

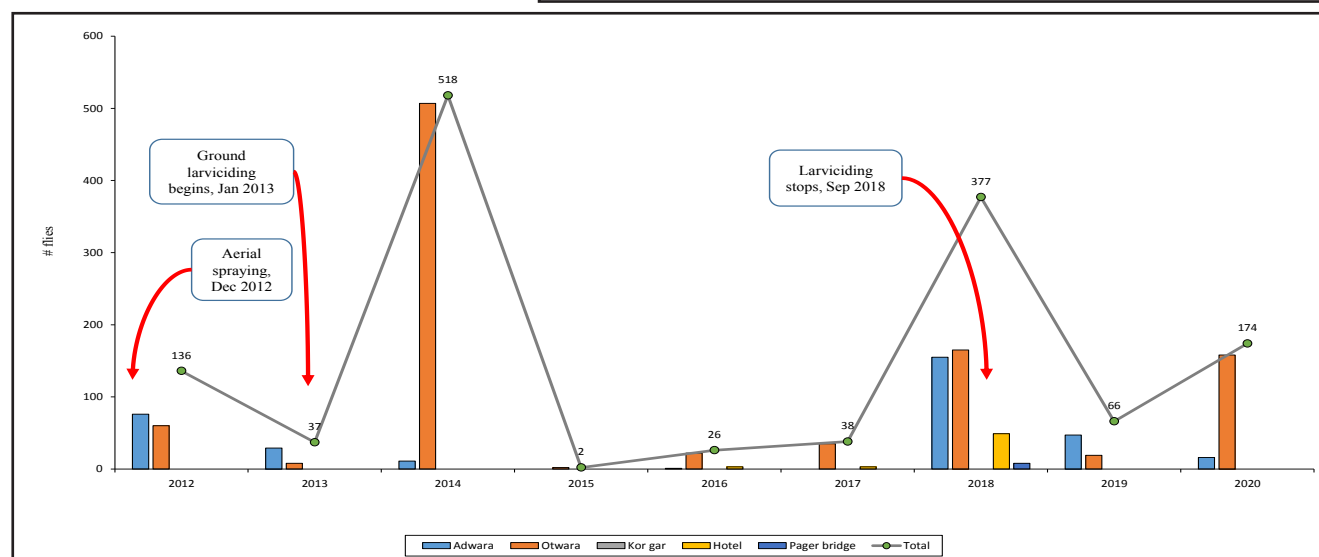
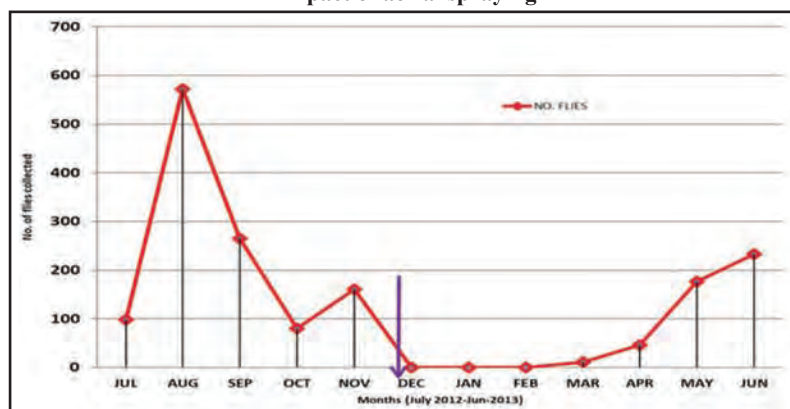


The district has had 8 rounds of effective treatment (>90%) since 2016 to date.

## Entomology

- Vector control started with the launch of aerial spraying in late 2012.
- To sustain the gains made, ground larviciding was launched in 2013.
- Vector monitoring activities are still ongoing at three sites.

### Impact of aerial spraying



## Ov16 Results for 2018 in Sentinel Sites

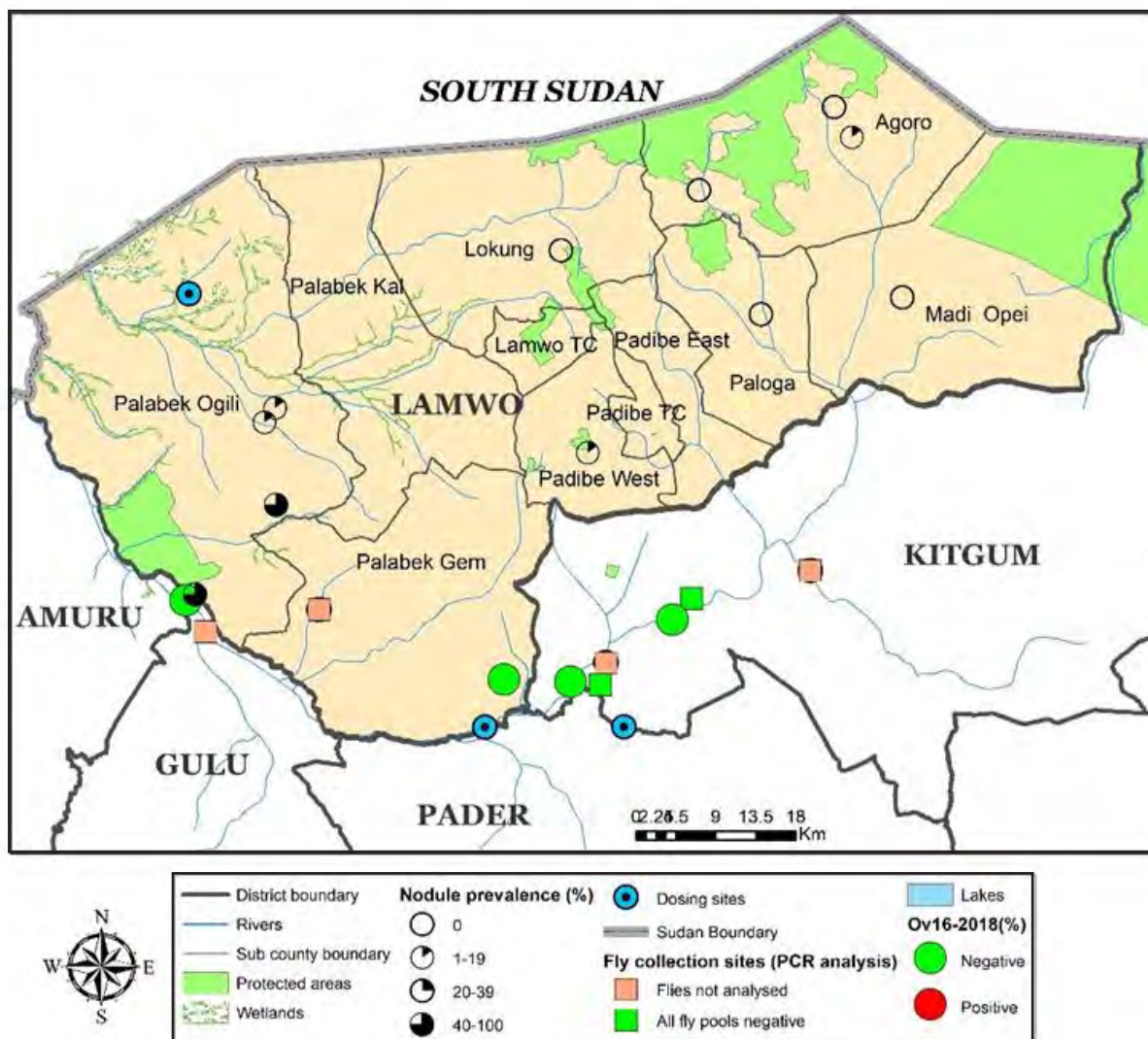
Subcounty	Village	#Children Screened	#Positive (%)	95% CI	#Adults Screened	#Positive (%)	95% CI
Akwang	Bola	71	0(0%)	0-0.051	37	7(18.9%)	0.095-0.342
Akwang	Tumanguu	90	0(0%)	0-0.041	50	8(16%)	0.083-0.285
Akwang	Adyee	76	0(0%)	0-0.048	37	8(21.6%)	0.114-0.372
Akwang	Libia	71	0(0%)	0-0.051	50	4(8%)	0.031-0.188
<b>Total</b>		<b>308</b>	<b>0(0%)</b>	<b>0-0.012</b>	<b>174</b>	<b>27(15.5%)</b>	<b>0.109-0.216</b>

### Simulium Fly PCR, 2014 in Sentinel Sites

Site	River	No. of Flies Collected	No. of Flies Analyzed	Pool Size	No. of Pools	No. of Pools Positive
Adwara	Pager River	12	12	12	1	0
Otwara	Pager River	509	600	200	3	0
		521	612		4	0

### LAMWO DISTRICT

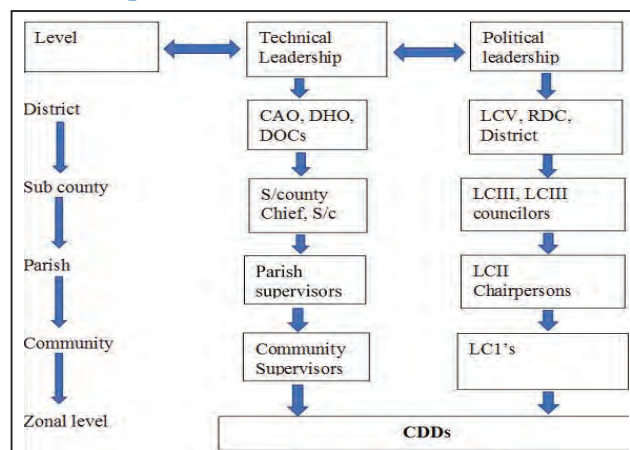
Map of Lamwo District Showing Oncho Endemic Areas



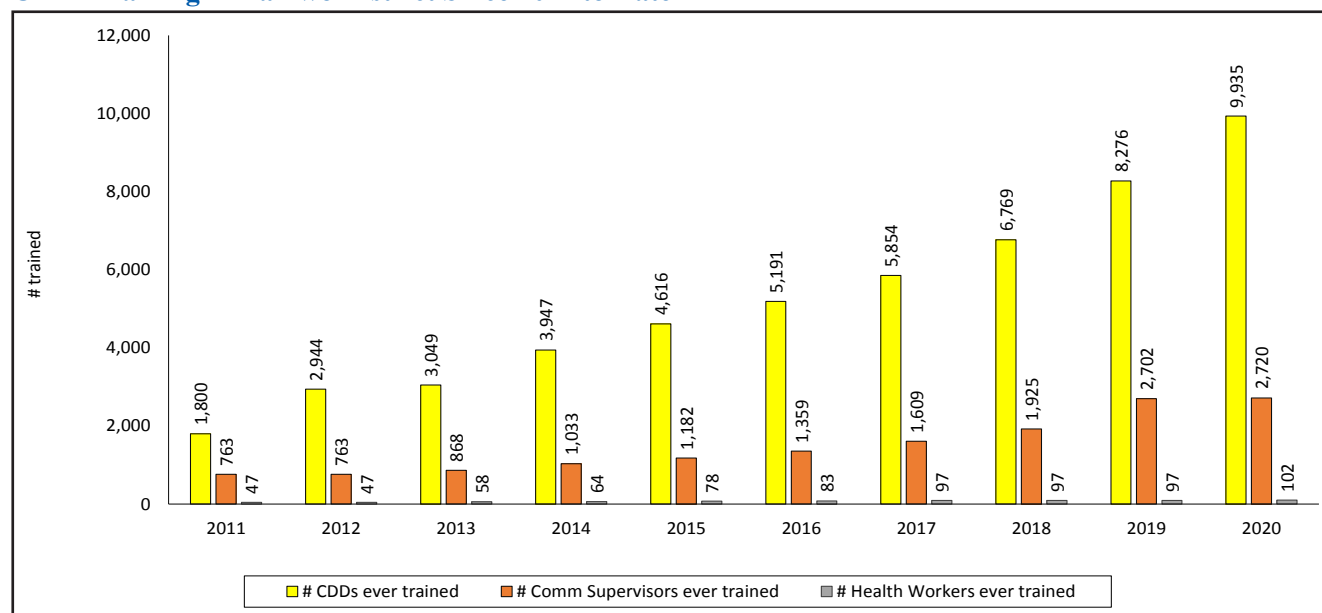
### Introduction

- Lamwo District was carved out of Kitgum District in 2009.
- It is bordered by Magwi county in South Sudan in the North, Kitgum District to the East and Southeast, Pader District to the South, Gulu District to the Southwest, and Amuru District to the West.
- The local population in the district is about 155,404 people.
- The main river systems are Aswa and Pager.

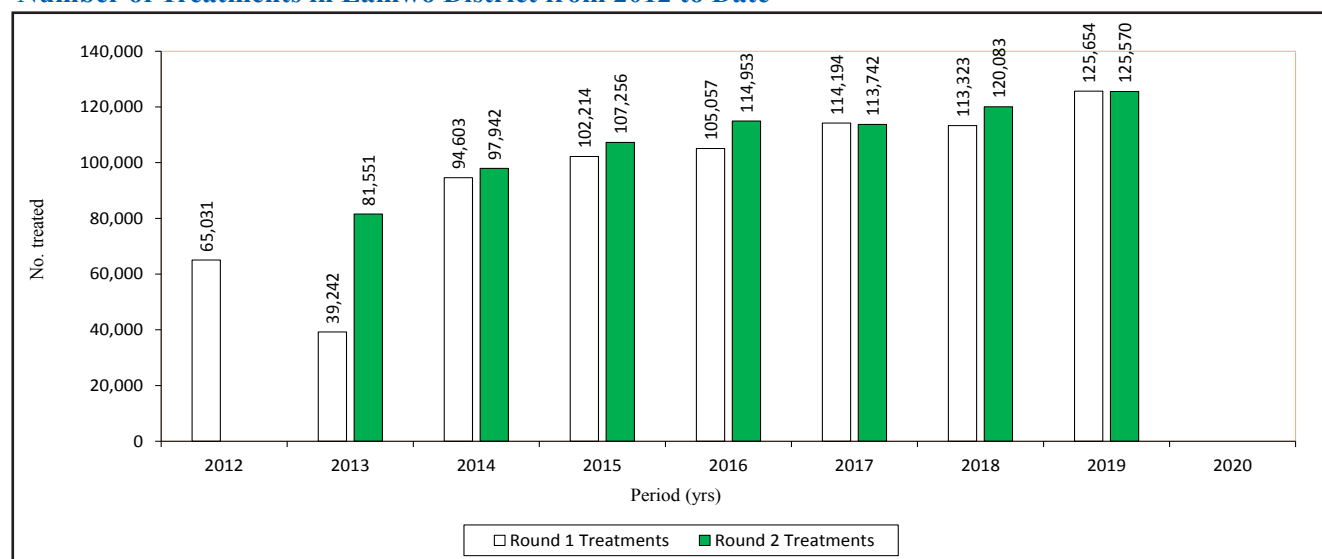
### CDTI Implementation Structure



## CDTI Training in Lamwo District Since 2011 to Date

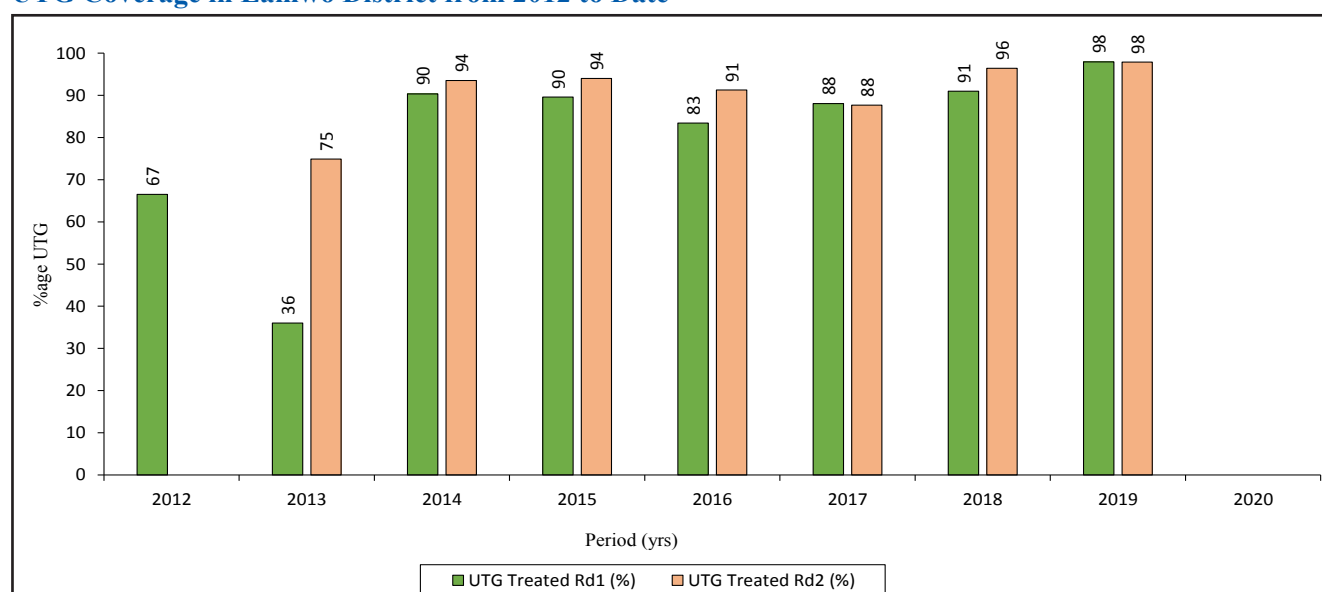


## Number of Treatments in Lamwo District from 2012 to Date



MDA for 2020 waiting approval from Act To End East

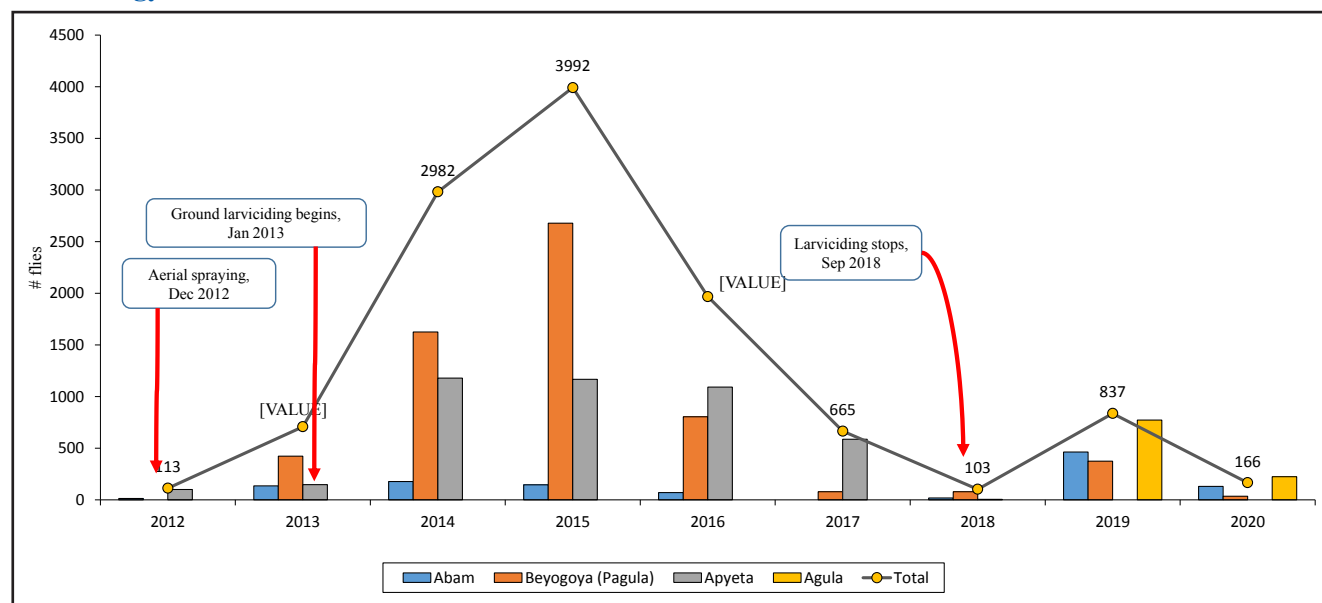
## UTG Coverage in Lamwo District from 2012 to Date



Lamwo District started treatment in 2012 and has had 8 rounds of treatment (>90%) since 2014 to date



## Entomology: Vector Control



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

## OV16 ELISA Results in Sentinel Sites in 2018

Sub county	Village	#Children Screened	#Positive (%)	95% CI	#Adults Screened	#Positive (%)	95% CI
Palabek gem	Abam	68	0(0%)	0-0.053	50	11(22%)	0.127-0.352
Palabek gem	Agwata	48	0(0%)	0-0.074	39	6(15.4%)	0.072-0.297
		116	0(0%)	0-0.032	89	17(19.1%)	0.123-0.285

## Refugee Situation in Lamwo District

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



## Results Of Skin Snip

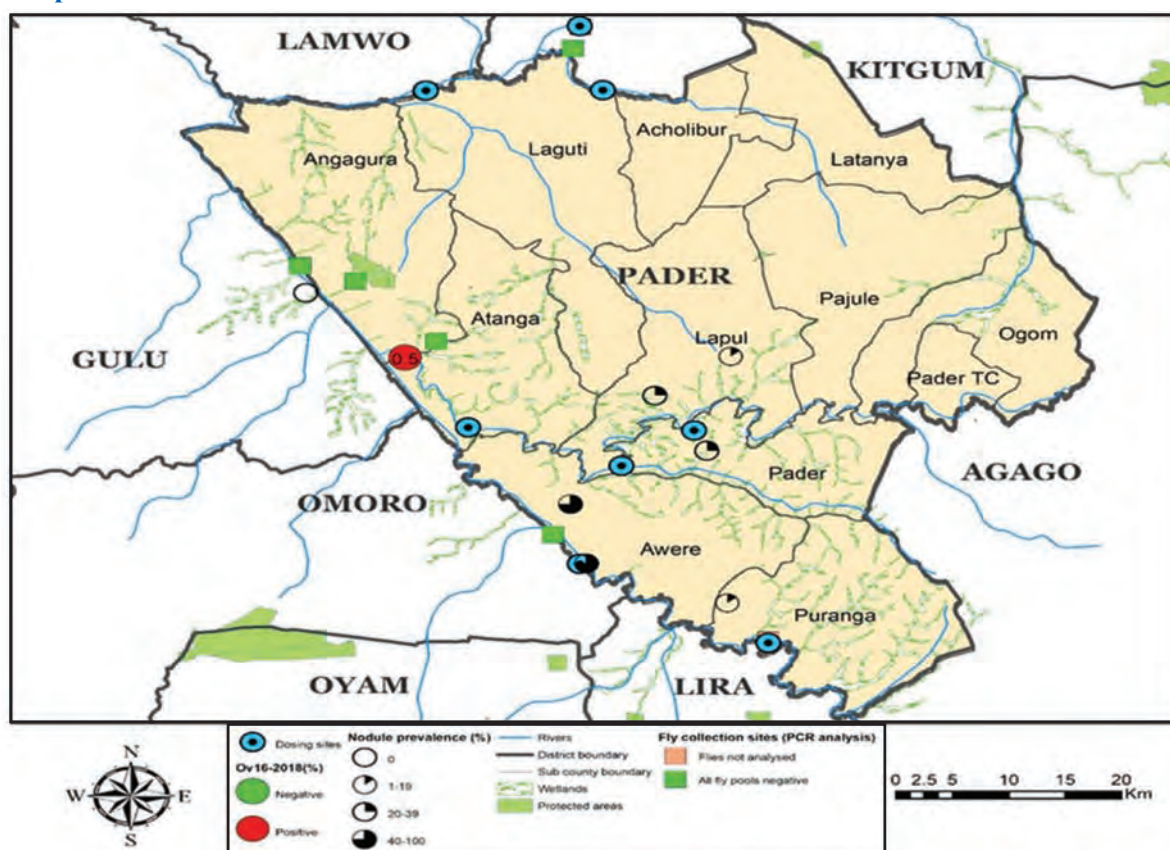
- 733 refugees were skin sniped in Palabek Refugee Settlement camp and the results showed negative in all the samples.

