



Group photo of most of the members of the Uganda Onchocerciasis Elimination Expert Advisory Committee and some observers and guests outside Serena Hotel, 15th - 17th August 2011

Contents table

General Introduction Peace Habomugisha	1
PART A - Inaugural Activities	3
Words of Welcome & Introduction - Former UOEEAC Chairman J. Frank Walsh	3
Welcome Notes - ACHS (MOH Uganda) Dawson B. Mbulamberi	3
Welcome Remarks - WHO Representative to Uganda Joaquim Saweka	4
Welcome and Opening - DGHS Jane Ruth Aceng	6
PART B - Monitoring and Certification Issues	7
Guidelines for Certification of Onchocerciasis Elimination in Uganda Thomson L. Lakwo	7
UOEEAC in Fresh Look at Certification of Onchocerciasis Elimination Guidelines	8
PART C – Matters Specific to Individual Foci	9
Itwara Focus James Katamanywa	9
Committee Re-examines Itwara	10
Imaramagambo Focus James Katamanywa	10
Under UOEEAC Attention Once More - Imaramagambo	12
Mt. Elgon Focus Review T.L. Lakwo	12
UOEEAC Appraises Elgon Status	14
Bwindi Focus Review Christopher Katongole	14
Through the Spectacles of UOEEAC – Bwindi Focus	16
Kashoya-Kitomi Focus Review Joseph Wamani	16
UOEEAC Screens Kashoya-Kitomi Performance	18
Wambabya Rwamarongo Focus Review James Katamanywa	18
UOEEAC Weighs Up Wambabya Rwamarongo	19
Budongo Focus Review: Progress made Ephraim Tukesiga	19
UOEEAC Spotlight on Budongo	21
Nyamugasani Sub-focus: Which Next Course of Action? Joseph Wamani	21
UOEEAC’s Re-visitation of Nyamugasani	23
Maracha Terego Focus –Next Course of Action Ephraim Tukesiga	23
UOEEAC Proposes Course for Maracha Terego	24
Nyagak-Bondo Focus: Prospects for Launching New Elimination Policy Ephraim Tukesiga	24
Nyagak-Bondo Bounces Back into View of the UOEEAC	26
Updates on Cross border Activities between Uganda & the DR of Congo Tony Ukety	26
UOEEAC Delivers its Updated Position on Cross border Matters	28
Launching River Blindness Elimination in North 1 Focus Bernard V. Abwang	28
UOEEAC Takes a Look at North 1 Focus	30
VCD-Molecular Epid. Lab Updates Harriet Namanya & David Oguttu	30
What UOEEAC Said about the Epid. Lab Updates	32
Wadelai Update & UOEEAC Recommendations	32
Predictive endmember auto-Gaussian <i>S. damnosum</i> s.l. habitat modeling in Northern Uganda (or Remote Sensing) Thomson Lakwo, Robert Novak, Peace Habomugisha & Thomas R. Unnasch	32
Discussion of Remote Sensing	35
PART D - News from some Partners	35
Mectizan Donation Program Adrian D. Hopkins	35
Proposed shipping strategies prompt reactions	36
Progress on River Blindness Elimination in the Americas (OEPA) Frank Richards	36
Reception of Richard’s OEPA News	40
NGDO Coordination Group for Onchocerciasis Control Tony Ukety	41

Ukety's Review of "Coalition Group"	41
African Program for Onchocerciasis Control, APOC Noma Mounkaila	42
Mounkaila's APOC Update	43
NTD Control Program/RTI Ambrose Onapa & Harriet Namwanje	44
NTDs Review Revisited	45
PART E - Other Issues	46
Using Standard Format for Coverage Data	46
Foci Names	46
Misrepresenting Sub-foci	46
Oncho and Filariasis Coordination	46
VHTs and NTD Integration	47
PTS Plans	47
Inter-meeting Decisions	47
Getting Results Published	47
UOEEAC, Debate, Minutes and Certification	47
PART F – Closure	47
Closing Remarks by retiring Chair J. Frank Walsh	47
Closing Statements from MOH Uganda Dennis KW Lwamafa	48
PART G – Peripherals	50
Annex I - Oncho Flag - 2011	50
Annex II - Attendance List	51
Annex III - List of Abbreviations	52
Annex IV – Autobiographical Notes on Outgoing Chairman J. Frank Walsh	53
Annex V - Uganda's Incredible Journey from Control to Elimination of Onchocerciasis: an Interview with Moses Katarbarwa	55



General introduction

Peace Habomugisha

Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC) in 2011 had its fourth session from August 15 – 17. The host hospitality facility was Serena Hotel of Kampala, Uganda.

Most of the faces that we have come to associate with the committee's once a year meeting, be it members of the committee, observers or facilitators, were present.¹ This is a clear pointer to a strong sense and trend of continuity and commitment among this body of persons working to end onchocerciasis in Uganda. Former Uganda National Onchocerciasis Control Program Manager Richard Ndyomugenyi who nowadays tends to attend in observer capacity and Dr. Ambrose W. Onapa (himself a UOEEAC member) were among the familiar faces that were absent. These two individuals had health-associated obligations to carry out elsewhere. Onapa who was scheduled to give a presentation had to ask Harriet Namwanje of NTDCP (at VCD, MOH Uganda) to do that for him.

New faces this time round included Dr. Johnson Ngorok, the new Sightsavers Country Director for Uganda, Dr. Paul Cantey of CDC, USA, and Dr. Stephen Leak of APOC, Burkina Faso. Of Ngorok not only has he replaced his predecessor Ben Male in the function of country director. He has also taken Male's place as a member of the UOEEAC – a responsibility

¹ Look in the final pages of this document for relevant details in the register of persons who attended the 4th (UOEEAC) meeting.

he assumed on account of his office.

The 4th UOEEAC meeting, in one way, was historic and historical. For the first time ever, since the committee was formed in 2008, its steering changed hands. Dr. J. Frank Walsh's term as chair ended, and Prof. Dr. Thomas R. Unnasch was elected the new chairperson, taking over straight away the chairing of the 4th session. Walsh remains a member of the committee; and he will always be remembered for ably managing the affairs of the committee, even when things were stormy, at the time of his chairmanship. Also this needs mentioning: Ephraim Tukesiga and James Katamanywa, as representatives (on the UOEEAC) of Uganda's onchocerciasis endemic districts, had their terms of office renewed so that the committee may benefit from their long-accumulated expertise. Thomas Rubaale, without any committee member's objection, was appointed new member of the committee, an honor that he readily accepted, pledging to do all his best.

We are happy to report that the districts of Pader, Kitgum, Gulu and Lamwo, where onchocerciasis infections had been reported to be of high levels, did receive considerable attention this time. Now that they have come into mainstream UOEEAC discussion, it is hoped that henceforward they will stay in the committee's view. Local (government and NGDO) officers whose responsibility it is to monitor the status of the fight of onchocerciasis in that region hopefully will be more on guard. We hope too that village, district and national officials charged with taking to the next level that attack, by providing necessary drugs and or through vector control and elimination, will get more down to business.

With regard to matters of making presentations at UOEEAC meetings, by both Uganda Carter Center (UCC) and VCD (MOH Uganda) field staff, a new welcome development sprung from the committee's 4th meeting. The UCC CDTI program, instead of contributing indirectly through its contributions to presentations by MOH field officers (the only people who have presented for two years running, i.e. 2010 and 2011), will present field reports alongside the VCD (CDTI, vector control and elimination) team. That will be the order of presentations in future, at least for the 2012 committee session, if the development is respected and implemented.

In few words we shall talk about the arrangement of the material in this report of 2011 UOEEAC proceedings. The first pages, and coming soon after this preface, hold the addresses by experts that opened the meeting – the first being by Walsh,² the second by Dr. Dawson Mbulamberi,³ the third by Dr. Solomon Fisseha who represented the WHO Representative in Uganda Dr. Joaquim Saweka, and finally that by Dr. Dennis K.W.

² Now better described as former UOEEAC chair.

³ The Assistant Commissioner for Health Services, MOH Uganda – one particularly responsible for control of vector-borne diseases. He is the ministry's focal officer for NTDs.

Lwamafa who represented Dr. Jane Ruth Aceng.⁴

Core presentations, i.e. presentations by Ugandan onchocerciasis field staff, which deal exclusively with the situation of the disease on the ground (in the country), form the second and biggest body of material. This group includes the VCD (Uganda) molecular laboratory report, although the reporter of this information presented nearly at the end of the meeting. Also placed in this category, because of their great potential relevancy to onchocerciasis fieldwork in Uganda, is the presentation on “cross border issues” (by a non-local) and the one on “remote sensing”, two of whose authors are not “local onchocerciasis fieldworkers”.

For each one of the core presentations, the presenter’s work is matched with the particular response(s) to it by UOEEAC, which response(s) follow(s) right after the presentation.⁵ Presenters in that class include Thomson L. Lakwo, James Katamanywa, Christopher Katongole, Joseph Wamani, Ephraim Tukesiga, Bernard V. Abwang, David Oguttu and Harriet Namanya, Tony Ukety, and T.R. Unnasch – some of whom, as shown by the contents, for example, presented more than once.⁶ We have also included UOEEAC’s discussion of and recommendations for Wadelai focus although no event had been planned in the committee’s 2011 timetable to deal with this matter.

Another set of presentations, generally titled “news from some partners”, were those by some other collaborators in the Uganda onchocerciasis program.⁷ In this group of presenters we have Drs Adrian D. Hopkins, Frank Richards, T. Ukety, Noma Mounkaila, Harriet Namwanje and Ambrose Onapa.⁸ This section is followed by another (titled “other issues”) that is devoted to the committee’s responses and recommendations toward certain

matters.

Words by retiring Chair Dr. J. Frank Walsh and Dr. Dennis K.W. Lwamafa of the Uganda MOH headquarters close the most important part of the present report. The peripherals thereafter include attendance list, the list of abbreviations, notes on the outgoing Chairman, and “Uganda’s Incredible Journey from Control to Elimination of Onchocerciasis”.

From what is already said, the assembling of this material has used for its advantage presentations by different people who are properly recognized. We want to record that it has also considerably benefited from one special record that has been particularly useful in the writing of the report of 2011 UOEEAC’s discussions and recommendations on the different onchocerciasis foci where the ultimate goal is elimination of onchocerciasis infection as well as the interruption of the transmission of this disease. This is the short account whose writing and revision were a corporate committee effort overseen by the committee’s new Chairman (Thomas R. Unnasch) who distributed it on 17 August 2011. It is from this committee official that authorization has been asked for (and granted)⁹ to use the “Unnasch-UOEEAC” text¹⁰ for purposes of the document now at your disposal.

In the build-up to UOEEAC 2011 and while this meeting lasted, many (people as individuals or groups and organizations) lent a hand, openly and/or indirectly, to help it succeed in fulfilling its agenda. The list of the known good doers is too large to report here. While we are thankful to one and all, it is all the partners actively participating in Uganda’s anti-onchocerciasis push – GOU, TCC, SS, APOC, etc. – that the UOEEAC and its Secretariat thank most deeply.

The reader, finally, is encouraged to also listen to and watch the video recording of the UOEEAC 2011 proceedings (in their entirety) that is available from The Carter Center Uganda headquarter offices in Kampala.

IMPORTANT NOTE: Future UOEEAC proceedings will no longer be produced in the current format. They will consist of comprehensive minutes (as recommended by the committee in August 2011) together with appendixes of opening and closing speeches, presenters’ presentations, and names of participants. The quality of each presenter or speaker’s material (in line with the requirements and guidelines of the committee as well as in terms of English) will be his or her responsibility. Speakers and presenters, besides a power point copy of their presentations, are requested to submit to the secretariat a Microsoft (Word 97-2003 or later) version of their material.

⁴ The new Director General of Health Services (DGHS) at Uganda’s Ministry of Health. Being unable to personally attend this event, she sent as her representative Dr. Lwamafa who presented her speech. Lwamafa is Uganda’s Commissioner for Health Services in the Department of National Disease Control at the MOH.

⁵ How, anyway, was the response(s) reached? When a presentation or two, or more, was/were given, as you will see from the meeting’s timetable, in the last pages of this report, the committee would have a discussion. It was out of such discussions that there evolved the response(s), which were the committee’s recommendation(s) on different oncho issues.

⁶ Lakwo is the Uganda NOCP Ag. Manager and a UOEEAC member, Katamanywa the DVCO Kyenjojo District, Katongole VCO (VCD, MOH Uganda), Wamani the VCO, Kamwenge District, Tukesiga the DVCO Kabarole District, Abwang the DVCO, Gulu District, Oguttu and Namanya of the molecular laboratory establishment at Uganda MOH VCD, Ukety of WHO Geneva, Switzerland, and Unnasch of the University of South Florida and UOEEAC.

⁷ Some collaborators or partners, i.e., besides the government of Uganda (GOU), Carter Center Uganda, and other partners.

⁸ Ngorok’s presentation, which fits in this category, was all oral as he had no written text. It is therefore not published in the current proceedings. Persons interested in it will have to consult the video record of it.

⁹ The request for consent from the Chair was written on 29th May 2012, and Unnasch’s affirmative reply was given on same day

¹⁰ Unnasch-UOEEAC 2011: Report of the 4th Annual Meeting of the Uganda Onchocerciasis Elimination Expert Advisory Committee, August 15-17. We have called the account Unnasch-UOEEAC 2011 not because we want to distance Unnasch from his committee membership, but simply to stress his leading role in putting together the text.

PART A - INAUGURAL ACTIVITIES

Words Of Welcome & Introduction

J. Frank Walsh



Ladies and Gentlemen,

Welcome to the fourth annual meeting of the Uganda Onchocerciasis Elimination Expert Advisory Committee. I am avoiding mentioning individuals as I fear to miss out some important personage, get the precedence wrong or mispronounce a name – missing out all names seems safer. In any case, I am a democrat (note the small ‘d’). However, I do especially wish to welcome all those who are participating in a UOEEAC meeting for the first time. We are essentially informal in our deliberations and so I urge all present to take full part in the discussions. It does not matter whether you are listed as a guest, observer, or member of the committee.

As the name of the committee clearly implies our task is to provide technical advice to the Ministry of Health on the elimination of onchocerciasis in Uganda with, I hope, a fair degree of expertise.

A substantial part of our meeting in 2010 was concerned with the development of the “National Guidelines for the Certification of Onchocerciasis Elimination in Uganda”, which has born fruit. We shall be revisiting the Ministry’s excellent response later on in this meeting.

The Third UOEEAC meeting also reviewed the ongoing elimination situation and made recommendations in our report for appropriate action in each of the actively pursued foci. No recommendations were made to the Ministry of Health during the year (August 2010 to August 2011) by me, on behalf of the committee, as laid down by protocol on inter-meeting decision making.

This year, at this meeting, we shall be considering important updates, especially to the epidemiological data, which should enable us to make more positive recommendations.

Finally, before standing down in a few minutes, I should like to express my appreciation of Mr. Ben Male, SSI, who retired during the year, for his services to the committee.



Welcome Notes

Dawson B. Mbulamberi



While you are here, indeed during this meeting, I wish, on behalf of MOH Uganda, to request you to advise us, on the meeting’s sidelines, on the following issue. We are in the process of working out criteria guidelines for certification of onchocerciasis elimination, but we are having a problem with foci that are co-endemic for onchocerciasis & LF. We have been doing mass ivermectin distribution in this country, in some districts we have done it for 5 years, in others (we have done it) for 6 years, but we have not yet embarked on formulating the criteria for certifying elimination of LF in any focus or in the country for that matter. The question is, if you decide, and I think we have done a good job as far as onchocerciasis is concerned, how do we take care of LF? We are trying to answer this question and each time we have had a meeting it has come up and Thomson Lakwo¹¹ will recall that I kept saying “well when the advisory group is here, they will probably advise on the way forward”. To sum up, we have not started looking at the guidelines for certification of LF, but here we are - dealing with foci in which we have both LF and onchocerciasis. For onchocerciasis, we think we have achieved the criteria, and we are saying that (yes) we can stop ivermectin mass treatment because we think we have eliminated the oncho disease in some foci or that we are successfully pursuing its elimination in others. What, however, do we do with the problem of LF in one and the same focus? Your advice will be highly appreciated on this matter.

¹¹ Then, as of now, Lakwo was the Ag. Manager of the Onchocerciasis Control Program for Uganda.

Another issue on which I would like to request your assistance is the question of co-implementation. Before MOH (Uganda) adopted the integrated approach for the control of the PCT neglected tropical diseases (NTDs) we had CDTI for onchocerciasis. But the ministry decided to adopt the integrated approach for preventive chemotherapy for 5 NTDs. Some quarters have not been very happy; they have complained that what we are doing now, using the integrated approach, might compromise CDTI. We have thought about various ways of handling the matter; we have thought about creating a taskforce to look at it critically and advise us on the way forward. We have recommended research but we have not been very lucky yet, as nobody has come forward yet to say that let us carry out a research study to see what happens to CDTI when we adopt the integrated approach. The integrated approach, we feel as MOH, is the way to go because we are hitting many enemies at the same time. We are also saving the customer plenty of time, and saving this customer cost of travel because the customer comes and we can give praziquantel, if the area is endemic for schistosomiasis, give ivermectin and albendazole rather than saying, okay today we shall give you ivermectin, then next week you can come back for praziquantel. We need your advice on this matter as well.

One more source of worry, for some quarters in this country, is what we call VHTs. We think that they should be the link between the health system and the communities. Our desire was to have Health Centers I at village level but we found that this would be very expensive; so we opted to have VHTs. These are teams of people who are residents in the different villages, who are recruited and then trained. They are given some basic knowledge so that they go round and advise the communities about issues of health. VHTs act as a link between the health system and the communities. Some quarters, though, think that this is going to destroy structures that already exist. The arrangement is that these VHTs should comprise people who have acted as community medicine distributors such as those who have participated in the distribution of HOMAPAK in the case of malaria. Actually preference is given to people of such background. Unlike some people who think that this view of arrangement of things (VHTs, etc.) might kill existing good structures, our feeling is that we are not destroying anything. We shall be thankful too for your opinions on the issue of VHTs.

I will limit myself to those three requests – requests regarding issues that are raised every now and then in some concerned quarters.

We shall be grateful if at the end of this meeting you have some advice for us on how we can forge ahead.

Once again I welcome you all. I thank you for coming

all the way from your countries, or from within this nation, to help Uganda on the way forward as far as onchocerciasis is concerned. I think we have done fairly a good job but it is up to you to judge, and say whether the claim we are making is justified or not.

I thank you Mr. Chairman and everyone very much for the opportunity to talk to you.

Welcome Remarks
*Joaquim Saweka*¹²



Solomon Fisseha represented Joaquim Saweka

On behalf of WHO, I greet you all and welcome you to this 4th session of the Uganda Onchocerciasis Elimination Expert Advisory Committee. This annual meeting of this committee is important as it will critically review progress made in the last 4 years since the country adopted onchocerciasis elimination as a goal. The committee will, after careful review of the activities done and of available data, provide recommendations for consideration by the Ministry of Health on how to advance the onchocerciasis elimination efforts in Uganda.

As you are all aware, WHO identified onchocerciasis for possible elimination as a public health problem in 1997, based on the evidence available then. The attainment of onchocerciasis elimination in parts of the Americas and in some foci in African countries including Senegal, Mali and Uganda is evidence that this is possible in most

¹² As at the 2010 August UOEEAC's 3rd convocation, the WHO Country Representative Saweka was represented by Dr. Solomon Fisseha who read out his boss's message for the event. The welcome began by recognizing the presence of the Director General of Health Services (MOH Uganda), of the person representing the APOC Director, of the main representative of The Carter Center, of the Country Director of Sightsavers International, of the Chairman of UOEEAC, and lastly, and generally, of other attendees, i.e. ladies and gentlemen in their different capacities.

of the affected areas, and this provides more basis for Uganda to push on with the elimination drive. However, there are key issues that should be put into consideration in the onchocerciasis elimination drive and these include the following:

1. Use of effective, evidence based interventions taken to scale and sustained until elimination is achieved in a focus. I believe that from time to time interventions are reviewed to ensure that they are effective and in line with new evidence being generated through research and country experiences.

2. Appropriate methods and indicators for monitoring the progress towards elimination, and documentation of elimination when it is achieved. Onchocerciasis elimination should be clearly defined so that when it is attained there are no doubts. I know that this committee has deliberated before on the indicators for monitoring elimination and the criteria for ascertaining that it has been achieved. I hope that these have been peer reviewed and agreed upon internationally by WHO and other partners to ensure that the Uganda program is following credible international standards.

3. Clear guidelines on post-elimination activities to ensure that onchocerciasis is not re-introduced in the foci that have already attained elimination. Specifically, it should be very clear when and how mass drug administration should be stopped in different foci, putting into consideration the risk of re-introduction of the disease; and there should be clear surveillance strategies that will enable quick detection of re-introduction of the disease if at all it occurs. We have noticed a tendency for complacency when elimination or eradication is achieved in the fight of certain diseases, but this should be avoided in the onchocerciasis program, especially since a phased approach is being used. Integration of post-elimination surveillance in national surveillance systems should also be explored now because sustainability of a vertical post-elimination system is quite difficult and may not be financially feasible. The committee should provide recommendations on these issues for consideration by government. As more countries in Africa move towards the elimination goal, I hope regional guidelines will be developed and that the Uganda guidelines will inform that development.

4. Clear strategy for handling cross-border transmission of infection, especially when the neighboring countries like South Sudan and DRC are at different levels of control of the disease. This is very critical as it can interfere with the elimination efforts in Uganda, if the risk for re-infection from the neighboring countries remains very high. There is need for cross-border collaboration in program planning, synchronization of activities like mass drug administration or vector control in the different countries, and strengthening of all the programs in the sub-region so that elimination becomes a sub-regional goal.

5. Monitoring community participation in onchocerciasis elimination as this has been the cornerstone for the success of this program thus far.

6. Special attention to post-conflict places: As you are aware, there is a high prevalence of onchocerciasis in the post-conflict districts of Acholi region.¹³ The attainment of onchocerciasis elimination in Uganda as a country will be determined by how quick and effective our interventions are in this region. In this quarter, “Nodding Syndrome” is highly prevalent in areas with high onchocerciasis microfilaria prevalence. It is of interest to study the impact of significant reduction in microfilaria prevalence on the incidence of the nodding syndrome. It is highly recommended that biannual mass treatment with ivermectin be considered for this region as this has been documented to result in elimination of the disease in a shorter period.

I urge this expert advisory committee to look into all these issues as you review the progress made by the onchocerciasis elimination program in Uganda.

Lastly, let me take this opportunity to commend the Government of Uganda, APOC, The Carter Center, SSI, WHO, and other partners for their technical, financial, and logistical support towards onchocerciasis elimination. I urge all to build on the country’s experiences with polio and Guinea Worm eradication, as well as the recently achieved Maternal and Neonatal Tetanus elimination¹⁴ to make onchocerciasis elimination a reality in Uganda.

I wish you fruitful deliberations. I would like to assure you that WHO fully supports this initiative and I wish to pledge our continued support. I thank you all for listening to me!



¹³ These are Lamwo, Kitgum, and Pader.

¹⁴ The certification of both took place about mid 2011.

Welcome And Opening

Jane Ruth Aceng¹⁵



Dennis K.W. Lwamafa represented Jane Ruth Aceng

It gives me great pleasure and honor to officiate on this important occasion. On behalf of the Ministry of Health, I would like to warmly welcome you all to Uganda and in particular Kampala. I extremely appreciate your readiness to give up your valuable time to contribute your experience and expertise to this meeting.

You bring with you a great variety of knowledge, experience and perspectives on onchocerciasis. This diversity I believe will contribute to the richness of discussion that I am confident you will have, provided everyone recognizes and respects each other's different constraints and responsibilities.

Being a meeting of experts, the purpose is not to seek to negotiate an agreed course of action, but its main purpose is to generate a better understanding of the complex issues involved in onchocerciasis elimination in Africa and specifically Uganda. The main product I expect from this meeting will be a report summarizing the main issues that will have been identified, the points that will have been made together with recommendations. This will be important if the program is to streamline and improve on onchocerciasis elimination in Uganda.

¹⁵ Dr. Ruth Aceng is the new Director General of Health Services (DGHS) at Uganda's Ministry of Health. Her address started off by recognizing the turnout at the meeting of the different delegates: WHO's Representative to Uganda, APOC Director's Representative at the event, The Director of the Mectizan Donation Program, Atlanta (USA), UOEEAC's Chairman (Dr. Walsh at that time), the lead Representative from The Carter Center, Atlanta (USA), The NGDO Coalition Coordinator, Representatives of Uganda onchocerciasis endemic districts, and, on the whole, each one of the distinguished invited guests (ladies and gentlemen) in their various capacities. As institutions, MOH Uganda/GOU partners in the anti-onchocerciasis effort (whether represented or not) were also specially recognized by the DGHS: APOC, Carter Center, GTZ, RTI/USAID, Sightsavers constituted her list.

I find it helpful to think of moving from positions to principles. If we are to move forward on the issue of elimination of onchocerciasis in Africa, and in particular Uganda, there are many issues that we need to address. We therefore need principles that can act as a lodestone or a compass as we and many others deal with the details and practical problems of onchocerciasis elimination.

Firstly, we take the availability of certification guidelines. I was reliably informed that this very committee worked on the draft text. The document has already been channeled through the technical committee of the Ministry of Health. This document is very important if we are to move forward, and it is now available for your final scrutiny and will be the basis upon which the program will operate. If we are to achieve the goal of elimination of onchocerciasis, all the partners represented here have a role to play. It should be noted that the world is becoming increasingly integrated. It has become less and less possible for different policy areas to be handled independently of each other: therefore working as a team has become the order of the day. I would like to commend all the partners that have kept this committee moving through their technical and other input.

Secondly, building capacities at national level for onchocerciasis elimination should be at the forefront. The health sector, with the support of partners, has a challenge of ensuring that relevant personnel are in place to preserve the achievements so far made in onchocerciasis elimination. Already some foci are due for halting of interventions, and this urgently needs strengthening of surveillance to support the post treatment effort. One of the requirements for certifying a focus as free of onchocerciasis is three-year Post Treatment Surveillance, an activity that needs strong support of district health teams. This preparedness is important if the affected communities are to understand onchocerciasis elimination strategy.

We need also to appreciate the fact that if we are to achieve certification of onchocerciasis, the issue of documentation becomes very crucial. Reliable data is wanted at all levels to demonstrate the trend in onchocerciasis elimination in each focus, and this should be verified by the National Certification Committee. Where interventions are to be halted there should be clear evidences of transmission interruption based on the current guidelines. Effort should also be made to document every step of elimination in each of the foci.

To conclude, allow me to comment on some few issues regarding elimination of onchocerciasis in Uganda.

The issues that you will discuss will essentially be scientific and technical. As such they will require technical solutions that are expected to be provided by experts seated here. We need to be sure that we have all the evidences available for onchocerciasis elimination before we make any decision.

The test of a meeting like this one is not the production of recommendations, nor is it the quality of report – although I am sure in this case, it will be a good one. The test is whether better understanding of the issue of onchocerciasis elimination has been fully seized in the context of Uganda and the African continent at large. These issues should further be translated into positive action within our own areas of operation and influence.

Finally, I would like to extend my sincere appreciations: to all the partners and to The Carter Center in particular for the support they have offered towards this meeting; to the organizers and to all the audience members for having honored the invitation.

With these words, it is now my pleasure and honor to declare this 4th session of Uganda Onchocerciasis Elimination Expert Advisory Committee officially open.

Thank you for your attention.



PART B - MONITORING AND CERTIFICATION ISSUES

Guidelines for Certification of Onchocerciasis Elimination in Uganda Thomson L. Lakwo



Background

- The Government of Uganda launched elimination policy in 2007.
- Policy aims to eliminate onchocerciasis by semi - annual treatment with ivermectin and vector control/elimination.
- Policy is being implemented in 14 districts in six foci.
- Need arose for criteria for decision making in elimination.
- First draft of the guidelines document was developed by UOEEAC.¹⁶
- Procedures for MoH to own a document is for it to be reviewed by their various committees.

Present Content

- Introduction - justification of guidelines.
- Elimination interventions.
- Onchocerciasis Flag.
- Certification criteria – indicators.
- National preparations - PTS, reports.
- International Certification Committee.

¹⁶ The initial draft development took place in 2009, and the committee was still known by its older name of Uganda Onchocerciasis Elimination Committee – the name it got at the first meeting (called in August 2008 by MOH Uganda and The Carter Center) where the committee was instituted as “the Uganda program for elimination of onchocerciasis (UPEO)... advisory body composed of national and international experts that conducts annual review, monitoring and evaluation...activities, recommends effective approaches and methods for hastening onchocerciasis elimination” (*Onchocerciasis Elimination Program in Uganda, The Uganda Onchocerciasis Elimination Committee (UOEC): Terms of Reference and Procedures of Operation 2008*). The name changed from Uganda Onchocerciasis Elimination Committee (UOEC) to UOEEAC (Uganda Onchocerciasis Elimination Expert Advisory Committee) about mid 2010, the time of the development of the second draft of the guidelines where for the first time we hear of UOEEAC.

The first draft was therefore made by UOEC, not UOEEAC. UOEEAC is not even mentioned in that oldest of the drafts – only UOEC is. See *National Guidelines for Determining the Elimination of Onchocerciasis in Uganda* (Draft 2, June 2010, pp. I, ii, 11-14). Under point 5.0, p.12, this draft says: “The Uganda Onchocerciasis Elimination Committee (UOEC) now renamed Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC) was formed in 2008 with the objective of providing technical advice to the Ministry of Health on onchocerciasis elimination in the country.” In a later version of Draft 2 (*National Guidelines for Determining the Elimination of Onchocerciasis in Existing Foci in Uganda*), also from June 2010, UOEEAC replaces UOEC in most places, while in a few others UOEC stubbornly escapes being replaced (pp. 2, 13-17). The statement that we just cited from point 5.0, p.12, is repeated, word after word, as item 5.1 (p.10) of the draft edition with the name National Criteria for Determining the Elimination of Onchocerciasis in Uganda (Draft: Post UOEEAC Review, August 12, 2010), a draft that appeared, as its name clearly shows, in the wake of the third UOEEAC meeting of August 10-12, 2010. See also one presentation by Thomson L. Lakwo at UOEEAC 2010 (10-12 August): *Terms of Reference for the Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC)*. There, inter alia, he writes: ‘The UOEC was renamed “Uganda Onchocerciasis Elimination Expert Advisory Committee” – UOEEAC.’

- Challenges & solutions.
- Conclusion.
- Appendices – SOPs – 10.

Review of post-August 2010 UOEEAC draft

- NCC review April 2011.
- CDC-Technical Working Group – 1st July 2011.
- TRC – 19th July 2011.
- Comments used to revise the document in conformity with MoH guidelines format.

Review changes

- Title – reverts to ‘guidelines’ instead of ‘criteria’.
- Some of the contents move from main text to appendix.
- Use of action verbs was strengthened.
- Rephrasing was conducted in some of the paragraphs.
- National preparations included.
- Challenges, solutions & conclusion added.
- Standard operating procedures included.

Next course of action

- Final comments from this committee (UOEEAC 2011 August).
- Comments from the WHO technical arm.
- Presentation to Uganda MOH’s Senior Management Committee.
- Presentation to Top Management Committee of MOH Uganda.
- Endorsement.
- Printing.
- Dissemination and use.



UOEEAC in Fresh Look at Certification of Onchocerciasis Elimination Guidelines

For work generally accomplished satisfactorily to this point, Uganda’s MOH is worthy of a pat in the back – this being the reason why some of the UOEEAC members quickly and warmly welcomed the 2011 edition of the document as an “improvement over” past drafts.

This reception was not without concerns, as we proceed to exemplify. We take the reactions to the replacement of the word criteria, in the document title, with guidelines, which was in fact a return to the latter term. But first, why is it a return? Because the document, during its early formative days, has had different names. First it was called National Guidelines for Determining the Elimination of Onchocerciasis in Existing Foci in Uganda (Draft 1, December 2009, pp. 1-13 & Draft 2009, pp. 1-15).

Later that name changed to National Guidelines for Determining the Elimination of Onchocerciasis in Uganda (Draft 2, June 2010, pp. cover page, i-iv, 1-24), and to National Guidelines for Determining the Elimination of Onchocerciasis in Existing Foci in Uganda (Draft 2, evidently during later part of June 2010, pp. 1-24). After the 10-12 August 2010 UOEEAC meeting there appeared another version titled National Criteria for Determining the Elimination of Onchocerciasis in Uganda (Draft:

Post UOEEAC Review, August 12, 2010, pp. cover page, i-iv, 1-18).Until about the time of the UOEEAC of August 2011, the document was still known as National Criteria....

We now return to the point of substitution: When saluting the change from criteria to guidelines, saying the latter is more flexible than the former, the 2011 UOEEAC assembly sounded caution. These guidelines are not cut and set in stone; they are not “the ten commandments”; not the bible; it was said. They can and will likely need to be revised in certain circumstances to match realities on the ground because, as they presently are, they do not capture everything that is possible, everything likely to be confronted ahead. With time, said in different words, the guidelines will change as unique situations will demand changes in the document’s stipulations.

The committee’s general wish is that MOH Uganda staff, those involved in onchocerciasis elimination in particular, will not forget that the guidelines are not cut in stone and rock. These sentiments, which are results of hands-on experience and serious learning, are not new in the UOEEAC circle. We find them as early as the fledgling stages of the birth and rise of the committee. “Rigorous satisfaction of elimination certification criteria (indicators for elimination)”, says the committee (UOEC 2008) whose name was to become UOEEAC in 2010, would “be established and periodically reviewed in detail, focus by focus, by the Uganda Onchocerciasis Elimination Committee (UOEC), a group of national and international experts...”, adding that “the criteria used” would “be developed by the UOEC with due reference to WHO, APOC and OEPA criteria and protocols”.

Some of the committee’s other concerns have been circulated by UOEEAC’s newly selected Chairperson Thomas R. Unnasch (17 August 2011), the coordinator and chief compiler of the points. This, however, was a summary of a longer text of matters that was passed on to MOH Uganda’s top management for attention, and the short list can only make sense when read in conjunction with the July 2011 edition of the Guidelines for Certification of Onchocerciasis Elimination in Uganda.

MOH (Uganda) is unquestionably the happy owner of the Guidelines for Certification of Onchocerciasis Elimination in Uganda (July 2011 edition), although, it must be said, other bodies and individuals, named and unnamed, directly and indirectly, have contributed significantly to this document’s content during 2009 - 2011. Copies of the guidelines (July 2011 edition), which, by the way, are yet to be finalized and made ready for expert and non-expert consumption, may be accessed, for those who are interested in them despite being unfinished, from MOH Uganda’s National Onchocerciasis Control Program, UOEEAC Chair or Co-Secretaries, Uganda Carter Center or any other connected office.

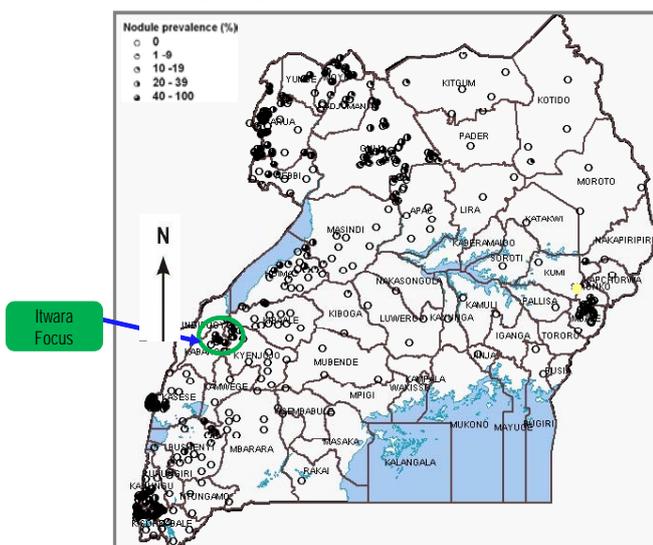


PART C - MATTERS SPECIFIC TO INDIVIDUAL FOCI

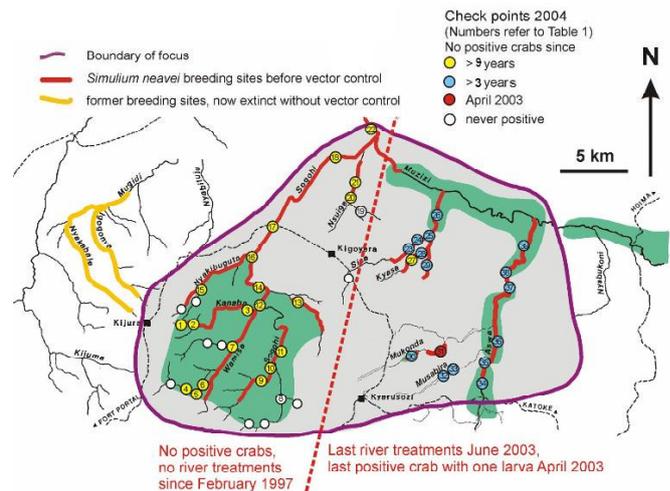
Itwara Focus James Katamanywa



REMO MAP OF UGANDA SHOWING ITWARA FOCUS



Itwara Focus



Introduction

- Itwara Onchocerciasis Focus traverses districts of Kabarole and Kyenjojo.
- It covers an area of 500 to 600 km².
- It has two secondary foci of Siisa and Aswa.
- The vector there was *Simulium neavei* whose larvae develop in phoretic association on fresh water crabs.
- It has a population of 95,000 people (2010 CDTI census data).
- Annual ivermectin mass treatment there started in 1991; was supplemented with vector elimination from 1995 onward.

Funding

- Program funding and implementation started by GTZ (1991), APOC got involved in 1998, The Carter Center (2009) and NTD/MOH (2008 to date).
- Baseline data collection (1991-1994) on disease epidemiology and entomology by GTZ, Institute for Tropical Medicine (Hamburg, Germany) and MOH Uganda.

Research results

- Microfilariae carrier prevalence 88%.
- Community microfilariae load (CMFL) 22-93 mf/snip.
- Nodule carriers 49%.
- Onchodermatitis prevalence 34%.
- Ocular oncho present with less damage.
- Epilepsy and retarded growth.
- *S. neavei* highly anthrophilic 300 fly/man/ day.
- Infection rates in the vector population above 40%.
- Annual transmission potential estimated at 4,500 to 6,500 infective larvae /person /year.

Results: Fly infection

- Vector infection rates decreased sharply after the distribution of ivermectin but always recovered a few months later.
- There was some downward trend during the first four years of treatment but transmission remained high.

- Investigation whether the effect of ivermectin could be enhanced by vector control measures started in 1994.

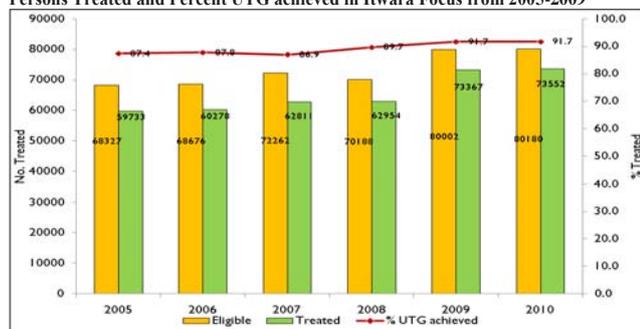
Results of Larviciding

- In 1995, *Simulium* vector elimination extended in all streams / rivers of the Itwara forest reserve.
- By September 1996, flies had virtually disappeared.
- For the last 15 years, no fly caught in the Itwara main focus.
- The last adult *S. neavei* caught in 2003 on River Siisa.
- In 2003, only 7 larvae of *S. neavei* were found in 2,268 river crabs from 32 sites.
- One year later in February 2004, none of the 3,814 crabs from 39 sites carried immature stages of the vector fly (*Prof R. Garms Report*).
- Assessment of 2004: None of the 10,000 crabs was carrying early vector stages.
- Assessment of 2005: None of the 4,000 crabs, from 41 sites earlier infested, was carrying young vector stages.
- *S. neavei* appearance eliminated from Itwara focus but monitoring continues.

Epidemiological indicators impact assessment

Indicators	1991	2004	2009
Microfilariae carriers	88%	1.7%	0 (686) 0%
CMFL	49 mf/s	0.06 mf/s	0 mf/s
Nodules	49%	13.5%	1 (686) 0.14%
Onchodermatitis	34%	1.3%	11 (686) 1.6%

Persons Treated and Percent UTG achieved in Itwara Focus from 2005-2009



Entomological indicators

Entomological indicator	1991 – 1995	July 2010
Infection rate	40%	0%
Infective rate	> 10%	0%
ATP	4,500 – 6,500	0%

Itwara OV16 and skin snip PCR results

Test	Number screened	Number positive	% positive	Comment
OV16 (Sept 2010)	3316	2	0.06	Follow up snips of the 2 Ov16 positive cases
Snip PCR (2 putative positive children)	2	0	0	The skin snips were negative using microscopy & PCR
Snip PCR (2009)	686 (adults and children)	0	0	Skin snip PCR results were negative

Conclusions

- Interruption of transmission had been achieved by 2004.
- With the focus isolated no threat of re-infestation.
- Annual mass treatment coverage has been going on at more than 80% coverage of eligible population.
- The 2009 epidemiological impact assessment revealed no threat of the disease.
- OV16 and skin snip PCR results for children also revealed no disease.

Recommendation

Mass treatment with ivermectin is not necessary and should be stopped.

Appreciation

Extended to German Technical Cooperation (BHS); Bernhard Nocht Institute, Hamburg, Germany; Mectizan Donation Program; Merck & Co.; The Carter Center; APOC; MOH Uganda; Vector Control Unit (Fort-Portal); the varied Kyenjojo & Kabarole leaderships; and the affected communities.



Committee Re-examines Itwara

“Based upon a thorough examination of the evidence,” we read, “the committee...concluded that the Itwara focus has met the MOH guidelines for transmission interruption and recommends that the MOH stop community-wide interventions. Treatment should still be made available on an individual basis to the rare individuals who might still be experiencing symptoms of onchocerciasis following the end of community-wide treatment. The committee recommended that the epidemiological data supporting this conclusion be prepared for publication in a peer reviewed journal” (Unnasch-UOEEAC 2011).¹⁷ As a signal that interruption of transmission has been achieved in this focus, it was placed in the light green area of the onchocerciasis flag.



Imaramagambo Focus

James Katamanywa

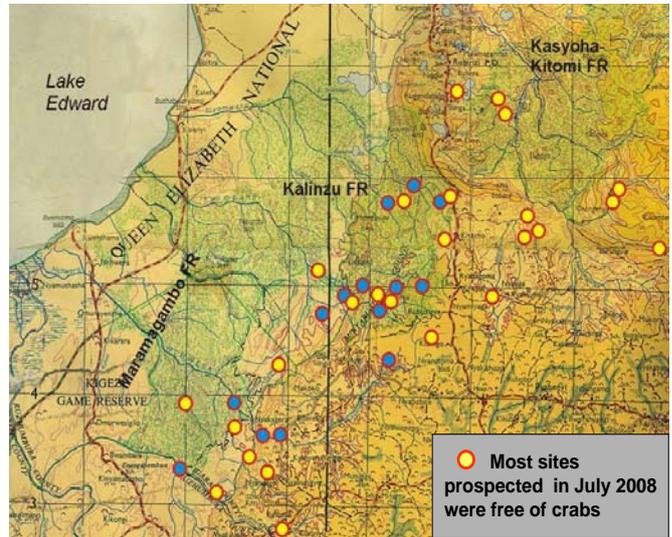
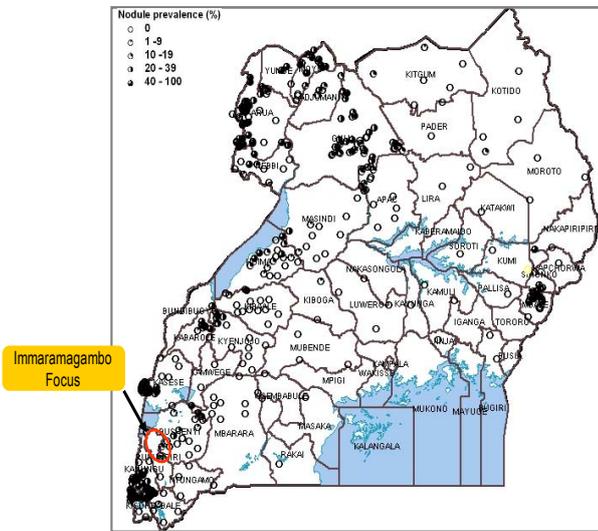
Focus Background

- Associated with Imaramagambo/Kalinzu FR.
- Area size about 580 km².
- *S. neavei* is suspected to be the vector.
- CBM survey data revealed onchocerciasis was a public health problem.
- Annual ivermectin treatment started in 1993 and still ongoing in 212 villages.
- Attempt to assess the situation has been ongoing.
- In 2004 APOC impact assessment team visited three river systems in Kalinzu FR.
- In 2007 a team from the Carter centre made a short visit covering 15 sites.

¹⁷ See the general introduction for the full details of this account.

- In 2008 Professor Garms during his consultancy assessed 45 sites in Imaramagambo and Kalinzu FR.
- All efforts focused on gathering adequate information for the next course of action.

REMO MAP OF UGANDA SHOWING IMARAMAGAMBO FOCUS



Survey 2004: APOC impact assessment

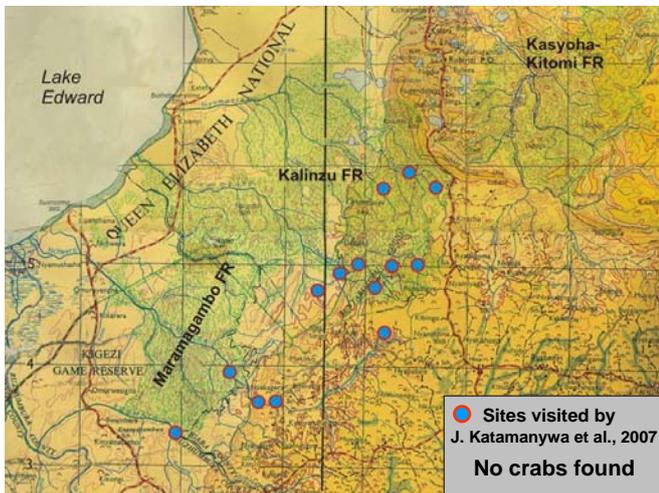
- Prospection of three river systems in Kalinzu FR.
- No fresh water crabs caught during the visit.
- No adult flies caught during the human-baited catches.
- Laborers of Rwenzori Highland Tea Estate interviewed had vague knowledge of the fly and the disease

Survey 2008: Professor Garms, et al.

- Complete absence of freshwater crabs could not be confirmed.
- No *S. neavei* was caught by the hired vector collector during 1 week of catching.
- Out of the 295 people skin snipped from four sentinel villages all were negative for onchocerca volvulus.
- Majority (67.5%) of those examined had taken ivermectin for < 5years.

Skin Snips for PCR

Age Group	Number Screened	Number Positive	% Positive
5 - 9	29	0	0.00
10-14	78	0	0.00
15-19	52	0	0.00
20-29	91	0	0.00
30-39	74	0	0.00
40+	138	5	3.62
Total	462	5	1.08



Imaramagambo OV16 and Snip PCR results

Test	Number Screened	Number Positive	% Positive	Comment
OV16	3356	13	0.4	Collect skin snips from the positive children for PCR
Snip PCR (11 putative positives)	11	0	0	All the snips were negative according to microscopy and PCR

Survey of 2007: Katamanywa et al.

- There was no sign of the vector *S. neavei*.
- No adult flies were caught during the visit.
- No fresh water crabs, the obligate phoretic hosts, were caught.
- No evidence that *S. damnosum* could be the vector in this focus.
- Skin snip examination was recommended.

Conclusion

- Data for 2004, 2007 and 2008 all suggest that there is no onchocerciasis transmission in the focus.
- There were no crabs observed in 2007 and 2008.
- Established catching sites and spot catches did not yield any vector flies.
- Only 5 (1.08%) adults, who were all over 40 years, were positive from the PCR results.
- OV16 results: 0.4% (13children) were putative positive.
- Follow up of 13 children got 11 of them who were confirmed with skin snip PCR to be negative.

Suggested way forward

- Interruption of transmission has been attained in this focus. Treatment should therefore be stopped.

Skin Snip Surveys 2011 (Children)

District	Community	No. Assessed	No. of persons +ve for mf	% mf +ve
Bududa	Buriri	8	0	0
Bududa	Bubungi	27	0	0
Bududa	Bunabutiti	22	0	0
Bududa	Bunabatsu	15	0	0
Mbale	Bukikoso	15	0	0
Totals		87	0	0

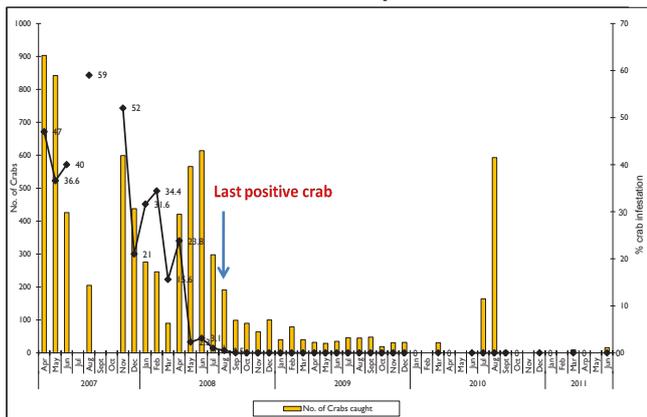
Epidemiological indicators: nodules

No	Sentinel villages	Baseline 1994	Post-int: 2005	Post-int: 2011
1	Bubungi	73.3%(N=30)	3.9%(N=154)	2.5%(N=80)
2	Bunabutiti	60%(N=30)	2.7%(N=110)	0.0%(N=100)
3	Bunabatsu	40%(N=30)	2.4%(N=124)	0.0%(N=118)
4	Buriri	63.3%(N=30)	3.6%(N=140)	1.8%(N=55)

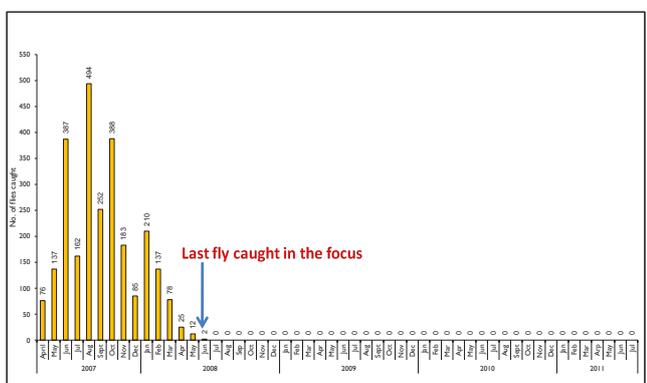
Entomological indicators

Indicators	2007	2008	2009	2010	2011
Fly density	5 FMH	0	0	0	0
Fly infection rate	7%	-	-	-	-
Fly infective rate (dissections)	0%	-	-	-	-
Fly infective rate (PCR), N=2300	0%	-	-	-	-

Trend of Crab infestation from April 2007 – June 2011



Trend of S.neavei catches from 2007- June 2011



Serological assessment (OV 16) in Elgon focus: 2010

District	No. of Communities	Age Group	No. Screened	Positive IgG4	% positive
Bududa		1 to <5	478	0	0
		> 5 and ≤ 10	498	0	0
		> 10 and ≤ 14	397	0	0
Sub total	6		1,373	0	0
Manafwa		1 to <5	149	0	0
		> 5 and ≤ 10	115	0	0
		> 10 and ≤ 14	100	0	0
Sub total	3		364	0	0
Mbale		1 to <5	280	0	0
		> 5 and ≤ 10	190	0	0
		> 10 and ≤ 14	188	1	0.6
Sub total	4		658	1	0.2
Sironko		1 to <5	206	0	0
		> 5 and ≤ 10	229	0	0
		> 10 and ≤ 14	221	0	0
Sub-total	4		656	0	0
Entire focus		1 to <5	1,113	0	0
		> 5 and ≤ 10	1,032	0	0
		> 10 and ≤ 14	906	1	0.1
Grand total	17		3,051	1	0.03

Conclusion

- This is the only isolated focus in Eastern Uganda.
- Fly infective rate 0%.
- Low Mf prevalence of 0.8% and 1.8% in two sentinel sites, and no children were mf positive.
- PCR pool screening (n=2300) 0%.
- OV16 blood spot analysis 0.03%.
- No positive crabs in the focus now for 3 years.
- No single adult fly caught for now 3 years.
- Transmission has been interrupted in the focus.

Recommendation

- Based on the available evidence there is need to halt intervention in Mt. Elgon focus.

Acknowledgements

Go to River Blindness Foundation; The Carter Center; John Moores; Merck and Co.; African Program for Onchocerciasis Control/WHO; NOCP, Uganda Ministry of Health; Mbale, Sironko, Bududa & Manafwa District Local Governments; District Onchocerciasis Coordinators; Entomological Assistants; Vector Collectors; & endemic communities.



UOEEAC Appraises Elgon Status

Elgon has “met all guidelines with the exception of Ov16 prevalence, where one seropositive individual was found” who was nonetheless “over ten years of age, outside the age range for the guideline, and may thus have been exposed a long time ago” although neither PCR nor skin snip confirmation of the person’s status could be given. “Based on the weight of the evidence, and considering the strong evidence of the local extinction of the vector at this focus, the committee recommends that community-wide interventions be discontinued,” reads Unnasch-UOEEAC 2011, it being said on top of that that “treatment should still be made available on an individual basis to the rare individuals who might still be experiencing symptoms of onchocerciasis following the end of community-wide treatment.” Because it is the committee’s conviction that transmission has been interrupted in Elgon, the focus was moved to the light green band of the onchocerciasis flag.



Bwindi Focus Review

Christopher Katongole

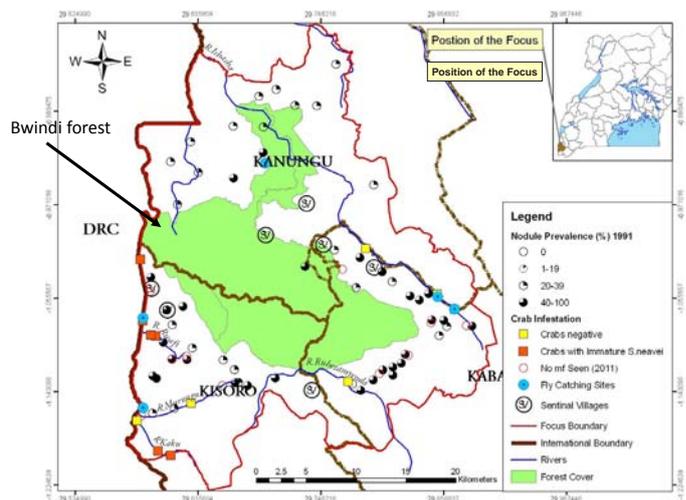


Introduction

- Located in SW Uganda, around the Bwindi impenetrable forest.
- Traverses the districts of Kisoro, Kabale and Kanungu.
- Nine endemic sub-counties, 188 affected communities with 121,652 people at risk.
- Vast areas have been deforested with the exception of the gazetted Bwindi impenetrable forest of which a small part extends into the DRC.
- The known oncho vector is *S. neavei*.
- The main river systems in the focus are Ivi, Ishasha, Kaku, Murungu, Ruafi and Ruhezamyenda.

- All rivers drain into DRC except Ruhezamyenda which drains into Lake Mutanda.
- Annual CDTI started in 1993 and scaled to semi-annual in 2007.
- Treatment coverage over 85% for the last 17 years.
- Preliminary entomological surveys in Kisoro were carried out in February 2010.
- By 1962, *S. neavei* infection rate was 6.5% (A.W.R. McCrae, 1962).
- In 1964, *Potamonautes* sp carrying *S. neavei* larvae were collected from Ishasha tributaries in Kanungu district (Colbourne and Crosskey, 1965).
- In 1966, A.W.R. McCrae collected *P. aloysiisabaudiae* in Munyaga and Mbwa Rivers in Kanungu district (Prof. Neil Cumberlidge, pers. com).
- No record of past vector control attempts.

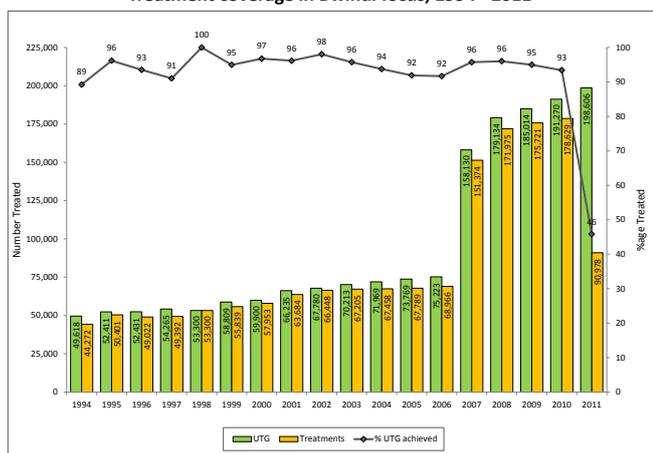
Map of Bwindi Focus



Google Image of a strip of Bwindi forest crossing into DRC from Uganda



Treatment coverage in Bwindi focus, 1994 - 2011



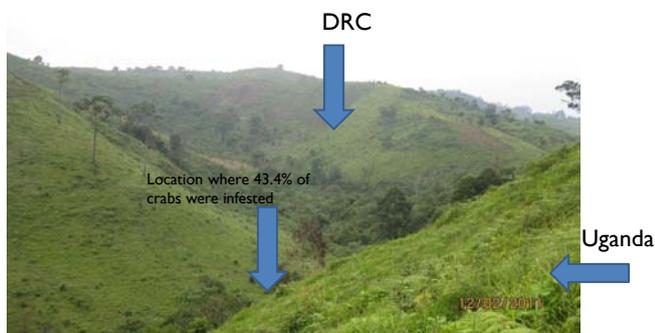
ENTOMOLOGICAL FINDINGS

Crab catches in Bwindi Focus

River system	Feb 2010			Aug 2010			Feb 2011		
	No. of sites prospected	No. of crabs caught (No. with immature stages of <i>S. neavei</i>)	% +ve (Mean crab infestation)	No. of sites prospected	No. of crabs caught (No. with immature stages of <i>S. neavei</i>)	% +ve (Mean crab infestation)	No. of sites prospected	No. of crabs caught (No. with immature stages of <i>S. neavei</i>)	% +ve (Mean crab infestation)
Ruafi	3	100* (18)	18 (0.23)	-	-	-	6	358* 12s (39)	10.9 (0.17)
Kaku	2	86* (5)	5.8 (0.07)	4	302* 5s (0)	0	4	241* 12s (0)	0
Murungu	1	14* (0)	0	2	50* (2)	0.04	8	131* (0)	0
Ruhezamyenda	2	134s(0)	0	7	630s (0)	0	5	120s (0)	0
Ivi	2	0 (0)	0	-	-	-	-	-	-
Ishaasha	-	-	-	8	4s (0)	0	4	2s (0)	0
Total	10	334(23)	6.9 (0.09)	21	352* 635s (2)	0.2 (0.005)	27	730* 146s (39)	5.3 (0.08)

Note: * *Potamonautes aloyisabaudiae*; s - small species

Ruafi River as it enters DRC



Kanungu district

- The two rounds of river prospection at 8 sites in 2009 and 3 sites in 2011 revealed no crabs.

Simulium fly investigations

- 4 entomological sites were established in the focus.
- Monthly fly collections are taken to the central laboratory for parasitological investigations using PCR.