Since I joined the Carter Center nine years ago, I have heard of the pioneering work of the Uganda onchocerciasis elimination effort. So, it gives me great pleasure now to witness first-hand the work of the national program and partners, though I am disappointed not to be gathering face to face.

*Gregory Noland*

## PADER DISTRICT

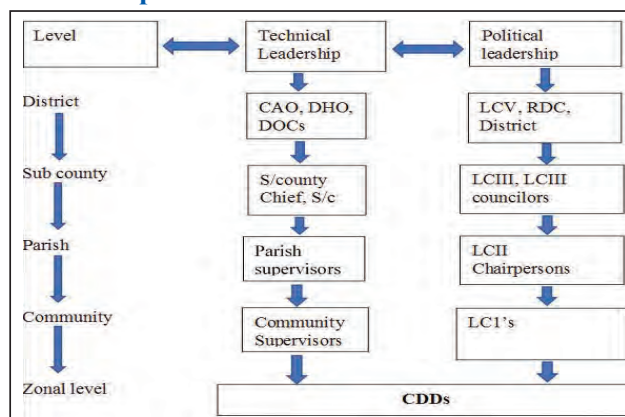
Map of Pader District



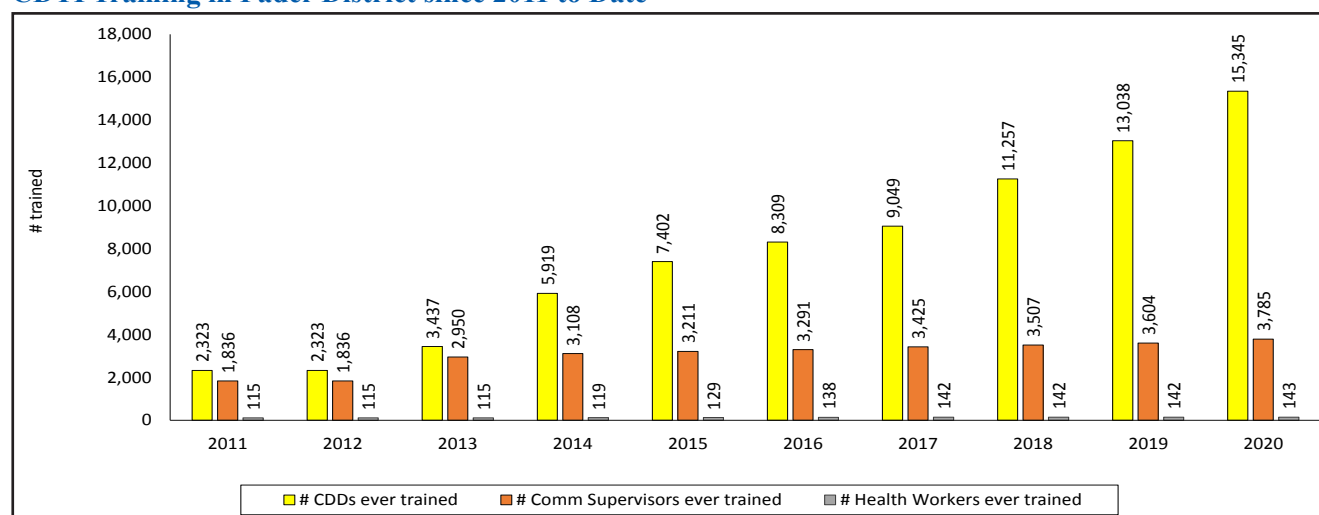
### Introduction

- Was carved out of Kitgum District in 2001.
- Borders: Lamwo to the North-west, Kitgum to the North-east, Agago to the East, Otuke to the South-east, Lira to the South, Oyam to the South-west and Gulu to the West.
- 12 sub-counties are onchocerciasis endemic.
- The main river systems are Aswa and Agago.
- Population is about 206,784.

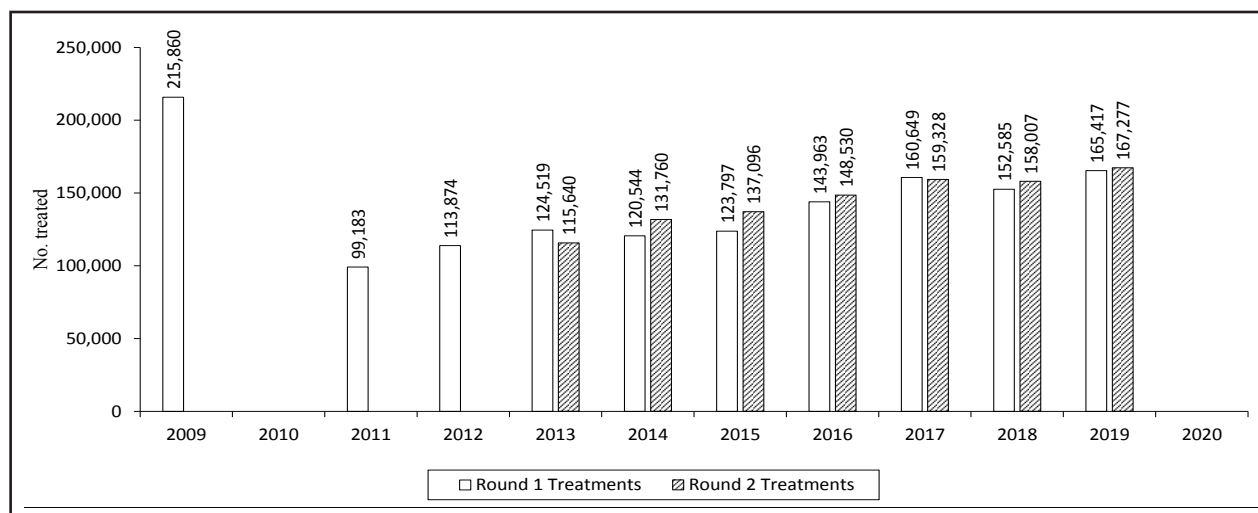
### CDTI Implementation Structure



### CDTI Training in Pader District since 2011 to Date

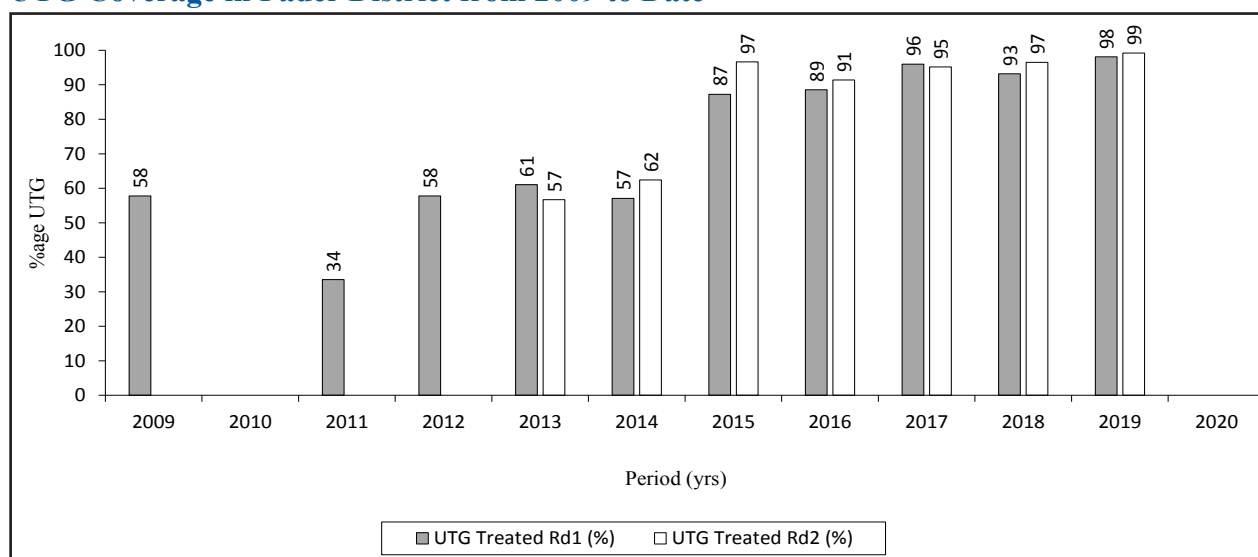


### Number of Treatments in Pader District from 2009 to Date



- Treatment did not take place in 2010 because CDTI structures were not stable in the district.
- MDA for 2020 waiting approval from Act To End East.

### UTG Coverage in Pader District from 2009 to Date



The district has had 8 rounds of treatment (>90%)

### Baseline Nodule Prevalence in Pader District in 2009

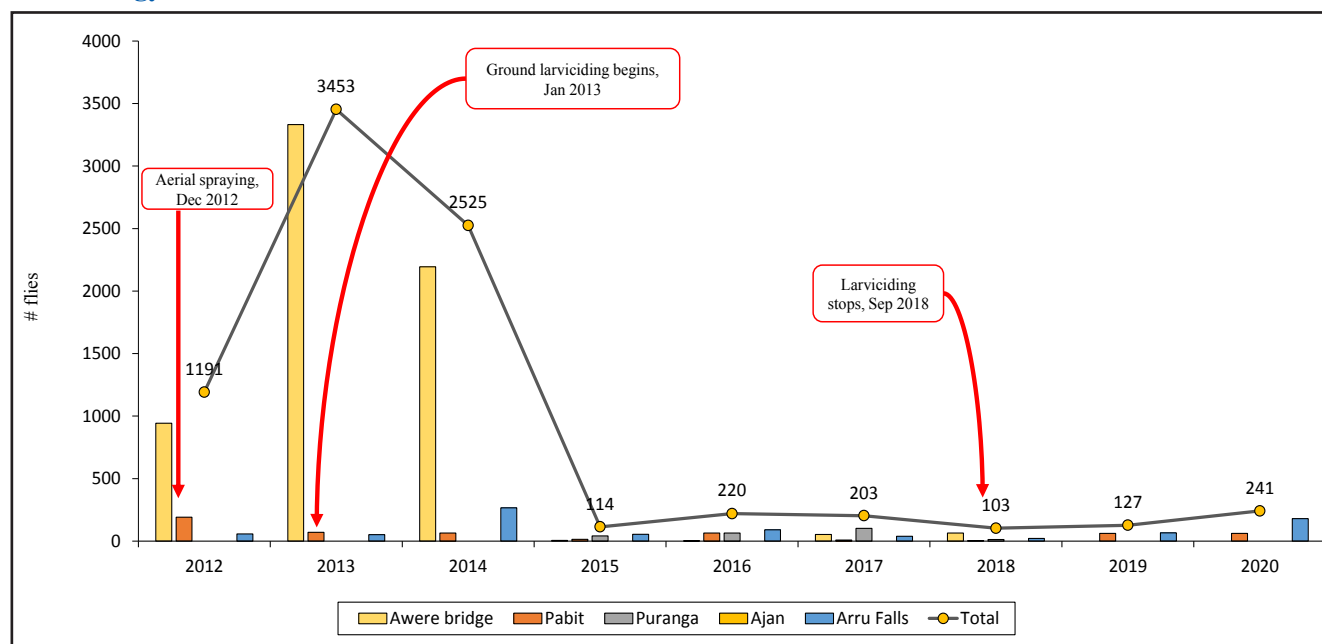
Community Name	Total Number Assessed	Total Analyzed	Total Positive for Nodules	Percent Positive for Nodules
Pece	47	47	0	0
Kabala	50	50	0	0
Obolokome	50	50	0	0
Ojuru	50	50	13	26
Bar Odilo	50	50	4	8
Kalangore	50	50	15	30
Adongkena	50	50	4	8
Angagura	50	50	23	46
Lajeng	50	50	39	78
Wang Opok	37	37	2	5
Porogali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



## Microfilaria Prevalence in 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
	<b>200</b>	<b>200</b>	<b>125</b>	<b>62.5</b>

## Entomology - Vector Control



## Ov16 ELISA Results in Sentinel Sites, 2018

Subcounty	Village	#Children Screened	#Positive (%)	95% CI	#Adults Screened	#Positive (%)	95% CI
Angagura	Lapaya	94	1(1.1%)	0.002-0.058	51	9(17.6%)	0.096-0.303
Angagura	Abilnino	98	0(0%)	0-0.038	51	4(7.8%)	0.031-0.185
		<b>192</b>	<b>1(0.5%)</b>	<b>0.001-0.029</b>	<b>102</b>	<b>13(12.7%)</b>	<b>0.076-0.206</b>

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

## Simulium Fly PCR Results from Sentinel Sites

Year	Site	River	No. of Flies Collected	No. of Flies Analyzed	Pool Size	No. of Pools	No. Pools Positive
NA	Aruu	Aswa River		245	200 & 45	2	0
NA	Awere	Aswa River		187	187	1	0
NA	Pabit	Abuku stream		57	57	1	0
2014	Awere	Aswa River	2194	200	200	1	0
<b>TOTAL</b>			<b>2194</b>	<b>689</b>		<b>05</b>	<b>0</b>

## Summary of PCR Results

Year	No. of Flies Analyzed	No. of Pools	No. Pools Positive
Moyo	15759	80	0
Kitgum	612	4	
Pader	689	11	0
<b>Total</b>	<b>17060</b>	<b>95</b>	<b>0</b>

## Summary of Ov16 Results for the 5 Districts

District	Subcounty	Village	#Children Screened	#Positive (%)	95% CI	#Adults Screened	#Positive (%)	95% CI
Moyo	Metu	Izzi	69	0(0%)	0-0.053	51	2(3.9%)	0.011-0.132
Moyo	Metu	Pamulu	119	0(0%)	0-0.031	50	3(6%)	0.021-0.162
Moyo	Dufile	Ramogi North	135	0(0%)	0-0.028	50	5(10%)	0.043-0.214
Moyo	Dufile	Ramogi South	115	0(0%)	0-0.032	51	2(3.9%)	0.011-0.132
Adjumani	Dzaipi	Mukoloyoro	84	0 (0%)	0-0.04	49	4 (8.2%)	0.032-0.192
Adjumani	Dzaipi	Obu	51	0 (0%)	0-0.07	36	2 (5.6%)	0.015-0.182
Pader	Angagura	Lapaya	94	1(1.1%)	0.002-0.058	51	9(17.6%)	0.096-0.303
Pader	Angagura	Abilnino	98	0(0%)	0-0.038	51	4(7.8%)	0.031-0.185
Kitgum	Akwang	Bola	71	0(0%)	0-0.051	37	7(19.9%)	0.095-0.342
Kitgum	Akwang	Tumanguu	90	0(0%)	0-0.041	50	8(16%)	0.083-0.285
Kitgum	Akwang	Adyee	76	0(0%)	0-0.048	37	8(21.6%)	0.114-0.372
Kitgum	Akwang	Libia	71	0(0%)	0-0.051	50	4(8%)	0.031-0.188
Lamwo	Palabek gem	Abam	68	0(0%)	0-0.053	50	11(22%)	0.127-0.352
Lamwo	Palabek gem	Agwata	48	0(0%)	0-0.074	39	6(15.4%)	0.072-0.297
			<b>1189</b>	<b>1(0.1%)</b>	<b>0-0.005</b>	<b>652</b>	<b>75(11.5%)</b>	<b>0.093-0.142</b>

### 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 to Lamwo & Adjumani thus jeopardizing the elimination process.
- Increasing vector population as a result of halting larviciding where there is refugee influx and free movement of farming population within the focus may lead to recurrence of transmission in this focus.
- Flies invading Moyo from South Sudan can present a challenge to elimination when there are population movements and no vector control in South Sudan.
- Efforts to synchronize Madi mid North MDA activities with those in Kajo Keji and Magwi in the month of April were not achieved.
- COVID-19 delayed MDA implementation this year 2020.

### Conclusions

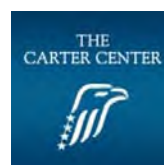
- The number of effective treatment rounds is between 8 and 12.
- Ov16 results from children 5-9 years in sentinel sites of Adjumani, Moyo, Kitgum and Lamwo districts were all negative indicating that transmission may have been interrupted.

- 11.5% of the adults screened by Ov16 from Adjumani, Moyo, Kitgum and Lamwo districts were positive.
- All the flies analyzed by O-150 PCR were negative.
- Vector control rapidly reduced fly population, but after halting of larviciding, there is an increasing trend in the vector population which is likely to jeopardize elimination efforts already achieved.
- Influx of refugees from oncho endemic areas of RSS and the increasing number of vectors in the area are potential risks for supporting *O. volvulus* transmission.

### Way Forward

- Analyze all the DBS and flies pending in the laboratory.
- Continue with semi-annual mass treatment with ivermectin.
- Strengthen cross-border epidemiological surveys and entomological activities between RSS and Uganda and conduct larviciding where possible.
- Ensure high treatment coverage for districts to achieve at least 13 effective rounds by 2022.
- Resume larviciding with Abate where the fly population is increasing.
- Treat the refugees with ivermectin.

## The program would like to thank



Lions Clubs of Uganda, M.O.H. Uganda, River Blindness Foundation, National Onchocerciasis Control Program, District Health Team, My team members, Local governments of Adjumani, Moyo, Kitgum, Lamwo and Pader districts, Focus vector control officers, Entomological assistants and Vector collectors and the General community for the high level of cooperation

As part of its mission to promote health,  
keep the world safe and serve the vulnerable,  
the World Health Organization (WHO) is exploring the potential of mobile phone  
technology to widen its scope in addressing a range of global  
public health issues.

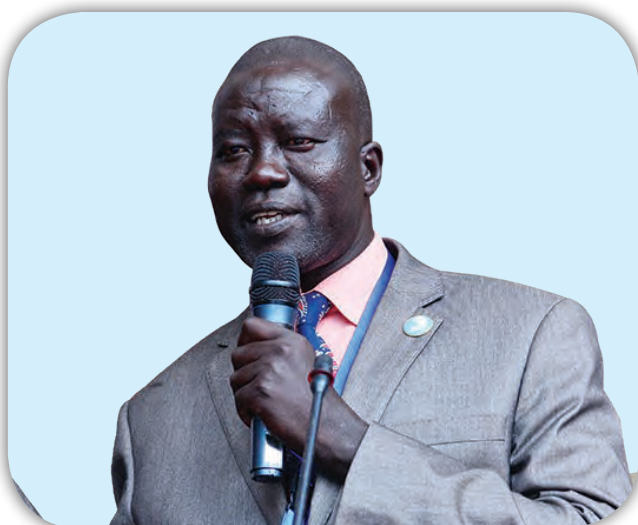
*Yonas T. Woldemariam*

In 2007, Uganda made an ambitious policy shift from  
onchocerciasis control to elimination. With guidance of UOEEAC and  
commitment of the Ministry of Health and partners,  
the country has interrupted transmission of 15 out of the 17 endemic foci.

*Health Minister Jane Ruth Aceng*



## Updates from Magwi & Kajo Keji Counties, RSS



*Samuel Y. Makoy Logora*



**Republic of South Sudan  
Ministry of Health**



### Overview on Cross-border Activities for Onchocerciasis Elimination in South Sudan

**Key Milestones since 15th and 16th May 2018 when a Meeting on Elimination of Cross-border Onchocerciasis Transmission was held between Uganda and RSS at Bomah Hotel, Gulu, Uganda**



#### **I. Advocacy and Planning**

- Adopted the Joint Communique.
- Approved the cross-border plan.
- Approved the facilitation of movement of technical teams and supplies to enhance cross-border activities.



#### **II. Training, River Prospection and OV-16 Testing**

- County and Payam Vector Control Officers, Boma-level fly catchers trained.
- River prospections completed in Kajo Keji and Magwi.
- 4 fly catching sites established on major rivers supporting *S. danmosum* breeding in both Kajo Keji and Magwi.
- OV-16 testing done in Magwi and Kajo Keji.



#### **III. Fly Catching and Joint Supervision (Magwi/Kajo Keji)**

- Entomological activities implemented in Magwi and Kajo Keji.
- Fly catching is conducted weekly (Kajo Keji/Magwi).
- Joint supervision mission to fly catching sites in March 2020.

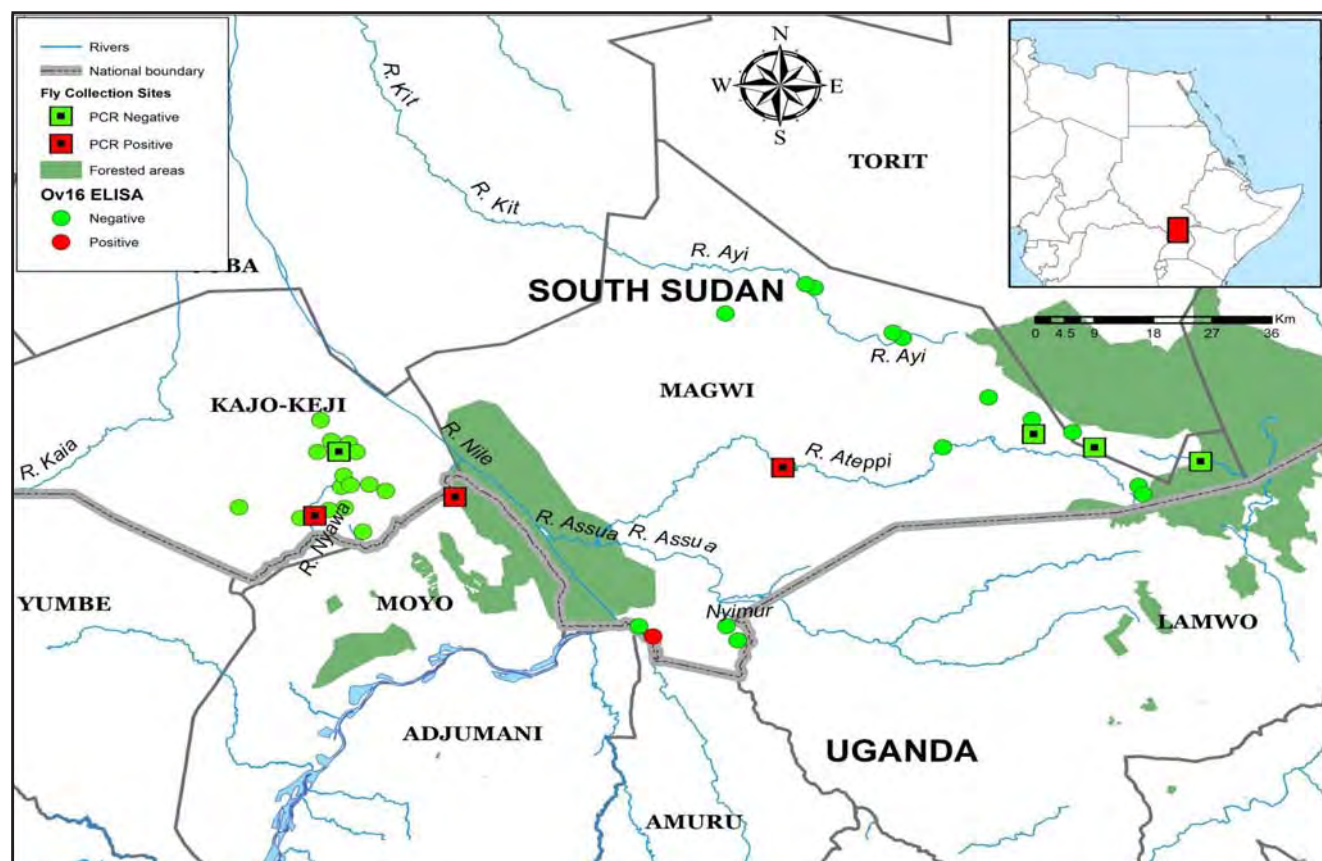


#### **IV. Mass Drug Administration**

- First treatment cycle done in Kajo Keji in March 2020 (before COVID 19 restrictions).
- MDA for Magwi suspended due to COVID 19.
- 2nd MDA treatment cycle in Kajo Keji planned for September 2020 (Upon approval from MDP).

Recommendations of 12th UOEEAC Meeting	Progress made Towards Recommendations
1. Expressed hope for the joint communique on cross-border collaboration between Uganda and RSS to be signed.	- Not done.
2. Expressed support for Uganda's cooperation on developing lab capacity in RSS.	- Ongoing.
3. Assist RSS entomological survey.	- Ongoing.
4. The South Sudan ONCHO/LF Elimination Advisory Committee (SSOLFEAC) to designate the counties bordering Madi-Mid North as Special Intervention Zone and implement twice-a-year treatment with ivermectin.	- Partially done. - The ONCHO program is putting together the necessary documentation to officially request approval for drugs from the MDP.

## Black Fly Catching Sites in Magwi and Kajo Keji

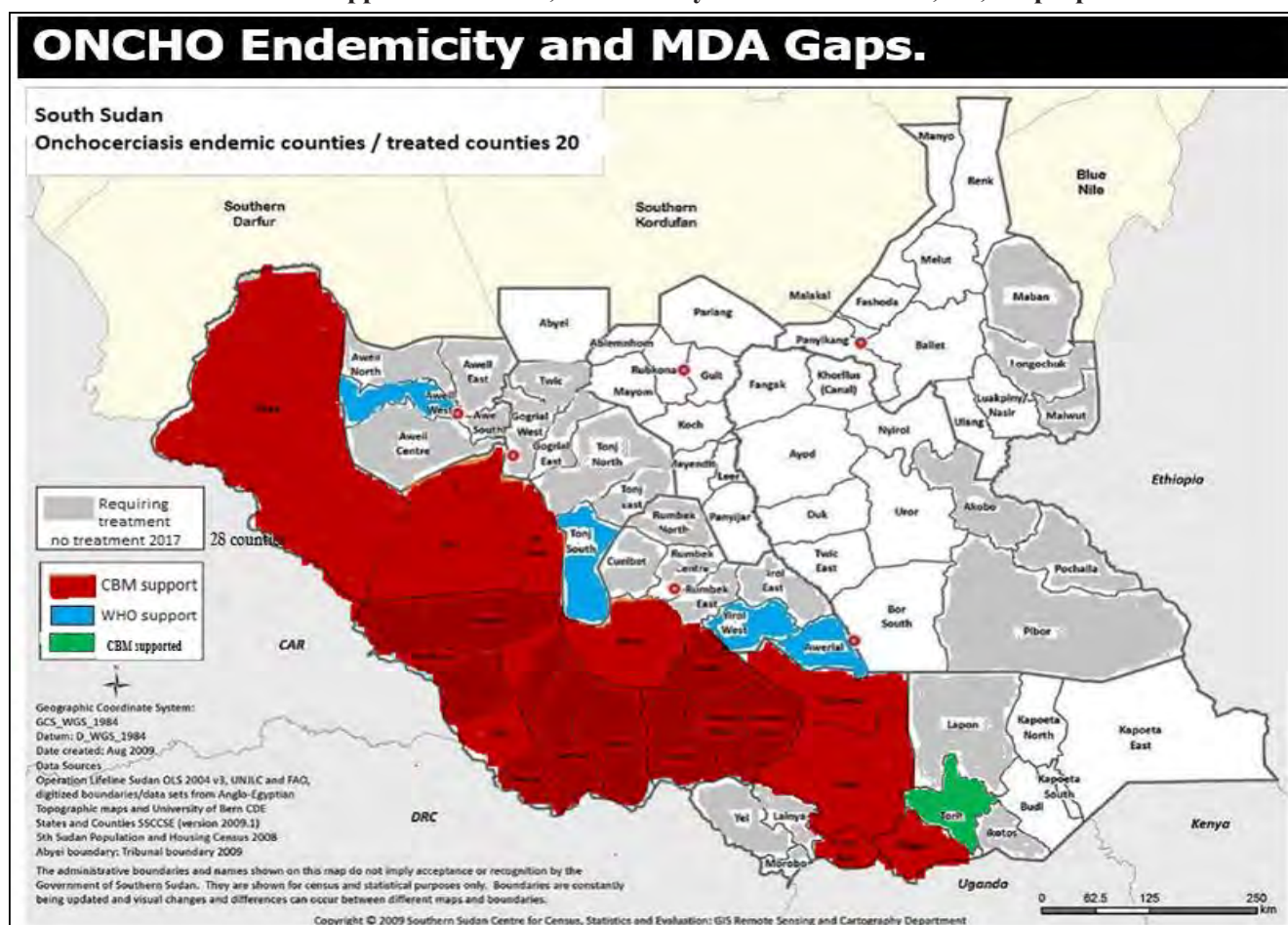


## Summary of Fly Collections and PCR Results

Fly PCR Results for South Sudan					
Focus	Sites of Collection	Year of Collection	Number of Flies	Number of Pools per 100	Number of Positive Pools
Magwi	Ngoo bot bridge	2019	96	1	0
Magwi	Jama palwa bridge	2019	263	3	0
Magwi	Owiny kibul	2019	323	4	1
Magwi	Agata bridge	2020	30	1	0
Sub Total			712	9	1
Kajo Keji	Gbari	2019	322	3	1
Kajo Keji	Gbari	2020	505	8	2
Kajo Keji	Kibo bridge	2019	1,100	11	0
Kajo Keji	Kibo bridge	2020	1,029	10	0
Kajo Keji	Sokare gobur	2019	1,241	13	2
Kajo Keji	Sokare gobur	2020	659	7	0
Kajo Keji	Moiyo	2019	272	3	0
Kajo Keji	Moiyo	2020	141	2	0
Sub Total			5,269	57	5
Total			5,981	66	6

Summary of Fly Collections and PCR Results				
Focus	# Catching Sites	# Flies Submitted to Lab	Analyzed	O-150 PCR Positive Pools
Magwi	4	988	694	1 (Owiny kibul)
Kajo Keji	4	7783	3670	5

**2019 Achievement 1:** with support from CBM, the Ministry of Health treated 1,537,423 people with ivermectin



**Achievement 2:** The Ministry of Health treated 1,537,423 people with ivermectin and albendazole for the control/elimination of onchocerciasis and lymphatic filariasis during the period Oct-Dec 2019 in 17 counties namely: Juba, Terekeka, Wulu, Raja, Jur River, Wau, Ezo, Ibba, Maridi, Mundri East, Mundri West, Mvolo, Nagero, Nzara, Tambura, Yambio and Kajo Keji

County	Population Registered		Number Treated	Therapeutic Coverage	Number of Communities		Geographical Coverage
	Total	≥5			Targeted	Covered	
Juba	608,039	513,793	530,935	87.3	937	937	100
Terekeka	194,814	164,618	154,351	79.2	315	315	100
Kajo Keji	23,838	21,931	21,314	89.4	130	130	100
Wulu	65,338	55,211	54,660	83.7	209	209	100
Raja	33,398	28,221	28,574	85.6	87	87	100
Jur River	114,965	97,145	99,275	86.4	171	171	100
Wau	92,098	77,823	69,937	75.9	92	92	100
Ezo	62,622	52,916	49,029	78.3	533	533	100
Ibba	53,433	45,151	37,551	70.3	271	271	100
Maridi	107,163	90,553	85,349	79.6	427	427	100
Mundri East	40,477	34,203	29,503	72.9	298	298	100
Mundri West	40,871	34,536	30,856	75.5	215	215	100
Mvolo	68,479	57,865	57,607	84.1	350	350	100
Nagero	14,273	12,061	10,800	76.7	73	73	100
Nzara	90,085	76,122	70,862	78.7	461	461	100
Tambura	62,209	52,567	51,710	83.1	404	404	100
Yambio	203,700	172,127	155,469	76.3	977	977	100
<b>Total</b>	<b>1,875,802</b>	<b>1,586,843</b>	<b>1,537,782</b>	<b>82</b>	<b>2559</b>	<b>2559</b>	<b>100</b>



**Achievement 3:** The MoH successfully conducted coverage evaluation surveys in 6 counties sampled from the 17 counties that treated for ONCHO and LF. The general objective pursued by the survey was to validate the reported coverage of the MDA campaigns

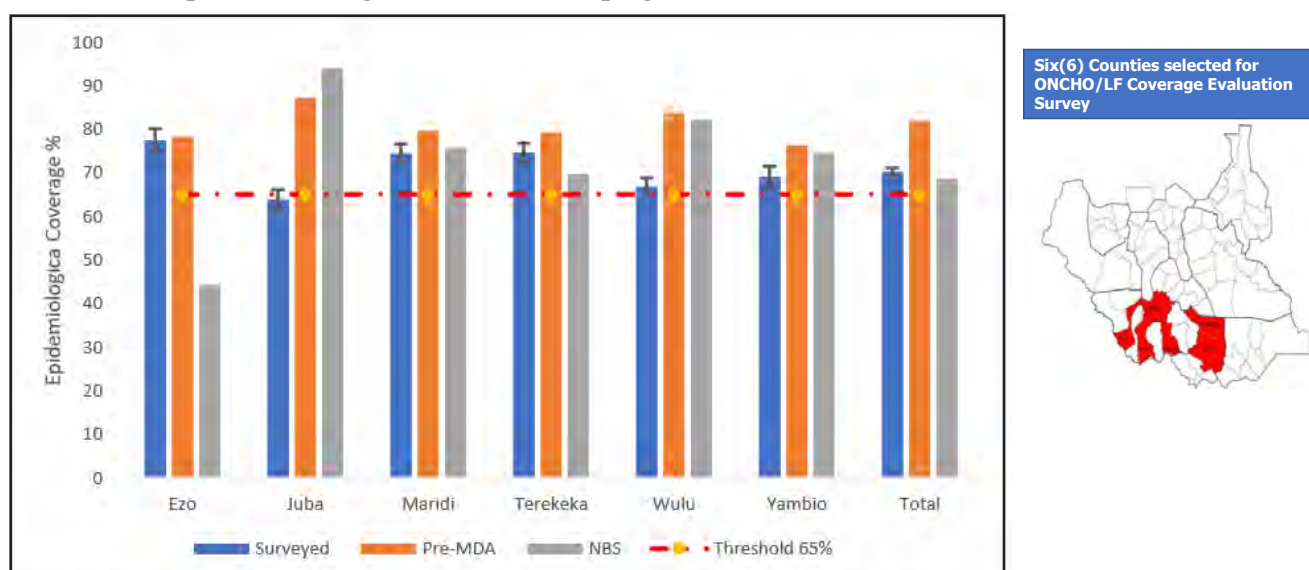


Figure 1; Comparison of epidemiological coverage among Survey, Pre-MDA registration by CDDs and NBS total populations

**Achievement 4:** The South Sudan Onchocerciasis and Lymphatic Filariasis Elimination Advisory Committee (SSOLFEC) successfully conducted two meetings in 2019



Professor Charles D Mackenzie AO

Chairperson, SSOLFEC



Dr John Pasquale Rumuru

Vice Chairperson, SSOLFEC

2nd Meeting of the SSOLFEC (Dec 2019)



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

2<sup>nd</sup>/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 (SSOLFEC)" 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 SSOLFEC had its first committee meeting on the 30th April 2019; the meeting was active and productive where members present, which included three State Ministers 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 is 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

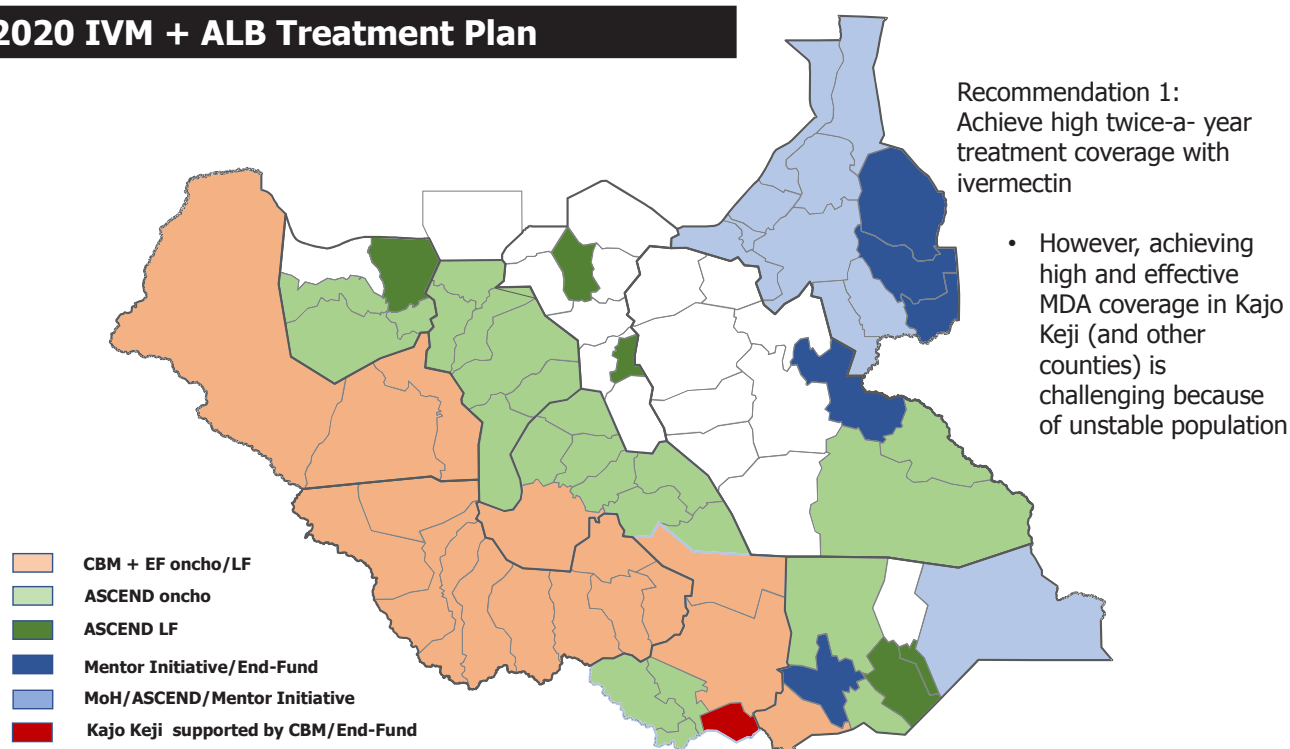
Chairperson, SSOLFEC

Dr John Pasquale Rumuru

Vice Chairperson, SSOLFEC

## Recommendations/Plans for 2020

### 2020 IVM + ALB Treatment Plan



### 2020 Plan for ONCHO/LF in South Sudan

Country	Interventions	Number of Counties Targeted	2020 Strategic Objectives
ONCHO	Mass Drug Administration (MDA)	48 Counties	<ul style="list-style-type: none"> <li>100% coverage of endemic counties with MDAs using ivermectin</li> </ul>
LF	MDA	50 Counties	<ul style="list-style-type: none"> <li>100% coverage of endemic counties with MDA using Albendazole and ivermectin</li> <li>Minimum package of care for lymphedema cases integrated into the PHC system</li> <li>Training of health &amp; community health workers on MMDP</li> <li>Conduct hydrocele surgeries</li> </ul>
	Morbidity Management and Disability Prevention (MMDP)		

#### Recommendation 2: Scale-up of vector control activities in hyper-endemic counties and special intervention zones.

- Due to challenges of achieving consistent high treatment coverage in the hyper-endemic and border counties, the MOH recommends for the onchocerciasis elimination program to be aggressive in implementing appropriate interventions including river dosing with Abate.

- Strengthen joint cross border vector control activities with Uganda using Abate to rapidly stop transmission in Kajo Keji and Magwi.
- Complement river dosing with slashing and clearing of vegetation around Maridi Dam (This is a significant cross-border issue with DRC).



## Slashing & Clearing - Maridi Dam



Community volunteers participating in slashing and clearing of vegetation around the dam

## The MOH – Republic of South Sudan Acknowledges the Unwavering Support from the Following Partners



### Other partners and stakeholders

The committee was pleased to hear of all of the collaborative activities that were conducted between the Ugandan program and the program in RSS. The committee was pleased to hear of the field-based entomological and epidemiological surveys, slash and clear interventions and the assistance provided by the Uganda program in analyzing black fly and serological samples.