Black Fly Collections (June – July 2011)

District	Entomological site	River	Adult <i>simulium</i> caught		
			June	July	Total
Kisoro	Mugoti	Ruafi	9	7	16 (s.n)
	Kiruhura	Murungu	1	0	1 (s.n)
Kabale	Mukongoro	Ishaasha	271	447	718 (s.d)
	Kitatamba	Ishaasha	766	2423	3189(s.d)
Kanungu	Byumba	Kyanya	0	0	0
Total			10(s.n) 1037(s.d)	7(s.n) 2870(s.d)	17(s.n) 3907(s.d)

Epidemiological Findings

Mf Prevalence (Adults)

DISTRICT	VILLAGE	1993		2004		2006		2011	
		No. Assessed	No. of persons +ve for mf (%)	No. Assessed	No. of persons +ve for mf (%)	No. Assessed	No. of persons +ve for mf (%)	No. Assessed	No. of persons +ve for mf (%)
Kisoro	Mugombwa	50	30 (60)	48	3 (6.3)	-	-	15	0
	Suma	50	9 (18)	60	3 (5)	-	-	40	0
	Kikobero	50	42 (84)	65	3 (4.6)	-	-	70	0
	Kashaka	50	27 (54)	51	3 (5.9)	-	-	28	0
	Gacenkya	-	-	-	-	-	-	99	0
	Muko	50	25(50)	40	0	-	-	-	-
	TOTAL	250	133(53.2)	264	12 (4.5)	-	-	252	0
Kabale	Kigarama	-	-	-	-	-	-	59	0
	Mburameizi	-	-	-	-	-	-	49	0
	Kinyungu	-	-	-	-	-	-	73	0
	Kitagata	-	-	-	-	-	-	26	0
	Ndego	-	-	-	-	-	-	53	0
	TOTAL	-	-	-	-	-	-	260	0
Kanungu	Katunda	50	21 (42)	-	-	141	1 (0.7)	44	0
	Kibingo	50	27 (53.7)	-	-	155	0	44	0
	TOTAL	100	48 (48)	-	-	296	1 (0.3)	88	0
	Grand total	350	181 (51.7)	264	12 (4.5)	296	1 (0.3)	600	0

Note: Data for 2004 includes children; this has a reducing effect on the mf rates

Mf Prevalence (Children <10 yrs)

DISTRICT	VILLAGE	2011		
		No. Assessed	No. of Children +ve for mf	% mf +ve
Kisoro	Suma	1	0	0.0
	Kikobero	5	0	0.0
	Kashaka	9	0	0.0
	Gacenkya	5	0	0.0
	TOTAL	20	0	0.0
Kabale	Kigarama	2	0	0.0
	Kinyungu	7	0	0.0
	Kitagata	7	0	0.0
	TOTAL	16	0	0.0
	Grand total	36	0	0.0

Nodule Prevalence (Adults)

DISTRICT	VILLAGE	1993		2004		2011	
		No. Assessed	% of Persons +ve for nodules	No. Assessed	No. of Persons (% +ve for nodules)	No. Assessed	No. of Persons (% +ve for nodules)
Kisoro	Mugombwa	50	50	48	3 (6.3)	15	0
	Suma	50	3	60	0	40	0
	Kikobero	50	69	65	5 (7.7)	70	2 (2.9)
	Kashaka	50	11	51	1 (2.0)	28	1 (3.6)
	Gacenkya	-	-	-	-	99	2 (2.0)
	Muko	50	2	40	0	-	-
	TOTAL	250	224	224	9 (4.0)	252	5 (2.0)
Kabale	Kigarama	-	-	-	-	59	0
	Mburameizi	-	-	-	-	49	0
	Kinyungu	-	-	-	-	73	0
	Kitagata	-	-	-	-	26	0
	Ndego	-	-	-	-	53	0
	TOTAL	-	-	-	-	260	0
Kanungu	Katunda	-	-	-	-	44	0
	Kibingo	-	-	-	-	44	0
	TOTAL	-	-	-	-	88	0
	Grand total	250	224	224	9 (4.0)	600	5 (0.8)

Note: Data for 2004 includes children; this has a reducing effect on the nodule rates

Ov16 Results (1-9 years)

District	First Visit (2010)		Purposely collected Samples from communities around <i>Simulium</i> Breeding sites (2010)	
	Samples Collected	Number Positive	Samples Collected	Number Positive
Kabale	840	0	453	0
Kanungu	1603	0		
Kisoro	1057	0	979	0
Total	3500	0	1432	0

Conclusion

- No crabs have been observed on the Kanungu and Kabale sides yet.
- *S. neavei* breeding seems to be limited to areas close to the DRC border with mean crab infestation of 0.17.
- There is a small part of the Bwindi impenetrable forest that crosses into the DRC where transmission could be going on.
- At the moment there is no evidence of ongoing onchocerciasis transmission on the Ugandan side.
- It is suspected that onchocerciasis transmission in the focus has been interrupted.

Recommendations

- Initiate cross border surveys (epidemiological & entomological).
- Monitoring with crab trapping and vector collection should continue on established sites.
- Semi-annual treatment should continue, awaiting the outcome of the cross border surveys (epidemiological & entomological).

Appreciation

Offered to Mectizan Co. Inc.; River Blindness Foundation; The Carter Center; John Moores; APOC; LCIF/Uganda Lions; M.O.H-Uganda; the affected districts (Kabale, Kisoro & Kanungu); and the affected communities.



Through the Spectacles of UOEEAC – Bwindi Focus

On course, yes; but Bwindi clearly still has some way to go as suggested by this list of things that need doing in respect of this focus: “Continue community-wide treatment activities. Entomological surveillance and analysis of *Simulium damnosum* flies by PCR needs to be completed. The extent of the incursion of the focus into DRC needs to be investigated. The focus consists of three ecotomes and entomological and epidemiological investigations should take this into account. The focus stays yellow on the oncho flag ...implement elimination policy...” (Unnasch-UOEEAC 2011).



Kashoya-Kitomi Focus Review

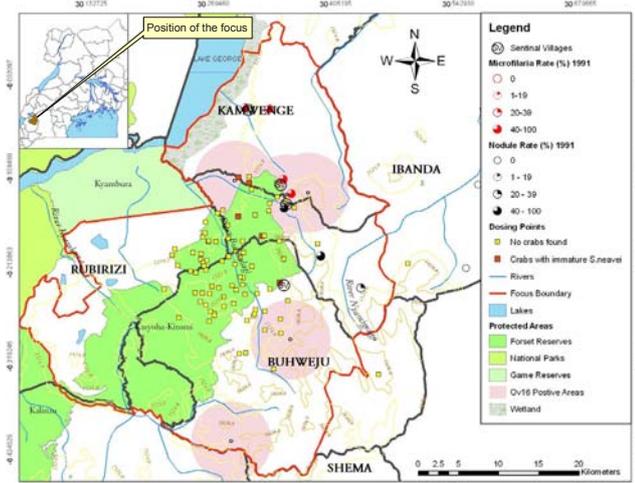
Joseph Wamani



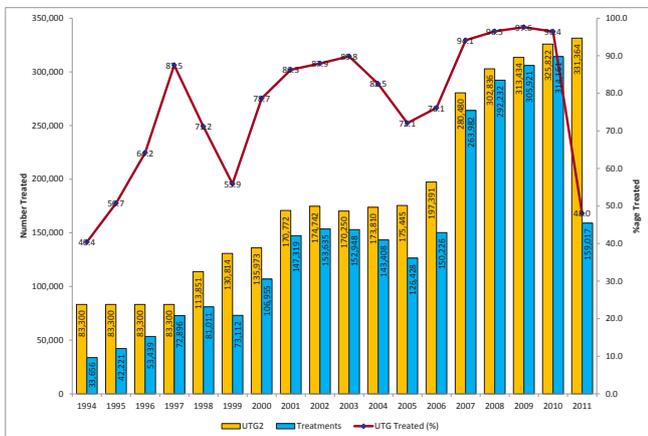
Background

- Size 399 km² with about 215,000 people at risk.
- Research/Control on *Simulium* vector flies was initiated in 1989 and ran to 2004 by GTZ and Bernhard Nocht Institute, Hamburg, Germany.
- Regular APOC assistance for ivermectin implementation was from 1998 to 2004.
- Experimental vector control was initiated in July 2003 with support of Bernhard Nocht Institute. Biting density and crab infestation were suppressed, but transmission continued.
- Uganda launched, in January 2007, a policy to eliminate onchocerciasis.
- Kashoya-Kitomi was one of the identified foci targeted for elimination.
- Plans were then made to start elimination (with semi-annual ivermectin distribution and vector elimination) activities in the focus early 2007 with support of The Carter Center.

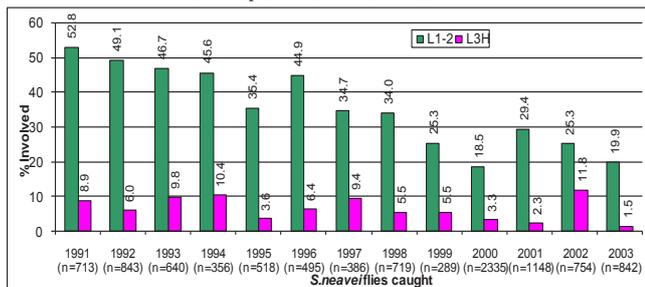
Kashoya Kitomi Focus



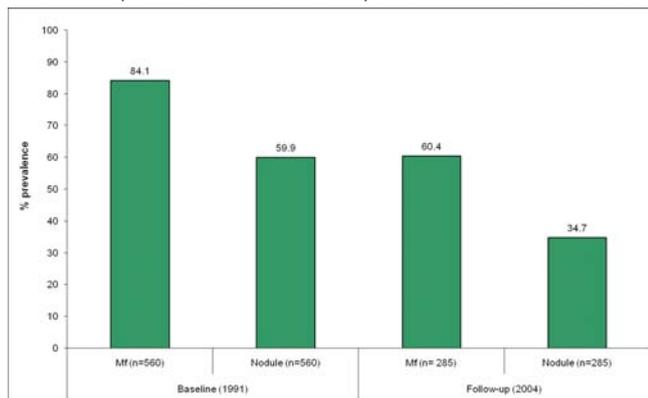
Treatment coverage in Kashoya Kitomi focus, 1994 - 2011



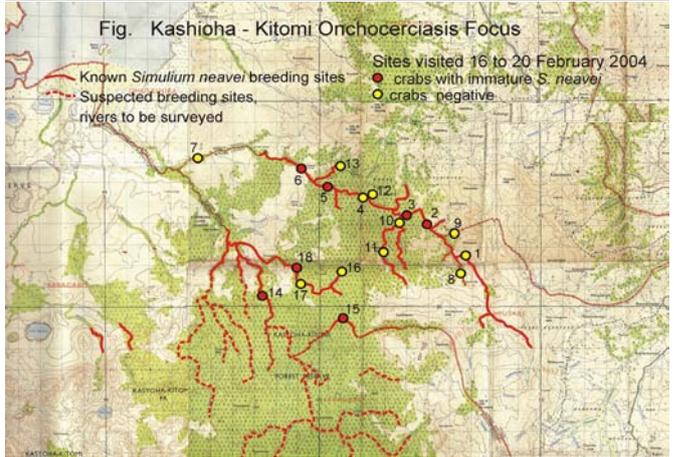
Simulium neavei infection 1991 to 2003 in Kashoya-Kitomi Focus: Ongoing transmission of *O. volvulus* despite annual ivermectin treatment



Kashoya-Kitomi Focus: Baseline (mf and nodule prevalence) 1991 data compared with follow up assessment in 2004 after 13 years of annual ivermectin distribution



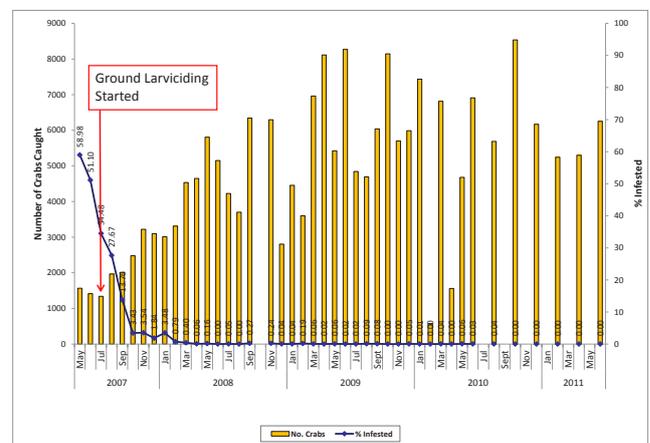
Targeted Control of *Simulium neavei* in the Kasyoha-Kitomi focus in 2004



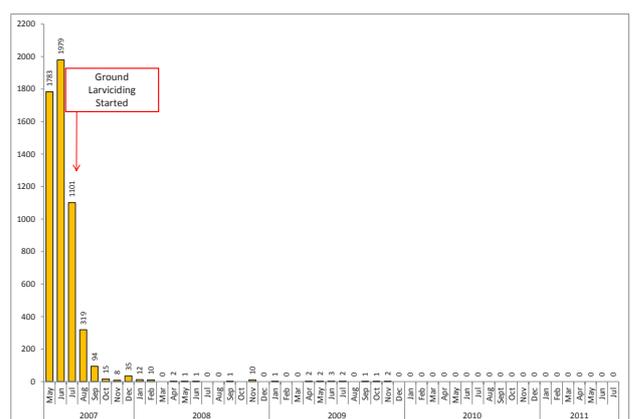
Implementation of Elimination activities from 2007 to date

- Crab trapping and examinations in river systems.
- Adult fly catches at established catching points.
- Focal river treatment with Temephos (Abate being the trade name) in the Kitomi system 4 weekly from July 2007 - May 2008, and then at the reduced pace of 8 weekly intervals from July 2008 - January 2009.
- Ngoro and Buhindagi systems were problematic: 4 weekly larviciding was implemented from July 2007 to November 2009; and the rest to March 2010. 8 weekly larviciding was implemented from December 2009 to March 2010 (for Ngoro & Buhindagi), and May to October 2010 for the rest of the focus.

Trend of Crab infestation from May 2007 to June 2011



The Trend of *Simulium* vector flies catches from May 2007 to July 2011



Way forward

- Stopped ground larviciding in October 2010; and a follow up of 3 years was mounted to guard against re-invasion as per national criteria (August 2010) for elimination of onchocerciasis.
- Conduct quarterly monitoring of Simulium catches and crab infestation in all the established sites to detect re-infestation.
- Assess blood spots in children ≥ 3 to ≤ 10 years with antigen OV16 to confirm interruption of transmission in 2012.
- Assess skin snips (microscopy) in the population in 2012.
- Continue twice yearly treatment with ivermectin until entomological, parasitological and serological indices, for stopping interventions, are attained.
- The recommendation to stop ivermectin treatment will be taken after the UOEEAC has reviewed all the data and determined that the criteria for interruption of transmission have been met.

Appreciation

This is given to the affected communities; Bushenyi, Rubirizi, Ibanda & Kamwenge district leadership; MOH, Uganda; German Technical Cooperation (BHS); Bernhard Nocht Institute, Hamburg, Germany; Mectizan Donation Program and Merck & Co.; The Carter Center; and African Program for Onchocerciasis Control (APOC).



UOEEAC Screens Kashoya-Kitomi Performance

The Kashoya-Kitomi anti-onchocerciasis program is definitely on track, but much also still has to be done there as per the specifications made by the committee: “Continue community-wide treatment activities and continue entomological and crab collections. Re-evaluate Ov16 seropositivity and skin snip prevalence in 2013. The focus stays yellow on the oncho flag...implement elimination policy...” (Unnasch-UOEEAC 2011)



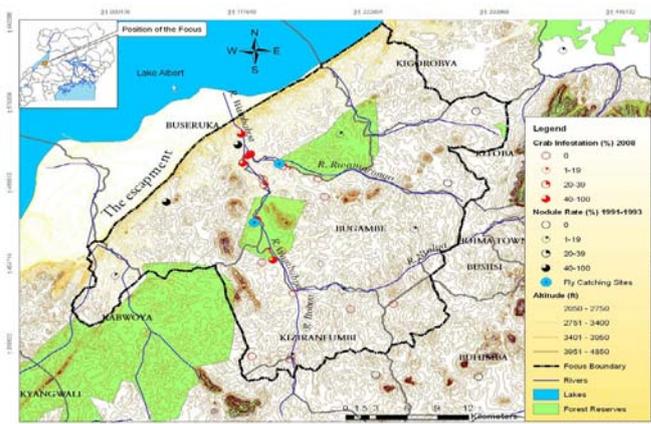
Wambabya Rwamarongo Focus Review

James Katamanywa

Focus Location

- Located in Hoima District, Mid-western Uganda and covers about 100 km².
- Total Population of the onchocerciasis endemic area is about 75,202 people.
- It is north and south west, respectively, of Bugoma and Budongo Forest Reserves.
- Major River Systems are Wambabya and Rwamarongo.

MAP OF WAMBABYA FOCUS



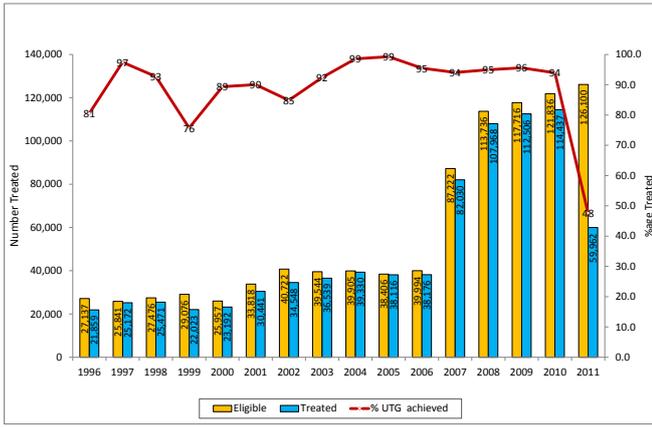
Introduction

- Annual Ivermectin mass treatment in communities started in 1989 with support from Uganda Foundation for the Blind (UFB), assistance from Sight Savers International (SSI) and some support from AVSI, an Italian NGO.
- Later in mid-1990s, SSI provided direct assistance to the program and UFB and AVSI dropped out.
- The Carter Center, African Program for Onchocerciasis Control and Neglected Tropical Diseases Control came on board later.
- Elimination strategy through semi-annual treatment coupled with vector elimination in isolated foci was launched by MOH and The Carter Center in 2007.
- Entomological base line data collection started in October 2008, and went on for 7 months.

Findings (October 2008 – May 2009)

- Biting detected in early morning and late afternoon at an average of 30 and 15 flies per day at Rwamarongo and Katooke catching sites respectively.
- Simulium neavei, a vector of onchocerciasis, found breeding on the lower reaches of Rivers Wambabya and Rwamarongo.
- Dissections carried out showed transmission ongoing (1 fly found with 13 third stages in the head).
- Infection rate at 8%.
- Fresh-water crab-infestation rate at 70%.
- Mean infestation at 5.1.
- Upper and lower breeding limits established and confined to stretches of forest cover along the rivers.
- 6 and 3 dosing points established on main Wambabya and Rwamarongo respectively using Abate (Temphos 500 EC).
- The focus is isolated from both Mpamba Nkusi to the South and main Budongo to the North East.

People Treated and Percent UTG Achieved in Wambabya Rwamarongo Focus from 1996 to 2010



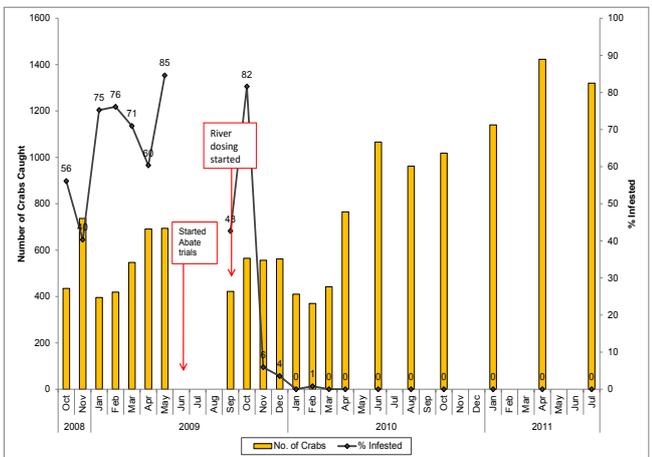
Intervention

- 4 weekly river dosing intervals carried out for 10 cycles and stopped.
- To date, 3 quarterly monitoring visits done.
- Adult fly catching by vector collectors, 2 days a week and supervised by the coordinator, is ongoing.

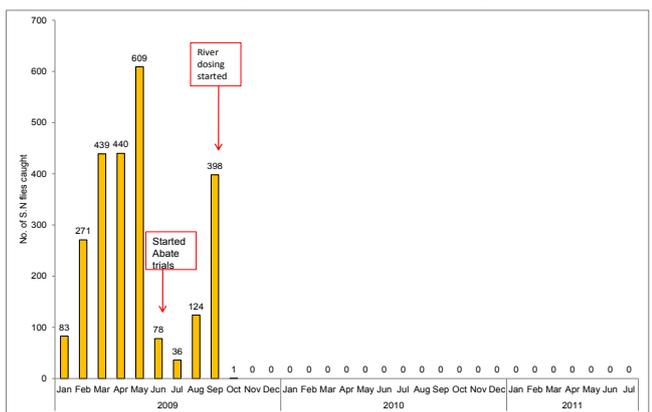
Results

- Crab infestation has dropped from 70% to 0 for now 15 months.
- The last adult vector fly was caught in October 2009.

Trend of Crab infestation from October 2008 to June 2011



Simulium vector fly catches in Wambabya Rwamarongo focus (January 2009 - July 2011)



Observations

- Size of the Simulium naevai vector in this focus has reached undetectable level.
- Monitoring the vector presence is now through crab trapping and intensified supervision of vector collectors.

Recommendation

- If the 4th quarterly monitoring visit in October 2011 does not yield any evidence of breeding, the focus will be visited only twice a year.

Appreciation

Goes to Mectizan Co. Inc.; SightSavers International; Uganda Foundation for the Blind; AVSI; The Carter Center; John Moores; APOC; Hoima district; M.O.H. Uganda; and the affected communities.

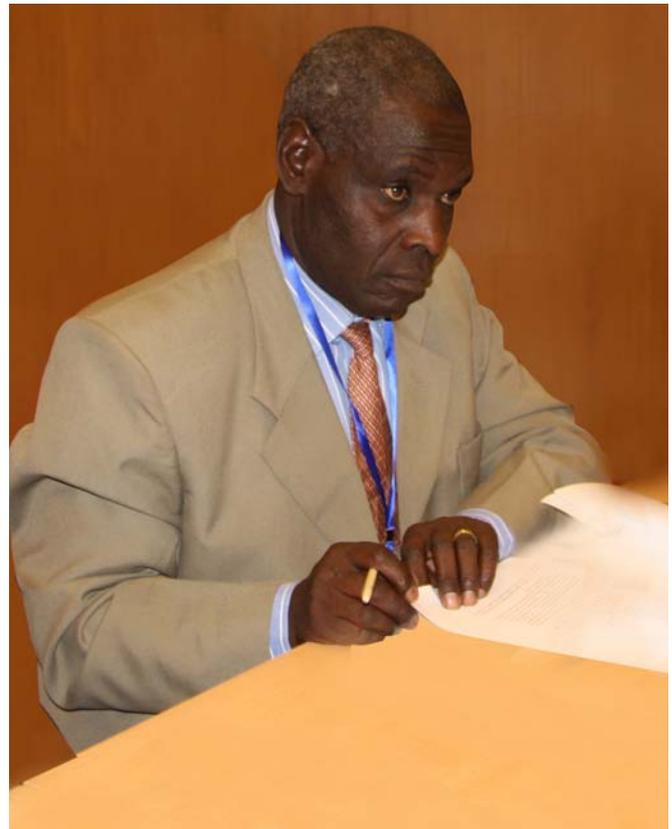


UOEEAC Weighs Up Wambabya Rwamarongo

Persons managing this focus program, which is in the yellow belt of the onchocerciasis flag and where elimination policy has to be implemented, recommended the committee, should “continue community-wide treatment activities...conduct a follow-up of the Ov16 seroprevalence to measure the delay of response, as entomological evidence suggests that the vector has recently been eliminated from this focus...conduct an epidemiological evaluation in 2013...obtain archived data to get a recent historical perspective on prevalence in this focus”, besides other activities (Unnasch-UOEEAC 2011).

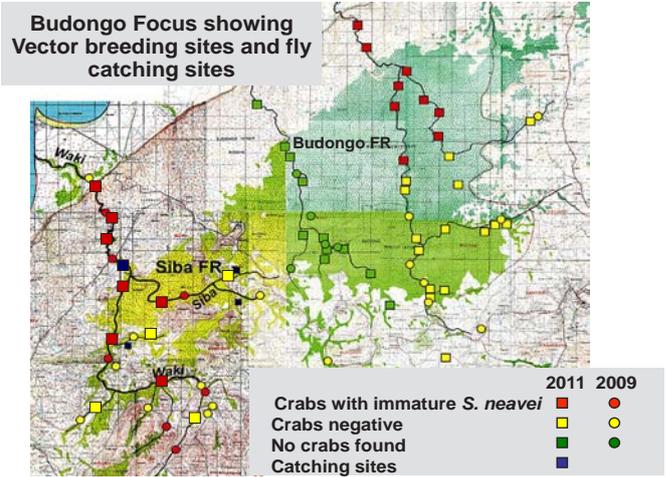


Budongo Focus Review: Progress Made
Ephraim Tukesiga



Background

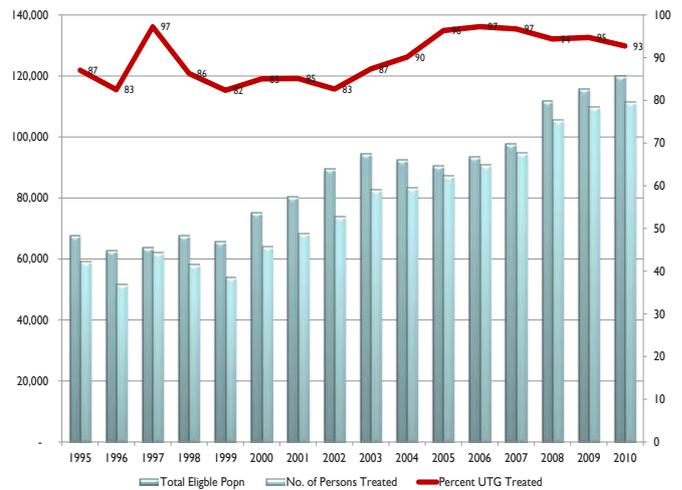
- Located in Mid-Western Uganda and straddles Masindi, Buliisa, Hoima districts.
- The focus is associated with Budongo (364 Km²) and Siba (66 Km²) FRs.
- Waki / Siba, Sonso and Kasokwa are the main river systems.
- The vector there is *S. neavei* associated with *P. niloticus* and *P. aloysiisabaudiae* depending on altitude variation.
- Vector control attempts using DDT 1956 to 1969 were successful but due to civil disturbances, in Uganda in the 1970s, there was vector re-infestation.
- Ivermectin mass treatment started in the 1990s with support from Sight Savers International.
- Review of Entomological investigations started in 2009 but was not done exhaustively. It resumed January 2011.



Budongo Onchocerciasis Focus Map 2011



Persons Treated and Percent UTG achieved in Budongo Focus from 1995-2010



Entomological Investigation Activities

Major activities

- Establishment of Vector breeding sites along river systems.
- Identifying and establishing vector species in the area.
- Biting behavior and infection rates of the vector fly to be established.

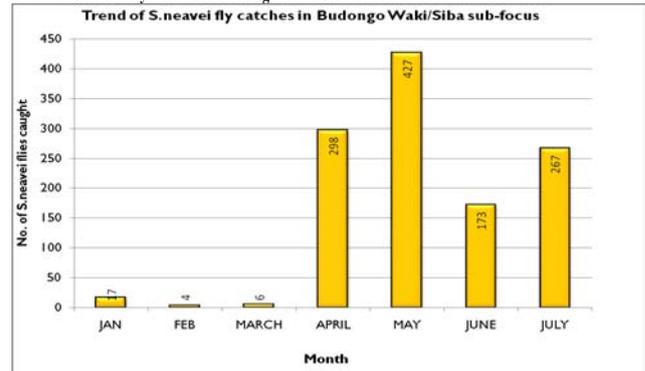
Specific activities

- Full-day catches (7.00 a.m. – 6.00 p.m.) 2 days a week.
- Support supervision.
- Crab trapping and examination for young stages of *S. neavei*.

ENTOMOLOGICAL INVESTIGATIONS TO ESTABLISH SIMULIUM BREEDING IN BUDONGO FOCUS

PERIOD	WAKI/SIBA RIVER SYSTEM			SONSO RIVER SYSTEM			KASOKWA RIVER SYSTEM		
	No. of Crabs Caught	No. Crabs +ve (%)	Mean Crab Infestation	No. Crabs Caught	No. Crabs +ve (%)	Mean Crab Infestation	No. Crabs Caught	No. Crabs +ve (%)	Mean Crab Infestation
2009 July	410	99(24.1)	0.7	0	0	0	0	0	0
2011 January	440	148(33.6)	1.2	-	-	-	-	-	-
February	56	8(14.2)	0.2	0	0	0	03	0(0.0)	0
March	-	-	-	-	-	-	49	7(14.3)	0.3
April	74	0	0	-	-	-	145	0(0.0)	0.0
May	-	-	-	-	-	-	490	185(37.8)	0.8
June	-	-	-	-	-	-	444	1(1.2)	0.01
July	47	1(2.13)	0.02	0	0	0	84	1(1.2)	0.01
Total	1027	256(24.9)	0.52	0	0	0	1,215	392(32.3)	0.8

Trend of *S. neavei* fly catches in Budongo Waki/Siba sub-focus 2011



Preliminary information on seizures, Nyantonzi Parish, August 2011

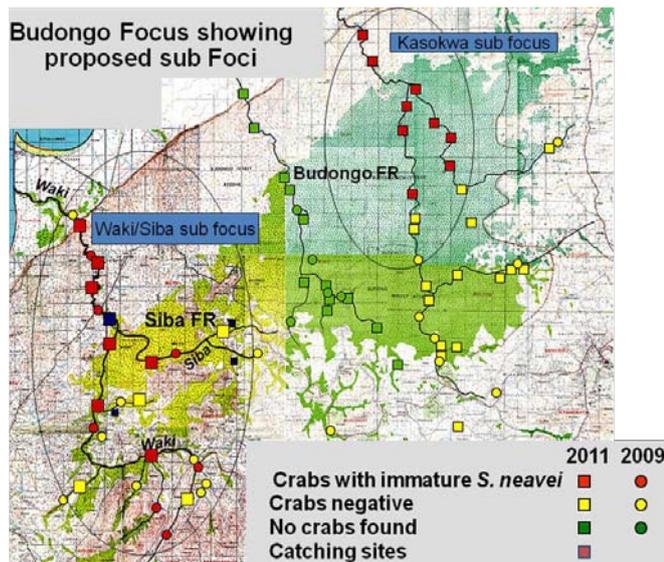
Community	No. of Epileptic cases	AGE RANGE			
		< 10years	≥10 to ≤15	>15yrs to <20yrs	≥ 20 yrs and above
Rwengara	13	3	1	6	3
Katugo II	15	2	4	1	8
Katanga	15	0	2	3	10
Katugo I	7	1	0	2	4
Nyantonzi	10	0	2	2	6
Siba	2		2		
Kababito	5	0	1	1	3
TOTAL	67	6	12	15	34

Achievements

- Vector mapping in Budongo focus completed.
- Field staff in Waki / Siba recruited and trained.
- Routine full-day catches in Waki/Siba in progress.
- Fly catches regularly forwarded to the PCR laboratory.

Challenges

- Kasokwa river system: is difficult to access.
- Convenient camping sites for Kasokwa in the FR are within reach of dangerous wild animals like lions and buffalos.
- Lack of communication with the outside world during camping.



Way forward/plan for waki/siba 2011

- The focus, it is proposed, is to be divided into 2 sub-foci that are to be tackled independently.
- Continue with fly catches for dissections and PCR.
- Carry out Abate trials.
- Establish dosing points.
- Start monthly river dosing.
- Monitoring and supervision.

Appreciation

Sight Savers International; The Carter Center; LCIF/ Uganda Lions; Uganda’s Ministry of Health; National Onchocerciasis Control Program; Uganda Wild Life Authority; District Health Officers; District Vector Officers; vector collectors; and field guides – all these are here thanked for their contribution(s) to the anti-onchocerciasis campaign.

UOEEAC Spotlight On Budongo

This is yet another focus where, the committee apparently feels, there is still a lot to be done and achieved to control and, in the long run, eliminate onchocerciasis infection and transmission. Watch the listing of the committee’s recommendations for the focus: “Continue community-wide treatment activities. Obtain good population data on this focus, as the UTG reported data that suggest an imprecise estimate of the size of the total population. Analyze remaining blood spots with the Ov16 ELISA. Concentrate crab and fly catching activities along the forest border. If *S. naevei* flies are collected along the forest edge, implement larviciding in the Kasokwa Forest Preserve.” In the classification of the many foci nationwide, “the focus stays yellow on the flag”, declared the committee, signaling that the project of eliminating onchocerciasis from this endemic area is far from the anticipated end (Unnasch-UOEEAC 2011).