*Thomas Unnasch*



## Foci Under Mass Drug Administration, Cont'd

### Delineation of Madi Mid North Focus

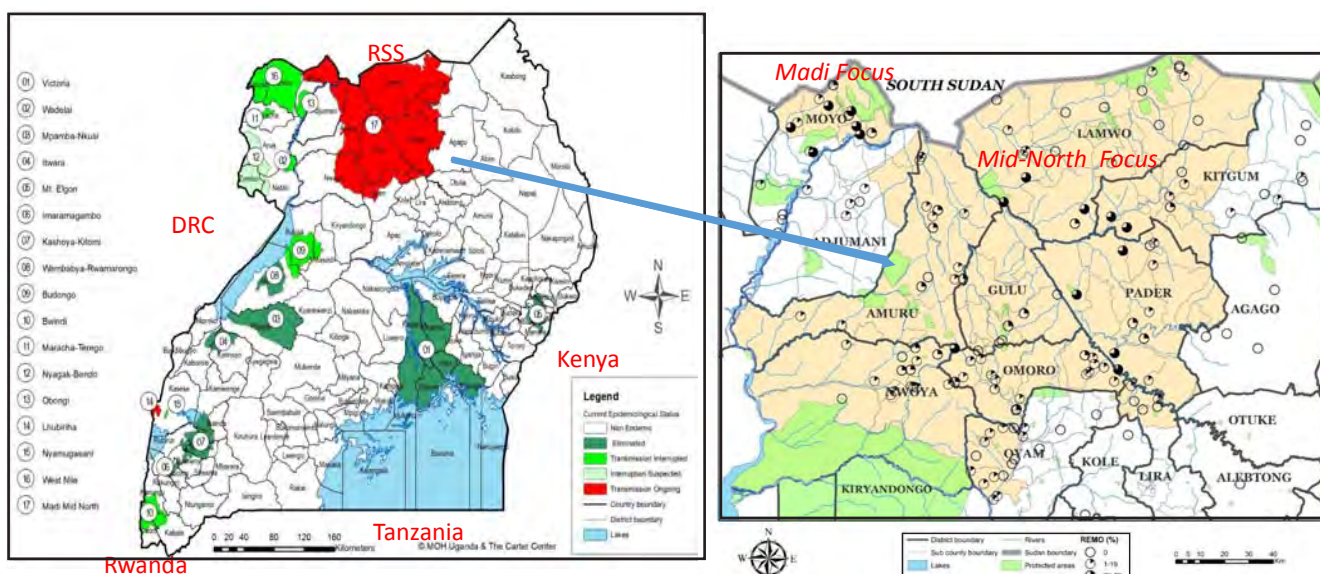


Moses N Katarwa

### Background

- Northern Uganda was a no-go area from 1986 to mid 2013 due to civil conflict.
- Many families were displaced to RSS where onchocerciasis is endemic.
- Onchocerciasis in some parts of RSS is known to be of a blinding strain.
- Northern Uganda has also hosted refugees from RSS since early 1990s.
- Ecological conditions in this region (Madi-Mid North focus) are favorable to *Simulium* vector breeding and therefore *O. volvulus* transmission.
- The focus was assumed to be a cross border phenomenon, cutting from Northern Uganda into RSS.

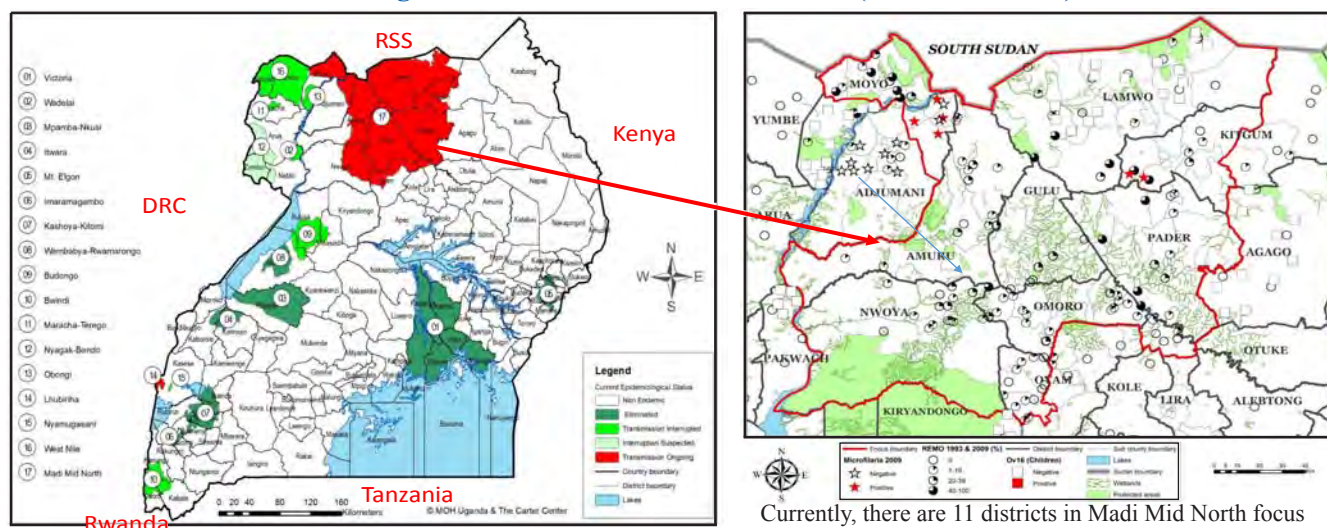
### Maps of Uganda Showing Madi and Mid North Foci before 2014



### UOEEAC, 2014 Recommendation

Madi Focus: The committee concluded based upon current evidence that 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, the mid-North/Madi focus. The classification of the combined focus remains “transmission ongoing” (red)

## Madi and Mid North Foci Merged to Form Madi-Mid North Focus ( UOEEAC 2014)



## The 10th Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC) Meeting (2017)

The committee recommended that both RSS and Uganda intensify cross-border activities in order to accelerate the implementation of onchocerciasis elimination strategies along the border.

The committee recommended that the program initiate collaborative entomological and epidemiological assessments of onchocerciasis transmission in Magwi and Kajo Keji counties, bordering Lamwo district. The committee also recommended that the program work to build capacity in entomological and epidemiological surveillance in the border areas of RSS.

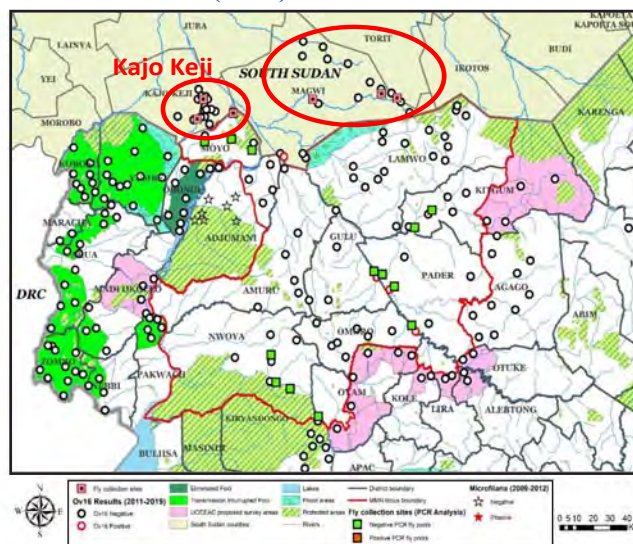
## Magwi, RSS - OV 16 Results: Delineation of Madi-Mid North Focus (2018)

Boma	# Children Screened	# Children Positive	% Positive	95% CI
Agata	121	0	0	0-0.031
Avumadrici	60	0	0	0-0.06
Bura	171	0	0	0-0.022
Katile-Abara	155	0	0	0-0.024
Kicenga	83	0	0	0-0.044
Kilio	157	0	0	0-0.024
Labato	224	0	0	0-0.017
Lagii	81	0	0	0-0.045
Lerwa	95	0	0	0-0.038
Lobone	218	0	0	0-0.017
Loudo	210	0	0	0-0.018
Masindi-Gandzi	40	0	0	0-0.088
Nimule central	570	0	0	0-0.007
Olikwi	351	1	0.28	0-0.011
Owiny-Kibul	383	0	0	0-0.010
Palwar	179	0	0	0-0.021
<b>Total</b>	<b>3098</b>	<b>1</b>	<b>0.03</b>	<b>0-0.002</b>



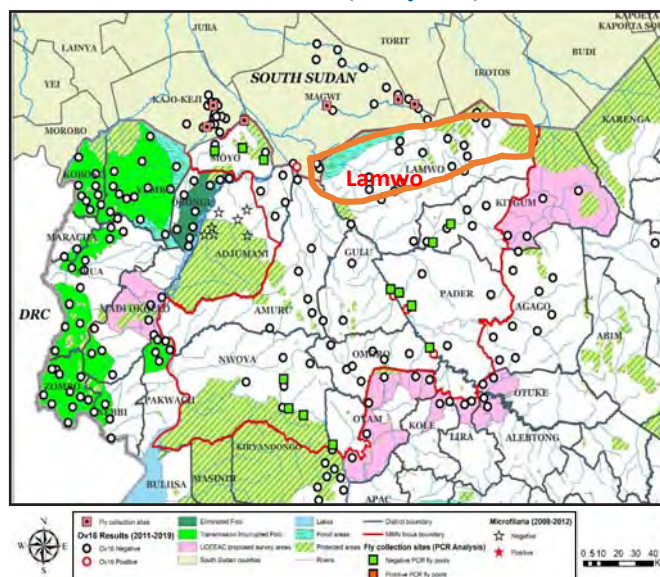
## Kajo Keji, RSS - OV 16 Results: Delineation of Madi-Mid North Focus (2018)

Boma	No. of Children Screened	No. Positive (%)	95% CI
Pamujo	200	0 (0%)	0-0.019
Gborong	84	0 (0%)	0-0.044
Lokojo	161	0 (0%)	0-0.023
Logu	130	0 (0%)	0-0.029
Jalimo	168	0 (0%)	0-0.022
Mondikolok	194	0 (0%)	0-0.019
Limi	64	0 (0%)	0-0.057
Longira	185	0 (0%)	0-0.020
Duwani	126	0 (0%)	0-0.030
Kiri	145	0 (0%)	0-0.026
Bori	130	0 (0%)	0-0.029
Litoba	126	0 (0%)	0-0.030
Leikor	123	0 (0%)	0-0.030
Mere	118	0 (0%)	0-0.032
Lime	126	0 (0%)	0-0.029
<b>Total</b>	<b>2080</b>	<b>0 (0%)</b>	<b>0-0.002</b>





## OV16 Results in Children (<10 years) in Lamwo District, 2018

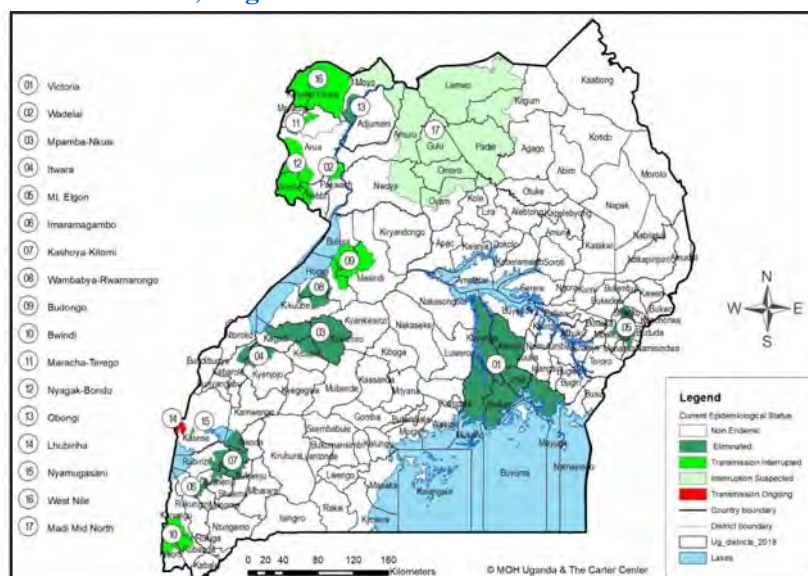


Subcounty	Parish	No. of Children Screened	No. of Children Positive	Percent Positive (95% CI)
Agoro	Lopulingi	114	0	0 (0-0.033)
Agoro	Ngacino	84	0	0 (0-0.044)
Agoro	Pobar	149	0	0 (0-0.025)
Lokung	Licwa	94	0	0 (0-0.039)
Lokung	Parapono	68	0	0 (0-0.054)
Lokung	Pawor	91	0	0 (0-0.041)
Palabek Kal	Lamwo	172	0	0 (0-0.022)
Palabek Kal	Kal	627	0	0 (0-0.006)
Palabek ogili	Lugwar	187	0	0 (0-0.020)
Palabek ogili	Padwat	150	0	0 (0-0.025)
Palabek ogili	Paracelle	114	0	0 (0-0.033)
Paloga	Bungu	202	0	0 (0-0.019)
Paloga	Pawaja	327	0	0 (0-0.012)
Paloga	Paloga	273	0	0 (0-0.014)
Potika	Pawach	117	0	0 (0-0.032)
Potika	Potika	71	0	0 (0-0.051)
		<b>2840</b>	<b>0</b>	<b>0 (0-0.0014)</b>

## Reclassification of Madi-Mid North after The UOEEAC, August 2019

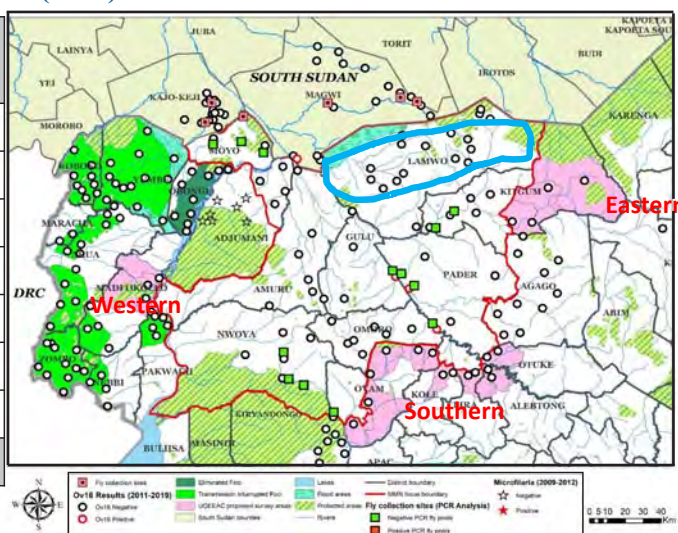
### Recommendation by The UOEEAC August 2019

- 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.



## OV 16 Results: Delineation of Madi Mid North Focus (2018)

Focus Section	District	# Children Screened	# Children Positive	% Positive	95% CI
Eastern	Alelbtong	304	0	0	0-0.013
	Kitgum	599	0	0	0-0.006
Southern	Arua	462	0	0	0-0.008
	Kole	316	0	0	0-0.012
	Lira	316	0	0	0-0.012
	Otuke	309	0	0	0-0.012
	Oyam	846	0	0	0-0.005
	<b>Total</b>	<b>3152</b>	<b>0</b>	<b>0</b>	<b>0-0.001</b>



NB: See the UOEEAC recommendation on the Purple Areas



## Moyo District Entomological and OV 16 Results in Sentinel Sites

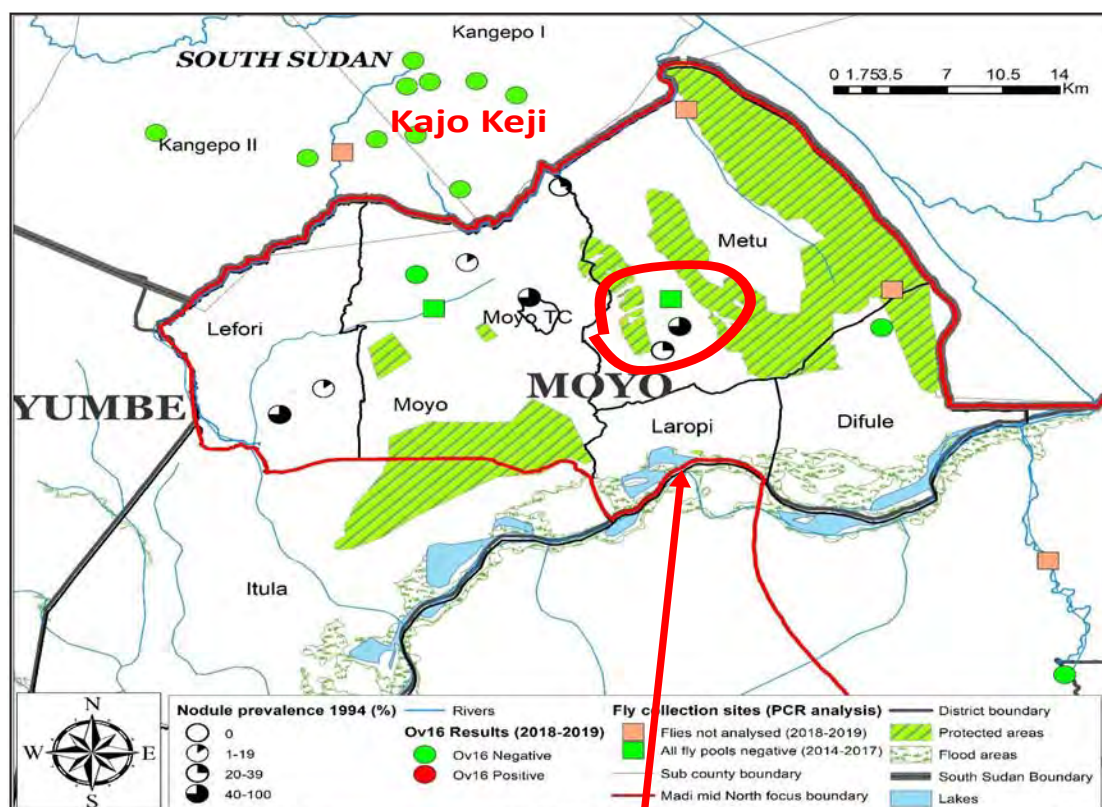
### Fly PCR Results (2014 to 2017)

Year	District	Site	River	No. of flies analysed	Pool size	No. of pools	No. pools positive
2014	MOYO	Gwere Luzira	Amua	1000	200	5	0
2014	MOYO	Pamulu	Oluvo	390	200 & 190	2	0
2015	MOYO	Gwere Luzira	Amua	3200	200	16	0
2015	MOYO	no site	Site not specified	2000	200	10	0
2015	MOYO	no site	Site not specified	672	200 (3 pools) & 72	4	0
2015	MOYO	Pamulu	Oluvo	200	200	1	0
2015	MOYO	Pamulu	Oluvo	6097	200 (30 pools) & 97	31	0
2017	MOYO	Pamulu	Oluvo	800	200	4	0
<b>Total</b>				<b>14359</b>		<b>73</b>	<b>0</b>

### OV16 Results for Kids Under 10 Yrs of Age in Sentinel Sites, 2018

District	Sub County	Parish	Monitoring Site	# Children screened	# Children positive	Percent Positive (95% CI)
Moyo	Metu	Pajakiri	Pamulu	188	0	0 (0-0.025)
Moyo	Dufile	Arra	Ramogi	250	0	0 (0-0.019)
<b>Total</b>				<b>438</b>	<b>0</b>	<b>0 (0-0.011)</b>

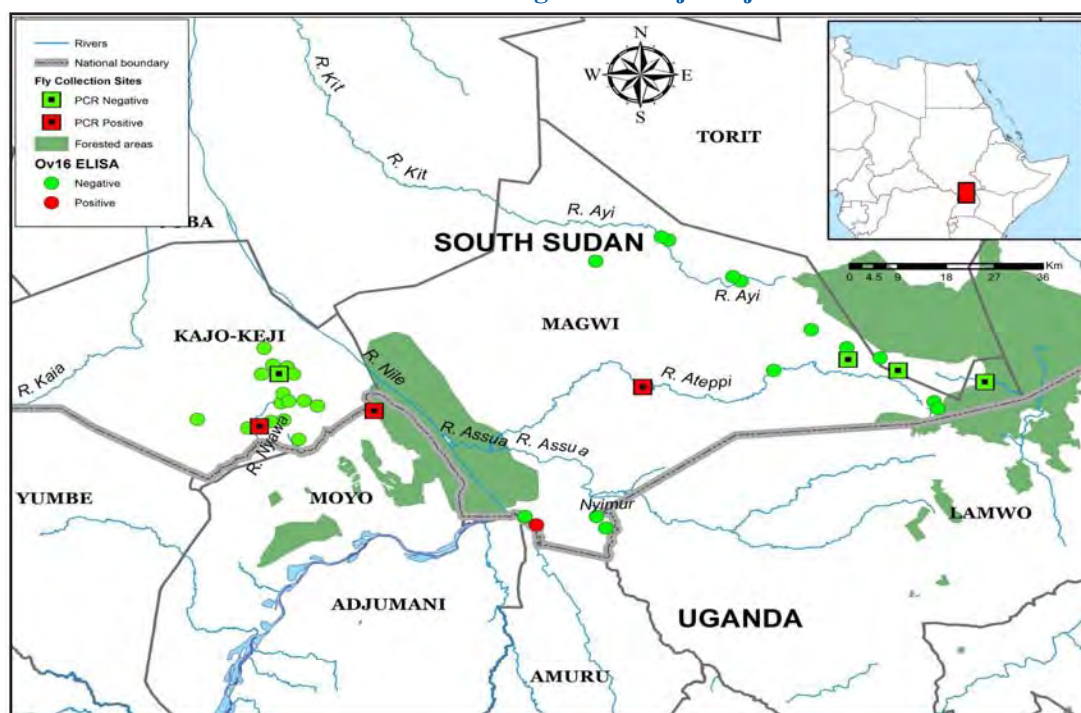
### Kajo Keji Area: A Potential for Cross-border Transmission



### Madi Mid North focus limits

- Metu Onchocerciasis focus does not exist anymore. The river that was breeding *Simulium* vectors disappeared due to poor agricultural practices that caused silting.
  - There are no breeding sites in Moyo District.
  - The *Simulium* flies collected in Moyo District are likely to be from Kajo Keji county of RSS.
- Flies in the laboratory from Kajo Keji analyzed.