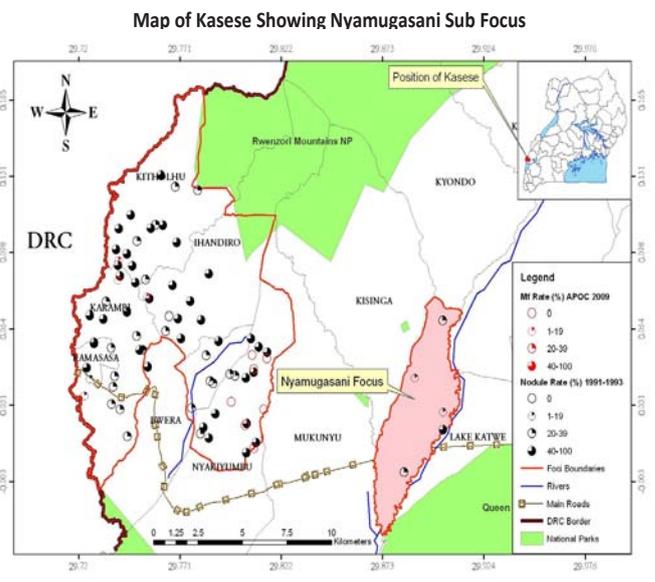


Nyamugasani Sub-Focus: Which Next Course Of Action?

Joseph Wamani

Background of Nyamugasani Sub-focus

- It is a sub-focus of Kasese Rwenzori focus.
- Approximately 15 km east of the main focus.
- Located in Kagando parish in Kisinga sub-county.
- Has 7 villages with a total population of 11,270 (CDTI report 2010).
- Annual ivermectin treatment started in 1993.
- The focus has 2 main rivers (Nyamugasani & Kanyampara) with their tributaries.
- The known oncho vector is *S. damnosum* ss.
- Biting is low as compared to situation in the Lhubiriha/Tako system.



Implemented Activities

Entomological

- 4 catching sites were established, each with 2 vector collectors and a supervisor.
- Catches are conducted 6 days in a month.
- Fresh dissections of suspected vectors.
- PCR.

Epidemiological

- Skin snipping.
- Ov16.

Epidemiological Evaluation in Nyamugasani (June 2011)

- 3 villages were evaluated using standard skin snipping procedures.
- The evaluation targeted community members 5 years and above.
- Snips were examined after 24 hours.
- A total of 285 (77 children & 285 adults) were snipped and examined, and all were negative. Compare with table below

RESULTS OF THE EPI EVALUATION IN NYAMUGASANI FOCUS JUNE 2011 (Adults & Children)

Village	Pop Census	Number Examined	Number positive	% positive
Kagando II	1392	104	00	00
Kisanga	524	102	00	00
Kamuruli	968	79	00	00
Total	2884	285	00	00

RESULTS OF THE EPI EVALUATION IN KASESE DISTRICT (APOC 2010)

	Village	Pop Census	No. Examined	% examined	No. +ve	% +ve
Lhubiriha close to Nyamugasani sub focus	Kyabisoro	519	334	64.9	0	0
	Muhindi	254	137	53.9	0	0
	Busarya	201	68	33.8	0	0
	Kighuthu	425	187	44	0	0
	Lyakirema	318	167	52.5	0	0
	Nyakasoja	239	117	48.9	0	0
Lhubiriha towards the boarder with DRC	Nyamighera	399	180	45.1	0	0
	Kyabikere	423	256	60	3	1.17
	Kihondo	296	127	42.9	5	4
	Ighomba	373	201	54	2	1
Total		3447	1774	51.5	10	0.6

Results of Entomological Assessment on Nyamugasani from March 2011

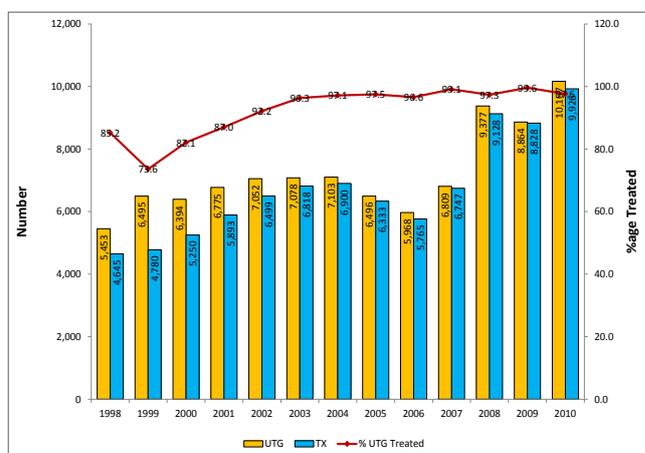
Month	Number of <i>S.damnosum</i>	Number Parous	Number Infected	Number of			
				L1	L11	L111	
						H	TA
March	70*	22	1	0	0	0	
April	23*						
May	38*						
June	136*						

* Dissected fresh * Flies were preserved in alcohol for PCR

Nyamugasani OV16 results

Test	Number screened	Number positive	% Positive	Comment
OV16	1,400	2	0.1	Collect skin snips from the positive children for PCR
Snip PCR (2 putative positives)	2	0	0	All the snips were negative using microscopy and PCR

Treatment coverage in Nyamugasani Sub Focus, 1998 - 2010



Conclusion

- Basing on the results of epidemiological and entomological evaluations of Nyamugasani, there is indication of interruption of transmission.
- There is a decline of disease prevalence as you move eastwards from the border - as indicated by the skin snip survey of 2010.

Way forward

- Transmission in Nyamugasani, it is suspected, has been interrupted.
- Monitoring of the vector should continue.

Appreciation

Mectizan Co. Inc.; River Blindness Foundation; The Carter Center; John Moores; APOC; LCIF/Uganda Lions; M.O.H. (Uganda); Kasese district leadership; and affected communities are here thanked for their different direct and indirect roles in the fight of onchocerciasis in Nyamugasani.



UOEEAC'S Revisitation of Nyamugasani

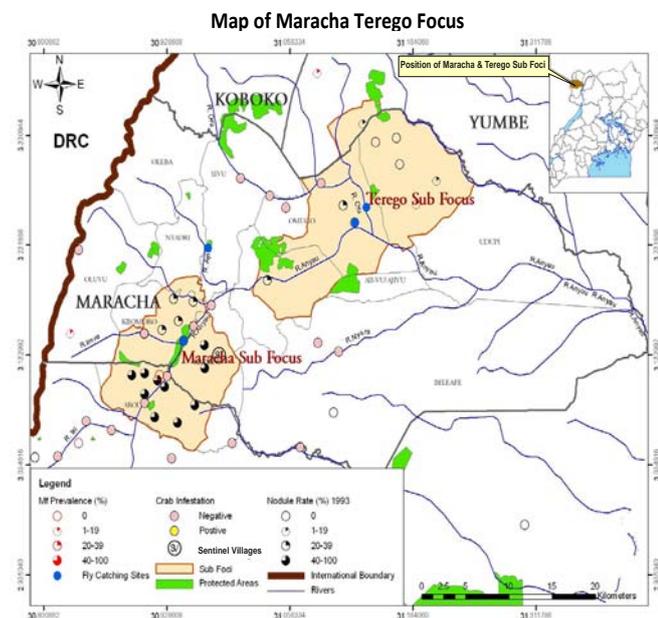
A border focus, Nyamugasani remains enclosed in some mystery, leaving unanswered many questions as is partly indicated by the committee's pronouncements on gains and challenges (Unnasch-UOEEAC 2011): "Continue community-wide treatment activities. Get epi data (Ov16 serological data and skin snips) from buffer communities separating this and Lubilila focus to confirm that these two are independent foci. This focus moves to grey green (interruption suspected)."



Maracha Terego Focus – Next Course Of Action Ephraim Tukesiga

Background

- Located in West Nile Region.
- Lies in the upper and lower reaches of Inyau river system.
- The focus straddles the former counties of Arua (Ayivu, Maracha and Terego).
- In the 1950 – 1960s onchocerciasis was more severe in Terego County.
- Vectors involved have been assumed to be both *S. damnosum* complex and *S. neavei*.
- Ivermectin mass administration started in the 1990s by NGOs – Kuluva Hospital with CBM
- Entomological and epidemiological review of the focus done 2009 – 2011.



Activities Implemented

Entomological investigation activities

- Establishment of vector breeding sites along river systems.
- Identifying and establishing vector species.
- Establishing biting behavior and infection rates in the vector flies.

Epidemiological investigation activities

- Skin snipping.
- Nodule palpation and skin examination.

Trend of Simulium Fly Catches in Maracha Terego Focus 2010 & 2011

Month	Onia-Ayi		Gangu-Oru		Hia-Enyau		Oguvu--Enyau	
	2010	2011	2010	2011	2010	2011	2010	2011
Jan	Dry season, much reduced water flow, some tributaries dry							
Feb								
March								
April		00		00		00		00
May		00		00		00		00
June		00		00		00		00
July	00	00	00	00	00	00	00	00
Aug	00		00		00		00	
Sept	00		00		00		00	
Oct	00		00		00		00	
Nov	00		00		00		00	
Dec	00		00		00		00	

Crab Trapping & Examination for *S. Neavei* and Search for *S. Damnusum* Free Living Larvae and Pupae

Period	River systems	<i>S. neavei</i> assessment			<i>S. Damnusum</i> assessment	
		No. of crabs caught	No. of crab +ve %	Mean crab Infestation	<i>S. Damnusum</i>	Other SPP.
February 2010	Enyau, Oru, Inve	106	0(0.0)	00	00	Non-Vector Species
August 2010	Enyau, Ayi, Oru, Inve, Osu, Nyara	40	0(0.0)	00	00	Non-Vector Species
October 2010	Osu, Asi, Enyau, Oru, Oluffe, Inve	07	0(0.0)	00	00	Non-Vector Species
January 2011	Enyau, Oru, Inve, Ayi	64	0(0.0)	00	00	Non-Vector species
May 2011	Enyau, Oru, Inve, Osu, Ise	21	0(0.0)	00	00	Non-Vector Species
Total		238	0(0.0)	00	00	-

MICROFILARIAE ASSESSMENT AND NODULE PREVALENCE IN TEREGO SUB FOCUS (1993 & 2007)

District	Village	1993					2007				
		Number Examined	No. Positive with mf	% mf	No. Positive with Nod	% Nod	Number Examined	No. Positive with mf	% mf	No. Positive with Nod	% Nod
Terego	Anyanga	50	48	96	38	76	50	0	0	2	4.0
Terego	Oguvu	50	NA	NA	33	66	50	0	0	1	2
Totals		100	48		71	71	100	0	0	3	3

MICROFILARIAE ASSESSMENT AND NODULE PREVALENCE IN AIVU MARACHA SUB FOCUS (March 2011)

District	Village	Adults					Children		
		Adults Examined	No. Positive with mf	% mf	No. Positive with Nod	% Nod	No. Examined	No. Positive with mf	% mf
Arua	Aliba	70	0	0.0	0	0.0	35	0	0.0
Maracha	Ayiko	80	0	0.0	1	1.3	30	0	0.0
Totals		150	0	0.0	1	0.7	65	0	0.0

OV16 Results

Sub Focus	Number Screened	Number Positive	% Positive
Maracha	3300	0	0.0
Terego	3300	Awaiting analysis	

Results

- 9 months of full day catches twice a month yielded no single fly.
- River prospections in potential simulium breeding sites had neither *S. neavei* nor *S. damnosum* early stages.
- Skin snip results still indicated no microfilariae carriers.
- Blood spots for OV16: results showed zero positive for Maracha sub-focus; Terego awaiting analysis.

Conclusion

On the basis of the entomological and epidemiological information, which has been used to assess the situation routinely for the last one year, it can be said that there is no evidence of onchocerciasis in this focus.

Appreciation

Mectizan Co. Inc.; Kuluva Hospital & CBM Support; The Carter Center; John Moores; APOC; LCIF/Uganda Lions; M.O.H. (Uganda); affected districts (Maracha Terego and Arua); and the affected communities



UOEEAC Proposes Course for Maracha Terego

Those whose work it is to control and eliminate onchocerciasis in this focus are to “continue community-wide treatment activities”, “complete Terego Ov16 ELISA assays and continue entomological evaluations before making a recommendation on transmission interruption,” recommended the committee, further stating that “this focus moves to grey green” as there is suspicion that interruption has been achieved there (Unnasch-UOEEAC 2011).



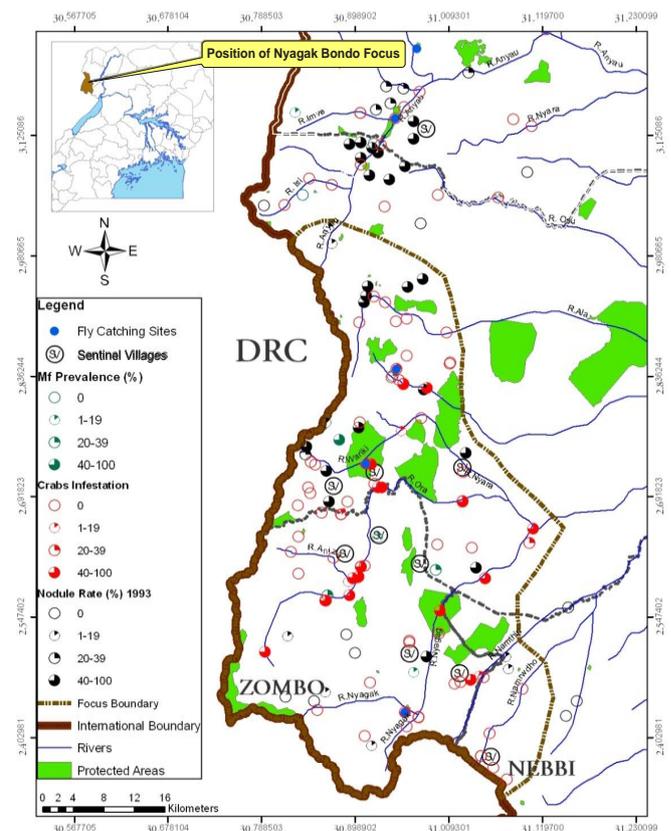
Nyagak-Bondo focus: Prospects for launching new elimination Policy

Ephraim Tukesiga

Background

- Located in West Nile Region.
- Precisely occupies new Zombo District, extending slightly in districts of Nebbi on the Southeast, Arua on the Northeast and DRC on the West.
- Rivers Nyagak, Ora and Agoi are the main systems.
- The vector is *S. neavei*, breeding in the middle reaches of the above systems.
- Annual mass treatment started early 1990s.

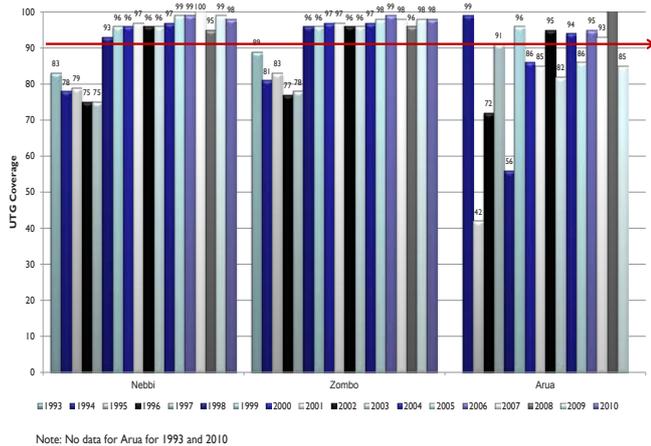
Position of Nyagak Bondo Focus



Activities implemented 2010, 2011

1. River prospection.
2. Adult fly catches at established sites for PCR and dissections.
3. Monitoring and supervision of vector collectors.
4. Skin snipping in some sentinel villages.
5. CDTI activities.

Persons Treated and Percent UTG achieved in Nyagak-Bondo Focus from 1993-2010

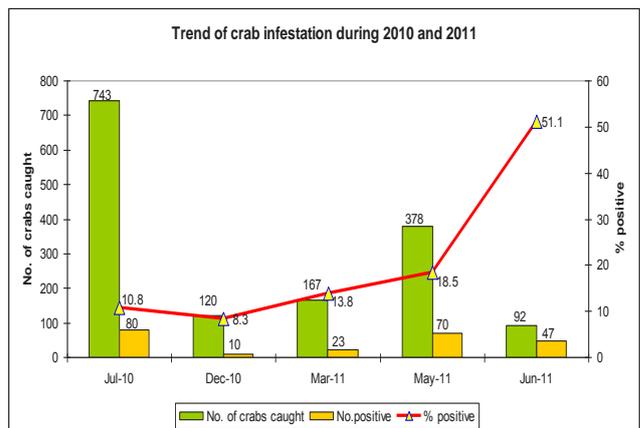


Comprehensive surveys of rivers systems in Nyagak - Bondo Focus

PERIOD	NYAGAK CRABS		ORA CRABS		AGOI CRABS	
	Caught	+Ve (%)	Caught	+Ve (%)	Caught	+Ve (%)
JULY 2010	209	7(3.3)	512	60(11.7)	22	13(59.1)
DEC 2010	40	3(7.5)	04	1(25)	76	6(7.9)
JAN 2011			49	18(36.7)		
MARCH 2011	34	6(17.6)	121	17(14.0)	12	0(0.0)
MAY 2011	44	17(38.6)	286	38(13.2)	48	15(31.3)
JUNE 2011	38	9(23.6)	52	37(71.2)	02	1(50)
TOTAL	329	39(11.9)	1025	171(16.7)	160	35(21.9)

Adults mf prevalence

Baselines, 1993					Follow up, 2011					P-value
District	Community	No. Examined	No. positive	% mf positive	District	Community	No. Examined	No. Positive	% mf positive	
Zombo	Patek Athele	50	50	100.00	Zombo	Patek Athele	89	3	3.4	<0.0001
zombo	Abilambe	50	48	96.00	Zombo	Abilambe	100	19	19.0	<0.0001
Nebbi	Agweci	50	48	96.00	Nebbi	Agweci	87	17	19.5	<0.0001
Zombo	Nyandima	50	50	100.00	Arua	Anguru	89	34	38.2	
Zombo	Ukongo	50	50	100.00	Zombo	Pachen	101	24	23.8	
Zombo	Jupa Ngali Upper	50	45	90.00	Nebbi	Oloamura	66	14	21.2	
					Arua	Kairo	75	30	40.0	
Total		300	291	83.1			607	141	23.6	



Mf prevalence - Children > 10 years

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

Distribution of Crab infestation in the defined Nyagak - Bondo focus

DATE	NYAGAK		ORA		AGOI	
	Caught	+Ve (%)	Caught	+Ve (%)	Caught	+Ve (%)
JULY 2010	44	6(13.6)	50	42	22	13(59)
DEC 2010	9	3(33.3)	1	1(100)	7	6(85.7)
APRIL 2011	51	25(49.0)	39	30(77.0)	19	7(36.8)
MAY 2011	23	17(74.0)	139	62(44.6)	45	15(33.3)
JUNE 2011	38	9(23.7)	53	42(79.2)	2	1(100)
TOTAL	163	60(36.4)	282	177(62.8)	95	42(44.2)

Adults nodule prevalence (15 & above years)

Baseline, 1993					Follow up, 2011					P-value
District	Community	No. Examined	No. positive	% positive	District	Community	No. Examined	No. Positive	% positive	
Zombo	Patek Athele	30	29	100.0	Zombo	Patek Athele	89	9	10.1	<0.0001
zombo	Abilambe	30	18	96.0	Zombo	Abilambe	100	14	14.0	<0.0001
Nebbi	Agweci	30	25	96.0	Nebbi	Agweci	87	2	2.3	<0.0001
Zombo	Jupa Ngali Upper	30	27	90.0	Arua	Kairo	75	15	20.0	
Zombo	Nyandima	30	26	100.0	Arua	Anguru	89	13	14.6	
Zombo	Ukongo	30	22	100.0	Zombo	Pachen	101	11	10.9	
					Nebbi	Oloamura	66	3	4.5	
		180	147	97.0			607	67	10.9	

Trend of S. naevi fly cathes in Nyagaka - Bondo focus

Months	Catching Sites			
	Anguru (Agoi)	Akara (Wariki)	Juba (Nyagak)	Total
April	01	01	01	03
May	25	30	06	61
June	24	270	10	304
July	20	1280	43	1343
Total	70	1581	60	1711

NB: Flies caught were sent to the Laboratory for PCR analysis

Achievements

- Mapping the focus has been completed.
- Field staff recruited and trained.
- Routine full-day catches in progress.
- Fly catches regularly forwarded to the PCR laboratory.

Conclusion

- Isolation of the focus is possible as all breeding river systems begin and flow inside Uganda. However, there is need to check inside DRC to see if there are other possible breeding sites that may be connected with this focus.

Appreciation

Mectizan Co. Inc.; River Blindness Foundation; CBM/Kuluva Hospital; The Carter Center; John Moores; APOC; LCIF/Uganda Lions; M.O.H. (Uganda); affected districts (Zombo, Nebbi & Arua); and the affected communities are gratefully recognized for the part played by them in the anti-onchocerciasis crusade.



Nyagak-Bondo bounces back into view of the UOEEAC

“Annual treatment has not been enough,” the committee agreed, “to move towards elimination. However, the focus may be isolated and susceptible to eventual elimination. The committee recommends moving to twice per year treatment, evaluating possibility of vector control activity and obtaining cross border data on extent of focus.” It was recommended also that the focus be shifted to the yellow of the oncho flag, a clear call for implementation of the elimination policy in this region (Unnasch-UOEEAC 2011).



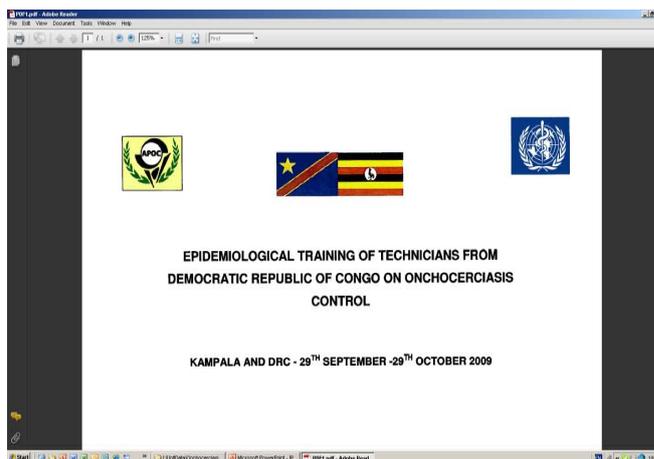
Updates On Cross-Border Activities Between Uganda And DRC

Tony Ukety



First session of cross-border meeting (15 August 2008)

- 3 out of 8 recommendations have not been implemented yet, namely:
 - (i) Inter-district meetings to be held prior to conducting surveys in Rwenzori and Bwindi foci.
 - (ii) Politicians and district authorities to be involved in cross-border arrangements.
 - (iii) Cross-border meetings to be held alternately in Uganda and DRC.



Special recommendation of the 3rd session of UOEEAC on “cross-border foci”

“The committee,” reads the recommendation (UOEEAC 2010), “reiterated the need for further cooperative activities in order to clarify the epidemiological and entomological status of foci which appear to cross the DRC-Uganda border”, saying as well that “the committee requested that APOC assist in facilitating the development of bilateral agreements, procedures and plans to realize such cross border studies”.

Achievements in 2011

- Letter from the national coordinator of the Ugandan NOCP, see below,
- Letter from Uganda’s Honourable Minister of Health, see below.

Ministry of Health,
P.O. Box 7272, Kampala, Uganda.¹⁸
3rd February, 2011

Dr. Tony Ukety,
Responsible Officer,
NGDO Coordination Group for Onchocerciasis Control,
Prevention of Blindness and Deafness,
World Health Organization, 20 Avenue Appia,
1211 – Geneva 27, Switzerland.

¹⁸ In its original appearance, the letter is on Uganda Ministry of Health headed paper, and has ADM. 97/153/11 as its reference identity.

Re: Cross-border Collaboration on Onchocerciasis Control/Elimination Activities between Uganda and DRC

Dear Dr. Ukety,

As recommended during the second and third sessions of the Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEEAC) held in August 2009 and 2010 respectively;¹⁹ may I kindly request that you facilitate contact with appropriate health authorities and officials in order to implement the recommendations of the Committee on cross-border issues. This would help us to move on with some technical issues as we are waiting for...higher level collaboration to be facilitated by APOC Management.

Your assistance in regard to this matter is highly appreciated.

Sincerely yours,

Dr. Richard Ndyomugenyi
National Onchocerciasis Coordinator, Ministry of Health
Uganda

Encl: Recommendations of 2nd and 3rd sessions of UOEEAC

Office of the Minister of Health,
P.O. Box 7272, Kampala, Uganda.²⁰
8th July 2011

Hon. Dr. Victor Makwenge Kaput,
Minister of Health, Kinshasa,
Democratic Republic of Congo.

Honourable Minister,

Re: Epidemiological Investigations on Onchocerciasis in Aru and Goma Districts in Eastern Democratic Republic of Congo

The Ministry of Health of the Republic of Uganda launched Onchocerciasis Elimination Policy in 2007 with the support of Health Development Partners. This bold decision came about as a result of the encouraging impact data obtained from the long-term treatment with Ivermectin.

Based on the above recommendations and to assist Uganda to determine whether there is cessation of cross border onchocerciasis transmission, and also to assess whether the foci of Nyagak-Bondo in West Nile Region and Bwindi in South Uganda are isolated from potential onchocerciasis infested areas in the DRC, there is a proposed plan to conduct epidemiological investigations

in Aru and Goma districts in Eastern DRC to verify the current onchocerciasis situation.

The investigations will be conducted by the technical team from Uganda in conjunction with the DRC technicians trained in 2009.

The Ministry of Health, Uganda, hereby requests your authorization for this team to undertake these investigations and to provide the necessary assistance at all levels to successfully accomplish this planned investigation.

We would like to thank you for your unflinching support to Uganda and are confident that these activities and any other future collaboration within the health sector will receive favourable support at all levels.

Please accept, Honourable Minister, the assurance of our highest consideration.

Hon. Dr. Ondo D.J. Christine
Minister of Health, Republic of Uganda

Cc. Hon. Minister of Foreign Affairs, Uganda; Hon. Minister of State for Health, General Duties, Uganda; World Health Organization – Representative, Uganda; H. E. The Ambassador of Uganda, DRC; The Director of APOC, Ouagadougou, Burkina Faso; Deputy Cabinet Director – Ministry of Health, DRC –mapatanow@yahoo.fr; Dr. Tony Ukety, NGDO Coalition, WHO/Geneva – uketyt@who.int; Technical Advisor, APOC, Kinshasa, DRC; Permanent Secretary, Ministry of Foreign Affairs, Uganda; Permanent Secretary, Ministry of Health, Uganda; Director General of Health Services, Uganda; Director Health Services (Community & Clinical), Uganda; Commissioner Health Services, National Disease Control, Uganda; and Programme Manager, Onchocerciasis Control Programme, Uganda.

Follow-up of the letter of the MoH, Uganda

- 3 – 4 August 2011: through the DPC WCO/ Uganda to WCO/DRC.
- 10 August 2011: through APOC TA/DRC to MoH/DRC

Challenges

- Very slow procedures.
- A lot of diplomacy.
- Involvement of high level and influential authorities.

AFR/RC57/R3 (2007), page 2

(c) To intensify cross-border activities to strengthen surveillance and avoid spillage of infection to freed zone.

Acknowledgement

TO: MoH of Uganda; WHO Country Office Uganda & DRC; APOC; The Carter Center (HQ & Uganda); MDP; and UOEEAC.

¹⁹ As has already been said, there was no committee called UOEEAC in 2009. There was the UOEC which was to mutate into UOEEAC sometime in 2010.

²⁰ Written on the letterhead of the Office of the Minister of Health, the communication is referenced MH/DIS/67.



UOEEAC Delivers its Updated Position on Cross border Matters

The committee's recommendations are given in a three part statement. Some experts from the countries sharing a common affected border, says the first section, are to "undertake epidemiological and entomological surveys in cross border foci. Developing such bilateral teams will ensure that the onchocerciasis elimination efforts of Uganda will be able to successfully attack cross border foci. The formation of such teams will also strengthen onchocerciasis control and eventually elimination efforts in DRC and South Sudan." APOC's Executive Director was asked "to follow up on high level political contacts which have been initiated between Uganda and DRC to allow the mapping of foci that may extend into DRC from Uganda," stipulates the second part. "The Committee stressed the need for continuous advocacy of the MOHs of Uganda, DRC and Southern Sudan to promote successful collaborative activities in their respective countries in line with the resolution AFR/RC57/R3 in 2007 and the Sub Regional collaboration protocol of 2003," reports part three (Unnasch-UOEEAC 2011).

Launching River Blindness Elimination in North 1 Focus*

Bernard Vincent Abwang



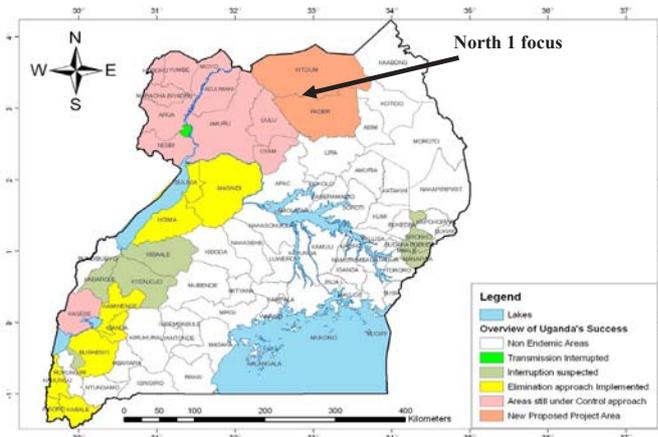
Background

- The focus covers Pader, Lamwo and Kitgum and part of Amuru and Gulu districts.
- Area size not yet known.
- Main rivers in this focus are R. Aswa, R. Pager, R. Ayugi, R. Unyama, R. Apa, and R. Ome.

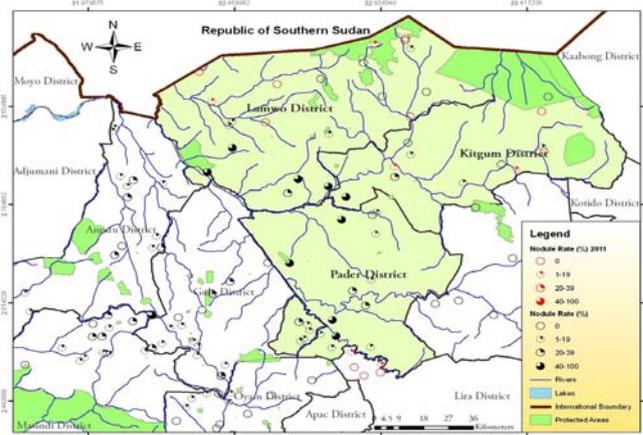
* I.e. Amuru, Gulu, Lamwo, Kitgum, and Pader districts.