## Simulium Flies and DBS Results from Magwi and Kajo Keji Counties of RSS



Map from Logora's presentation above

### Recent Simulium Fly PCR Results (2019-2020)

Focus	Fly Collection Site	Year of Collection	Number of Flies	Number of Pools	Number Positive Pools
Magwi	Ngolo bot bridge	2019	96	1	0
Magwi	Jama palwa bridge	2019	263	3	0
Magwi	Owiny kibul	2019	323	4	1
Magwi	Agata bridge	2020	30	1	0
Sub Total			712	9	1
Kajo Keji	Gbari	2019	322	3	1
Kajo Keji	Gbari	2020	505	8	2
Kajo Keji	Kibo bridge	2019	1,100	11	0
Kajo Keji	Kibo bridge	2020	1,029	10	0
Kajo Keji	Sokare gobur	2019	1,241	13	2
Kajo Keji	Sokare gobur	2020	659	7	0
Kajo Keji	Moiyo	2019	272	3	0
Kajo Keji	Moiyo	2020	141	2	0
Sub Total			5,269	57	5
Total			5,981	66	6

### Conclusion

- Ov 16 results from children in Kajo Keji and Magwi border counties of RSS are negative.
- There are positive *Simulium* fly PCR results in Magwi (1 pool) and Kajo Keji (5 pools).

- Fly PCR and Ov16 results from Moyo District were negative.
- There is potential transmission of *O. volvulus* from RSS.
- Security has been an issue in Kajo Keji and there is need to reconsider our approach for onchocerciasis elimination in Kajo Keji and Magwi counties.

### Appreciation

- Affected communities of Uganda
- Ministry of Health Uganda - all levels
- The Carter Center Atlanta
- Sightsavers

The program would like to thank



Lions Clubs of Uganda  
And our many generous individual donors



## Lhubiriha Focus



**Abraham K. Muhesi**

### Recommendations made by 12th UOEEAC August 2019 Meeting

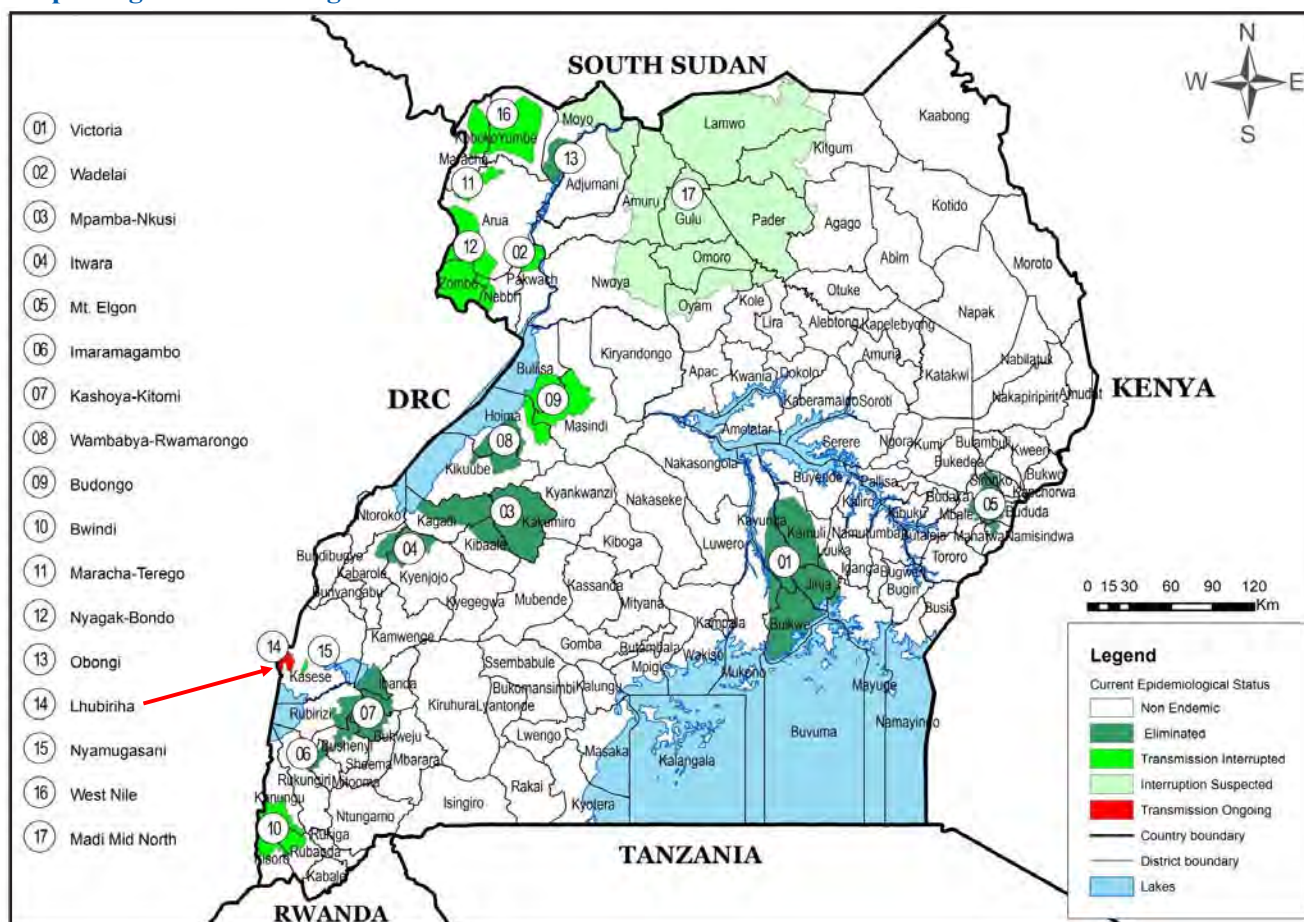
‘Cross-border activities recommended by the committee in 2018 were unable to be completed due to the Ebola epidemic...occurring in the neighboring areas of DRC. As a result, the committee recommended that this focus remain classified as

“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.’

### Background Information of Lhubiriha Focus

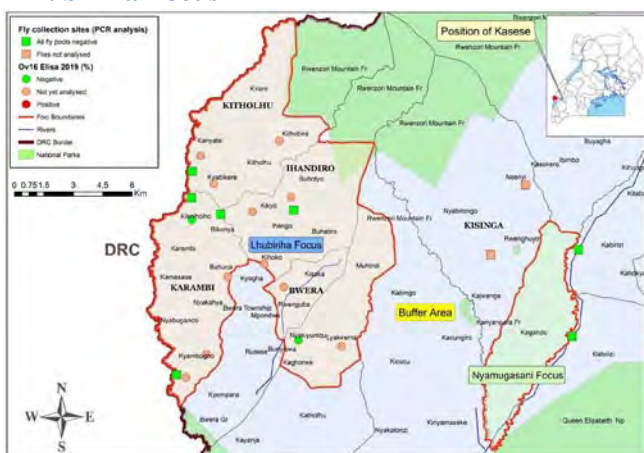
- Located in Kasese District and borders DRC.
- Has 134 villages with a total population of 140,659 people.
- Annual ivermectin treatment started in 1993.
- Bi-annual treatment with ivermectin commenced in 2014.
- The focus has 2 main rivers (Thako & Lhubiriha) with their tributaries.
- The known Oncho vector is *S. kilibanum*.
- This is a cross border focus.

### Map of Uganda Indicating Lhubiriha Focus





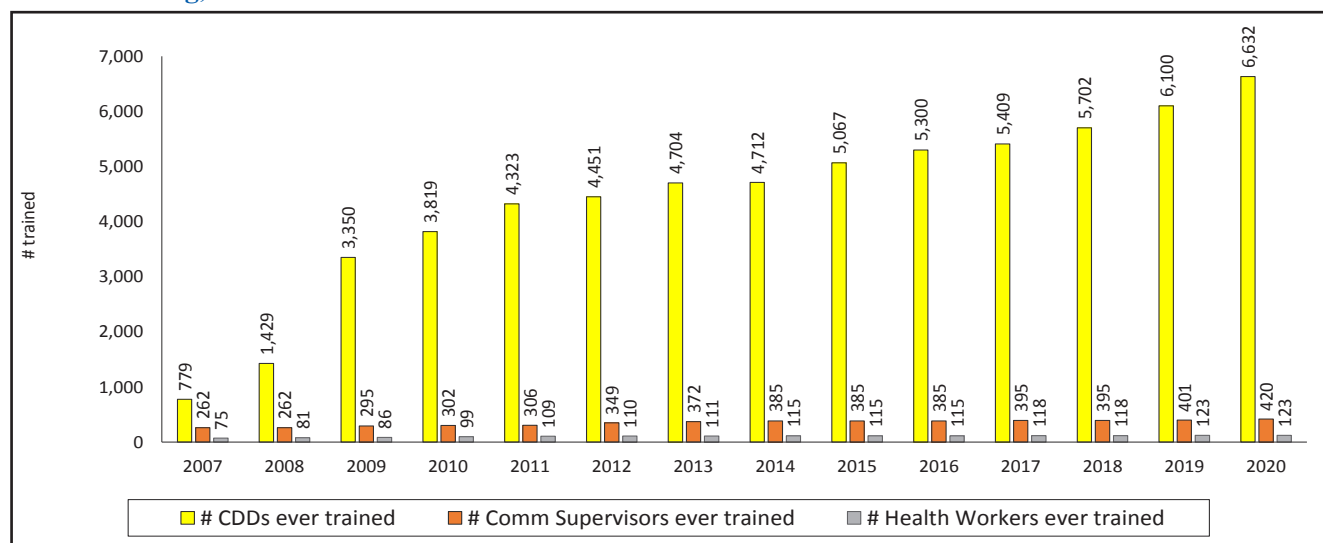
## Lhubiriha Focus



## Implemented Activities

- Community directed treatment with ivermectin implemented twice a year since 2014.
- Larviciding was done in this focus from 2014 to 2019.
- Training, health education and update of registers were done from January to March, 2020.
- Last treatment was done in September 2019. Treatment for April 2020 was delayed due to COVID-19.

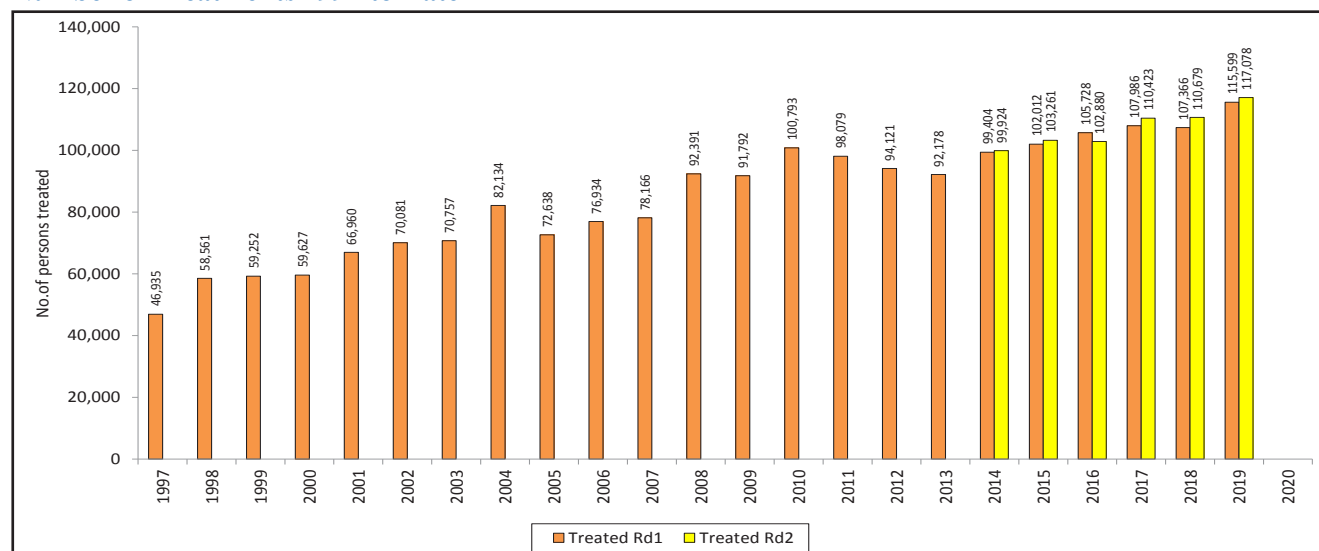
## CDTI Training, 2007 to Date



## Training of Parish and Community Supervisors - Sample Scenes

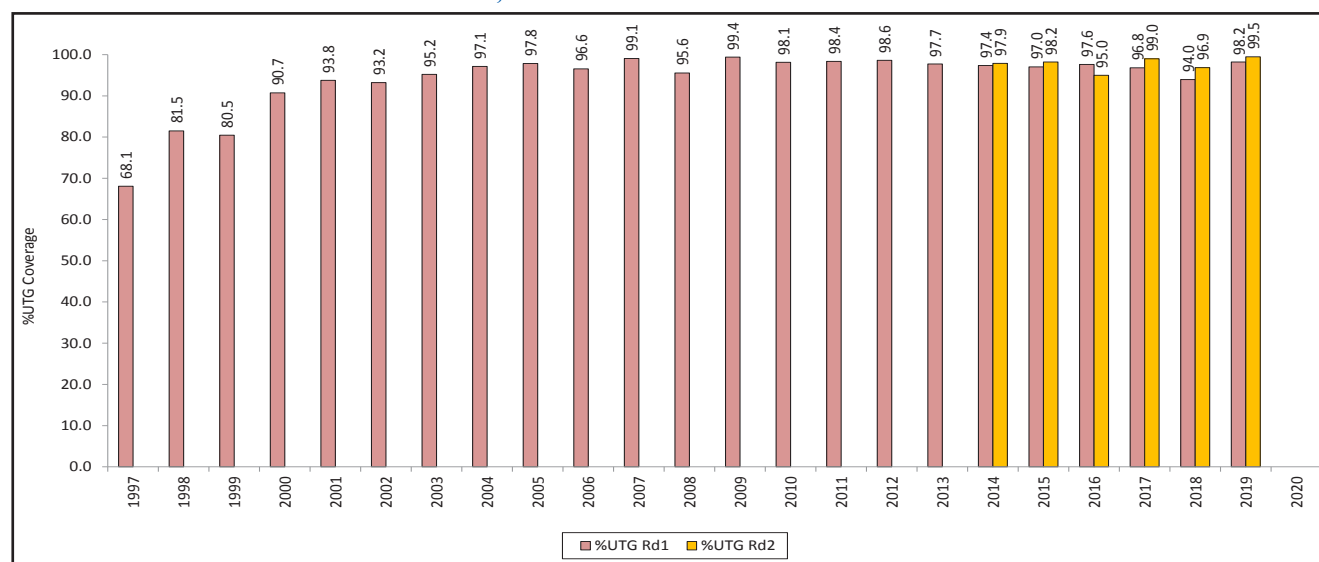


## Number of Treatments 1997 to Date



MDA for 2020 waiting approval from Act To End East

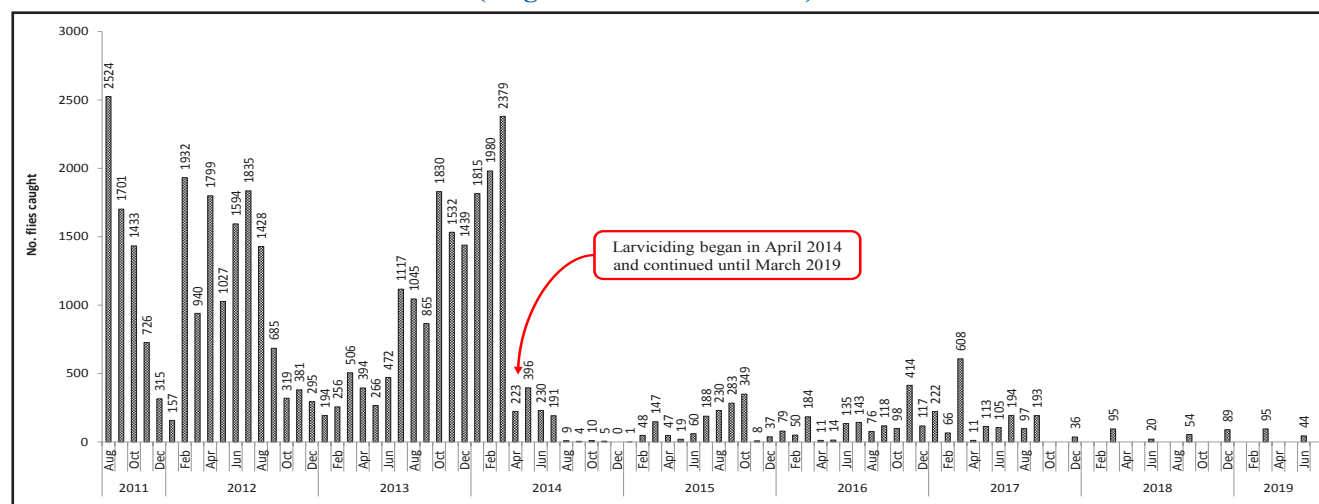
## % Treated of UTG in Lhubiriha Focus, 1997 to Date



## Entomological Activities

### Fly collection, River Dosing and other Vector Activities

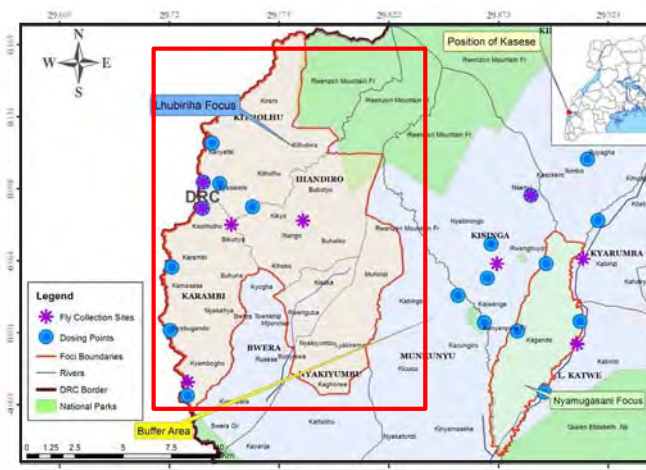
#### *S. kilibanum* Collection in Lhubiriha (August 2011 to June 2019)



- In spite of the larviciding work done, there are still flies being collected
- This may be an indication that there are flies across the border in DRC, from where they come into Uganda



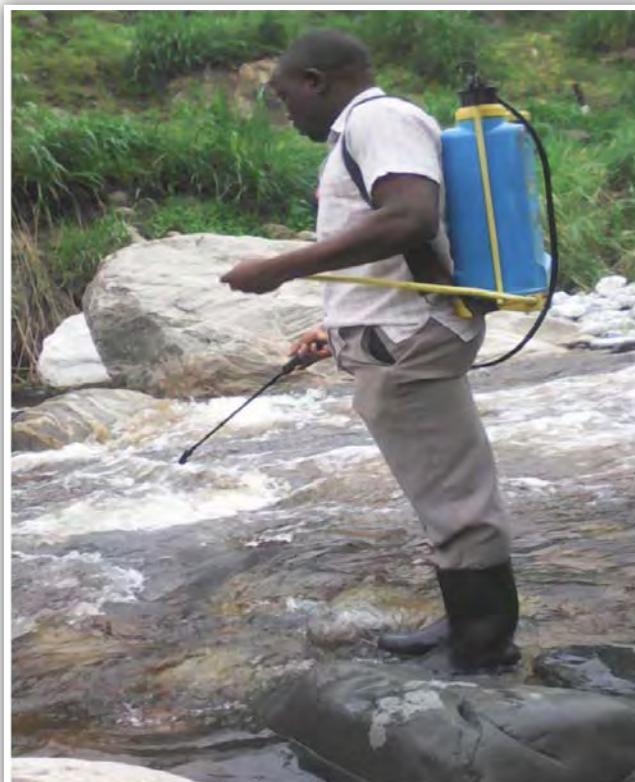
## Larviciding Points and Fly Collection Sites in Lhubiriha Focus



## Map Showing DRC Health Zones Neighboring Lhubiriha Focus



Looking at the river network on the DRC side, the team recommends that entomological activities be done in DRC (Mutwanga) to control vectors in Lhubiriha focus



Technical team gauging a river and applying a chemical during ground larviciding

Public health services including NTD planned activities were disrupted among other socio-economic activities due to the pandemic and the consequent lockdown, which was part of the initial response. WHO has since responded to Member States' request through issuance of relevant guidelines; information sharing and capacity building through virtual interaction and advocacy to maintain essential health services including commodity management in the 'new normal' environment.

*Yonas Woldemariam*



## Fly PCR Analysis Results from Lhubiriha Focus

Year	River	Site	No. of Flies Analyzed	pool size	No. of Pools	No. of 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
<b>Sub Total</b>			<b>665</b>		<b>7</b>	<b>0</b>
2015	Lhubiriha-Tako	Kisolholho	85	85	1	0
<b>Sub Total</b>			<b>85</b>		<b>1</b>	<b>0</b>
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
<b>Sub Total</b>			<b>495</b>		<b>5</b>	<b>0</b>
2017	Lhubiriha	Isango	240	200 & 40	2	0
	Lhubiriha-Tako	Kisolholho	937	200 (4 pools) & 137	5	0
	Lhubiriha-Tako	Kisolholho	241	100 (2 pools) & 41	3	0
	Muruseghe	Ihango bridge	25	25	1	0
	Thako	Kathembo	120	120	1	0
<b>Sub Total</b>			<b>1563</b>		<b>12</b>	<b>0</b>
2018	Lhubiriha	Isango	25	25	1	0
	Muruseghe	Ihango bridge	2	2	1	0
	Thako	Kathembo	75	75	1	0
	Lhubiriha	Isango	203	200 & 3	2	0
	Lhubiriha-Tako	Kisolholho	207	200 & 7	2	0
<b>Sub Total</b>			<b>512</b>		<b>7</b>	<b>0</b>
2019	Lhubiriha	Isango	17	17	1	0
	Lhubiriha-Tako	Kisolholho	100	100	1	0
<b>Sub Total</b>			<b>117</b>		<b>2</b>	<b>0</b>
<b>TOTAL</b>			<b>3437</b>		<b>34</b>	<b>0</b>

## Ov16 Results from Lhubiriha Focus, Feb 2019

Subcounty	Parish	# Sampled	# Screened	# Analyzed	# Positive	% Positive
Bwera	Kisaka	353	309	300	0	0
Ihandiro	Bubotyo	87	120	118	0	0
Ihandiro	Kihoko	150	196	194	0	0
Ihandiro	Kikyo	184	240	0	0	NA
Karambi Lower	Kamukumbi	53	70	67	0	0
Karambi Lower	Kayembe	69	70	68	1	1.47
Karambi Lower	Nyabugando	437	320	32	0	0
Karambi Upper	Buhuna	507	330	7	0	0
Karambi Upper	Kisolholho	356	361	255	0	0
Kitholhu	Kanyatsi	316	157	157	0	0
Kitholhu	Kithobira	37	58	57	0	0
Kitholhu	Kyabikere	300	271	250	0	0
Nyakiyumbu	Lyakirema	432	400	392	1	0.26
Nyakiyumbu	Nyakiyumbu	219	200	199	1	0.50
		<b>3500</b>	<b>3102</b>	<b>2096</b>	<b>3</b>	<b>0.14</b>

There is a backlog of 1006 samples not yet analyzed.

### Challenges

- Transmission status across the border in DRC is unknown.
- Cross border activities in DRC could not begin due to Ebola outbreak. However, the area has been declared free from that disease.
- Coronavirus pandemic is now the challenge. How the two sister countries will collaborate on Oncho elimination during this period is now a hot question.
- Whether MDA is ongoing in the DRC side is another.

### Way Forward

- Complete PCR and OV16 analysis.
- Continue semi annual treatment.
- Cross border interventions should begin when feasible.

- The focus should keep the “transmission ongoing” status pending completion of OV16 and follow up of the positive children.

The program would like to thank



Lions Clubs of Uganda, M.O.H. Uganda, River Blindness Foundation, The Carter Center, John Moores Foundation, Kasese District Local Government Leadership, Members in endemic communities of Kasese District, Focus vector control officers, Entomological assistants and Vector collectors and general community for the high level of cooperation

## Annex One: Inaugural Addresses

### Thomas Unnasch

I would like to thank all of you for coming to the 13th meeting of the Uganda Onchocerciasis Elimination Expert Advisory Committee. I joined this committee in 2008; at that time there were foci in Uganda where we still did not know the extent of onchocerciasis in any detail. Since then, we have witnessed that a powerful combination of vector control and semi-annual mass drug distribution with Mectizan, which has been employed by the Uganda program, has dramatically reduced onchocerciasis in Uganda. Today, we are facing a situation where transmission is still ongoing in only two of the seventeen original foci.

Last year, we saw that collaborations between Uganda and the programs of DRC and RSS were bearing fruit. As we begin this meeting, onchocerciasis has been eliminated in 8 foci. Another 7 foci are in their post treatment surveillance period. I look forward to working with you over the coming three days to review the current status of onchocerciasis in Uganda and to formulate recommendations to the people running the program as to how to most efficiently carry out their activities in the coming year. I am looking forward to the day when Uganda becomes the first nation in Africa where this disease is officially eliminated.



### Yao Sodahlon



Thank you for the opportunity to make a few remarks. Mectizan Donation Program is one of the key partners. I wish to appreciate the Minister of Health of Uganda

for her leadership. We are grateful for the progress made on the continent in these times of covid-19.

Thank you, Uganda, for establishing Onchocerciasis elimination as a mission in its own right. Today we can announce that Oncho is one of the diseases due for elimination in the new roadmap. At the World Health Summit level, however, that disease is yet to be seen as such.

I want to thank the management of Uganda's onchocerciasis program and the country's Ministry of Health in general, for working together with Uganda's National Drug Authority, NDA, to waive the 2% verification certificate fees usually charged on a consignment, in our case inbound NTD donations. Please continue reminding the authorities to maintain the waiver until we send the last load to Uganda. Greetings from my team and we pledge our support to Uganda until we eliminate onchocerciasis.



### Mike French



Dear MOH and UOEEAC guests

On behalf of myself and attendees from RTI International, we are delighted to attend the 13th session of the annual UOEEAC meeting. We thank you for the invitation to join and celebrate this long running and successful partnership with the Uganda Ministry of Health, The Carter Center, Mectizan Donation Program, and many other partners across several years.

We recognize the particular challenges this year and we applaud the move to a virtual format. Thank you to all for making it happen.

There are three key elements which make this meeting so successful and constructive:

- Firstly, that we can see the tremendous progress that has been made towards elimination. It is heartening to see the map continue to turn from red to green as additional foci interrupt transmission. Only two foci remain classified as endemic; although of course noting that includes the biggest focus of Madi-Mid-North.
- Secondly, that the meeting really gets into the relevant detail to make decisions – using district level (and below) data on infection, transmission, and vectors, to make informed decisions about the program.
- Thirdly, that it enjoys strong cross-border collaboration with colleagues from RSS and DRC – this is essential if elimination is to be realized and recrudescence avoided.
- I look forward to the discussions over the next few days. Of particular focus will be:
- Impact of COVID-19 - of course, this cannot be avoided. It has impacted all NTD programs across the world. Like everybody, we are aiming to start up as safely and effectively as possible to protect the gains that have already been made, and to retain the trust of the communities we serve. And doing that while ensuring the infection risk for COVID-19 is managed. It is not straightforward, and there are not guidelines ready to be pulled from the shelf. This is where our role as public health leaders becomes so important. Thank you to the MOH, TCC, and others for putting so much work into developing protocols and training guides and tools for allowing MDA re-start to happen. From the Act | East side, we expect this to be the first program in Africa to re-start activities.
- As we continue to look forward, we need to give serious consideration on setting up strong surveillance systems post MDA, not just for onchocerciasis but the other elimination PC NTDs as well. Uganda has made great strides towards the elimination of LF and trachoma. How do we avoid recrudescence of disease?

Thank you again, we look forward to a productive and illuminating meeting.

## **Yonas Tegegn Woldemariam**



## **Bayo Fatunmbi**

*Represented Woldemariam*



## **Uganda Welcomes You to the 13<sup>th</sup> UOEEAC Session**



### **Protocol**

Honourable Minister of Health, Dr Jane Ruth Aceng; Your Excellencies, the Ambassadors of neighbouring member states and members of delegations; Chairman of Ugandan Onchocerciasis Elimination Expert Advisory Committee (UOEEAC); Professor Thomas



Unnasch, the University of South Florida, USA; Colleagues from affected Ugandan districts and neighboring countries; MOH officials; Representatives and colleagues from The Carter Center, Lions Clubs, Sightsavers, RTI, ASCEND and other partners; Distinguished guests; Ladies and Gentlemen; All other protocols duly observed.

### Greetings from WHO Top Management

Allow me to bring to you greetings from Dr. Tedros Adhanom, the DG of WHO, and Dr. Matshidiso Moeti, the Regional Director for Africa. It gives me a 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-Saharan African countries including Uganda. Regarding Neglected Tropical Diseases (NTDs): 1.5 billion people are affected by NTDs worldwide; 39% of the global NTD burden occurs in Africa; and 600 million people do require treatment in Africa.

### Burden of Onchocerciasis and WHO Response

As you all very well know most of the Global River Blindness or Onchocerciasis occurs in sub-Saharan Africa including Uganda. More than 99% of infected people live in 31 countries of sub-Saharan Africa. It is a parasitic disease caused by the filarial worm, *Onchocerca volvulus*, transmitted by repeated bites of infected blackflies (*Simulium* spp.). These blackflies breed along fast-flowing rivers and streams, close to remote villages located near fertile land where people rely on agriculture. There are socio-economic consequences. 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 operated from 1995 to 2015. It 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. ESPEN will continue to assist onchocerciasis elimination programs in addition to assisting programs for other preventative chemotherapy neglected tropical diseases.

### Response to Onchocerciasis in Uganda

Uganda is endemic for Onchocerciasis but the response is strong and sustained. Population treated in 2018 was 1,931,499 out of 2,012,913 that required preventive chemotherapy. Population requiring treatment in 2019 was 1,802,065, while 1,763,968 people were treated; and in 2020, population requiring treatment was 1,396,731. The trend of Oncho in Uganda continued on a downward slope in the number of cases over the

past years. Judging from last year's meeting, Oncho will be eliminated from Uganda because Uganda has a long history of diligent response and its progress has been remarkable.

### Responses in the context of Covid-19 Pandemic

#### 1: Technical Guidance, Adapted by Member States

The gains recorded over the years come with inherent and unexpected challenges including limited domestic financing and the unexpected covid-19 pandemic and attendant response. I want to put on record, the prompt and adequate preparedness and response put up by the people and Government of the Republic of Uganda. Public health services including NTD planned activities were disrupted among other socio-economic activities due to the pandemic and the consequent lockdown, which was part of the initial response. WHO has since responded to Member States' request through issuance of relevant guidelines; information sharing and capacity building through virtual interaction and advocacy to maintain essential health services including commodity management in the 'new normal' environment. The latest of these NTD related guidelines - Considerations for implementing mass treatment, active case finding and population-based surveys for neglected tropical diseases in the context of the COVID-19 pandemic - was issued last week, on the 27 of July 2020.

#### List of related WHO Guidance

- i) Considerations for implementing mass treatment, active case finding and population-based surveys for neglected tropical diseases in the context of the COVID-19 pandemic (27 July 2020). <https://www.who.int/publications/i/item/WHO-2019-nCoV-neglected-tropical-diseases-2020-1>
- ii) COVID-19: WHO issues interim guidance for implementation of NTD programmes. [https://www.who.int/neglected\\_diseases/news/COVID19-WHO-interim-guidance-implementation-NTD-programmes/en/](https://www.who.int/neglected_diseases/news/COVID19-WHO-interim-guidance-implementation-NTD-programmes/en/)
- iii) Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic. <https://www.who.int/publications/i/item/community-based-health-care-including-outreach-and-campaigns-in-the-context-of-the-covid-19-pandemic>
- iv) Key planning recommendations for mass gatherings in the context of COVID-19. <https://www.who.int/publications/i/item/10665-332235>

- v) Framework for decision-making: implementation of mass vaccination campaigns in the context of COVID-19. <https://www.who.int/publications/i/item/framework-for-decision-making-implementation-of-mass-vaccination-campaigns-in-the-context-of-covid-19>
- vi) Cleaning and disinfection of environmental surfaces in the context of COVID-19.
- vii) Maintaining essential health services: operational guidance for the COVID-19 context, Interim guidance (01 June 2020). <https://www.who.int/publications/i/item/covid-19-operational-guidance-for-maintaining-essential-health-services-during-an-outbreak>
- viii) Water, sanitation, hygiene, and waste management for the COVID-19 virus (April 2020). <https://www.who.int/publications/i/item/water-sanitation-hygiene-and-waste-management-for-covid-19>
- ix) Accelerating work to overcome the global impact of neglected tropical diseases: a roadmap for implementation (2012). [https://www.who.int/neglected\\_diseases/NTD\\_RoadMap\\_2012\\_Fullversion.pdf](https://www.who.int/neglected_diseases/NTD_RoadMap_2012_Fullversion.pdf)

## **2: Guidance from OTS M&E WG Meeting**

In addition, WHO has released the report of 2019 Onchocerciasis Technical Advisory Subgroup (OTS) of the World Health Organization (WHO) Department of Control of Neglected Tropical Diseases' Monitoring and Evaluation Working Group Meeting. The meeting reviewed new data comparing the available serological platforms for diagnosis of onchocerciasis and new data related to onchocerciasis elimination mapping (OEM). It also reviewed and provided input to the development of milestones relevant to elimination of onchocerciasis (interruption of transmission) for the achievement of the 2030 Sustainable Development Goals. WHO (2020): 2019 WHO OTS 3<sup>rd</sup> Meeting Report. <https://www.who.int/publications/i/item/9789240006638>

## **3: Digital Information**

As part of its mission to promote health, keep the world safe and serve the vulnerable, the World Health Organization (WHO) is exploring the potential of mobile phone technology to widen its scope in addressing a range of global public health issues. In response, the Department of Control of Neglected Tropical Diseases recently converted a 2018 pictorial training guide on neglected tropical diseases of the skin (the so-called skin NTDs) into an interactive new

mobile phone application. This software application, launched about two weeks ago, will quickly allow health care workers and the public to get information about a specific disease – such as its clinical features, management and geographical distribution – and also provide a list of potential diagnosis. The application also allows rapid exchange of information via a chat box through which general questions can be answered promptly. You can access the interactive menu and a few clicks to identify the skin condition.

Android -[https://play.google.com/store/apps/details?id=com.universaldocor.skin\\_ntds&hl=en\\_US](https://play.google.com/store/apps/details?id=com.universaldocor.skin_ntds&hl=en_US)  
iOS - <https://apps.apple.com/us/app/skin-ntds-app/id1499080526>. WHO in collaboration with ESPEN and other partners is making progress with Onchocerciasis elimination mapping of endemic countries as a key step to defeating river blindness. Please access information through the website <https://www.who.int/news-room/detail/29-11-2018-onchocerciasis-elimination-mapping-of-endemic-countries-is-key-to-defeating-river-blindness>

## **Perspectives for Consideration for Uganda Onchocerciasis Elimination**

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. There will be need for exchange programs between Uganda and countries in the sub-region in addition to the current collaborative measures. The meeting's objectives are clearly defined. Realistic solutions are required for the implementation challenges to be identified and for sustenance of current gains. Such will include feasible solutions for addressing cross-border issues.

On behalf of WHO, I would like to recognize the immense contributions of the following key partners, among others: a) The Carter Center, Atlanta Georgia, USA; b) Sight Savers; c) The Lions Clubs; d) The Mectizan Donation Program; e) RTI – Research Triangle International / Envision / Act to End NTDs; f) ASCEND; and g) Deliver. The cooperation of the affected / host communities in Uganda with neighbouring countries, Uganda's national onchocerciasis control and elimination program and partners has been good. This is highly appreciated. We call for the prioritization of efforts to sustain the current gains including by provision of significant domestic financing and post elimination surveillance within the context of covid-19 response so as not to lose those gains. We will continue to promote onchocerciasis

elimination activities on the regional one health platform. We urge the government and partners to embrace affected refugees and to accommodate the country's Integrated NTD Elimination Master Plan in the Uganda National Integrated Health Response Plan for Refugees & Host Communities.

As we continue turning the corner, WHO will continue to support the furtherance of the Oncho Elimination Program including the articulation of clear guidance for the post-elimination era in selected districts in strict compliance with guidance from the national covid-19 response plan. We will optimize our convening work to strengthen cross border collaboration among concerned member states and will follow up on the country's request for a WHA Resolution on Onchocerciasis Elimination. We are also aware of the need for, and will continue to advocate and mobilize for, resources to meet the needs of the Oncho Program including resources to implement entomological and epidemiological activities.

### **Conclusion**

People will be happy and grateful if NTDs are prevented, controlled and eliminated. Health System strengthening will accelerate the process. Let us come together. Together, we can eliminate Oncho. I wish you fruitful deliberations.



### **Gregory Noland**



Honorable Minister of Health, other distinguished MOH officials, WHO Representative, UOEEAC Chair and members, Delegations from the Republic of South Sudan and the Democratic Republic of the Congo, Representatives from RTI/USAID, ELMA Philanthropies, Lions Clubs and other development partners, drug donation partners Merck & Co. Inc and

MDP, Carter Center colleagues, and other participants, I greet you!

I convey greetings to you on behalf of President and Mrs. Carter, as well as Ms. Paige Alexander, the new CEO of The Carter Center. President and Mrs. Carter are in good health and wish good health and safety for you and your families in these challenging times of the COVID-19 pandemic.

These are also unprecedented times in the sense that this is the first time someone other than Dr. Frank Richards is making opening remarks for the Carter Center at a UOEEAC meeting. Dr. Richards stepped down as Director of the River Blindness Elimination Program on June 1<sup>st</sup> 2020. I was asked to by Carter Center leadership to take over as Director, with Dr. Richards remaining as a part-time Senior Advisor to the program. So let me begin by acknowledging the work and legacy of Dr. Richards in leading the program and pursuing elimination of onchocerciasis in Uganda and other countries across the globe. You have left me a great team, including outstanding, dedicated individuals at headquarters and in Uganda. Our goal remains to realize the ambitious, but achievable, goal of river blindness elimination.

Since I joined the Carter Center nine years ago, I have heard of the pioneering work of the Uganda onchocerciasis elimination effort. So, it gives me great pleasure now to witness first-hand the work of the national program and partners, though I am disappointed not to be gathering face to face. For me personally, I will be taking the time to listen, to learn as I gain familiarity with the details of the activities in Uganda and bordering countries.

This UOEEAC committee is key to helping to guide and evaluate river blindness elimination activities in Uganda. At times of leadership change it is worth emphasizing the importance of institutional knowledge and documentation. Individuals will come and go, partners will come and go, but it is the oversight provided by this committee that will stand the test of time.

Finally, we all recognize the gravity of the COVID-19 pandemic. I am sure much of the meeting's discussion will focus on the COVID situation in the country, the latest WHO guidance for NTD programs, and plans for restarting MDA in Uganda. Let me only say that in highly uncertain times, one thing is certain: the support of The Carter Center for river blindness elimination in Uganda. I wish you a productive meeting.







## Jane Ruth Aceng



## Patrick Tusiime (Delivered the speech)



The Chairman, Uganda Onchocerciasis Elimination Expert Advisory Committee, The Country Representative of World Health Organization, Representatives from The Carter Center - Atlanta, Invitees attending from DRC and South Sudan, Partners, Uganda affected district representatives, Ladies and Gentlemen, all necessary protocol observed.

On behalf of the Government of the Republic of Uganda and in my own behalf, it is my pleasure and privilege to welcome you to this virtual meeting. We have missed hosting you physically in Uganda due to the ongoing global health challenges caused by the COVID-19 pandemic.

### Fight of Onchocerciasis

All the 12 previous meetings hosted in Kampala made important recommendations, which the Ministry of Health has implemented to make faster progress towards onchocerciasis elimination. The virtual attendance by representatives from DRC and RSS 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 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.

As Uganda fights the COVID-19 pandemic, the Ministry of Health of Uganda has not relaxed giving attention to interventions against endemic diseases including NTDs. To ensure that NTD mass treatment, in communities, takes place in the face of COVID-19, guidelines and protocols have been developed for community health workers to follow while treating their own people. District health workers implementing COVID-19 prevention strategies also supervise community health interventions.

In 2007, Uganda made an ambitious policy shift from onchocerciasis control to elimination. With guidance of UOEEAC and commitment of the Ministry of Health and partners, the country has interrupted transmission of 15 out of the 17 endemic foci. 24 districts with a population of 4.2 million no-longer require mass treatment with ivermectin.

As of today, out of the 40 districts that were formerly endemic for onchocerciasis (making up 17 foci), only 12 districts are still implementing interventions while the 28 have either achieved elimination or interruption of transmission, and in either case have stopped mass treatment. Through larviciding of rivers in isolated foci using Abate, black flies (the vectors of Onchocerciasis) have been eliminated from eight foci. Application of Abate and semi-annual treatments, to reduce *Simulium* flies in Madi Mid-North focus, have been the key interventions to stop new cases of the associated nodding syndrome. However, due to halting of larviciding, increase in human biting by vectors is currently causing fear in communities along the Aswa river. I urge partners to reconsider supporting periodic larviciding to ensure that no risk of recrudescence will occur after stopping MDA.