- The vector species in this focus is believed to be *S. damnosum* s.l.
- Distribution of the species complex is fragmented.
- This fragmentation has been responsible for numerous distinct forms.
- Ivermectin treatment started in 1994 in Gulu and Amuru districts.
- In Kitgum, Lamwo and Pader districts treatment was passive until 2009.
- Progress in epidemiological studies in this focus has been reported.

Map showing overview of Uganda's success in River Blindness Elimination since 2007



North 1 focus (amuru, Gulu, Kitgum, Lamwo and Pader districts)



Northern I Focus: Population and treatments required in 2011

Districts involved	Total Population	Persons to be treated	Total Treatments	Mectizan® Tablet Requirement (Semi-annual)
Pader	220,785	187,667	375,335	1,050,938
Gulu	26,433	21,675	43,350	121,380
Kitgum	151,319	128,582	257,164	720,059
Amuru	32,332	26,513	53,026	148,473
Lamwo	118,049	100,311	200,622	561,742
Total	548,918	464,748	929,497	2,602,592

Epidemiological indicators: Kitgum and Pader districts, 2008 (N = 400)

District	Sentinel Village	No. Assessed	% mf +ve	mf density	CMFL	% Nodules	% onchodermatitis
Kitgum	Laraba	50	80	39.3	18.6	84	38
	Tumangur	50	62	18.6	10.8	82	18
	Pawena	50	40	4.5	4	56	32
	Mudu Central	50	43	16.3	9.4	11.9	16.7
		200	56.25	19.7	10.7	58.5	26.2
Pader	Ojuru	50	61.8	31.5	9.4	26	34
	Ongany	50	40.3	14.7	8.4	46	28
	Angagura	50	57	31.9	10.1	78	60
	Lamac South	50	90	88.1	33.9	48	26
		200	62.3	41.6	15.5	49.5	37.0
Total		400	59.28	30.65	13.1	54.0	31.6

Ophthalmological Survey In Northern I Focus

- In 2009, an ophthalmological survey (N=675 persons) in the proposed project area revealed chronic and acute onchocercal eye disease in the following forms:
 - « sclerosing keratitis – 35(5.2%),
 - « Iritis – 21(3.1%),
 - « punctate keratitis (B, D & E) – 27 (4%), and
 - « microfilariae in the anterior chamber – 28 (4%).
- This level of onchocercal eye disease is above the threshold for elimination of onchocerciasis morbidity (as defined by WHO 2001 Guidelines).

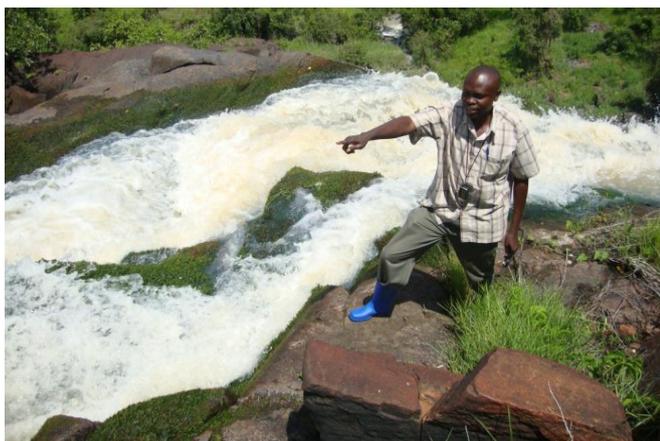
Onchocercal eye disease occurs in this part of Uganda, contrary to the misconception that Uganda does not have the blinding strain of onchocerciasis.

We estimate from these studies that there are at least 5,400 people already visually impaired or permanently blind from river blindness in the project area.

Rationale for twice yearly treatment

- North I focus has previously not benefited significantly from the ivermectin (Mectizan®) donation due to insecurity.
- Peace and security are now prevailing.
- The government of Uganda has recommended elimination of onchocerciasis with twice yearly distribution of ivermectin for rapid reduction of its prevalence and interruption of transmission.
- Eye disease will be averted.

A Simulium damnosum breeding site in Aruu falls in Pader district.



Other causes of eye disease in this part of Uganda (2009)

- 54 (27.4%) out of the 197 with visual impairment had cataracts, a leading cause of blindness in the project area.
- 36 (18.3%) out of the 197 with visual impairment had trachoma, and the majority of trachoma cases were from Pader District.

Plan for Involvement of Local Lions Clubs

- A partnership will be promoted between Ugandan Lions and district health services in North I Focus to facilitate treatment of patients with cataract, trachoma, etc.
- The Sight First Committee (SFC) will interface with:
 - « District health services
 - « Local ophthalmologists
 - « Frontline health units personnel, & Community supervisors and CDDs to include training and activities that will result in identification of cataract and trachoma cases.
- Local Lions will organize cataract and trichiasis surgeries and monitor the delivery of primary eye care services, with LCIF assistance.
- Lions Clubs of Uganda will advocate for eye care services and onchocerciasis elimination at national and district levels through meetings with relevant administrative and political leaders as well as TV and radio talk shows.
- Local Lions will continue to attend the annual Uganda Onchocerciasis Elimination Expert Advisory Committee (UOEAC) meeting.

North I focus has previously not benefited significantly from the ivermectin (Mectizan®) donation due to insecurity. Peace and security are now prevailing. The government of Uganda has recommended elimination of onchocerciasis with twice yearly distribution of ivermectin for rapid reduction of its prevalence and interruption of transmission.

Uganda Lions Mobile surgical Unit – Look from outside



Uganda Lions Mobile surgical Unit – Look from inside



Acknowledgement

The River Blindness Foundation; NOCP, Ministry of Health; NTD Control Program; The Carter Center; John Moores; African Program for Onchocerciasis Control/WHO; Merck and Co.; District Onchocerciasis Coordinators; and endemic communities are all here acknowledged for their various contributions in the assault of onchocerciasis.



UOEEAC's Look at North 1 Focus

“Committee concurs,” members agreed among themselves, “with the MOH recommendation to begin semi-annual treatment. Entomological surveys to delineate sibling species of Sd²¹ present. Committee requests assistance of APOC in coordinating cross border studies to delineate focus and effect of human population on epidemiology of onchocerciasis in this area.” Yellow was the focus’s recommended destination given the point that the focus is expected to seriously embark on eliminating onchocerciasis and its transmission.



VCD - Molecular Epidemiological Laboratory Updates

Harriet Namanya & David Oguttu



Harriet Namanya



David Oguttu

21 Sd – an acronym for Simulium Damnosum

Background

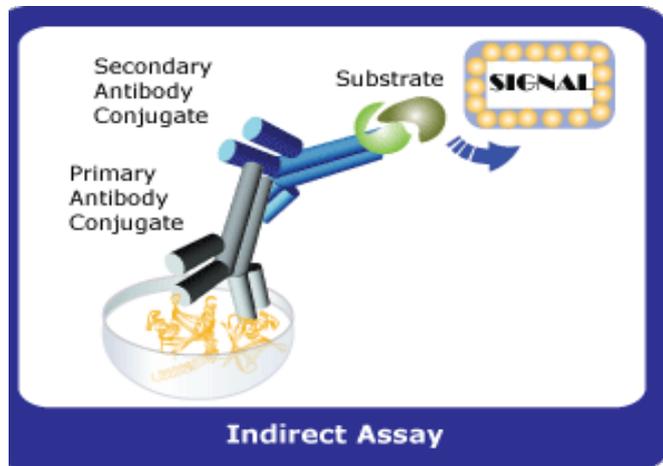
- Established in August 2007.
- Fully operational May 2008 after training of VCD-based technicians.
- Offers highly sensitive and specific modern techniques for monitoring onchocerciasis elimination.
- OV16 ELISA on blood spots.
- O-150 PCR on Simulium and skin snips.

O-150 PCR technique



Based on amplification of *O. volvulus* DNA (O-150) in *Simulium* vector and in skin snips of adult humans (Meredith et al. 1995, Katholi et al., 1995).

Ov16 ELISA technique



- Based on detection of IgG4 in blood using Ov16 antigen
- Early marker of exposure to infective larval stage of *O. volvulus* (Lobos et al., 1991, Bbakima et al., 1996)

It is done on children 2 - 10 years

Blood spots at UOEEAC AUG 2010

Focus	Achievement	Number of samples screened	+ve	Backlog?
Wambabya-Rwamarongo	Cleared backlog	3005	46	0
Budongo	Reduced backlog	1200/3400	80	2200
Imaramagambo	Collection of 3400 blood spots	3356	13	0
Bwindi-Kigezi	Collection of 3400 blood spots	0	-	3400 + 1300 collected in Oct 2010
		Total screened = 7561		Total backlog = 6900

NB: The 13 putative positives in Imaramagambo were to be confirmed using PCR. 44 samples were left out because they were duplicates.

UOEEAC 2010 Recommendations

- To clear backlog of samples in the lab.
- Follow up 13 Ov16 positive children in Imaramagambo for snip PCR.
- To collect and screen blood spots from Itwara, Kashoya-Kitomi and more from Bwindi focus.

Action on backlog since 2010

Focus	Achievement	Number of samples screened	Number +ve	% positive	Backlog?
Wambabya-Rwamarongo	Cleared backlog	3005	49	1.6	0
Budongo	Discarded backlog	1200	80	6.7	0
Imaramagambo	Collected snips from 11 children	3356	0	0	0
Bwindi-Kigezi	Cleared backlog	3400	0	0	0
Total		10,961	129	1.2	00

NB. In Imaramagambo the 11 Ov16 positives were confirmed by PCR to be negative and 2 other children were not found.

New collections and progress made 2010 - 2011

Focus	# spots collected	Date	# screened	# positive	% +ve	backlog
Bwindi	1200	Oct 2010	1200	0	0	0
Itwara	3400	Sept 2010	3314	0	0	0
Kashoya	1360	Nov 2010	1360	10	0.7	0
Nyamugasani	1400	Mar 2011	1400	2	0.14	0
Maracha-Terego	6600	May 2011	3200	1	-	3300
Obongi	3300	Jul 2011	0	-	-	3300

NB. Nyamugasani Ov16 positive children were confirmed *O. volvulus* negative by PCR.

Update results from all foci

Focus	# spots collected	Date of collection	# screened	# of +ve result	% +ve
Wadelai	3013	May 2008	3013	3	0.09
Mpamba-Nkusi	3392	Jan 2009	3392	19	0.56
Imaramagambo	3400	Sept 2009	3356	0	0
Elgon	3150	Oct 2008	3150	1	0.03
Wambabya	3150	Jun 2008	3005	49	1.6
Budongo	3400	Aug 2008	1200	80	6.7
Bwindi	4500	Nov 2009 - Oct 2010	4500	0	0
Itwara	3400	Sept 2010	3316	0	0
Kashoya	1360	Nov 2010	1360	10	0.7
Nyamugasani	1400	Mar 2011	1400	0	0
Maracha-Terego	6600	May 2011	3300	(backlog 3300)	0
Obongi-Moyo	3300	July 2011	0	Backlog 3300	-

NB. Maracha-Terego has 2 sub-foci, thus 6600 samples. The backlog is for Maracha sub focus.

Results all foci contd.

Focus	# spots collected	Date of collection	# screened	# of +ve result	% +ve
Itwara	3400	Sept 2010	3316	0	0
Kashoya	1360	Nov 2010	1360	10	0.7
Nyamugasani	1400	Mar 2011	1400	0	0
Maracha-Terego	6600	May 2011	3300	(backlog 3300)	0
Obongi-Moyo	3300	July 2011	0	Backlog 3300	-

NB. Maracha-Terego has 2 sub-foci, thus 6600 samples. The backlog is for Maracha sub focus

Update all O -150 results

Focus	# flies	Year Of collection	# pools of 20	+ve	Backlog ?
Kashoya-kitomi	5240	2007	249 (4980)	6	260 flies
Elgon	4311	2007	115(2300)	0	2011
Wambabya	1663	2009	-	-	1663
SKIN SNIP PCR					
Mpamba-nkusi	799	Jan2009		12	0
Itwara	686	May 2009		0	0
Imaramagambo	462	June 2009		5	0

Plan for 2011-2012

- Clear Ov16 backlog for Maracha and Obongi.
- OV16 in Mpamba-Nkusi and other foci which may be recommended by UOEEAC.
- O-150 on flies from Elgon, Wambabya, Nyamugasani, Bwindi, Maracha and Moyo, Nyagak, Rubiriha.²²

Work capacity of the laboratory

OV16:

- Maximum 17500 blood spots per year.
- O-150 PCR:
- Only 5000 reactions per year.

Challenges

- Understaffing (only 1 technician on government pay roll)

Recommendations

- Min of Health should consider posting at least 1 more technicians to the lab.

Acknowledgement

To Prof. Unnasch for technical support to the Uganda lab.; The Carter Center for establishing and maintaining the lab.; and Uganda's MoH for posting a parasitologist to VCD. (We still need more.)



What UOEEAC Said About The Epidemiological Laboratory Updates

A statement with four sections delivers the committee's views on the laboratory's status – its work, successes, requirements, and its future. "The committee gratefully acknowledged the MOH support for the laboratory over the past year," states section 1, "in particular in assigning...David Oguttu as a full time employee responsible for the laboratory operations. As a result... the laboratory has cleared the backlog of samples that existed and is now capable of keeping abreast of the samples collected by the field teams, thus providing timely data to the elimination program and the UOEEAC. The committee congratulates...Oguttu and the laboratory staff on this impressive achievement." This facility, says section 2, "is currently working at capacity analyzing samples generated by the onchocerciasis elimination program alone", observing also that "the recommendation that the MOH consider adding 1 or more technical positions to the laboratory" has the full backing of UOEEAC as the lab will need some extra hands should its work get bigger.

MOH Uganda's wish "to expand the mandate on the laboratory to include diagnostic tests for other NTDs", section 3 says, has in principle the support of UOEEAC, which however insists that "in order to expand the laboratory's activities additional personnel, space and equipment will be necessary". A six point list of laboratory priorities for August 2011 – August 2012 was created, as given in section 4, namely "analyze Terego blood spots with Ov16 ELISA (3300 samples); Bu-

²² A focus name pronounced and spelt differently by different people, e.g. Lhubiriha.

dongo - complete Ov16 ELISA analysis of blood spots (1800 samples); obtain blood spots and conduct Ov16 analysis on buffer villages west of Nyamugasani to determine if Nyamugasani and Lubilila are indeed separate foci (3500 samples); collect and analyze blood spots from the Mpamba Nkusi focus (3500 samples); analyze blood spots from the Obongi focus (3300 samples); and O-150 PCR analysis on flies collected from Bwindi (35 pools), Nyagak-Bondo (17 pools) and Wambabya (15 pools)" (Unnasch-UOEEAC 2011).

Wadelai Update & UOEEAC Recommendations

While there was no timetabled presentation on the Wadelai focus, the committee was given an update by Lakwo Tom on it as we now report.

"The committee," as has been recorded, "was pleased to note that the NCC accepted the recommendation of the UOEEAC 2010 meeting that transmission was interrupted at the Wadelai focus and twice per year treatment could stop. That this committee also "heard reports suggesting some community resistance to stopping community-wide twice per year treatment" in the focus is on record.

"The committee," consequently, "recommended strengthening community sensitization around this decision, informing the community clearly that while twice per year treatment will stop, once per year treatment will continue under the filariasis program." It was again "recommended that the MOH make a statement, making it clear that interruption has been achieved at this focus, to help in informing the community" (Unnasch-UOEEAC 2011).



Predictive endmember auto-Gaussian S.damnorum s.l. habitat modeling in Northern Uganda²³

Thomson L. Lakwo, Robert Novak, Peace Habomugisha & Thomas R. Unnasch



Thomas R. Unnasch

²³ In 2011 UOEEAC program terms, this presentation, whose presenter was T.R. Unnasch, was given as "remote sensing", which title is a mirror of the content of the paper. Co-contributors Novak, Habomugisha and Lakwo received from the presenter due acknowledgement for their participation.

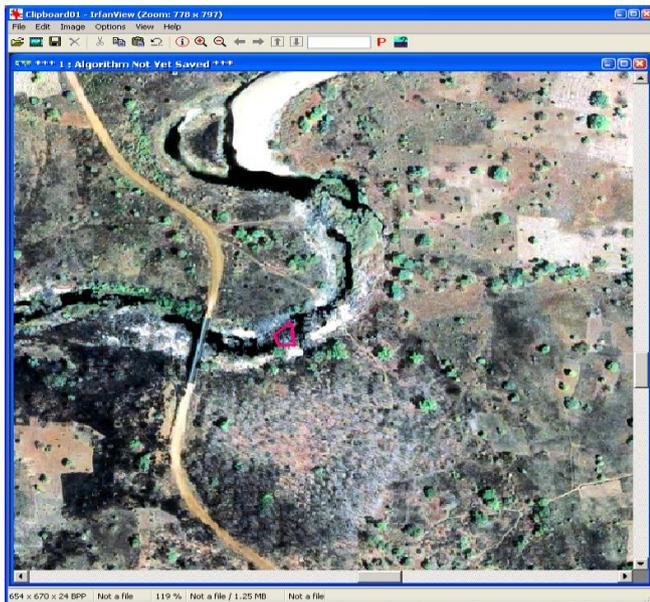
Background.

- Onchocerciasis foci currently mapped using epidemiological surveys.
- Epidemiological methods require on the ground assessment of prevalence of infection.
- Some communities difficult to reach for on-the-ground surveys.
- Onchocerciasis foci are generally associated with black fly breeding sites, (thus the common name river blindness).
- Therefore, identification of breeding sites for the vector might be a useful way to predict the communities most at risk for onchocerciasis.

Overall objectives

- To utilize historical data on Simulium breeding sites in conjunction with remote sensing data to develop a spatial model capable of predicting breeding site locations.
- To validate this model using an independent historical dataset.
- To evaluate the ability of the model to predict breeding sites in other areas of West Africa and in East Africa (Uganda).

GIS polygon of Precambrian rock and associated hydrological data at the Sarakawa study site in Burkina Faso



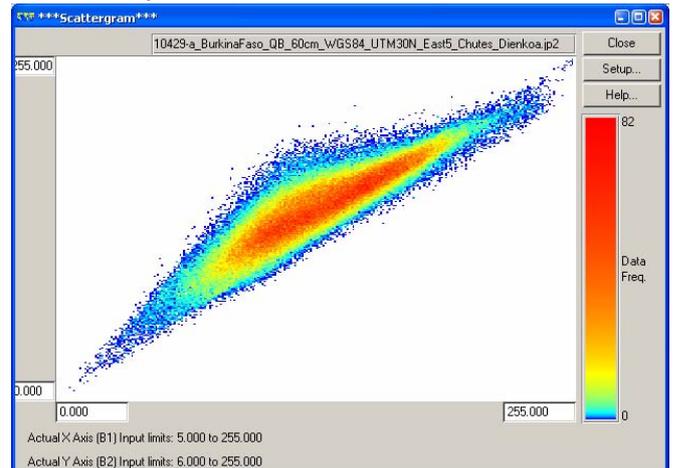
Turbid Waters



Precambrian Rock

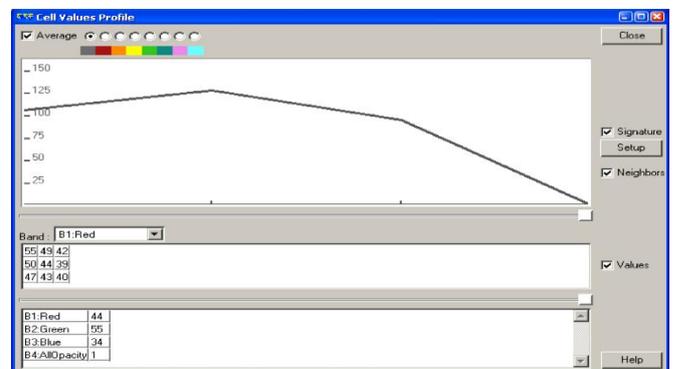


Spectral signature of the Precambrian rock polygon at the Dienkoa study site

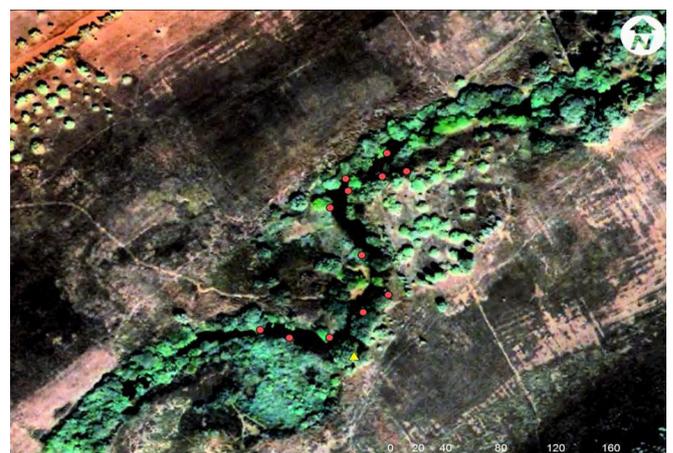


This is output combination of reflected light between vis and near IR - this the area that represents a spectral signature for pre-cambrian rock and flowing water over rock.

Spectral signature of breeding sites



Predicted S. damnosum s.l. riverine larval habitats in Burkina Faso



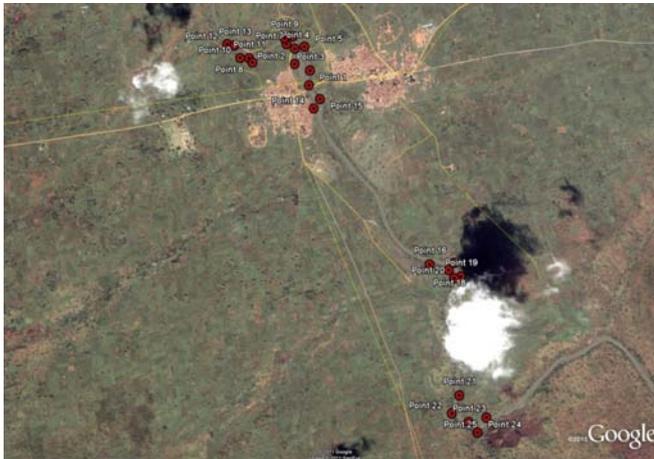
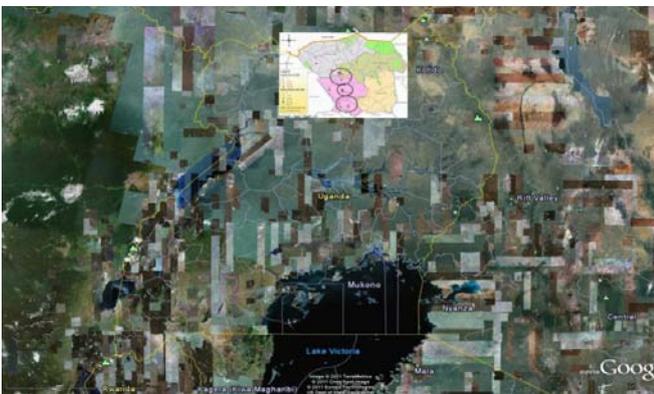
Results of ground truthing

- 100% of predicted sites contained larvae.
- No false positives.
- Specificity of model was 100% in Burkina Faso.

Extension of the model to Northern Uganda

- S. damnosum* area.
- Identify onchocerciasis endemic areas from REMO map.
- Obtain images from the area.
- Extract signatures corresponding to breeding sites in Burkina Faso.
- Visit predicted breeding sites (and sites not predicted as breeding habitats).

Map overlay of areas sampled in Northern Uganda



NB: Predicted breeding sites based on BF model. Also looked for larvae between sites, nothing found



Closeup of predicted sites



Floating Vegetation



How did the model do in Uganda?

- ▶ 23/25 (92%) predicted positive sites contained larvae.
- ▶ 28/30 (93%) predicted negative sites did not contain larvae.
- ▶ Sensitivity = 92%.
- ▶ Specificity = 93%.

Further work

- ▶ Identification of a signature to predict remaining 8% of breeding sites missed by current model.
- ▶ Ground truthing of new signature in Burkina Faso.
- ▶ Delineation of “zones of risk” around breeding sites.
- ▶ Extension of approach to other vector species (e.g. *S. neavei*).

Acknowledgements

To: Edson Byamukama, Statistician, Uganda Carter Center; William Sam Oyet, Vector Control Officer, Pader District; Bernard Abwang, Vector Control Officer, Gulu District; Denis Munu, Driver, Carter Center Uganda; Leteace Howard, Field Technician, Penn State University, Pennsylvania, USA; and Isaias Gomez-Garcia, Field Technician, University of California at Berkeley, California, USA.



Discussion of Remote Sensing

There were questions, answers and comments, in what was flood-like, after Unnasch's presentation of the model that uses the presence of Precambrian rocks (a geological feature) and fast running clear water, as detected in satellite images, to predict breeding spots of the black fly, a model that was earlier successfully used for the same aim in some West African countries, Togo included. At the present the model is being applied to *Simulium damnosum*, with plans to widen the scope of its application to *Simulium naevei*.

If there is anything that may help to expose spots (in generally hard to reach oncho endemic terrain, in Uganda or other places as Ethiopia) that may, until now, have evaded treatment efforts by default,²⁴ it is the now publicized (remote sensing) model, some committee members seemed to believe. One member even got inspired and called it the "predator" of onchocerciasis.

There was a widely shared expectation that the remote sensing model, which, the audience was told, is presently also being considered by USAID as a possible measure against malaria, is potentially a powerful anti-onchocerciasis attack tool. The model, at least in the northern Uganda background, has not been effective a hundred percent, however; and one of the things that still have to be considered is how small rivers and streams fit in this model as potential breeding habitats.

On use of the remote sensing model, the statement was made that this could very much be applied by local experts, a trend that would cut out reliance on foreign expatriates.



PART D - News From Some Partners

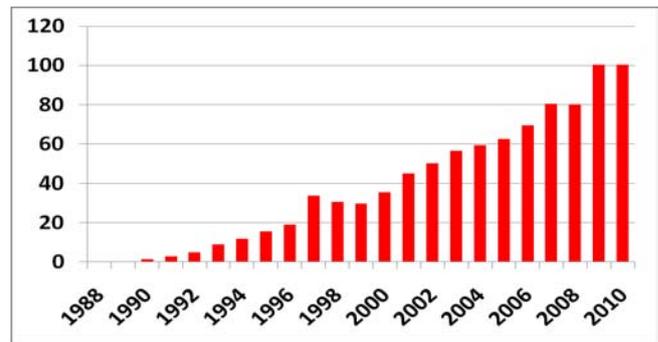
The Mectizan Donation Program

Adrian D. Hopkins

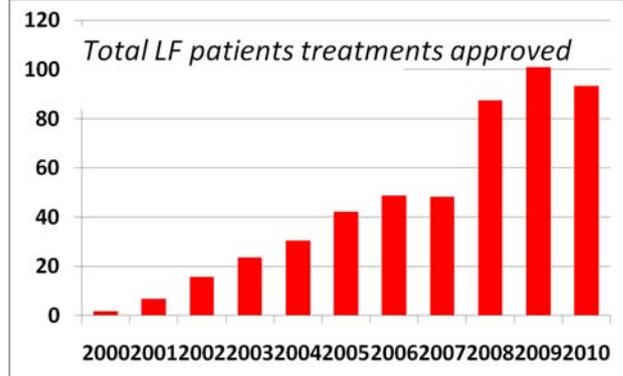


²⁴ Because of the inadequacies of the traditional methods of identifying the vector's breeding sites from the ground.

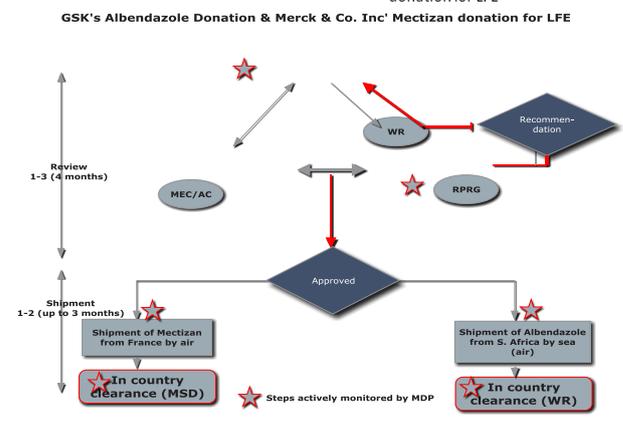
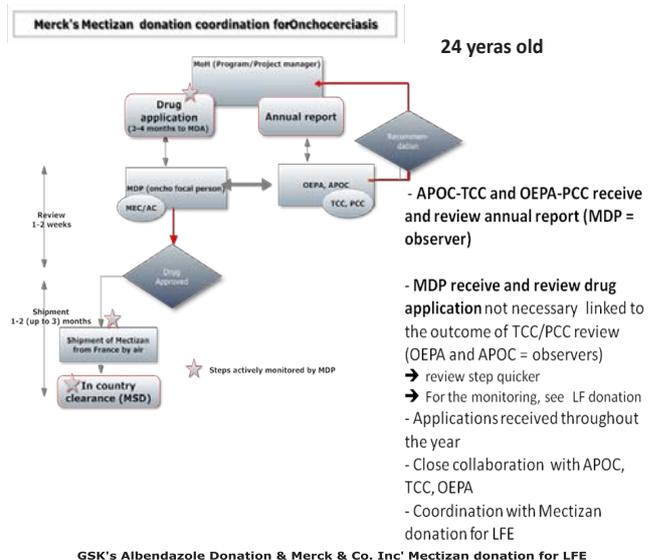
Onchocerciasis: Millions of Treatments Approved



Lymphatic Filariasis: Treatments in Millions Approved



NB: Total LF patients treatments approved 121,497,228, but 28,337,564 were approved for onchocerciasis as well



The future with NTDs

Application Review Process

- Currently under discussion with WHO.
- Development of coordinated application process in AFRO.
- Probably in a modular form.
- Related to NTD Master Plan and Annual Plan of Action.

Challenges in 2011

- Supply Chain.
- New shipping process put out to tender by Merck.
- Companies chosen not always familiar with procedures.
- Delays in exoneration.
- Breakdown in IT system with shipping department.
- Solution.
- Apply well in advance even if full report is not available.
- Program Managers must follow dossier through importation formalities.
- Keep MDP informed of problems.

25 years

Evaluation

- Will include some country visits (not Uganda).
- Extensive review of results with partners.
- Extensive review of processes.
- Basis of strategic planning 2013 – 2020.

Special Events

- Two special events at WHA (Geneva) and World Sight Day (London) plus special events with partners at JAF, and OEPA.



Proposed Shipping Strategies Prompt Reactions

The proposed transition, in the shipping of medicines and related stuff to their destinations in NTD-infected parts of Africa (onchocerciasis endemic areas included), seemed to have generally gone down well with the 2011 UOEEAC addressees. Some worries were expressed, however, as examples will show. The planned changes, it was discussed, need to be piloted with and in a few countries as a way of testing their viability and sustainability. General consensus was that this is better than simply rolling out once the new system to all affected countries as that may have its own risks and troubles that may do much wider harm. Changes will begin picking up in 2012, with participating organizations and countries being educated that year, and with the transition starting to take effect in 2013 – all this being in line with the saying “make haste slowly”.