Making progress towards interruption of transmission remains a challenge in few areas bordering the Republic of South Sudan and the Democratic Republic of Congo. However, I am happy with the joint cross border epidemiological and entomological activities which have commenced. I am optimistic that the COVID-19 challenge will be addressed to allow continuity of the cross-border activities.

#### 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 effort to implement the PHASE strategy is required.  
Sustainability

As we make progress towards achieving our targets in eliminating onchocerciasis and other NTDs, we need to be mindful of how these achievements can be preserved. The health sector's primary objective is to ensure health for all at all times. Uganda is committed to increasing domestic resources for 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.

#### Cross Border Issues including Refugees

On these matters, the stand of our Ministry of Health has always been to promote good neighborliness and other mutually beneficial activities. It is our desire to strengthen this collaboration even the more. Right now, I want to reaffirm that. I am confident that the attendance of key stakeholders from the DRC and

the Republic of South Sudan will offer the regional cooperation network more opportunity to discuss cross border action plans including vector control and synchronized MDA in special intervention zones.

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 kindly accept our application for medicines to treat refugees from endemic areas.

Finally, I would like to extend my sincere appreciations to WHO and the Mectizan Donation Program for the enormous support to our NTD program. I thank all the partners - The Carter Center, Sightsavers, RTI / Act to End, Lions Clubs and endemic districts for the support they have offered towards this noble course. I also thank our colleagues from DRC and RSS for joining this virtual meeting and for also facilitating the activities that have so far been accomplished.

Last but not the least, I thank the Onchocerciasis Elimination Expert Advisory Committee members for their remarkable contributions made towards the Uganda program. Special thanks go to the Chair of the Committee.

It is now my honor to declare this virtual 13<sup>th</sup> session of the Uganda Onchocerciasis Elimination Expert Advisory Committee officially open. I wish you fruitful deliberations.

*For God and My Country.*



Allow me to thank the Government of Uganda through the Ministry of Health for giving us Lions a conducive environment where we can work with all partners that continue looking out for us to give help where it is due. On behalf of Lions Clubs International, we pledge our continued collaboration and support and re affirm our commitment to keep reaching out to serve.

*Sedrace Rwekikiga*

## Annex Two: Speeches at Closing



**Sedrace M Rwekikiga**



The Honorable Minister of Health of Uganda, the Chair of the Uganda Onchocerciasis Elimination Expert Advisory Committee, World Health Organization Country Representative, members of all other partner organizations, Ladies and Gentlemen; on behalf of LCI, I bring warm greetings and good wishes to you all. Lions Clubs International is the world's largest service club organization with nearly 1.4 million men and women in more than 200 countries and 46,000 clubs worldwide. Lions volunteer their time and energy to serve the communities and lead the world-wide effort to make the world we live in a better place.

We serve in communities across the globe. Each Lion and each club has a unique story of their own. Yet every time we show up in our vests, we are contributing to something bigger. We combine our talents with efforts of others to make a difference in the lives of people in our communities. Lions are known for strength and ability to help others. We serve people in all places. Our global priorities are vision, hunger, environment, childhood cancer and diabetes. Over the past 100 years, Lions united in service have transformed the lives of so many. Since 1968, they have done so with resources and grant funding from Lions Clubs International Foundation.

In Uganda, we have had the privilege to benefit from many such funds including for trachoma elimination in districts where we participated. We have the quest program ongoing, which provides valuable skills for life to the youth. Also we contribute to measles vaccination, comprehensive eye care, and onchocerciasis control and elimination projects just to mention a few. LCIF in conjunction with Lions Aid Norway has supported in the construction and equipping of the eye departments of the regional referral hospitals of Lira, Masaka, Gulu, Mbale and Arua. The Lions of Uganda would like to commend all agencies and partners involved in the fight against neglected tropical diseases, including onchocerciasis, that hamper development of our people.

Allow me to thank the Government of Uganda through the Ministry of Health for giving us Lions a conducive environment where we can work with all partners that continue looking out for us to give help where it is due. On behalf of Lions Clubs International, we pledge our continued collaboration and support and re-affirm our commitment to keep reaching out to serve. Lionism is not an individual affair, it is we that matter, and not I. Our Motto is simple: 'We Serve' because kindness matters. Covid 19 is still with us and it is real. Observe the SOPs provided by the Ministry of Health.

Take care and thank you all.



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 neighbours. There will be need for exchange programs between Uganda and countries in the sub-region in addition to the current collaborative measures.

*Yonas Woldemariam*



**MINISTRY OF HEALTH**

**UGANDA REGISTERS SIGNIFICANT  
PROGRESS TOWARDS ELIMINATION OF  
RIVER BLINDNESS / ONCHOCERCIASIS**

The Ministry of Health is close to declaring as River Blindness free the foci of Wadelai (in Pakwach District) and West Nile in the districts of Koboko and Yumbe.

Uganda stopped interventions in 2019 among 608,219 people in Nyagak Bondo focus, which was previously treated for river blindness (onchocerciasis), basing on the current World Health Organization (WHO) guidelines, bringing the country closer to achieving its goal of eliminating river blindness nationwide. River blindness has been known as a public health problem affecting a significant population of Uganda from long before the early 1950's when serious efforts to control and eliminate the disease were scaled up. The Government of Uganda declared a countrywide elimination policy in 2007. River blindness is a vector borne disease that is transmitted by black flies, mainly females, which breed in fast flowing rivers. It causes serious skin and eye complications, and the vision impairment may result in blindness. The disease was originally endemic in 40 districts of 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.

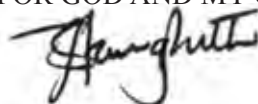
Since the launch of the elimination program in 2007, Uganda has achieved elimination in 7 foci: Obongi in Obongi District; Itwara (Kyenjojo and Kabarole districts); Elgon (Mbale, Sironko, Manafwa and Bududa districts); Mpamba-Nkusi (Kagadi District); Wambabya-Rwamarongo (Hoima and Kikuube districts); Kashoya-Kitomi (Kamwenge, Rubirizi, Buhweju and Ibanda districts); Imaramagambo (Bushenyi and Mitooma districts), excluding the Victoria Nile focus (in Jinja, Mukono, Kamuli, Mayuge and Kayunga districts) that was eliminated in the early 1970's. The strategy for elimination of river blindness from Uganda is a combination of mass treatment of affected communities with ivermectin and vector control/elimination. The 13th meeting of the Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC), held from 4th to 6th August 2020, concluded that final serological surveys should be conducted this year in Wadelai and West Nile foci, which have completed three years of post-treatment surveillance (PTS) as per the current WHO guidelines. There has been no evidence of river blindness vectors (*Simulium flies*) for the last 10 years in these foci. If serology confirms successful completion of PTS period in Wadelai and West Nile foci, an additional population of 566,888 will no longer be at risk of

contracting river blindness. Including the Victoria focus, at least 4.676 million people in Uganda will no longer be at risk of being infected with onchocerciasis.

There are 5 foci (Budongo, Bwindi, Maracha-Terego, Nyamugasani, and Nyagak-Bondo) where interruption of transmission was confirmed but which have not yet completed the required PTS period as per the WHO guidelines. In these foci, the population has been protected from onchocerciasis, and the foci are awaiting final confirmation of elimination. The Madi-Mid North focus, comprising Pader, Lamwo, Kitgum, Gulu, Omoro, Amuru, Nwoya, Oyam, Lira, Adjumani and Moyo districts, with a population of approximately 1,471,583 people, is still classified as "Interruption Suspected". Only Lhubiriha focus (Kasese District), with a population of 140,659, remains classified as "Transmission Ongoing". So far, approximately 4.3 million treatments for Onchocerciasis have been stopped. The Government of Uganda in collaboration with neighbouring countries, the Democratic Republic of Congo and the Republic of South Sudan, continues to promote cross-border river blindness elimination activities.

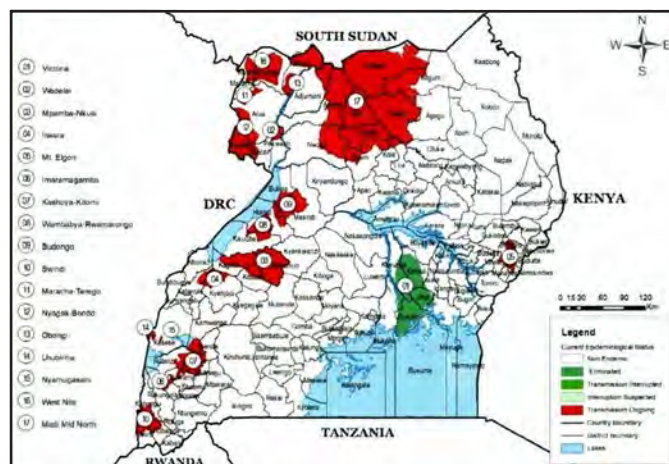
Through the effort of the River Blindness Elimination Program of the Ministry of Health (and with the support of partners including The Carter Center, Sightsavers, USAID's Act to End NTDs / East Program led by RTI International, the Lions Clubs International Foundation, Lions of Uganda, Merck, Mectizan Donation Program, BASF, World Health Organization, and the Governments of the Democratic Republic of Congo and the Republic of South Sudan), Uganda continues to register success in the fight against river blindness. This accomplishment is evidence that total elimination of River Blindness is possible in Africa.

FOR GOD AND MY COUNTRY

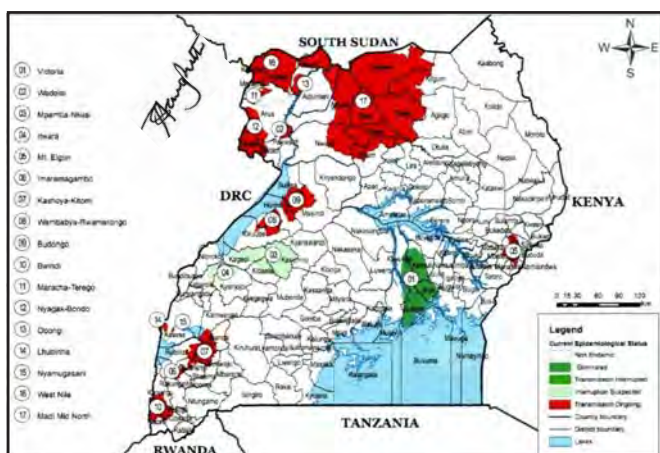


Dr. Jane Ruth Ocero Aceng  
Minister for Health

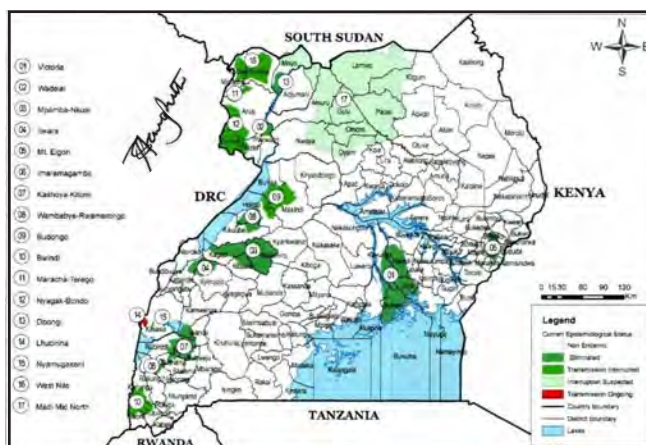
**Onchocerciasis Status 1992**



## Onchocerciasis Status 2007



## Onchocerciasis Status in 2019 / 2020, Pending Reclassification of Wadelai / West Nile Foci



THE REPUBLIC OF UGANDA

### Jane Ruth Aceng



The Chairman, Uganda Onchocerciasis Elimination Expert Advisory Committee; The Representative of the World Health Organization, Uganda; Director, Mectizan Donation Program; Representative, The Carter Center, Atlanta, USA; all our other partners - Sightsavers, RTI/USAID, SCI, Lions Clubs; Health Officers attending from the Democratic Republic of Congo and South Sudan; Representatives from the affected endemic districts; Ladies and Gentlemen.

### Alfred Mubangizi Presented the Minister's Speech



On behalf of the Government of the Republic of Uganda, I would like to once again warmly welcome you to this important meeting. I wish to firstly thank every single participant and presenter. Your attendance and contributions have made this meeting both a success and another milestone in our journey to elimination of Onchocerciasis and other Neglected Tropical Diseases despite the ongoing challenges of the COVID-19 pandemic.



Join me in thanking our information and communication technology (ICT) team, the NTD Secretariat, The Carter Center, the committee chair, Professor Thomas Unnasch and his team for organizing this virtual meeting to guide Uganda in the face of the COVID-19 pandemic. We have missed the opportunity to host you in real time in Uganda due to this ongoing global health threat.

I am glad the COVID-19 outbreak has not stopped the success of this meeting; and the participation of key experts, partners, some countries within the region (namely DRC and South Sudan), scientists, policy makers and endemic Ugandan districts illustrates great commitment. The success registered in the last 12 years of hosting this meeting continues to make 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 Onchocerciasis elimination; and you have been able to come out with important recommendations. I have the honor to comment on important issues which will enable the country to achieve elimination of onchocerciasis and other NTDs.

### **1. The 2020 Elimination Goal**

Since the launch of the elimination policy in 2007, great success has been achieved with the guidance of this committee. Out of the 40 endemic districts, 28 have interrupted or eliminated onchocerciasis transmission and stopped interventions. The significant progress reported during this meeting has to be sustained and challenges to elimination efforts addressed.

I am happy to learn that evaluation of a new community-based onchocerciasis vector control method known as “slash and clear” has shown that the intervention can be and is effective in Uganda. The Ministry will consider adopting it as one of the interventions in integrated vector management where feasible alongside larviciding with Abate. On this note I congratulate the research team led by Prof. Thomas Unnasch for the innovation.

The elimination program now needs more support to facilitate: a) the documentation of its success; b) the verification of elimination in the ‘green foci’; c) the implementation of post intervention surveillance activities; and d) the intensification of supportive supervision in Madi Mid North for each community to achieve at least 13 consecutive mass treatment rounds so as to make progress from the current status to interruption of transmission.

### **Cross-border Control/Elimination**

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

I am happy with the cross-border activities which were actualised and which gave impressive results to guide decision making by this committee in 2018 and 2019. However, recent Ebola and COVID-19 outbreaks have been a challenge to implementation of joint cross border activities with DRC and RSS. On a positive note, I would like to congratulate the DRC team upon stopping the Ebola outbreak and I hope cross border collaboration activities will begin as soon as COVID-19 restrictions are lifted.

### **2. Refugees and Elimination of NTDS**

The country has continued to receive and host many refugees from DRC. This influx presents a humanitarian crisis. It also has huge implications on the health sector in terms of possible disease outbreaks and importation of diseases into Uganda where one or more such disease may already be close to being eliminated from the country. Some of the refugees are from known onchocerciasis endemic areas and need to be treated. Our Ministry of Health will continue to work with the office of the Prime Minister to plan for mass treatment of refugees coming from endemic areas of South Sudan and DRC.

I take this opportunity to appreciate the pharmaceutical companies, medicine donation programs, executing agencies and all the partners for their enormous contributions towards elimination and control of NTDs in Uganda. I appeal to partners to continue supporting community directed interventions despite the COVID-19 outbreak. The Ministry of Health has prepared guidelines and protocols to enable health workers deliver essential health care services, including mass treatment, to households with strict adherence to infection prevention practices.

I would again like to re-affirm our commitment as a sector. We pledge to make sure that we give more visibility to NTDs and other vector borne diseases. I now have the pleasure and honor to declare this virtual 13th meeting of the Uganda Onchocerciasis Elimination Expert Advisory meeting closed.

Thank you



## Annex Three: Participant Register

NO	NAME	ADDRESS	STATUS	EMAIL CONTACT	PHONE	PLACE OF ATTENDANCE
1	Prof. Dr. Thomas R. Unnasch	USF TAMPA	Chair	tunnasch@health.usf.edu	+ 1-813-974-7807	USA
2	Ms Peace Habomugisha	TCC Kampala	Co-Secretary	peace.habo@cartercenter.org	0702414982	Uganda
3	Mr. David W. Oguttu	VBNTDD-MOH	Co-Secretary	doguttu@gmail.com	0782495847	Uganda
4	Prof. Dr. Eddie. W. Cupp	Auburn University	Member	ecupp64@gmail.com		USA
5	Dr. Johnson Ngorok	Sightsavers Uganda	Member	JNgorok@sightsavers.org	0787924210	
6	Prof. Dr. Edwin Michael	Uni Notre Dame	Member	edwin.michael.18@nd.edu		USA
7	Dr. Alfred Mubangizi	VBNTDD-MOH	Member	mubangizialfred@gmail.com	0772443659	Uganda
8	Dr. Moses Katabarwa	TCC Atlanta Georgia	Member	moses.katabarwa@cartercenter.org		USA
9	Mr. Dickson Unoba	Nebbi District Local Government	Member	unoba2@gmail.com	0773785309	Uganda
10	Dr. Ambrose Onapa	Ex-Officio	Member	aonapa@ug-ntd.rti.org	0772497180	Uganda
11	Mr. Joseph Wamani	Kamwenge DLG	Member	wamani@yahoo.com	0772368682	Uganda
12	Mr. Tom Rubaale	Fort Portal City	Member	trubaale@gmail.com	0777912866	Uganda
13	Dr. Frank Richards	The Carter Center Atlanta	Observer	frank.richards@cartercenter.org		USA
14	Dr. Gregory Noland	The Carter Center	Observer	gregory.noland@cartercenter.org		USA
15	Dr. Adrian Hopkins	USA and DRC	Observer	adrianhopkinsconsulting@gmail.com	+ 447792627433	USA
16	Ms Lauri Bernard	TCC, Atlanta	Observer	lauri.bernard@cartercenter.org		USA
17	Ms Andrea Echols	TCC, Atlanta	Observer	andrea.echols@cartercenter.org		USA
18	Dr. Yao Sodahlon	Georgia	Observer	ysodahlon@taskforce.org		USA
19	Dr. Bayo Fatunmbi	WHO Uganda	Observer	fatunmbib@who.int		Uganda
20	Mr. Christopher Katongole	VBNTDD-MOH	Observer	ckatongole@gmail.com	0772438311	Uganda
21	Dr. Narcis Kabatereine	ASCEND	Observer	vcdmoh@gmail.com	0772492078	Uganda
22	Mr. Abraham Kibaba Muhesi	Lhubirha-Kasese	Observer	muhesiak@gmail.com	0775342434	Uganda
23	Mr. James Katamanywa	Kyenjojo	Observer	katamanywawilly@gmail.com	0772351363	Uganda
24	Mr. Martin Klaus Osilo	Act to End NTDS/East Program	Observer	mosilo@rti.org		
25	Mr. Gabriel Kayira Matwale	VBNTDD	Observer	gkmatwale@gmail.com	0772487431	Uganda
26	Mr. Levy Matua	Yumbe DLG	Observer	lematu6@gmail.com	0772389782	Uganda
27	Mr. Galex Orukan Ochieng	Mbale	Observer	ochienggalex766@gmail.com	0774265992	Uganda
28	Dr. Tony Ukety	Goma, DRC	Observer	tony.ukety@gmail.com	+243822400101	DRC

29	Jack Wheeler	TCC USA	Observer	jack.wheeler@cartercenter.org			
30	Mr. Samuel Makoy Yibi Logora	Juba, South Sudan	Guest	morrelogora@yahoo.com	+ 211921666989		South Sudan
31	Lion Polly Ndyarugahi	Kampala	Guest	pollybhaikn@gmail.com	0772431421		Uganda
32	Ms Annet Khainza	TCC Kampala	Observer	annet.khainza@cartercenter.org	0772650124		Uganda
33	Mr. Edson Byamukama	TCC Kampala	Observer	edson.byamukama@cartercenter.org	0706955103		Uganda
34	Mr. Samuel Dramuke	TCC Kampala	Observer	samuel.dramuke@cartercenter.org	0773887260		Uganda
35	Ms. Christine Nahabwe	VBNTDD-MOH	Observer	ch.nahabwe@gmail.com	0782361229		Uganda
36	Ms. Emily Griswold	TCC Atlanta	Observer	emily.griswold@cartercenter.org			USA
37	Ms. Lindsay Rakers	TCC Atlanta	Observer	lindsay.rakers@cartercenter.org			USA
38	Mr. Randall Slaven	TCC Atlanta	Observer	randall.slaven@cartercenter.org			USA
39	Ms. Madelle Hatch	TCC Atlanta	Observer	madelle.hatch@cartercenter.org			USA
40	Ms. Kathryn Crowley	RTI USA	Observer	kcrowley@rti.org			USA
41	Ms. Upendo Mwingira	RTI USA	Observer	umwingira@rti.org			USA
42	Ms. Amy Veinoglou	RTI USA	Observer	aveinoglou@rti.org			USA
43	Ms. Lisa Chowthi	RTI USA	Observer	lchowthi@rti.org			USA
44	Ms. Elizabeth Plunkett	RTI USA	Observer	eplunkett@rti.org			USA
45	Ms. Stella Agunyo	Act to End NTDS/East Program	Observer	sagunyo@rti.org			Uganda
46	Mike French	RTI USA	Observer	mfrench@rti.org			
47	Ms. Harriet Sengendo	TCC Uganda	Support staff	harriet.sengendo@cartercenter.org	0772515760		Uganda
48	Mr. Apollo Nduhukire	TCC Uganda	Support staff	apolonduhukire@cartercenter.org	0783315987		Uganda
49	Mr. Julius Musigire	TCC Uganda	Support staff	julius.musigire@cartercenter.org	0783518934		Uganda
40	Mr. Paul Kambugu	Kampala	Rapporteur	pkambugu@gmail.com	0772939325		Uganda
41	Dr. Patrick Tusiime	MOH Uganda	Ministry Representative	patrick.tusiimek@gmail.com			Uganda
42	Ms Sedace Rwekikiga	Kampala	Guest	rsedrace@yahoo.com	0772427582		Uganda
43	Leonard Lopay Bay	DRC Ituri	Observer	lopabayleonard@gmail.com	+243810252728		DRC

**NOTE:** Dr. Jane Ruth Aceng, Ugandan minister for health, and WHO representative in Uganda, Dr. Yonas Tegegn Woldemariam, were absent at the meeting with apologies. They were however represented.