On twice per year (onchocerciasis elimination) drugs, because twice yearly treatments are affected more by late arrival of medicines than annual ones, applications

need to be made well in advance,²⁵ months before they are expected for distribution. The point was made that getting flight delivery papers for an expected consignment was not enough ground for one to assume that the medical supplies will easily arrive at a warehouse from where one will equally easily collect them. One has to do something to see to it that they are delivered sooner than later. In Africa, this responsibility will pass on to individual affected nations particularly their NTD departments and coordinators (guided by the NTD Master Plan and Annual Plan of Action), although AFRO (a WHO arm) is set to oversee the application and shipping procedures for virtually all drug requisitions.



Progress on River Blindness Elimination in the Americas (OEPA)

Frank Richards

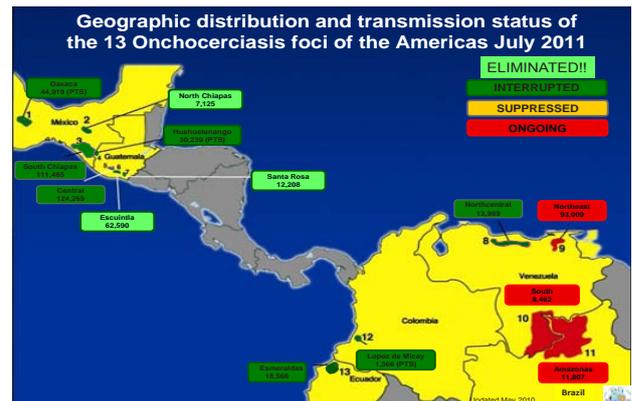
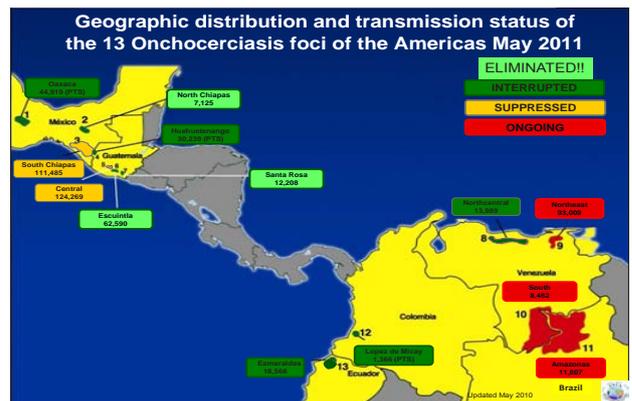
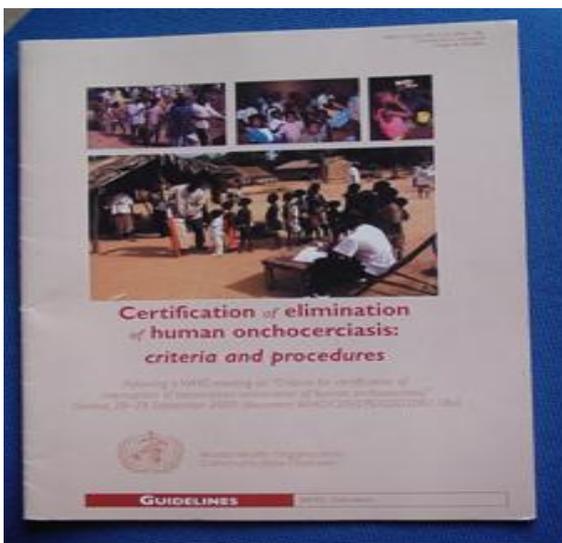
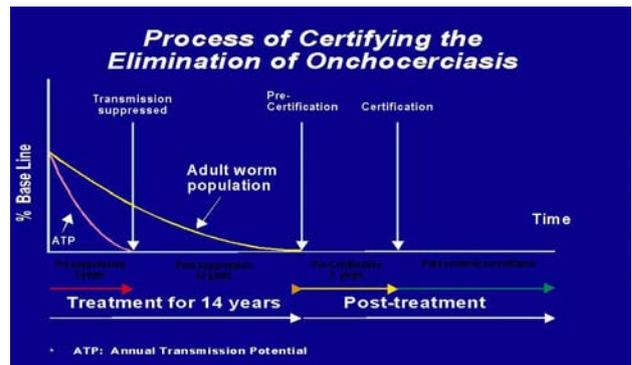


Geographic distribution and transmission status of the 13 Onchocerciasis foci of the Americas in 1987



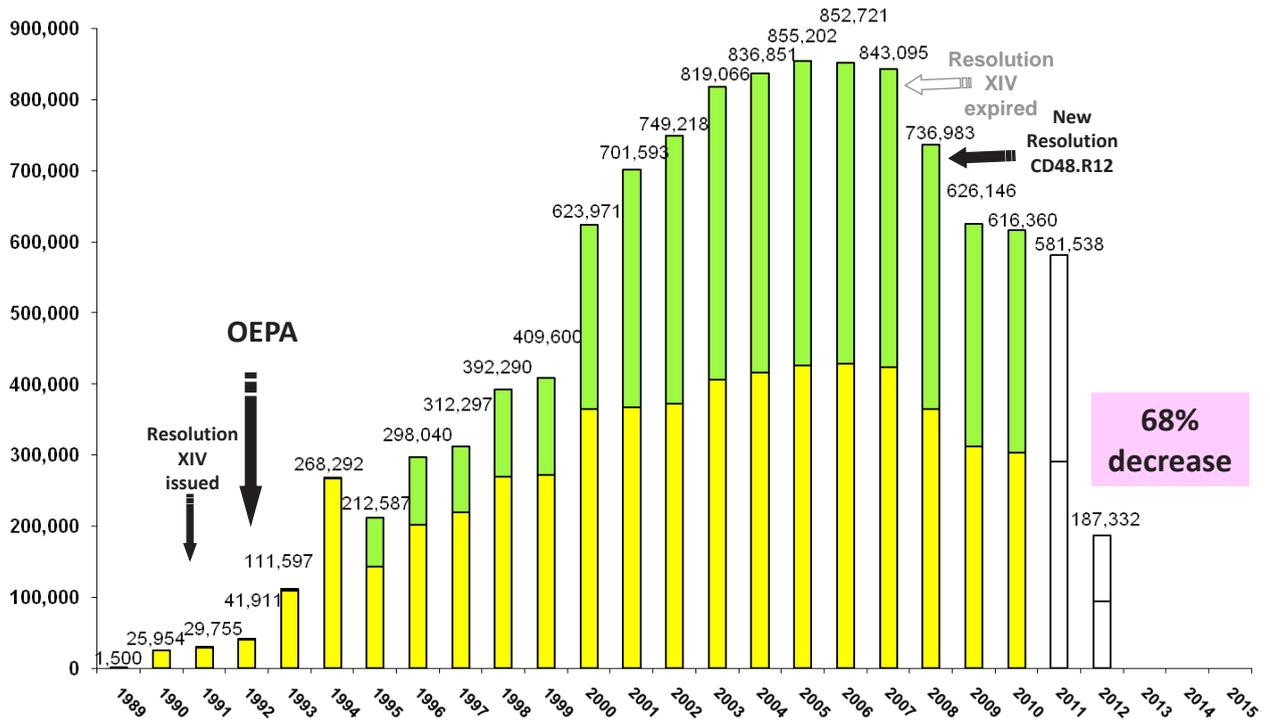
²⁵ The time now being given by WHO as most suited for applications is January/February of each year, the meeting was informed by Hopkins.

Mectizan Treatment Coverage in the Americas, by Focus, 2001 – 2010

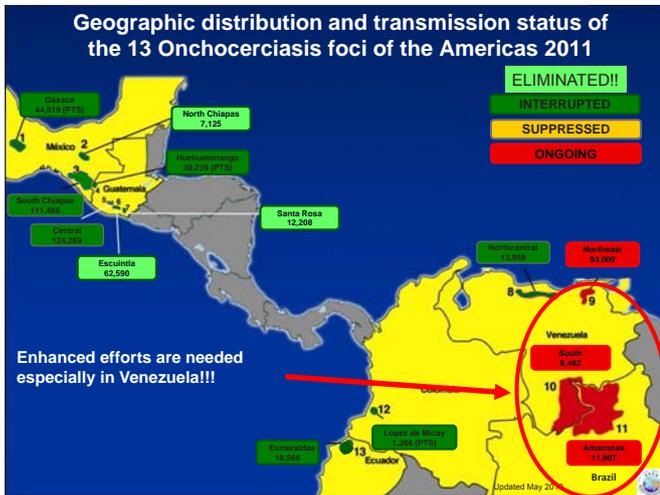


- ENT: <1/2000 infective flies
- EPI: <0.1 percent infection in children
- MORB: <1% mf in cornea/anterior chamber of eyes

History of Mectizan® treatment in the Americas and projection for 2011-2012



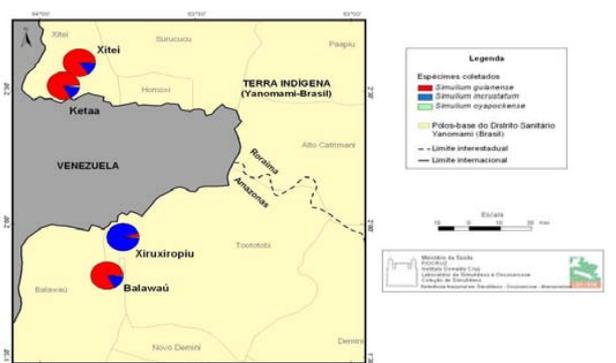
Good News!
Bad News!
Poor Progress in Venezuela and Brazil
Discovery in 2010 of untreated hyperendemic vil-
lages in South Venezuela



Nuevas comunidades. Thorapiwe (mas de 1000 mts altitud) y Momoí (algo mas de 400 mts de altitud) se encuentran en el Alto Ocamo, muy cerca de la frontera con Brasil, cerca de un área de minería ilegal. La comunidad de Thorapiwe fue sujeta a EER resultando ser mesoendémica con menor intensidad que las comunidades de Parima. En el día de hoy se produce una segunda entrada a la zona de Momoí



Localidade / %	S. guianense	S. incrustatum	S. oyapockense/roraimense
Xitei	83,72	15,185	1,095
Ketaa	81,6	16,13	2,27
Balawaú	83	15,5	1,5
Xiruxiropiu	5,36	93,76	0,88



Evaluación Entomológica - Simulídeos capturados, nos PB centinelas Xitei, Balawaú e Toototobi, 2009 y 2010, Brasil

Polo	Comunidad	Nº de moscas colectadas agos - nov 2009	Nº de moscas colectadas agos - oct 2010*	Total
Xitei	Watatase 1	9.789	-	9.789
	Watatase 2	7.510	-	7.510
	Ketaa (Ketaa)	2.319	3.647	5.966

	Ketaa (Aplutaú)	3.610	6.234	9.844
Sub-total Xitei		23.228	9.881	33.109
Balawaú	Maxapapi (Tapiri) Balawaú 1	1.392	1.462	2.854
	Maxapapi (maloca) Balawaú 2	921	1.701	2.622
	--- Balawaú 3	---	376	376
Sub-total Balawaú		2.313	3.539	5.852
Toototobi	Amahiki	7.251	-	7.251
	Xiruxixopiu	14.580	-	14.580
Sub-total Toototobi		21.831	-	21.831
Total		47.372	13.420	60.792



Photo credit CIACET-VEN



onward!

Fotografía: Kike Arnal

PLAN DE SALUD YANOMAMI

PCD - DEPA - MSDS - DRS - PSY - CAIGET

Puerto Ayacucho, 19 - 22 de Julio 2005



ACYAPS Feliciano Yoakai, ambulatorio Provisional (Shakripiwei - Área Shitari/Alto Ocamo)



Four times per year Mectizan® treatments in Venezuela and Brazil in 2011

Focus	Hyper-endemic	# hyper-endemic communities under 4x/year tx in 2010 (% hyper)	2010 Transmission status
Northeast, VZ	35	35 (100%)	Ongoing
YANOMAMI AREA (CROSS BORDER VZ AND BR)			
Amazonas, BR	7	3 (43%)	Ongoing
South, VZ	5	2 (40%)	Ongoing
TOTAL	47	40 (85%)	



Reception of Richard's OEPA News

His address, as in years past, received maximal UOEEAC attention, thanks in part to the way in which he structurally organized, graphically illustrated and verbally elaborated his material. His unique style was effective - in educating, challenging and sending out wake-up calls to onchocerciasis fieldworkers and officers, governments (health ministries especially) and everyone else playing a part in the oncho fight on the opposite (African) side of the Atlantic Ocean.²⁶ Richards' paper in 2011 seemed to say that if the six "oncho countries"²⁷ in the Americas can achieve so much, in this and or that manner, in such and such time, the people of Africa (and Uganda in particular) can also achieve that much, and even more, to make life better for onchocerciasis victims and those at risk of being made miserable by it.

There were aspects of his presentation that were vivid reflections of the workings and challenges of Africa's decades-old oncho onslaught. The implications (for Africa) of some of these aspects were apparently recognized well by UOEEAC (2011) and its guests. OEPA's Program Coordinating Committee (the PCC), is one such feature - a feature that is comparable to Uganda's UOEEAC.

With all due reference and attention to relevant treatment and other data²⁸ as well as a WHO document (Certification of Elimination of Human Onchocerciasis: Criteria and Procedures), the PCC has been making to different governments (Colombian, Ecuadorian, Venezuelan, Brazilian, Guatemalan and Mexican) recommendations on government onchocerciasis programs²⁹ where stories of complete or partial success have been registered in terms of achieved elimination of the disease, interruption of its transmission, its suppression, and even where there is ongoing drug administration to control or elimi-

²⁶ The reader, to achieve optimal gain, does in fact have to look beyond the skeletal text above of Richard's presentation: He or she must watch the video recording of it.

²⁷ Namely Brazil, Colombia, Mexico, Guatemala, Venezuela and Ecuador.

²⁸ Which is seriously reviewed.

²⁹ E.g. when to stop onchocerciasis Mectizan treatments.

nate the disease's ATP³⁰.

The situation of the "untreated hyperendemic villages", which were discovered during 2010 in Venezuela's southern region, just at this country's border with Brazil,³¹ is our second case in point of the "reflecting aspects". Between both countries, right in and across the border focus where the newly found village communities live, there exists poor cross border cooperation, reports Richards.

You have one government minister (on one side of the border) asking his or her counterpart (on the other side) about this or that, talking about doing one thing or the other to have both sides work together to find solutions for the border onchocerciasis problem. One main problem, however, is that Brazil (with a strong oncho program), so they say, is in a better position to deal with the reality of the previously untreated border communities than Venezuela is. A bad transport system, over and in the border area, complicates more the degree of ability and readiness (on both sides) to deal with the border oncho scare. There is virtually no road network there, and flying into the area is more practicable and cheaper from Brazil than from its neighbour.³² Cooperation between Brazil and Venezuela, in the matter of the border onchocerciasis scare, remains difficult, therefore; and while Brazil would be able to deal more easily with this matter (than Venezuela), that has not happened at the political level, said Richards.

These circumstances in many ways correspond to issues of cross border nature that Ukety was mandated to report on in the context of East and Central Africa as Richards told his hearers. This calls to mind cross border issues, real or suspected, between Uganda and DRC, or between Uganda and the Republic of Southern Sudan, and the DRC-Uganda and South Sudan-Uganda borders where anti-onchocerciasis efforts are hugely undeveloped or largely uncoordinated where they exist - issues and borders that always find their way in UOEEAC's annual agenda.



³⁰ Four of the six countries that got treatments since about 1987, it is reported, have stopped Mectizan treatments. Brazil and Venezuela are the only two still giving treatments, but their progress has been described as poor.

³¹ The news of the finding of these people and of one case among them that suffered badly from a strain of savannah onchocerciasis that came from Africa, got into the middle of the Amazon and now affects "American Indians", did in fact attract much attention of the 2011 UOEEAC meeting.

³² Aircraft has actually been used to look for and take to the Indians of the densely forested area essential Mectizan treatment, and in this we have a situation corresponding to the Africa onchocerciasis helicopter project of the past that helped to decimate or reduce the disease in some places on the continent.

NGDO Coordination Group For Onchocerciasis Control

Tony Ukety

Highlights

- Membership of the Group.
- New development of the Group.
- Challenges facing the Ugandan onchocerciasis elimination program.
- The way forward.

Membership of the Group

- 1) Charitable Society for Social Welfare;
- 2) Christoffel BlindenMission e.V. (CBM);
- 3) Helen Keller International (HKI);
- 4) IMA Global Health (IMA);
- 5) Light for the World;
- 6) Lions Clubs International Foundation (LCIF);
- 7) Mectizan® Donation Program (MDP);
- 8) Mission to Save the Helpless (MITO SATH);
- 9) Organisation pour la Prévention de la Cécité (OPC) ;
- 10) Schistosomiasis Control Initiative (SCI);
- 11) Sightsavers International (SSI);
- 12) The Carter Center;
- 13) United Front against River blindness (UFAR);
- 14) US Fund for UNICEF; and
- 15) Malaria Consortium.

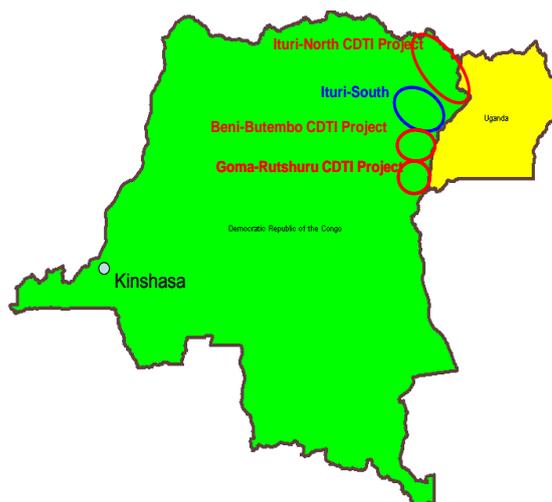
New development of the Group

- Launching of the NTD NGDO Network in September 2009.
- Membership:
 - NGDO Group for Onchocerciasis Control.
 - International Coalition for Trachoma Control (ICTC).
 - LF NGDO Network.
- First session: 21 – 23 September 2010 in Atlanta, USA (Task Force for Global Health).
- Second session: 20 – 22 September 2011 in Nairobi, Kenya (CBM).

Challenges of interested DRC CDTI projects.

- Lack of NGDO Support in Ituri-Nord, Beni-Butembo and Goma-Rutshuru CDTI projects.
- Political unrest in Goma-Rutshuru CDTI project area.
- Delay in launching onchocerciasis control in Ituri.

Challenges facing the Ugandan onchocerciasis elimination program



The Way Forward

- CBM: Appointment of an NTD Program Officer in Kinshasa.
- Sightsavers – UFAR partnership to support 2 CDTI projects (Lubutu & Ituri-Nord).
- Possibility of launching Ituri-Sud CDTI project with APOC support in 2012.



Ukety's Review of "Coalition Group"³³

Members were reminded that the NGDO Coalition for Onchocerciasis Control is a consortium of non-governmental organizations. At the onset, these were: some anti-onchocerciasis groups, some that were member institutions of the International Coalition for Trachoma, and some organizations whose business it was to combat lymphatic filariasis. The hope, that time, was that this coalition would promote the fight of onchocerciasis. As suggested by its name, the coalition (NGDO

³³ Besides Ukety's brief presentation above and what is reported here, the reader is advised to listen to the presenter's live video camera-recorded delivery of his update where we find some detail that is not present in the summary. His original sketch, in the video record, gets expanded as he presents.

Coalition for Onchocerciasis Control) has started fruiting as examples from DRC demonstrate. A substantive officer for Kinshasa is in place, and has been in this appointment for a while. Plans that are potentially bright are unfolding, for example, for Lubutu and Ituri-Nord.

There is this other pleasant aspect: There is great hope that serious implementation of strong CDTI projects, from Goma Rutshuru (in the south) to Ituri-Nord (in the north) along DRC's eastern board, which is now in plan, will significantly help Uganda to find solutions to its known and still unknown onchocerciasis cross border problems – those which are real, suspected or potential. But there is also this worrying reality: Despite the existence of the oncho NGDO coalition, a good many CDTI projects in the DRC are described as not having NGDO partners, as generally being weak as a consequence³⁴.

African Program for Onchocerciasis Control Noma Mounkaila



Follow Up of JAF 16 (2010) decisions

Following a decision of JAF 16 (year 2010), an evaluation of the APOC program took place between July and September 2010.

The objectives were to evaluate: establishment of country led CDTI systems, strengthening of health systems,

co-implementation, and the shift from control to elimination³⁵.

JAF requested APOC to work closely with its statutory bodies (CSA and TCC) to make a proposal based on estimated cost and priority of each of the different recommendations to be presented to JAF 17 in 2011.

The Committee of Sponsoring Agencies (CSA)

- Elaborate TORs for 3 advisory groups:
- Future of APOC (advisory group).
- Co-implementation (advisory group).
- Elimination of onchocerciasis infection and interruption of its transmission (advisory group).
- Nominated members of each advisory group.

Implementation of CSA decision on advisory groups

First meeting of the Advisory Groups	Ouagadougou, 16-18 May 2011
Face to face meeting of CSA Advisory Group on Co-Implementation	Amsterdam, 4-5 June 2011
Face to face meeting of CSA Advisory Group on the Future of APOC	Accra, June 16-17, 2011
Face to face meeting of CSA Advisory Group on Elimination	Geneva, June 21-23, 2011
Reports from the advisory groups to CSA	Paris, 19-21 July 2011
CSA advisory meeting and presentation to TCC	Ouagadougou, 12-16 September 2011

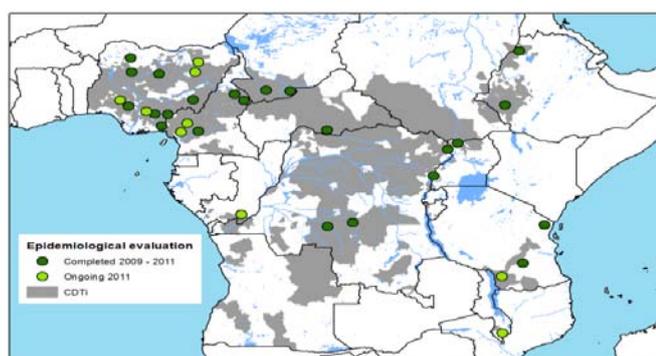
Elimination of Onchocerciasis infection and interruption of transmission in Africa where feasible

- Elaboration and adoption of the Guidelines on treatment coverage and epidemiological evaluation protocol (1-3 March 2011, Ouagadougou, Burkina Faso)
- Elaboration and adoption of the entomological evaluation protocol 28-30 March 2011, Ouagadougou, Burkina Faso)
- 2011 Epidemiological evaluation
 - Concluded: Central African Republic, CAR (Basse Kotto), Ethiopia (Keffa Shekka, Bench Maji and North Gondar), Cameroon (Centre 1 and Littoral 2)
 - Ongoing: Malawi (Malawi extension and extension), Congo
 - To be completed: Cameroon (1 project), Nigeria (4 projects) and Tanzania (2 projects)
- 2011 Entomological evaluations in Cameroon, Chad, Nigeria, Uganda and Tanzania.

³⁴ The September 20-22 (2012) NTD NGDO Network forum that convened in Nairobi, Kenya: Habomugisha has made a report, which has a section on the NGDO Coalition for Onchocerciasis (as a member of the network and also as an organization that was represented and discussed at the 2nd session. The report is being printed.

³⁵ See Report of the External Mid-term Evaluation of the African Program for Onchocerciasis Control.

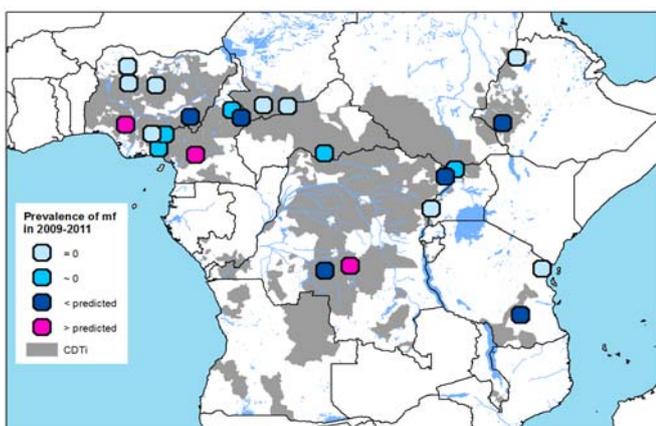
Epidemiological evaluation sites in 2009 – 2011



Evaluation Indicators and targets

Phase	Evaluation objective	Indicator	Target
1	a. Assess decline towards elimination breakpoint	Prevalence of mf	≤ predicted prevalence
	b. Confirm that breakpoint has been reached and Rx can be stopped	Prevalence of mf	< 5% in all villages < 1% in 90% of villages
		Vector inf.rate	< 0.5 infective fly / 1000
2	Confirm there is no recrudescence of infection/transmission	Prevalence of mf	No increase
		Vector inf.rate	< 0.5 infective fly / 1000
3	Detect possible recrudescence of infection/transmission	Prevalence of infection	< 1% in all villages
		Vector inf.rate	< 0.5 infective fly / 1000

Results of epidemiological evaluations in 2009 – 2011



Results of epidemiological evaluations in 2009 – 2011

Conclusion of evaluation	Number of sites
Elimination probably already achieved	9
Close to elimination	5
On track, but still some years to go	6
Total with satisfactory progress	20

Strengthening CDTI/CDI implementation

- CDTI/CDI training workshops carried out for all levels in 4 countries: Burundi (52 people), Liberia (48), Tanzania (116), DRC (78).
- Enhance onchocerciasis control in Taraba State, Nigeria.
- Completion of the mapping of LF and schisto in DRC (Katanga and Kasai).
- National plans to complete mapping of LF, schisto, STH, trachoma received from 6 countries (Nigeria, Cameroon, Chad, Congo, Kenya, CAR), to be co-financed by APOC, ongoing.
- Enhance management of SAEs.
 - APOC and MDP financial, logistic and technical support to DRC.
 - technical advisor for Angola.
- Manual and handbook for integration in the curriculum of universities, medical and nursing schools.
- Monitoring of treatment coverage, assessment and work plan for reaching 20 million people not yet covered by ivermectin treatment.
- Ivermectin biannual treatment in the context of elimination of onchocerciasis infection and interruption of its transmission (protocol to be reviewed by APOC/TCC).

Collaboration for monitoring and evaluation of onchocerciasis

- Trap for catching onchocerciasis vector.
- PATH new diagnostic tools.
- DOLF integrated interventions for onchocerciasis and LF mapping WHO/TDR, DEC Patch test.



Mounkaila's APOC Update

His news update was one of the updates that enthused the meeting. Several questions were asked and some comments were made as shown by samples hereunder.

The plausibility of APOC's plan to wind up its mandate in 2015, which however is now talking of its constituencies going from control to elimination of onchocerciasis in the context of integrated administration of drugs for different diseases,³⁶ was questioned by a committee member. She also wondered if the talk meant that APOC's term of life was about to be extended or that the elimination project would be left halfway as APOC closes in 2015. Here is partly why. The proposed date is not only too near. Many of the APOC supported countries, too, still have some way to go to kill onchocerciasis, an example being northern Uganda districts where the effort to control and eliminate onchocerciasis is only beginning in earnest now after the end there of the rebellion that had made living and working there extremely

³⁶ On the matters of transition from control to elimination and co-implementation of medicine interventions, different African governments, their MOHs, certain NGDO and other partners and APOC were said to be in contact to chart the way forward.

difficult. The reply was heard that when 2015 comes, and time is over for APOC, its governing body (JAF) and the Committee of Sponsoring Agencies will consider its future – this being why we may say that that future is mainly an issue to be settled by JAF.

Sometime back, noted a committee member, APOC's Technical Consultative Committee, TCC, did consider and discuss the idea of national laboratories (for the oncho program) and support for them, an idea that has however not been heard of by the questioner ever since. With most affected African countries transiting from control to elimination, noted Mounkaila, each such country, ideally, should have: (1) an epidemiological evaluation team, (2) an entomological evaluation one, and (3) a relevant laboratory to examine and assess onchocerciasis associated samples. The idea, said Mounkaila, was in progress although there was no proper budget for it until 2011: still being worked on as regards most of the countries; in others, where already there are necessary facilities (Uganda, Cameroon and Nigeria), there is collaboration (on analysis of oncho-related samples) with the MDSC laboratory in Ouagadougou Burkina Faso.



NTD Control Program/Rti

Ambrose W. Onapa & Harriet Namwanje



Namwanje represented Ambrose Onapa

Background on NTDs in Uganda

- NTDs are diseases that affect poor rural and some urban communities in 3rd world countries.

Group 1: Difficult to treat, require management in hospitals - Sleeping Sickness or Human African Trypanosomiasis; Kala-Azar or Leishmaniasis; Buruli

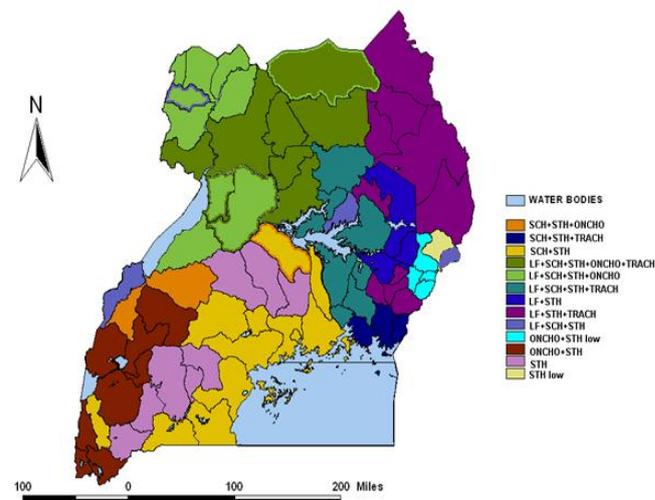
Ulcer Disease (BUD); Plague; and Guinea worm (although the last one has been eradicated).

Group 2: Amenable to Mass Treatment (MDA)

- Lymphatic Filariasis (LF); River Blindness or Onchocerciasis; Bilharzia (Schistosomiasis); Intestinal worms (Soil Transmitted Helminthes); and Trachoma.

New candidates: cysticercosis, plague, tungiasis, rabies, etc.

NTD Overlap in the Country



- Incentives: demand for incentives by all has reached crescendo levels.

- Districts have their own ways of doing things! **BIGGEST CHALLENGE.**

Magnitude of NTDs in Uganda

NTD	Total endemic districts (80)	Population at risk (in millions)**	Estimated infected population (in millions)**
Lymphatic Filariasis	56	16.0	4.8
Onchocerciasis	36	4.4	1.5
Schistosomiasis	67	5.2	4.0
STH	112	33.2	11.0
Trachoma	35	10.8	0.7

NB: ** At risk figures subject to change

Staggering of packages during MDA

Target Diseases	NTD Treatment Campaign						6 Months
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
LF + STH + Trachoma	IVM + ALB			AZ			ALB
LF + STH + Oncho	IVM + ALB						IVM + ALB
LF + Schisto + STH	IVM + ALB			PZQ			ALB
LF + Schisto + STH + Trachoma	IVM + ALB			PZQ		AZ	ALB
LF + Schisto + STH + Oncho	IVM + ALB			PZQ			IVM + ALB
LF + STH	IVM + ALB						ALB
Schisto + STH + Oncho	IVM + ALB			PZQ			IVM + ALB
Oncho + STH	IVM + ALB						IVM + ALB
Schisto + STH	PZQ + ALB						ALB

Key: Diseases: LF = Lymphatic Filariasis; STH = Soil Transmitted Helminths; Schisto = Schistosomiasis; Oncho = Onchocerciasis; Trachoma Drugs: IVM = Ivermectin; ALB = Albendazole; PZQ = Praziquantel; AZ = Azithromycin

Achievements registered

- Capacity building at all levels - national, district, HSD, schools, etc.
- Training manuals, guides, communication strategy, IEC materials developed.
- Trachoma baseline surveys completed in all highly endemic districts.
- Scaled up PCT to all districts, except newly mapped trachoma districts.
- Extensively supported de-worming in districts during CDP.
- Support to MOH programs - equipment, communications and logistics.
- Impact assessments in progress especially in LF districts – some near cut off points (1%) e.g. parts of Adjumani, Moyo.
- All partners have agreed to harmonise support to districts and implementation –NTDCP, TCC, SSI, APOC /NOCP.

Challenges faced in NTD implementation

- Delayed and inaccurate drug deliveries to districts by NMS – in some cases by more than 6 months.
- Data reporting (reliability, accuracy, and compilation) is a big problem.
- Drug combinations: some CMDs give cocktails not approved, leading to adverse events.
- Incentives: demand for incentives by all has reached crescendo levels.
- Lack of morbidity control and disability management is a big concern.
- Districts have their own ways of doing things!
BIGGEST CHALLENGE.

Acknowledgements

The following agencies and partners are acknowledged: WHO; Pharmaceutical Groups: Merck & Co. Inc. for Mectizan donation through MDP, GlaxoSmithKline for Albendazole, CWW/Johnson and Johnson for Mebendazole, Pfizer for Zithromax® through ITI; RTI/ USAID for PZQ and ALB; and NGDO partners: TCC; Sightsavers; SCI (UK).



NTDS Review Re-Visited

Namwanje, while she had the floor, would (here and there) give important information additional to what is contained above in the sketch.³⁷ NTDs, which are diseases suffered by the poorest of the poor, said the presenter, have tended to be neglected at all levels (national and international included), so much so that even persons suffering from them tended to ignore them. She outlined the nature and extent of these diseases, including but not limited to estimated numbers of affected people. For example she said this of onchocerciasis: i.e. that the disease is endemic in 36 districts; that people at the risk of being infected with onchocerciasis are 4.4 million across Uganda; and that 1.5 million people are already infected by this disease.

NTDs in Uganda, noted Namwanje, have been integrated for two reasons: (i) in order to minimize on treatment and associated costs; and (ii) to reduce duplication of treatment activities. She named the many challenges that face the NTDs program, one of these being the nil or little training of community medicine distributors (CMDs) also known as community drug distributors (CDDs).³⁸

One more example of the noted challenges was that the data that the national NTDCP headquarter offices receive from upcountry treatment communities are usually: incomplete and inaccurate, with the way in which they are compiled being bigly problematic. The cause of all this data reporting trouble was given as the insufficient or no training given to the CMDs, who (unlike district level officials) have never trained in the use of, nor used, integrated data collection tools that many see for the first time when national supervisors from Kampala go into oncho villages.

Another of the challenges, which does not appear in the rough draft above said Namwanje, rises from Uganda Ministry of Health's new policy of VHTs as the essential connector between communities and the country's health system. "The arrangement," says Mbulamberi early in this document, "is that these VHTs should comprise people who have acted as community medicine distributors such as those who have participated in the distribution of HOMAPAK in the case of malaria. Actually preference is given to people of such background."³⁹ The noble thought that priority would be given to the old crop of CMDs as the source from which would be chosen CMDs for VHT membership has however fallen on rock in some districts. Community leaders, in such places, have selected entirely different new people who have not previously been involved in drug distribution.

37 It is very important therefore that the reader see the video record of that presentation.

38 She actually described them as either untrained or as having trained only once. That is apparently true of the experiences of Uganda's Neglected Tropical Disease(s) Control Program, NTDCP, which has had the support of USAID and RTI. The presenter's statements of "not much training or no training at all" do not, however, reflect the general experience of The Carter Center Uganda (for years at the forefront of the against-onchocerciasis campaign), which always makes effort to have its CDDs (CMDs) trained.

39 Mbulamberi, D.B. (2011). "Welcome Notes" in *Proceedings of the Fourth Session of Uganda Onchocerciasis Elimination Expert Advisory Committee, UOEEAC*, 15-17 August. Check in the introductory pages

This has frustrated many seasoned CMDs to the extent that they have decided to hand in their books of records, resigned and turned to other activities.

This is another of the challenges that were tabulated and discussed in some good detail by the presenter: the ever rising demand for financial incentives by almost every party taking part in medicine administration. In some districts, where there were say twelve onchocerciasis CMDs, these people, noted Namwanje, declined to do treatment, with the consequence that community supervisors would step in to treat the entire community. Similarly in parishes where CMDs would opt not to treat, again because of getting no pay for their participation, parish supervisors would sometimes distribute the drugs, or import CMDs from another parish to do it. She also reported that training of teachers, in many districts, as drug dispensers last happened in the year 2007 or 2008, the time when school children last got treatment. As teachers won't treat, partly because there is no incentive and partly because they have other time-consuming school and other obligations, some CMDs in some places, after treating in communities, do go to schools to treat there as well.

Many of those CMDs asking for incentives, in certain areas, look back to a time when they would get Uganda shillings 1000 or 2000 in appreciation of their services. Now that this is no more, they express their unwillingness to continue working for free.

There is also this case, the last one that we shall review. It was reported by Namwanje that the area of NTD drug combinations has become a challenge (and terrifying) in itself as this is openly flouted and abused by some CMDs, for a combination of reasons apparently. Clearly shown above are the authorized combinations of medicines – a policy that takes into account the physical place where they are to be given out and the NTDs that are co-endemic in that area. Some CMDs in certain districts, however, she reported, do dish out unauthorized drug combinations, e.g. praziquantel with azithromycin, ivermectin with praziquantel;⁴⁰ or azithromycin with ivermectin. The unapproved cocktails, generally, she said, tend unfortunately to unpleasantly affect the users of the combinations.

The speaker was thanked for openly and clearly stating the challenges and problems confronting the country's NTDCP – facts that until now tended to be muted. Namwanje's presentation led to important comments and questions, many of which are unambiguously or potentially controversial. Because of that we are not reporting here those reactions. We recommend that readers, if they so wish, secure copies of the video recording of the presentation and watch and assess what they hear and see.



40 Ivermectin and praziquantel combinations, it was noted by her, have been shown by certain studies to be safe - further stating, however, that it is not yet official policy in Uganda to treat with such combination.

Using Standard Format for Coverage Data

It came to the attention of the UOEEAC meeting of 2011 “that the presenters utilized different formats for presenting coverage data, something that was confusing to the committee”, records the Unnasch-UOEEAC source. “A standardized format for the presentation of coverage data,” the committee recommended, “would be useful”. And then this: “For elimination to be achieved,” following MOH guidelines (Unnasch-UOEEAC 2011), “every treatment round must reach geographic coverage of 100% and 95% of the eligible population. The standardized format should be designed so that the data presented can be easily examined in light of the MOH guidelines.”

Foci Names

The nearly never ending multiplication of the number of districts in Uganda has, as the UOEEAC stated it, caused the names of some foci to undergo “some revisions”. This being the case, “the committee recommended that the oncho flag be revised to include a column containing a unique identifier number that will remain associated with each focus even if the name is altered” (Unnasch-UOEEAC 2011).

Misrepresenting Sub-foci

Uganda onchocerciasis fieldworkers, the committee has realized, tend “to split previously identified foci into sub-foci as mapping”. It was made clear that this practice, which tends to attach special importance to each such sub-focus, is not favored by the committee. Without doubt, “sub foci may be useful in informing operational activities,” however, they “will not be recognized as independent by the committee in its evaluations,” members stated (Unnasch-UOEEAC 2011).

Onchocerciasis and Filariasis Coordination

The two diseases (onchocerciasis and lymphatic filariasis, LF), and most especially in foci where they are co-endemic, said Mbulamberi during the initial stages of UOEEAC 2011, were one area where MOH Uganda wished to be seriously advised in the course of that meeting. This ministry, to be specific, “recommended that the UOEEAC develop a method to strengthen coordination of its activities with the filariasis control program” (Unnasch-UOEEAC 2011). See also Mbulamberi's welcome remarks in the introductory pages of this report to get a better picture of the background to this matter. On this issue, the committee was able to deliver in recommendation terms. “The committee added a column to the oncho flag,” we report (Unnasch-UOEEAC 2011), “to indicate the status of filariasis endemicity in each focus, and requested the presence of a representative of the Ugandan filariasis control program to provide the UOEEAC with expert advice on the status of filariasis in each of the foci. ...the committee recommended that the MOH include a filariasis program representative as a regular observer to the UOEEAC to ensure coordination of activities vis a vis intervention interruption.”

VHTs and NTD Integration

Three things were listed by Mbulamberi's opening speech as items on which Uganda's Ministry of Health was keen to be advised. Above, we reported UOEEAC's response on one, and now what the committee said about the other two, i.e. "integration of onchocerciasis elimination into the Village Health Team (VHT) policy for integrated neglected tropical disease (NTD) control", which is a new approach that calls for a shift "from CDI to VHT structure and integration with other NTD programs" (Unnasch-UOEEAC 2011).

"The committee noted that the VHT policy and the CDI approach that has been used for onchocerciasis control and elimination," the source says (Unnasch-UOEEAC 2011), "are in many ways similar. Challenges faced in harmonizing the operations of the two in NTD control (and in particular CDTI) should be addressed at the programmatic level through education of the implementers on the approaches taken by each and developing an agreement on how to address the few differences between them. Harmonization of operations should be quickly achieved to ensure no interference with mass ivermectin treatment for onchocerciasis elimination." The point of harmonization is apparently part of what Noma Mounkaila calls "strengthening CDTI/CDI" in the midst of co-implementation efforts with other drug distribution endeavors.

PTS plans

That there is "need for the development of PTS plans that are specific to areas in which all community-wide treatments have stopped", as well as the creation of such plans for "foci where once per year treatment is ongoing due to co-endemicity of filariasis", was recognized. These plans accordingly are to "be developed over the coming year" and will "undergo committee review at the 2012 meeting", said the committee (Unnasch-UOEEAC 2011).

Inter-meeting Decisions

More or less, this is a rephrasing of a subject matter of UOEEAC 2010, i.e. "Inter-meeting action plan".⁴¹ "Because the UOEEAC meets officially once per year," committee members reasoned (Unnasch-UOEEAC), "it is possible that there may be delays for some foci where only a small amount of follow up data are needed to recommend transmission interruption. To overcome this problem, the UOEEAC recommended that such late breaking results will be communicated to the committee chair." Using email, the chairperson is to circulate the results (plus some recommended action) among the

41 "The committee recommended that if there are important or urgent decisions to be made," it was reported, "information can be sent to the Chairman by an individual. The Chairman will then contact the committee members, and if they are in agreement, recommendations would be made to the government. For example, following this meeting such decisions may include changes in the status of Itwara and Imaramagambo foci. This proposed mechanism, whereby urgent decisions can be made without calling a special meeting or without waiting for the annual meeting, seeks to speed up committee activities." See "Matters Arising" in: *Uganda Onchocerciasis Elimination Expert Advisory Committee... A Report of the Third Meeting, August 10-12, 2010*, p. 56. The subhead "Inter-meeting action plan", was however erroneously left out there by the printer

committee who by majority vote, and also through e-mail, shall pass or reject the suggested course of action (Unnasch-UOEEAC).

Getting Results Published

It was of utmost significance, the committee agreed, that peer reviewed journals publish data generated from the onchocerciasis control and elimination efforts. "This will provide important documentation to the appropriate committees that will eventually certify onchocerciasis elimination in Uganda," the committee members concurred. They were in fact happy to hear that texts of results from the foci of Elgon, Itwara and Wadelai were being organized for possible publication in the kind of high-end journals that we described above.

UOEEAC, Debate, Minutes and Certification

It was and remains the view of the committee that the preservation of its deliberations "may be important information for the eventual certification process". For that reason, rapporteurs shall be required to produce a "detailed report of the minutes and conclusions and send this to the chair, who will circulate the report to the committee for comments and revisions", after which the committee approved report is to be distributed among persons invited for the UOEEAC 2012 assembly during which the members will revisit the document to approve, disapprove, or amend its content and that kind of stuff. It was agreed that the approved report was to be preserved "in digital and hard copy formats" (Unnasch-UOEEAC 2011).



PART F - CLOSURE

Closing Remarks by retiring Chair

J. Frank Walsh

Mr Chairman, Colleagues,
Thank you for your kind remarks and good wishes on my retirement from the Chairmanship of UOEEAC – a committee that is increasingly becoming important. Having missed the no doubt facetious comments at the cocktail party the other evening, I am at a loss to know how George Washington crept into the picture.⁴² I certainly do not see any resemblance between George and me, except perhaps that I have always thought of myself as also being something of a rebel. Mention of George Washington reminded me of something I wrote for the '0-Now!' conference in Leiden in 1990. Perhaps George would have made a good vector/disease controller, if he had had the chance. Bear in mind that I was writing at the beginning of the modern era of the use of ivermectin successfully to suppress onchocerciasis and was speaking on behalf of vector controllers.

42 It was Unnasch who, during his cocktail party remarks on 16 August 2011, at Garden City, Kampala, referred to JF Walsh as the George Washington of UOEEAC.

I slightly paraphrase my closing remarks to include all controllers: “*What is clear is that the fate of any control scheme, and especially one aimed at elimination (which is after all the most cost-effective type), depends on the quality of the pre-control surveys and studies. The limiting factor is not funding but the availability of the right type of staff. Good controllers must be dedicated enthusiasts, physically tough, keen on the ‘great outdoors’, competent field scientists and intelligent, but at the same time perhaps a little mad. In this environmentally deteriorating world, if one has such a combination of qualities, one might better aim at becoming President or Prime Minister.*”⁴³ So you see the earlier George Washington probably made the wiser choice. [Note that the quoted paper contains some serious comments on the history of attempts to control onchocerciasis in Central and East Africa.]

I hope that I have helped, in a small way, to establish the committee, to ensure that it is a pleasure to attend and that it is fun to be involved in this great endeavour. At the same time I have tried to insist that the deliberations and recommendations of the committee are taken seriously by all concerned, particularly the MoH. I feel that great progress has been and is being made, and indeed that we are working in exciting times. Notwithstanding the habitat changes which are occurring, the elimination of onchocerciasis from the Mount Elgon Focus is a tremendous achievement. I heartily congratulate all those involved, from Thomson Lakwo and his team and Peace Habomugisha and her team, to the last Community Volunteer. When I reported directly to the Minister of Health at the beginning of the modern era of onchocerciasis control/elimination, which followed a WHO consultancy in 1991, I had the unenviable task of dampening hopes and reporting that I did not think elimination of onchocerciasis from Mount Elgon would be possible. By 1996 Prof Rolf Garms, Lakwo and I reported that ‘cost effect control, or even eradication of the northern sector of the focus may be feasible’. This still implied that elimination from the whole focus might not be possible,⁴⁴ but now our colleagues have done it.

As we move into the Post Treatment Surveillance era it is fitting that a new Chairman, with his knowledge of all the sophisticated laboratory methods for confirming the disappearance of the parasite and who not only chairs, but drafts out the recommendations and much of the proceedings in real time, should take charge of the committee. We have already reaped the benefits at this meeting.

These few remarks have largely been written since the end of the meeting,⁴⁵ as at that time I was in a bit of a daze and failed to offer coherent thanks.

Anyway, thank you all for your help during my chairmanship and for your kind remarks on my retirement. I wish everyone success in the coming years in this vital task of onchocerciasis elimination.



Closing Statements from MOH Uganda Dennis K. W. Lwamafa⁴⁶



It is my pleasure to officiate at the closing ceremony of this very important meeting. First and foremost, I would like to once again welcome all the invited guests to Uganda and to Kampala city in particular.

I believe that over the last two days you have achieved a great deal in reviewing progress in elimination, making important decisions and recommending important actions to be undertaken. All these will make a real difference in ensuring that the poor people of the voiceless and low income endemic communities may with time enjoy the fruit of onchocerciasis elimination in Uganda.

The issues you have been discussing on elimination are quite crucial. Achieving the various benchmarks set in the guidelines to facilitate interruption of transmission requires a lot – not only on the side of the program, but also on the side of all the stakeholders involved in onchocerciasis elimination. I am happy that significant achievements have been made in some foci, and this needs to be preserved. I am quite convinced that the necessary surveillance network will be strengthened in these foci to allow elimination to be fully achieved.

43 Walsh, J.F. 1990. ‘Review of Vector Control Prior to the OCP’, Acta Leidensia 59: Nos. 1 & 2. Proceedings of the Symposium on Onchocerciasis, pp. 61-78.

44 Walsh, J.F., R. Garms & T. Lakwo. 1996. Planning of Focal Vector Eradication in Onchocerciasis Foci in Uganda. Special Programme for Research & Training in Tropical Diseases (ID No. 960012).

45 The writing was complete by 28 August 2011.

46 Uganda MOH’s Commissioner for Health Services, Department of National Disease Control. He addressed the meeting on 17 August 2011. His speech started by recognizing the presence of the Representative of the World Health Organization, Uganda, who sent Dr. Solomon Fisseha to stand in for him; that of the Representative of the Director of APOC; that of the Director of the Mectizan Donation Program, GA, USA; that of the Chairman of the Uganda Onchocerciasis Elimination Expert Advisory Committee; that of the Representative of The Carter Center, Atlanta, GA, USA; that of the Coordinator of the NGDO Coalition; the significance of all partners involved in the onchocerciasis program: APOC, Carter Center, GTZ,

I believe you have shared some lessons and experiences during this session. You have discussed the contents of the current draft guidelines: this to me is the most important since it will guide all the activities to be undertaken. You have heard arguments for and against some of the document contents. We should appreciate the fact that we do not have this kind of guidelines for the continent of Africa where 99% of the onchocerciasis cases occur. We have to borrow a lot from OEPA, which is quite advanced in the elimination of onchocerciasis in the world. The MOH, in the process of owning the guidelines document, subjected it to a number of technical committees for it to be within the framework of the Health Sector Strategic Investment Plan. There may have been tensions, and some areas where it was difficult to agree. This is inevitable. But the task here was to think through carefully the implications of different options for all the stakeholders – even if a consensus was not reached.

There are other issues that merit our further attention. I will just take two examples (but there are others that have been presented and exhaustively discussed). First, you have touched several times on the issues of transmission interruption and halting intervention in a focus: Our ministry (MOH Uganda) is responsible for verifying and officially communicating to the district concerned matters in this regard. It is crucial that adequate preparedness be made at all levels in terms of strengthening the surveillance system and putting in place a good relevant documentation system.

Second, we need to set very clear plans on the cross-border issue as this has a lot of implications for the elimination process. As you might have heard yesterday (on 16 August 2011) a regional effort is being made to strengthen cross-border collaboration between DRC and Uganda and this, if successful, should be extended to the new Republic of South Sudan. To move this agenda forward financial support from partners would be required.

Lastly, for any designed strategy of onchocerciasis elimination to be effective, it should be properly implemented. For the case of twice yearly treatment with ivermectin, there should be sustained high treatment coverage while for vector elimination, proper planning and commitment of field teams are very crucial. However, both would require political support, involvement of the health workers⁴⁷ and the affected communities. Empowerment of the communities to take care of their own health and sustainability of the elimination program must therefore remain our watchwords.

To conclude, I would like to further emphasize the commitment of program staff toward this elimination effort, and this should be supported and maintained. The support from The Carter Center and other partners is ex-

tremely appreciated. Elimination of onchocerciasis will set a new stage for other NTDs and will be a new experience for the continent of Africa.

It is now my honor and pleasure to declare officially closed the 4th session of UOEEAC.

Thank you for your attention.



"Achieving the various benchmarks set in the guidelines to facilitate interruption of transmission requires a lot – not only on the side of the program, but also on the side of all the stakeholders involved in onchocerciasis elimination. I am happy that significant achievements have been made in some foci, and this needs to be preserved."

There may have been tensions, and some areas where it was difficult to agree. This is inevitable. But the task here was to think through carefully the implications of different options for all the stakeholders – even if a consensus was not reached.

RTI/USAID; and Sightsavers; the presence of Representatives from oncho endemic districts in Uganda; that of all other distinguished invited guests in their various capacities; and of all ladies and gentlemen there present.

⁴⁷ Within or in the neighborhood of the onchocerciasis endemic areas.

PART G - PERIPHERALS

Annex I - Oncho Flag August 2011

Note
 Dark Green = Eliminated
 Light Green = Transmission Interrupted
 Greyish Green = Interruption suspected

Yellow = Implement elimination policy
 Blue = Priority for epi studies for delineation of each focus before semi-annual treatment decision
 Red = Not much is known (Need for Epi studies)

Uganda's plan for onchocerciasis elimination (August 11, 2010)

ID No.	Focus	PTS Ye/No	Vector	District	# MDA annual rounds	# of MDA semi annual rounds	Total Pop	2011 UTG1	UTG2	Status of Transmission	Yr. of elimination	Plan for MDA treatment
1	Victoria		<i>S. damnosum</i>	Jinja	N/A	N/A	198,160			Eliminated	1973	No need
				Mukono	N/A	N/A	387,707			Eliminated	1973	No need
				Kamuli	N/A	N/A	268,046			Eliminated	1973	No need
				Mayuge	N/A	N/A	156,714			Eliminated	1973	No need
				Kayunga	N/A	N/A	142,565			Eliminated	1973	No need
2	Wadejhi		<i>S. neavei</i>	Nelbi	15	9	17,739	14,382	28,764	Interrupted		Semi-Annual
4	Iwara		<i>S. neavei</i>	Kabarole	20	N/A	30,689	25,655		Interrupted		Annual
				Kyenjojo	20	N/A	63,850	50,823		Interrupted		Annual
5	Mt. Elgon		<i>S. neavei</i>	Manafwa	15	7	40,604	33,698	67,396	Interrupted		Semi-Annual
				Mhalo	15	7	50,253	40,781	81,562	Interrupted		Semi-Annual
				Sironko	15	7	76,375	64,396	128,792	Interrupted		Semi-Annual
				Bududa	15	7	161,630	139,656	279,312	Interrupted		Semi-Annual
3	Mpanba-Nkusi		<i>S. neavei</i>	Kibale	17	N/A	190,305	156,470	312,940	Interruption Suspected		Annual
6	Imatnagambo		<i>S. neavei</i>	Bushenyi	18	N/A	102,180	85,748		Interruption Suspected		Annual
15	Nyamugasani		<i>S. damnosum</i>	Kasese	17	N/A	9,701	8,377		Interruption Suspected		Annual
11	Maracha-Terego		<i>S. neavei/S. damnosum</i>	Maracha-Terego	18	N/A	170,377	136,302		ongoing		Annual
7	Kashoya-Kitomi		<i>S. neavei</i>	Buhweju	16	7	59,412	48,739	97,478	uncertain		Semi-Annual
				Rubirizi	16	7	73,316	60,668	121,336	uncertain		Semi-Annual
				Ibanda	16	7	25,645	21,260	42,520	uncertain		Semi-Annual
				Kamwenge	18	7	42,457	35,015	70,030	uncertain		Semi-Annual
8	Wamhabya-Kwamarongo		<i>S. neavei</i>	Hoima	16	7	74,600	63,050	126,100	ongoing		Semi-Annual
9	Budongo		<i>S. neavei</i>	Masindi	16	7	46,330	38,530	77,060	ongoing		Semi-Annual
				Buliisa	16	7	26,019	22,351	44,702	ongoing		Semi-Annual
				Hoima	16	7	75,626	63,472	126,944	ongoing		Semi-Annual
10	Bwindi		<i>S. neavei/S. damnosum</i>	Kahle	15	7	28,960	23,608	47,216	ongoing		Semi-Annual
				Kanungu	15	7	56,321	45,790	91,580	ongoing		Semi-Annual
				Kisoro	15	7	36,371	29,905	59,810	ongoing		Semi-Annual
	Mid North I			Pader	N/A	N/A	484,271	295,822		ongoing		Semi-Annual
				Kilgum	N/A	N/A	151,319	128,582		ongoing		Semi-Annual
				Lamwo	N/A	N/A	118,049	100,311		ongoing		Semi-Annual
				Ahuru	17	N/A	26,989	22,911		ongoing		Semi-Annual
				Gulu	17	N/A	27,956	22,938		ongoing		Semi-Annual
				Lira	N/A	N/A				ongoing		Semi-Annual
12	Nyakak Bondo		<i>S. neavei</i>	Nelbi	18	N/A	112,011	93,024		ongoing		Semi-Annual
				Zombo	18	N/A	233,428	192,992		ongoing		Semi-Annual
				Arua	18	N/A	191,033	168,969		ongoing		Semi-Annual
13	Obongi / Moyo		<i>S. neavei</i>	Moyo	17	N/A	42,753	34,302		ongoing		Annual
14	Lubhita		<i>S. damnosum</i>	Kasese	17	N/A	117,084	99,718		ongoing		Annual
16	Madi		<i>S. damnosum</i>	Moyo	17	N/A	122,797	99,508		ongoing		Annual
				Adjumani	17	N/A	145,945	120,047		ongoing		Annual
17	West Nile		<i>S. neavei/S. damnosum</i>	Yumbe	18	N/A	286,615	229,292		ongoing		Annual
				Koboko	18	N/A	167,076	133,661		ongoing		Annual
				Arua	18	N/A	138,063	134,696		ongoing		Annual
18	Mid-North		<i>S. damnosum</i>	Oyam	17	N/A	21,057	17,606		ongoing		Annual
				Gulu	17	N/A	95,780	77,422		ongoing		Annual
				Ahuru	17	N/A	19,946	16,909		ongoing		Annual

Annex II - UOEEAC 2011 Attendance List

SN	Names	Capacity in which one attended	Institution of affiliation	Physical Address	Email Address
1.	Dr. Dawson B. Mbulamberi	Member UOEEAC	MoH	MoH, Kampala, Uganda	mbulamberid@yahoo.com
2.	Dr. Dennis K.W. Lwamafu	Facilitator (opened the meeting)	MoH	MoH, Kampala, Uganda	lwamafu@hotmail.com
3.	Prof. Thomas R. Umash	At large member & Chair UOEEAC	University of Florida	USF, USA	tumasch@health.usf.edu
4.	Dr. J. Frank Walsh	At large member UOEEAC		LYTHAM ST ANNES, UK	frank@walsh.me.uk
5.	Prof. Rolf Garmis	At large member UOEEAC	Bernard Nocht Institute	Hamburg, Germany	garmis@bni-hamburg.de
6.	Dr. Frank Richards	Observer	The Carter Center (TCC)	Atlanta, GA, USA	frich01@emory.edu
7.	Dr. Moses N. Katabarwa	Member UOEEAC	The Carter Center	Atlanta, GA, USA	mkatamba@emory.edu
8.	Mr. Thomson L. Lakwo	Co-secretary (votes only in a tie)	NOCP, VCD/MoH	Kampala, Uganda	tlakwo@gmail.com
9.	Ms Peace Habomugisha	Co-secretary (non-voting)	TCC (at VCD/MoH)	Plot 15, Bombo Rd, Kja, Uganda	provia5@hotmail.com
10.	Mr. James Katamanywa	Member UOEEAC	Kyenjojo District Office	Box 1002, Kyenjojo, Uganda	katamanywaj@yahoo.com
11.	Mr. Ephraim Tukesiga	Member UOEEAC	DHO's Office, Kabarole	Box 38, Fort portal, Uganda	etukesiga@yahoo.com
12.	Dr. Noma Moukaila	Member UOEEAC	APOC	APOC, Burkina Faso	noma@oncho.afro.who.int
13.	Dr. Stephen Leak	Observer	APOC	APOC, Burkina Faso	leaks@oncho.afro.who.int
14.	Dr. Johnson Ng'orok	Member UOEEAC	Sightsavers	Kampala, Uganda	jngorok@sightsavers.org
15.	Dr. Cilliasy Tumwesigye	Member UOEEAC	Lions Club Uganda	Mulago Hospital, Kampala, Uganda	tcilliasy@yahoo.com
16.	Mr. Tom Rubaale	Member	DHO	Kabalore, Uganda	communitybased@utonline.co.ug
17.	Dr. Adrian Hopkins	Observer	MDP	USA	ahopkins@taskforce.org
18.	Dr. Miriam Nanyunja	Observer	WHO	Kanwokyra, Kampala, Uganda	nanyunjam@ug.afro.who.int
19.	Dr. Tony Ukely	Observer	WHO/Geneva	Geneva, Switzerland	ukelyt@who.int
20.	Dr. Paul Cantley	Observer/Guest	CDC	USA	gdh9@cdc.gov
21.	Dr. Solomon Fisseha	Facilitator (gave some welcome remarks)	WHO	Kampala, Uganda	fissenhas@ug.afro.who.int
22.	Dr. Narcis B. Kabareine	Observer	VCD/MoH	Box 1661, Kampala, Uganda	vcdmoh@gmail.com
23.	Dr. Harriet Namwanje	Observer	NTD/CPV/VCD/MoH	Kampala, Uganda	harrietwanjaga@gmail.com
24.	Dr. Edritidah Tukahabwe	Observer	VCD (MoH)	Kampala, Uganda	edmutheki@gmail.com
25.	Ms Stella Agunyo	Observer	TCC (at VCD/MoH)	Plot 15, Bombo Rd, Kja, Uganda	agunyoeguny@yahoo.com
26.	Ms Jacqueline Idusso	Observer	Merck Uganda	Kampala, Uganda	jackie.idusso@gmail.com
27.	Ms Edson Byamukama	Observer	TCC (at VCD/MoH)	Box 12027, Kampala, Uganda	rvbprg@utonline.co.ug
28.	Mr. Gabriel Matwale	Observer	PELF	VCD/MoH, Kampala, Uganda	gkmatwale@yahoo.com
29.	Mr. David Ogutu	Observer	VCD	VCD (MoH), Kampala, Uganda	dgotutu@gmail.com
30.	Ms Harriet Namanya	Observer	VCD	VCD (MoH), Kampala, Uganda	harrietnamanya@gmail.com
31.	Mr. Galex Orukan Ochieng	Observer	DHO's Office	Mbale District, Uganda	ochienggalex@yahoo.com
32.	Mr. Bernard V. Abwang	Observer	Gulu District Office	Gulu, Uganda	abwangben@gmail.com
33.	Mr. Benjamin Tinkitina	Observer	VCD	VCD (MoH), Kampala, Uganda	tinkitina@yahoo.com
34.	Mr. Dickson Unoba	Observer	DHO's Office	Box 1, Nebbi District, Uganda	unoba@hotmail.com
35.	Mr. Edward Banoba	Observer	Kasese District Office	Kasese, Uganda	ebanoba@yahoo.com
36.	Mr. Christopher Katongole	Observer	VCD	VCD (MoH), Kampala, Uganda	ckatongole@gmail.com
37.	Ms Zakiya Mugaba	Secretariat	VCD/	VCD (MoH), Kampala, Uganda	zakiawashitu@yahoo.com
38.	Ms Peace Komukama	Secretariat	VCD	VCD (MoH), Kampala, Uganda	peacekomukama@yahoo.com

Absent with apology: 1. Dr. Ambrose W. Onapa (at large member UOEEAC) Kwibalel@yahoo.co.uk; 2. Dr. Richard Ndyomugenyi (invited observer) richarddyomugenyi@yahoo.com; 3. Dr. Uche V. Amazigo (invited observer) Amazigo4@yahoo.com.