Closing Group Picture of Ugandan Participants who Attended Physically. L to R - D. Ogutu, P. Habomugisha, D. Unoba, S. Rwekikiga, P. Ndyarugahi and A. Onapa



## Annex Four: Memorials to Unoba

### Remembering Dickson Unoba

#### Peace Habomugisha

What is written in this space is in remembrance mainly of Dickson Unoba's job-related legacy. The deceased's personalia have not been taken into account. His birth and educational backgrounds are simply the pedestal whereon sit his adulthood heroism and achievements that are here acknowledged.

#### Nativity

Of northern Ugandan origin (specifically from the sprawling West Nile region of old), Dickson Unoba was born to the Ezenia Gitara and Jessica Agombo family, in Andibo village, Panyango sub-county, Jonam county, in what now is Pakwach District on the 31<sup>st</sup> of December 1957. (That time Pakwach was simply a portion of the broader West Nile District.) Unoba was one of the seventeen siblings descended from his mother and father, both of whom are still living.

#### Education

He attended Pajobi Primary School from 1968 -1975 for his primary school education; St. Joseph's College Ombaci in Arua District where he attained his Uganda Certificate of Education (UCE) from 1976-1979. His ambition to advance was to take him farther to the great Teso College Aloet in Soroti where he obtained his Advanced Certificate of Education (UACE), from 1980-1981. During 1982-1984, his journey in the world of learning took another jump, at the Mulago Paramedical School, in Kampala, that was crowned with a Diploma in Medical Entomology. This was the commencement, and later the bedrock, of his life's career, that rocked and propelled his enormous energy, that whetted his desire to be a success – in short that consumed most of his waking time as he planned and acted in real time to help his mother nation Uganda and other countries in Africa to relieve themselves of different NTDs like onchocerciasis and LF.

Between mid-1980's and mid-1990's, Unoba acquired more training in his academic field. We shall only talk, and very briefly, about the major developments during that period, and not necessarily in a chronological order. In 1988, he left for Nairobi in Kenya, and there he read for a certificate in Studies and Management of Snails of Africa and Schistosomiasis, or call it Bilharzia. This took 3 months. About 1989, he attended a training program in pan African tsetse fly control in Zambia which lasted nearly 7 months. Another opportunity for further training knocked at his door

in 1990. This time he was admitted in Denmark for a Diploma course in parasitology and entomology, which he completed successfully after 3 months.

#### Work & Workplaces

Makerere University Faculty of Veterinary Medicine, after Unoba's Mulago paramedical education, hired him to work as a lab assistant. The duration of this employment was from sometime in 1984 to sometime in 1988. As for the rest of his worktime, from the late 1980s to the time of his passing on 8th December 2020, Unoba remained almost exclusively a government of Uganda employee, in the vector control department under Ministry of Health.<sup>1</sup> Excluding onchocerciasis, on the basis of which *Insight Special* has interest in him, he was involved in the control of such other NTDs as lymphatic filariasis (elephantiasis), schistosomiasis, plague (occasionally), helminthiasis (intestinal worm infection), Leishmaniasis and sleeping sickness / human trypanosomiasis.

Unoba's serious engagement in onchocerciasis programs dates from 1993. About that time, he joined the Nebbi District local government as a DVCO. Nebbi would later split up into three divisions - Nebbi, Zombo and Pakwach districts. Despite, that political reorganization, he still remained central and pivotal - among himself and two other VCOs, each for the two newly created districts. He was a sort of consultant to his two colleagues. Nyagak Bondo focus, formerly under his sphere of operation, takes up the whole of Zombo District with sections of it extending into Nebbi and Arua districts. It is not misplaced to say that by the time of his death, Unoba was by far the most senior and experienced vector controller in the whole of the north-western region of Uganda. This may partly explain why in 2015 he was elected as a board member of the UOEEAC.

In what now looks to be "formerly endemic" areas of Uganda's North-west (e.g. Wadelai focus) which appear to be approaching declaration as eliminated, he was involved both in vector control / elimination and MDA with drugs like ivermectin and Albendazole. Perhaps because he was a survivor of schistosomiasis, Unoba was passionate about liberating West Nilers, from Zombo and Nebbi (in the South) to Koboko and Yumbe in the North, from the NTDs rampant in that quarter of Uganda. Onchocerciasis of course was among them. Common reports say that he had such a convincing tongue that would tranquilize and lure even people initially opposed to eating antiparasitic drugs (ivermectin etc.) to take them. According to

many people, he was such a great expert in his field, especially when it came to hands on stuff, so much so that he was almost unbeatable in Uganda's North West. He is described as a man who was hardworking and eager to teach and guide. It is said of him that in cases of practical work, he would always return to where it was being done to check and see for himself what had been done on the ground.

While in the course of doing his duties, Unoba was not always a conformist, particularly when there was justification for dissenting opinion. As he covered the journeys of his life's jobs, he did, like most humans, face challenges and frustrations. Between him and his seniors and/or juniors, things would at times not work out well, not as he wished. He would usually maintain his cool; not throw in the towel and remain hoping for the best solution(s). He had a gift for working with opponents and supporters, with friends and foes. Time would come, in cases of disagreement, and fences would be mended in reconciliatory and justifiable moves. Or he would make a u-turn and embrace his adversary, following this adage: "If you can't beat them, join them", especially if there was enough praiseworthy reason for so doing.

Unoba, you lived, worked hard like you would exist to the day when the final blow would be dealt to onchocerciasis in Uganda, with you standing or sitting in bodily form among those witnessing and celebrating the success. But now that the geography of your location has changed, let the world be assured that that mission is still on course because you contributed to have Uganda have a definite resolve to win against the *onchocerca volvulus* worm. May you rest in everlasting tranquility, and may those who knew you and future generations, those who will hear of you, by reading this memorial or by word of mouth, live to make human life in the world better.

Sources of some of the information that was used for this write up: Narcis Kabatereine, PhD, formerly tutor at Mulago Paramedical School & associate of VBNTDD, MoH, Kampala, Uganda; Bernard Abongo Otim, a retired senior vector control officer, from Lira District, Uganda; Curtis Mungubit, son to the late, Uganda; Kura Vasco, brother to the deceased; and Patrick Dramuke, DVCO, Zombo, Uganda; and Emmanuel Okecho, DHO's office, Nebbi District, Uganda.

#### NOTE

1. Because Makerere University is historically a public institution; Unoba's employment at the university's faculty of veterinary medicine meant automatically that he was a government worker.

## The Unoba I Knew and His Contribution to Uganda's Fight Against Onchocerciasis

### Thomson Lakwo

My statements about the late Mr. Dickson Unoba, having worked with him during my time as an Entomologist and as Uganda Program Manager for Onchocerciasis, are based on a total 23 years over which I got to know him to some good extent.

I first knew Unoba in 1994 when I joined VCD from Uganda Virus Research Institute, Entebbe. There was no doubt about his commitment, hard work and responding timely to any inquiry or request related to his field of work.

He was one of the District Onchocerciasis Coordinators who participated in the first multi-country study on community directed treatment with ivermectin (CDTI). Nebbi District, where he came from and which he represented, was one of the study sites in Africa. Due to his participation in this study that ushered in this strategy for ivermectin delivery, he became highly knowledgeable about CDTI and on several occasions the African Program for Onchocerciasis Control (APOC) would invite him as a temporary advisor in all Independent Monitoring Surveys of APOC activities in Uganda and other African countries.

Mr. Unoba's contribution to the elimination effort in Uganda is enormous, starting from mapping activities to ivermectin treatment, training, supervision and impact assessments. The district under his control had the highest number of villages of more than 600, but Unoba was always in touch with all these villages and could ride all over despite the bad road network. The prevalence of onchocerciasis at the beginning of the program was 100% in most places, but through his effort transmission was interrupted in most areas by the time of his demise. From our available records, we have this finding: In his effort of kicking the disease out of Nebbi District, he used more than five motorcycles each of which he would ride until it wore out. Thereafter it would be grounded.

He was very organized in managing his onchocerciasis program at district level, and his district was a model. A number of onchocerciasis documentaries were shot in Nebbi District to provide learning experiences for other affected Ugandan districts and African countries. Mr. Unoba contributed towards the cross-border coordination arrangements in 2009. He took initiative to ride his motorcycle through Goli Customs Post to Mahagi in the Democratic Republic of Congo. There he not only delivered a letter from the Resident District Commissioner of Nebbi District to the chief

of Mahagi, but also made advance arrangement for accommodation for the Ugandan team. He was among the Ugandan delegation that travelled to Kinshasa, DRC, in 2013 to attend the first cross-border meeting. He was very instrumental also in local cross-border coordination of entomological surveys in Nyagak-Bondo focus.

He participated in a consultancy study on *West Nile: Entomological Investigations in Three Lesser Known Foci of Onchocerciasis* (Wadelai, Maracha-Terego and NW Koboko, Uganda) that was conducted by Dr. Frank Walsh in 2010. This was to investigate evidence of ongoing transmission in Wadelai focus in Nebbi District.

He was a member of Uganda Onchocerciasis Elimination Expert Advisory Committee, representing the affected districts; and he played this role successfully since he had vast experience in onchocerciasis.

Mr. Unoba was not only conversant with onchocerciasis, but was also knowledgeable in all the vector borne diseases, notably malaria, sleeping sickness, trachoma, schistosomiasis, STH and plague. He was the focal person for plague and he established a good surveillance network for plague that was taken over by Zombo when it became a district. He will miss to celebrate with others when onchocerciasis is finally eliminated in Uganda in the near future. May his soul rest in eternal peace.

### Co-authored Publications

M.N. Katabarwa, F. Walsh, P. Habomugisha, T. Lakwo, S. Agunyo, D.W. Oguttu, T.R. Unnasch, D. Unoba, E. Tukesiga, R. Ndyomugenyi, F.O. Richards. "Transmission in Wadelai Focus of Northwestern Uganda has been Interrupted and Disease Eliminated". *Journal of Parasitology*. 2012, Vol. 2012:1-7.

M.N. Katabarwa, T. Lakwo, P. Habomugisha, S. Agunyo, E. Byamukama, D. Oguttu, E. Tukesiga, D. Unoba, P. Dramuke, A. Onapa, E. Edridah, D. Lwamafa, F. Walsh, T.R. Unnasch. "Transmission of *O. volvulus* continues in Nyagak-Bondo Focus of Northwestern Uganda after 18 years of a Single Dose of Annual Treatment with Ivermectin". *American Journal of Tropical Medicine and Hygiene*. 2013, 89:293-300.



Mr. Unoba Dickson, third from the left during entomological field survey in DRC in 2016

Impact of COVID-19 - of course, this cannot be avoided. It has impacted all NTD programs across the world. Like everybody, we are aiming to start up as safely and effectively as possible to protect the gains that have already been made, and to retain the trust of the communities we serve.

**Michael French**



## Annex Five: Photo Memories of UOEEAC 2020

### Peace Habomugisha

We have had it said from time to time that “a picture is worth a thousand words plus”. This may not be true for every image, though. Be that as it may, it is a fact that many a picture says a lot about itself, its creator(s), circumstances surrounding or that surrounded it, and much more. A word may be a pointer to current and/or older situations, other words included. Oftentimes, however, pictures seem to be far more loaded; and a person (watching one) can see so much in it.

We have identified and stacked in this space, for your eyes and mind, a sizable lot of the pictures from August’s 4th to 6th (2020). They have quite a number of characteristics: space of about a meter + between individuals, masks covering the nose, mouth and chin, *absence of crowding together*, social coldness stemming from things like conscious revulsion to human touching and closeness, computer screens

flashing images and/or name initials of all, or a few, of the virtual assembly attendees, etc. Many of these features are unprecedented in human history, including assembly settings. Each one has its own story to tell, an account that may fill anything up to a huge volume.

Let me tell you this. Much sooner than many expected, onchocerciasis shall be eliminated in Uganda and our entire eastern and central African sub-region. Future human generations and researchers, in a flashback over or serious review of the history of human health, will know (by for example leafing through *Insight Special 2020*, especially the photo corridor) that Uganda’s total river blindness elimination made it with great daring during the year 2020. We shall now go to the pick of photographs from the 13th assembly of the UOEEAC, and please note that videos covering the same meeting are also available, but in a different format and obtainable by asking.



Peace Habomugisha



Alfred Mubangizi



Gregory Noland



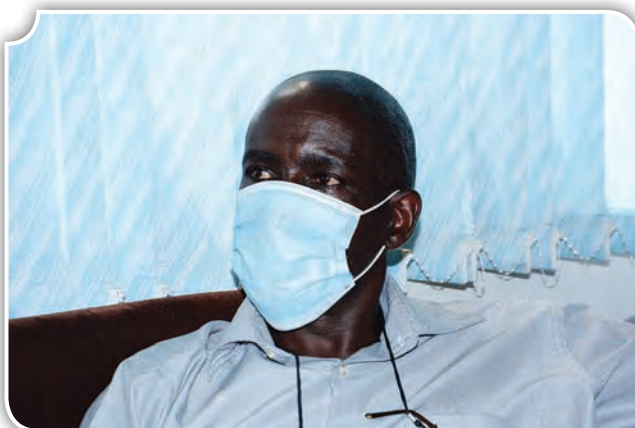
Frank Richards



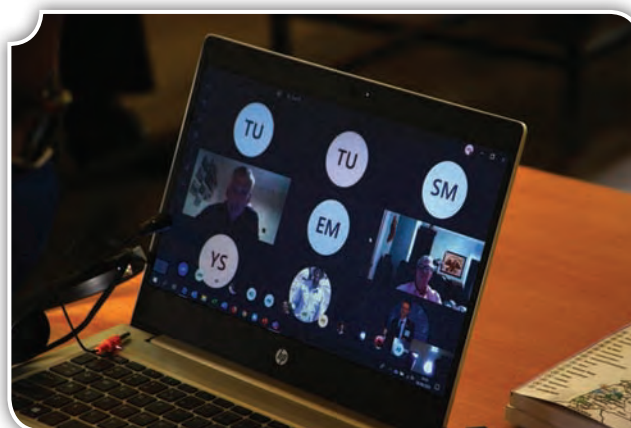
Adrian Hopkins



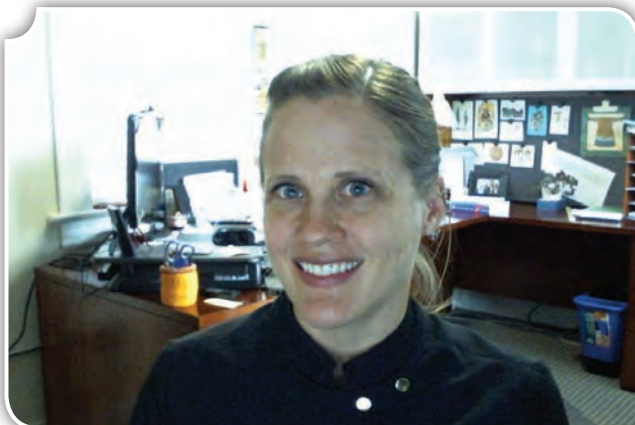
Lauri Bernard



Christopher Katongole



Desktop Picture Showing Some of the Meeting's Online Participants



Lindsay Rakers



Edwin Michael



Galex Ochieng



Gabriel Matwale





A Duo in Discussion at the Assembly's Margins



An Attendee in Deep Attention



Samuel Dramuke (R) and Abraham Muhesi (L)



Samuel Dramuke



L - R Christopher Katongole, Gabriel Matwale and Ambrose Onapa



L-R Dickson Unoba and Samuel Dramuke



Abraham Muhesi



L-R Peace Habomugisha, Sedrace Rwekikiga and Polly Ndyarugahi

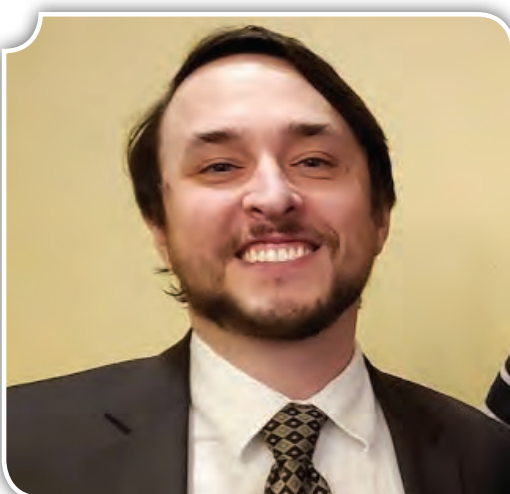




Thomas Rubaale



Eddie W. Cupp



Randall Slaven



Joseph Wamani



Ambrose Onapa



Tony Ukety





Madelle Hatch



Leonard Lopay Bay



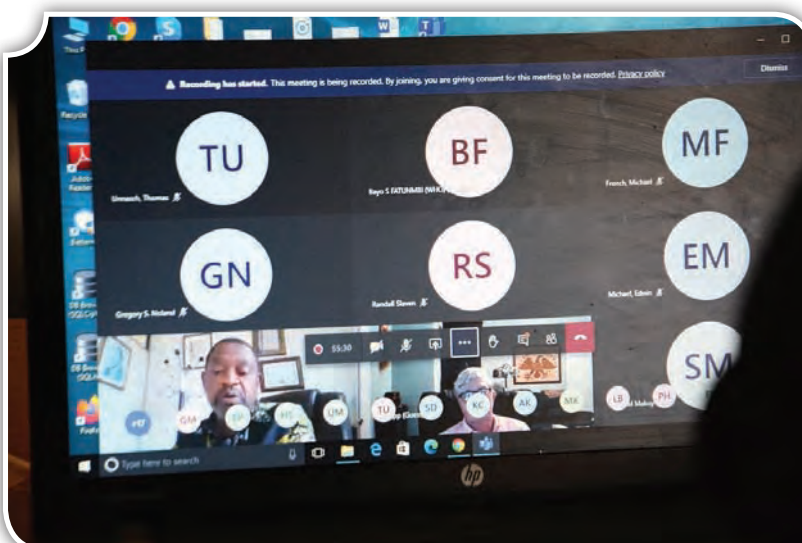
James Katamanywa



Some Participants Going for a Group Photo after Day One Session



Johnson Ngorok



Screen Image of Some of the Participants who were attending the Session Virtually





C - Levy Matua



Christine Nahabwe



David Oguttu (R), Polly Ndyarugahi (L)



L - David Oguttu, R - Alfred Mubangizi



L-R Edson Byamukama, Christine Nahabwe



Sedrace Rwekikiga



Infront - Sedrace Rwekikiga, Behind - Peace Habomugisha



R-L Joseph Wamani, Christine Nahabwe, Peace Habomugisha



## A Walk Back in Time, 11th-14th August 2008 to 4th-6th August 2020

UOEEAC has been in active existence that long. The first UOEEAC (then called UOEC) meeting took place from 11th-12th August 2008, while Uganda's initial national onchocerciasis elimination conference, NOEC, ran from 13th-14th August of that year. Between then and August 2020 Uganda has eliminated eight foci and nearly four more are likely to be declared "eliminated" any time soon, bringing the total to more than half of the country's formerly blackfly infested foci. The following pictures are from the two 2008 meetings.



Front Row L-R Frank Richards, James Walsh, Dennis Lwamafa, Stella Agunyo



Front Row L-R Richard Ndyomugenyi, Peace Habomugisha, Tom Lakwo



During a Cocktail Session



Front Row-Uche Amazigo. Second Row; L-R Thomas Unnasch, Rolf Garms,...and Frank Richards



Harriet Sengendo (R) and Stella Agunyo (L)



Peace Habomugisha (L) and Harriet Sengendo (R)



**INSIGHT SPECIAL** is supported by  
The Carter Center and Uganda's Ministry of Health.  
Published by The Carter Center (Uganda)  
Program for Onchocerciasis Control and Elimination  
& Vector Control Division, MOH Uganda,  
Plot 15, Bombo Rd, Kampala, Uganda.  
Typset by the Uganda Carter Center,  
P.O. Box 12027, Kampala.  
Tel: +256 414 251025, Fax: +256 414 34 9139





Former President Jimmy Carter with Wife Rosalyn on Bicycle in Plains, Georgia, December 1980

Karuma Falls Located in Madi mid North Focus, Southern Zone