Annex III - List of Abbreviations

ALB: Albendazole.	OEPA: Onchocerciasis Elimination Program for the Americas
APOC: African Program for Onchocerciasis Control.	Oncho: Onchocerciasis.
ATP: Annual Transmission Potential.	OPC : Organisation pour la Prévention de la Cécité.
AVSI: International Service Volunteer Association (Italian).	PCR: Polymerase Chain Reaction.
AZ: Azithromycin.	PCT: Preventive Chemotherapy and Transmission Control.
CBM: Christoffel BlindenMission.	PZQ: Praziquantel.
CDC: Communicable Disease Control.	RBF: River Blindness Foundation.
CDI: Community Directed Interventions.	RTI: Research Triangle International.
CDP: Child Days Plus.	SAEs: Serious Adverse Effects.
CDTI: Community Directed Treatment with Ivermectin.	Schisto: Schistosomiasis.
CMD(s): Community Medicine Distributors.	SCI: Schistosomiasis Control Initiative.
CSA: Committee of Sponsoring Agencies.	SOPs: Standard Operating Procedure
CWW: Children Without Worms.	SS/SSI: Sightsavers (International).
DEC: Diethylcarbamazine	STH: Soil Transmitted Helminths.
FR: Forest Reserve.	TCC: Technical Consultative Committee (arm of APOC).
GOU: Government of Uganda.	TDR: Tropical Disease Research.
GSK: GlaxoSmithKline.	TORs: Terms of Reference.
GTZ: German Technical Cooperation.	TRC: Technical Review Committee.
HKI: Helen Keller International.	UFAR: United Front against River Blindness.
HOMAPAK: Combination Sulphadoxine/ Pyrimethamin (SP) and Chloroquine (CQ).	UFB: Uganda Foundation for the Blind.
HSD: Health Sub-District.	USAID: United States Agency for International Development.
ICTC: International Coalition for Trachoma Control.	VCU: Vector Control Unit.
IEC: Information, Education and Communication materials.	VHTs: Village Health Team(s).
IMA: Interchurch Medical Assistance Global Health.	WHA: World Health Assembly.
ITI: International Trachoma Initiative.	WHO: World Health Organization.
IVM: Ivermectin.	
JAF: Joint Action Forum.	
LCIF: Lions Clubs International Federation.	
LF: Lymphatic Filariasis.	
M.O.H., M.o.H., MOH, MoH: Ministry of Health.	
MDA: Mass Drug Administration.	
MDP: Mectizan Donation Program.	
MDSC – Multi-Disease Surveillance Center.	
MITOSATH: Mission to Save the Helpless.	
NCC: National Certification Committee.	
NGDO: Non-governmental Development Organization.	
NGO: Non-governmental organization.	
NMS: National Medical Stores.	
NOCP: National Onchocerciasis Control Program.	
NTD: Neglected Tropical Diseases.	
NTDCP: Neglected Tropical Disease(s) Control Program.	
OCP: Onchocerciasis Control Program	

Annex IV - Autobiographical Notes on Outgoing Chairman J. Frank Walsh

Name James Frank Walsh.

Born Derby, England 1937.

Educated at State schools. Left school in 1954 aged 16 years with undistinguished certificates.

1954-1959 Various jobs, plus 2 years in Royal Air Force, while studying in for university entrance qualifications.

1959-1962 Liverpool University, Zoology Department, graduating with 2nd Class BSc in Zoology (special Entomology).

1962-1965 Taught pre-university level Biology in a Liverpool Technical College.

1965-1969 Entomologist with Vector-Borne Diseases Control Unit, Kainji Dam, Northern Nigeria. Employed by Balfour-Beatty, Consultant Engineers on a very large hydro-electric project. The Senior Entomologist was Mr H Goiny, one of the team who eradicated *Simulium neavei* from Kenya. I learnt a lot from him and took over as Senior Entomologist when he retired. We introduced innovative methods of entomological monitoring.

1970 I wrote up my experiences at Kainji for WHO.

1970-1973 I was recruited by WHO to the Onchocerciasis Consultative Services team working in Ghana, Togo, Benin and eastern Burkina Faso. I carried out aerial surveys in these countries and investigated methods for trapping *S. damnosum*, working with Dr AWR McCrae, formerly of Uganda.

1973 I returned to Europe and spent most of the next year helping Mr J Hamon to draft the complex and detailed report which was the Project Document for the OCP. I played a substantial part in this. Probably my major contributions were to insist that clear reference must be made to the migratory prowess of *S. damnosum* in the introductory document. (This proved invaluable when the OCP was heavily invaded by the vector in 1975, and several senior World Bank officials wanted to cut their losses.) My other important contribution was to insist on the importance of comprehensive entomological monitoring. This had been a weak aspect of French control efforts in West Africa. I wrote, and costed, the plan for the Entomological Surveillance. Dr R Le Berre led in drafting and costing the Aerial Operations with my input from the eastern countries.

1974-1980 I joined OCP as Chief Entomological Surveillance, along with Dr Le Berre, Chief Vector Control Unit and Dr DAT Baldry Chief Aerial Operations. With departure of Dr Le Berre to WHO HQ I became Chief VCU. Between 1975-1979 we struggled to understand and control a major invasion of the western sector of the OCP area. Professor R Garms became our key consultant, and Dr JB Davies joined the surveillance team in 1975. Eventually, we understood the origin of the invading flies and regained control. We were awarded the

Dusseldorf Hygiene Prize for the write up of this work.

1981-1990 I found that my role as Chief VCU was not to my liking (too much administration, not enough field work), and resigned. For most of 1980s I worked as a consultant for OCP, often as part of the control management team. This gave me the flexibility to register as a part-time PHD student at Salford University, with Professor David Molyneux as my supervisor. In 1984 I successfully submitted my thesis entitled '*Aspects of the Biology and Control of Simulium damnosum s.l. (Diptera: Simuliidae) in West Africa*'. This was based largely in my development of control strategies and tactics in Nigeria and the OCP, together with studies of the non-man biting behaviour of adult *S. damnosum s.l.* In April 1986 I was a member of the Third WHO Expert Committee on Onchocerciasis. Dr Brian Duke, as Secretary of the Committee, was the dominant personality. Professor Garms and I were joint Rapporteurs for the entomological side of things. This was a very interesting experience.

During the later 1980s I took charge of the entomological control operations and surveillance in the eastern half of the OCP area, working from time to time with Professors RA Cheke and Garms. Our knowledge of transmission by different members of the *S. damnosum* complex was improving and I began to formulate plans for control targeted at specific limited populations of individual cytospecies, even where more than one was present. I presented these ideas at a Wellcome Foundation Filariasis Seminar in November 1986. This was later published (JF Walsh et al. 1987. *Tropical Medicine & Parasitology*. 38: 57-60). Later, we successfully eradicated the Djodji form of the vector *S. sanctipauli* from its only known locality, on the borders of Ghana and Togo, where it co-existed with *S. squamosum*, which persisted. Transmission was permanently reduced. A limited account of this success was not published until 2008 (RA Cheke et al. *Medical & Veterinary Entomology* 22: 172-174). In 1990 I ceased working in West Africa, though I took up membership of the Expert Advisory Committee of the OCP until 2000.

Uganda, 1991-1997

At the suggestion of Dr EM Samba, Director OCP, in March 1991 I visited Uganda, as a WHO consultant, together with Dr Teklemariam Ayele, to advise the Minister of Health on a possible Onchocerciasis Control Programme. For a month we travelled to most of the onchocerciasis foci with Mr L Kabango. After considering the existing economic situation within Uganda, the rundown state of the VCU, and the enthusiasm for ivermectin distribution following Merck's offer of free supplies, we concluded that a control programme would have to be based on the annual distribution of the drug. Our report did, however, also state that in certain circumstances vector elimination might prove cost effective.

Back in England, a chance telephone conversation with Dr Duke led to my inclusion, as general advisor, in the first River Blindness Foundation (RBF) visit to Uganda.

I accompanied RBF Director Dr Baldwin and Medical Director Dr Duke. At our scheduled first meeting with the Minister of Health, the Minister greeted me warmly with words to the effect that 'with my presence he knew the Ministry was in safe hands'. This was most generous, and a very lucky break for me. On leaving the Minister's office Dr Baldwin turned to me and said, 'Well, Frank, if the Minister thinks so highly of you, you had better be RBF's man in Uganda'. I visited Uganda regularly to liaise with the Ministry, work with VCU, and plan for the opening of an RBF office. Although my activities were mainly administrative I continued to visit many of the known foci, making contact with District Medical teams, Professor Garms and other members of the GTZ team, and Mr Trevor Graves of CBM and working with members of the VCU. I wrote a job description for an RBF Director and a Finance Officer and received approval for these from Dr Duke, who was my direct superior. I then advertised these posts in the main daily newspaper and asked two Makerere University professors to assist me in interviewing the managerial candidates. I selected eight people to interview for each of the posts. Fortunately the Professors and I were in total agreement that we should offer the post of Country Director to Mr (now Dr) Moses Katarwa.

I no longer have the reports I wrote for RBF, but I certainly visited Uganda on several occasions until the RBF was subsumed into Global 2000. I travelled in most of the onchocerciasis foci where the vector is *S. neavei*, as well as some of the northern *S. damnosum* areas accompanying many members of VCU and RBF. In 1993 I accompanied Dr Duke to a conference on Onchocerciasis Control in Central and East Africa sponsored by RBF. In October 1994 together with (the now Drs) Katarwa, Onapa and Kabatereine, I met the Commissioner for Health Dr Sam Okware to discuss the visit of Ambassador Easum on behalf of RBF. The views of the Ministry regarding vector control were discussed in detail. The Ministry was strongly in favour of vector control at that time.

In 1996 I was back in Uganda, as a consultant for the TDR Special Programme. My remit was to report on the potential for focal vector eradication (see below). I asked Professor Garms and Mr T Lakwo to join me in writing a report '*Planning of Focal Vector Eradication in Onchocerciasis Foci in Uganda*'. ...Katarwa, by that time with Global 2000, provided logistic support. We suggested as priorities for vector eradication Itwara, Wadelai, Mpamba-Nkusi, Rwamarongo and possibly part of West Nile.

1990s Outside Uganda

In the early 1990s I reported to the World Bank on the possibilities of controlling onchocerciasis in Africa outside the OCP countries. This culminated in *my Review of human onchocerciasis in Africa outside the OCP countries with recommendations on control*, Unpublished Report to the World Bank, 81 pages, 1993. This report was influential in persuading the World Bank to support the establishment of an APOC, and was probably the most important document that I ever wrote. It was

used as the baseline document for the development of an APOC proposal. While writing this document I became increasingly convinced of the value of combining ivermectin distribution with some level of vector control, particularly to gain a rapid reduction of transmission to levels which could not be achieved by ivermectin distribution alone. I also became convinced of the likely cost effectiveness of focal vector eradication. In 1994 I wrote a supplementary document *The control of Human Onchocerciasis in Africa outside the OCP countries: suggestions for Vector Control*, Unpublished Report to the World Bank, 43 pages. Apart from my TDR visit to Uganda referred to above I also visited and reported on Focal Vector Eradication for Tanzania and Malawi.

In discussion with Dr JH Remme in 1993, I outlined my ground and aerial survey experience and view that I could help to develop a rapid mapping technique for areas where the knowledge available to De Sole (De Sole et al. 1991) did not exist. This resulted in my recruitment as a TDR Special Programme Consultant. I proposed a method for identifying and mapping onchocerciasis zones, lacking detailed entomological or epidemiological data. Dr P Ngoumou, Mr J-M Mace and I prepared maps of potential endemic onchocerciasis areas in Cameroon. Dr Ngoumou carried out nodule palpation surveys to test the effectiveness of the approach. This resulted in the publication of *A Manual for Rapid Epidemiological Mapping of Onchocerciasis* by P Ngoumou & JF Walsh UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases and a formal publication (P Ngoumou, JF Walsh & J-M Mace (1994) *Annals of Tropical Medicine and Parasitology* 88: 463-474). The REMO technique has greatly aided the campaign to treat affected communities with ivermectin. With the successful establishment of RBF in Uganda and its incorporation into Global 2000, together with the establishment of APOC in West Africa, and the lack of enthusiasm for anti-vector measures in that organization, my connection with the fight against onchocerciasis virtually ceased.

The development of the UOEEAC

In 2008 I was surprised and honoured to be invited as an 'at large' member of the newly convened UOEC (now UOEEAC) and later to be its first chairman. After a long period on the sidelines I did not have any precise idea about the content of the first agenda. However, I was keen to get the maximum input from field workers. I hoped that some active field personnel would be members of the committee and that the maximum number of VCU and district staff would be able to attend the meetings of the Committee. In my introductory remarks at the first meeting I encouraged everyone present whether Committee members, secretariat, or observers, to express their views about the technical aspects under discussion. I hoped through this to gain maximum value for the technical advice that the Committee offered to the Ministry, to give credit where credit was due, and at the same time to maximise cooperation between all parties (including APOC). My other particular desire was that the control/elimination activities be properly documented and where possible results published in

peer-reviewed journals. I thought at the time that the 1st meeting had gone well.

At the 2nd UOEC meeting in 2009 I again stressed the advisory nature of the Committee's work. A key part of our activities during the 2nd meeting was geared towards developing National Guidelines which eventually became the document 'Guidelines for determining that Elimination of Onchocerciasis has been attained in existing foci in Uganda'. This document was necessary because the WHO paper 'Certification of elimination of human onchocerciasis: criteria and procedures' was based on the experiences of onchocerciasis in West Africa, where the vectors were members of the *S. damnosum* complex. No consideration had been given to the fundamentally different situation in Central and parts of East Africa, where the vector was *S. neavei* and the disease frequently present in relatively small isolated foci.

At the time I thought we were making progress to the satisfaction of the Ministry. This proved not to be so. In a letter dated 24 December 2009 Dr Sam Zaramba, Director General of Health Services, presented highly critical documents to me as Chairman. I responded with a strong refutation of some of the comments made and...I eventually succeeded in meeting him face to face on 16th February 2010. I told him of my dissatisfaction with the reaction of MoH to the UOEC 2nd Report, and especially with the criticism of the 'at large' members of the Committee. I gave him a short letter of complaint that I had written earlier. ... I was strongly inclined to resign at that point but was eventually persuaded by Dr Katarbarwa to stay on as Chairman for the 3rd meeting. Fortunately, by August 2010 ... co-operation was restored. The name of the Committee was changed to include the all-important word 'Advisory,' significant progress was made in drafting the Guideline document, applying the criteria to foci such as Wadelai, and in restoring friendly relations all round.

Highlights of my career

1965-1969 Experiencing large scale vector control and monitoring on the Niger River and its tributaries in northern Nigeria.

1973 Helping to draft the baseline documents for OCP.

1974-1980 Designing and implementing Entomological Surveillance for OCP. Helping to understand and combat the long range migrations of *S. damnosum* s.l. in collaboration with Professor Garms and Dr JB Davies and being jointly awarded the Dusseldorf Hygiene Prize. Standardising vector collection procedures and introducing the Annual Biting Rate (ABR). Heading the VCU of OCP.

1986 Membership of the Third WHO Expert Committee on Onchocerciasis.

1986-1990 Introduction of control targeted at specific limited populations of cytospecies of the *S. damnosum* complex, and deliberately eradicating the Djodji form of *S. sanctipauli*.

1991 WHO consultancy to Uganda. Advice given to MoH to control onchocerciasis by annual distribution of ivermectin.

1991-1995 Setting up Blindness Foundation (RBF) Office in Uganda and recruiting...Katarbarwa to post of Country Director.

Early 1990s Preparing background documents which were influential in persuading the World Bank to support an APOC. Introduced the concept of Focal Vector Eradication.

1993-1994 Playing a significant part in the development of REMO.

2008-2011 Chairmanship of the UOEC, UOEEAC.

Annex V - Uganda's Incredible Journey from Control to Elimination of Onchocerciasis: an Interview with Moses Katarbarwa *Peace Habomugisha, Stella Agunyo & Edson Byamukama*



Moses Katarbarwa

Introduction

The story of Uganda's war on onchocerciasis does not begin and end with Katarbarwa.⁴⁸ Being an old-timer in the progress of that war, he does, however, know quite a lot about it, and, over and above that, he has personally experienced it to quite some degree, especially since about the beginning of the 1990s when the fight was reenergized. Habomugisha, Agunyo and Byamukama, who interviewed Katarbarwa some days before UOEEAC's 4th meeting of August 2011, bring to you an account of certain aspects of the struggle against onchocerciasis as told by Katarbarwa.

The narrator tells of times of uncertainty and disappointment over the course of the struggle, of informed daring

⁴⁸ Onchocerciasis is also known as river blindness.

(sometimes even in the face of stiff opposition), of moments of expectation of great things to come that would result in open or concealed ear to ear facial smiles, and so on and so forth. Bit by bit, the story unfolds as you read on.

Of Denial, Disaster, Partial or More Knowledge and Ignorance

The late 1980s and early 1990s were a period of denial of endemicity of the age-old scourge of onchocerciasis, says Katarbarwa. According to him, some local leaders considered the ugly skin, the uncontrollable skin itchiness, symptoms of nakalanga syndrome (dwarfism) and epilepsy, all of which tend to be associated with the disease, to be a disaster for the image of their respective areas and districts.

It took some time to convince Kisoro and Kabale leaders, with data and photographs, that parts of their districts were onchocerciasis endemic. Already, the disease was known in Bushenyi, Buhweju, and Ibanda districts (in what was formerly Ankole), in Kyenjojo, Kabarole, and Kamwenge (where formerly we had Tooro), as well as in Buliisa, Hoima, and Masindi districts (in what used to be called Bunyoro), and efforts to treat affected communities were underway. In Nebbi district, the population had appealed to President Yoweri K. Museveni in a memorandum asking for assistance to treat river blindness. In endemic districts not yet mapped (for the disease), communities were turning to local remedies, while others had given up, convinced that superior underworld spirits were responsible for their fate.

“In truth,” said Katarbarwa, “only the Vector Control Division (VCD) of the Ministry of Health understood the problem of onchocerciasis in the country. Other institutions were generally ignorant of the disease. Yet the institution that had the knowledge of onchocerciasis was at the verge of collapsing, with limited or no support after many years of the political turmoil and the economic hardships of the 1970s and 1980s.”

Outside Support & Reinvigoration

It was during the early 1990s, with support from the German organization for Technical Cooperation (GTZ), the Bernhard Nocht Institute for Tropical Medicine in Hamburg, Germany, and the River Blindness Foundation to the Vector Control Division, that the war on age-old onchocerciasis was reignited.⁴⁹

Katarbarwa's assignment with the River Blindness Foundation, which employed him in 1992, was to provide financial assistance to the Vector Control Division of Uganda's Ministry of Health, to help it to regain its earlier reputation as a leader in onchocerciasis control,

⁴⁹ It needs remembering that from the 1950s to the early 1970s, the Vector Control Division had tackled and succeeded in onchocerciasis control through vector control with DDT in the Victoria Nile areas of Busoga and Buganda, the Mt. Elgon area of the East, and the Rwenzori area in the western parts of Uganda. Although vector control efforts in the Victoria Nile area were successful, in other areas political upheavals, during Amin's regime, left onchocerciasis efforts incomplete and abandoned.

to provide evidence of onchocerciasis existence in all the affected districts of the country, to build capacity in those districts through the official health delivery system and to encourage the communities to tackle this disease. Fortunately, Merck & Co. President (then) had promised President Jimmy Carter that his company would provide Mectizan® free as long as required and in as many quantities as needed in order to control onchocerciasis.

The main challenge, at that time, was to map the distribution of the disease countrywide,⁵⁰ organize implementation teams at Vector Control Division and district level, and for the affected communities to tackle the disease. During the period 1992 to 1995, John Moores, the founder of the River Blindness Foundation, donated millions of dollars to assist onchocerciasis control programs in the Americas and Africa. It was through this generous gift that river blindness control in Uganda was massively and exceptionally re-rejuvenated. His assistance also enabled the establishment of a strong coalition of non-governmental development organizations (NGDOs) with coordination mechanism at World Health Organization headquarters in Geneva. It also engineered the formation of the African Program for Onchocerciasis Control (APOC) that was finally launched in December 1996.

Meanwhile the Mectizan Donation Program, with Merck & Co.'s support, had been established in Atlanta at the Task Force for Child Survival, now known as The Taskforce for Global Health, in order to coordinate procurement by and delivery to affected countries of Mectizan®. By 1996, The Carter Center had taken over the operations of the River Blindness Foundation in Uganda, although John Moores's financial support continued. Later, additional financial assistance came from Lions Clubs International Foundation and the newly formed APOC, where the World Bank and President Carter played a key role in mobilizing donors for the new African onchocerciasis control effort.

Mectizan Management and MOH/GOU Resistance

Although Mectizan (ivermectin) was available for treating onchocerciasis patients, it was originally not clear which strategy one would employ to treat all affected communities. One challenge was that the Ministry of Health was faced with a situation in which communities were being empowered to receive and distribute the medicine, something that had never been done before under its jurisdiction. Before the ministry got involved (in the administration of the drug), different partners employed different strategies, such as mobile clinic treatment, clinic-based treatment, and community-based treatment systems ranging from places where communities were not involved to where they were heavily involved.

⁵⁰ More will be said later by Katarbarwa about the subject of mapping

One side supported communities handling the medicine, with the justification that high treatment coverages would be attained every year in these remote communities; another maintained that handling medicines was a job for trained clinicians, and there was no way the government would allow communities to play that role. Both sides were passionate and determined to have a policy that would be adopted through the health delivery system. This was in the face of shortage of trained health workers, along with poor and unevenly distributed health facilities. Convincing relevant institutions to adopt or support a system where communities would be empowered to treat themselves was therefore an uphill task.

Based on early evidence obtained from Kabale and Kanyungu districts, Katarwa was convinced that health workers were never going to succeed in providing Mectizan® to affected communities every year at the desired coverage of at least 90 percent of the eligible population. His unyielding support for community involvement did not earn him a good reputation in government circles. Fortunately, however, the multi-country study launched and supported by WHO/TDR in 1996 showed that communities, when effectively trained, attained higher coverage rates than program-directed (including clinician driven) treatment systems. This settled the argument in the Ministry of Health, and the community-driven treatment program went sky-high in the affected districts.

But there was also this angle to the matter under discussion. Basing on his experience while growing up, during the hard time of President Idi Amin, when one could not easily access medical services, Katarwa has always believed that access to health services in disadvantaged communities could be better if community members were trained to administer basic medicines.

“There was a situation in my home area where there was only one veterinary doctor to serve the whole community,” Katarwa recalls. “This veterinary doctor would teach people how to administer medicine to their animals, besides giving them many more empowering skills. He would only be called upon when there was a complicated situation. All this created a feeling in his (Katarwa’s) heart that it was possible to organize and train community members to prevent, or treat themselves against, some endemic diseases such as onchocerciasis, lymphatic filariasis, and TB, to mention a few.”

Onchocerciasis Mapping & Recruitment of Staff

It should be noted that mapping of onchocerciasis in Uganda began well before APOC was established. Katarwa, along with colleagues Richard Ndyomugenyi,⁵¹ Ambrose Onapa, and Tom Lakwo, with support of a highly motivated group of Vector Control Officers, played a key role in mapping the distribution of onchocerciasis countrywide. That group of Vector Control Officers later came to form a central and district

onchocerciasis surveillance teams. Mapping the distribution of river blindness was also aided by the study where Katarwa, Onapa, and Nakileza tested, modified and adapted to the *Simulium neavei* areas in Uganda the rapid epidemiological mapping technique developed in Cameroon by Frank Walsh and his colleagues for *Simulium damnosum*.

“Mapping onchocerciasis was very challenging,” Katarwa said. “In the 1990s, the road infrastructure was limited and in a very poor state. Most of the mapping in endemic areas was done on foot since many bridges were broken and accessibility of places, by vehicles during the rainy season, was almost impossible.” Another challenge was ensuring that districts recruited (appropriately) skilled personnel to tackle onchocerciasis. Most districts were not aware that it was important to have trained entomologists to tackle vector borne diseases. Through relentless advocacy at district levels, and with financial support from the River Blindness Foundation initially and later from The Carter Center, most affected districts hired and later maintained Vector Control Officers who have now become a cornerstone for onchocerciasis elimination.

Elimination of Onchocerciasis

Although government of Uganda’s bold move to launch river blindness elimination policy came as a surprise to some, says Katarwa, leaders in the Ugandan onchocerciasis program were, from the beginning, inclined to strive for elimination of the disease. “There were no questions on that, because they were certain that Uganda as a country did not want treatment to go on indefinitely with a single annual dose of Mectizan®,” he said. Katarwa also said: “This opinion was also supported by the late Dr. Brian Duke, then the River Blindness Foundation Medical Director (MD), who noted that Uganda could eliminate onchocerciasis with biannual Mectizan® treatment and even attain this in a shorter period if vector elimination or targeted vector control (where feasible) were employed.”

Indeed, impact assessments, done after more than 10 to 18 years of treatment with a single annual dose, observes Katarwa, have indicated that transmission is still taking place, and that treatment cannot be halted without the risk of disease recrudescence. The general feeling among Ugandan experts, he points out, was that the onchocerciasis program should be allowed to do more than just distribute Mectizan® once every year. Vector elimination activities, with assistance from GTZ, Bernhardt Institute of Tropical Medicine and APOC, in Itwara and Mpamba-Nkusi foci, had shown that the dual approach resulted in definite success.

Ironically, the opportunity for the Uganda onchocerciasis program to launch an elimination policy, Katarwa says, arrived when external support began dwindling. The challenges of an indefinite annual treatment program prompted the government to act. Such a long-term treatment policy was impossible for the government to sustain, and posed a serious risk of disease recrudescence in affected and disadvantaged communities - not

⁵¹ A medical doctor by training with a PhD as his terminal degree.

to mention the risk of developing onchocerciasis resistance to Mectizan®, noted Katarbarwa.

The idea of a countrywide elimination program, the reader is informed, originally arose out of a conversation between Katarbarwa (of The Carter Center, Atlanta, Georgia), Peace Habomugisha (Uganda Carter Center's Country Representative) and Ndyomugenyi, the then Uganda National Onchocerciasis Coordinator. A policy for nationwide river blindness elimination that attracted wide support was then formulated and rapidly embraced by the government of Uganda. In January of 2007, with support from The Carter Center, the government of Uganda launched the elimination policy.

Today (2011), Uganda has interrupted transmission of onchocerciasis in the Wadelai, Mt. Elgon and Itwara foci that cover a population of about 450,000 people, said Katarbarwa.⁵² Transmission interruption, he also noted, is suspected in the foci of Nyamugasani (in Kasese District), Imaramagambo (in Mitooma and Bushenyi Districts), Mpamba-Nkusi (in Kibaale District) and Maracha-Terego (in Arua and Maracha Districts), which have 464,000 individuals as their total general population.

The Carter Center, Katarbarwa's listeners are told, has assisted Uganda's Ministry of Health in establishing a molecular epidemiological laboratory to assess the progress of interruption of transmission. It has also supported, he informs his readers, an international technical advisory committee (composed of Ugandan and foreign experts) to review relevant river blindness data, and to advise the country's Ministry of Health, especially by providing them with recommendations pertaining to onchocerciasis elimination.

It is Katarbarwa's firm view that hope abounds that the disease (onchocerciasis) will eventually be eliminated. He encourages every Ugandan, mostly people in the affected areas and persons charged with killing the disease, that hope should not be lost even in the face of challenges. There have been concerns that the onchocerciasis elimination program in Uganda can be impeded by cross-border issues, but Katarbarwa had this to say on that: "This can be solved by creative thinking. For example, those same cross-border collaborations that MoH Uganda has had can be extended to the onchocerciasis program. These collaborations were for programs like immunization where children from neighboring countries were immunized by health personnel from Uganda."

He also noted that onchocerciasis in some border areas is naturally dying off - for example in Bwindi, where the focus has been de-forested on the side of DR of Congo, hence destroying the vector breeding grounds there. That there is need to complete delineation of foci in the border areas was emphasized by him, saying that

this may reveal that the areas that are assumed to have cross border issues may actually not have them. Vector control, noted Katarbarwa, is an important tool that can be used to interrupt transmission or at least knock down river blindness vectors in rivers along international borders such as River Tako on the Uganda-DRC border in Kasese District.

Wrap Up

Although there was initial skepticism about onchocerciasis elimination in Uganda, the successes that have been achieved so far have shown the world that the elimination of the disease (with existing tools) is possible, says Katarbarwa. In his words: "It should be noted that serious challenges in life are always overcome in a step by step fashion, and indeed onchocerciasis elimination in Uganda should be done through a step by step approach. This is an approach that the rest of Africa should be taking a keen interest in. They would do well to consider emulating Uganda's courageous and innovative approach to disease elimination."

During the period 1992 to 1995, John Moores, the founder of the River Blindness Foundation, donated millions of dollars to assist onchocerciasis control programs in the Americas and Africa. It was through this generous gift that river blindness control in Uganda was massively and exceptionally re-rejuvenated.

Although government of Uganda's bold move to launch river blindness elimination policy came as a surprise to some, says Katarbarwa, leaders in the Ugandan onchocerciasis program were, from the beginning, inclined to strive for elimination of the disease. "There were no questions on that, because they were certain that Uganda as a country did not want treatment to go on indefinitely with a single annual dose of Mectizan®."

The idea of a countrywide elimination program, the reader is informed, originally arose out of a conversation between Katarbarwa (of The Carter Center, Atlanta, Georgia), Peace Habomugisha (Uganda Carter Center's Country Representative) and Ndyomugenyi, the then Uganda National Onchocerciasis Coordinator. A policy for nationwide river blindness elimination that attracted wide support was then formulated and rapidly embraced by the government of Uganda. In January of 2007, with support from The Carter Center, the government of Uganda launched the elimination policy.

⁵² Wadelai is found in Nebbi district; Elgon in the districts of Bududa, Manafwa, Mbale and Sironko; and Itwara in Kabalore and Kyenjojo districts.



This newsletter is supported by The Carter Center and the Ministry of Health Uganda. Published by The Carter Center Program and vector Control Division, Ministry of Health. Plot 15 Bombo Rd. Typset by The Carter Center P.O. Box 1207 Kampala. Telephone: +256 414 349139.