



# 2015

## Annual Highlights



MECTIZAN<sup>®</sup>  
DONATION  
PROGRAM

# 10 Years Building Research and Laboratory Capacity in Cameroon: The Center for Research on Filariasis and Other Tropical Diseases (CRFiMT)



In 2003, the Mectizan Donation Program began supporting Joseph Kamgno, MD, PhD, MPH as Loiasis Technical Advisor in Cameroon. Dr. Kamgno, of the Centre Pasteur in Yaoundé, Cameroon, a research institute affiliated with the Institut Pasteur in Paris, France, was tasked with oversight of the safe distribution of Mectizan in areas where onchocerciasis and / or LF is co-endemic with loiasis in Cameroon. In this capacity, he also trained teams in Democratic Republic of Congo, Angola and South Sudan for the safe mass treatment of onchocerciasis and LF in loiasis co-endemic areas, including surveillance and management of post treatment adverse reactions. Dr. Kamgno also provided research and operational support on loiasis related issues through population surveys, clinical and community trials, and data collection on adverse events following treatment.

Loiasis, also called African Eye Worm, is a parasitic disease transmitted by the bites of deer flies in the equatorial rain forests of Central and West Africa. Patients heavily infected with loiasis experience severe itching, swelling, and anxiety as adult worms may cross the front of the eye in some patients. Endomyocardial fibrosis was also described in some heavily infected subjects. To avoid complications in co-infected individuals, strict guidelines are in place for Mectizan distribution in loiasis endemic areas.

In 2006, with financial support from MDP and Merck & Co., Inc., Dr. Kamgno launched the CRFiMT in Yaounde, which has grown from a small laboratory staffed by one lab technician into a large, sophisticated, highly respected research center staffed by 22 people and funded by multiple partners including USAID, the Bill & Melinda Gates Foundation, the Neglected Tropical Disease Support Center, The National Institute of Health and the Institut de Recherche pour le Développement for a variety of research topics related to filarial (round worm) diseases.

In recent years, the Center conducted an analysis on the clinical impact of loiasis and considered safe treatment strategies. According to the Centers for Disease Control and Prevention, loiasis can be treated with diethylcarbamazine (DEC) if the parasitic load is low; however, DEC is contraindicated in river

blindness endemic areas and in patients heavily infected with loiasis. CRFiMT conducted many studies for the treatment of loiasis, including albendazole<sup>1</sup>, low dose of ivermectin, mebendazole and antimalarial drugs<sup>2</sup>. Based on CRFiMT's findings, a reliable, safe treatment for loiasis is urgently needed to relieve the suffering of patients in endemic communities.

CRFiMT also recently conducted a study to examine the persistent high prevalence of river blindness in Cameroon where treatment with Mectizan has been ongoing for more than 15 years. The study found that low treatment coverage due to programmatic constraints was responsible for the persistent presence of disease.

CRFiMT is also participating in 1) the ongoing study to determine the feasibility of testing patients for loiasis in co-endemic areas before treating (or not treating) with Mectizan for river blindness and LF elimination; 2) Neglected Tropical Diseases and mapping malaria in Eastern Cameroon; and 3) NTD mapping in Central Africa.

Finally, a new building for CRFiMT is being built in Cameroon with support from Merck & Co., Inc., MDP, and other partners where a state of the art laboratory will be established, taking the work of Prof. Kamgno and his team even further.

In 2015, CRFiMT won the Islamic Development prize for Science and Technology in recognition for its outstanding scientific contribution to the socioeconomic development of Cameroon.

The Mectizan Donation is very proud of Prof. Kamgno and his team, and we look forward to continued collaboration as we progress toward the goal of eliminating onchocerciasis and LF.

<sup>1</sup> Kamgno J, Nguipodop-Djomu P, Gounoue R, Téjiokem M, Kuesel AC. Effect of Two or Six Doses 800 mg of Albendazole Every Two Months on Loa loa Microfilaraemia: A Double Blind, Randomized, Placebo-Controlled Trial. *PLoS Negl Trop Dis*. 2016 Mar 11; 10(3):e0004492.

<sup>2</sup> Kamgno J, Djomo PN, Pion SD, Thylefors B, Boussinesq M. A controlled trial to assess the effect of quinine, chloroquine, amodiaquine, and artesunate on Loa loa microfilaremia. *Am J Trop Med Hyg*. 2010 Mar; 82(3):379-85.

# Message from the Director

## Dr. Adrian Hopkins

2015 marked the end of an era with the closure of The African Programme for Onchocerciasis Control (APOC). Established in 1995, APOC and its country partners scaled up treatment with Mectizan to control river blindness (onchocerciasis) as a public health problem. The work was so successful that disease transmission may be eliminated in a number of foci, and indeed elimination of the disease became a stated priority for APOC over the last few years.

APOC was a novel partnership, implemented by WHO and funded through a World Bank trust fund. River blindness endemic countries outside the Onchocerciasis Control Program, which operated in West Africa from 1974-2002, governed APOC during the annual Joint Action Forum. Nongovernmental development organisations (NGDOs) played an instrumental role by helping facilitate mass drug administration (MDA) in endemic countries and by providing 25% of APOC's funding.

We congratulate APOC's management and staff headquartered in Ouagadougou, Burkina Faso, the international donor community, ministry of health staff, program managers, community-directed distributors, NGDOs, researchers, and all the other partners who contributed to APOC's remarkable success.

This is the beginning of a new era in Africa, not only for river blindness, but also for other Neglected Tropical Diseases (NTDs). At the end of 2015, the WHO Regional Director for Africa, Dr Matshidiso Rebecca Moeti, announced plans to launch the Expanded Special Project for the Elimination of NTDs in Africa (ESPEN) in 2016. ESPEN will be a resource for all the Preventive Chemotherapy Neglected Tropical Diseases (PC NTDs) in the African Region, focusing on country ownership and scaling up MDA according to the National Master Plans developed by each country. ESPEN will provide technical assistance and limited funding for specific activities where funding gaps for NTDs are present.

The Mectizan Donation Program worked closely with WHO, WHO AFRO, and other partners during the closure of APOC and the creation of ESPEN. We are very excited to support ESPEN as it develops.

During this transition period, we strongly encourage countries and other stakeholders to make every effort to maintain momentum and continue MDA to avoid setbacks towards achieving elimination goals. We invite countries to contact MDP if you need guidance during this transition.

Moving forward, we hope to see improved integration of MDA for onchocerciasis and lymphatic filariasis (LF). Opportunities have been missed to coordinate the LF and river blindness elimination programmes co-administering Mectizan and albendazole. We look forward to working closely with ESPEN and other partners to improve efforts to eliminate these two diseases.

Partners hoped some countries would have stopped treatment for river blindness prior to APOC's closing. Unfortunately, this was not achieved. However, a new initiative is being developed that will target eight countries to assess the status of ongoing transmission of disease over the next two years so that a decision whether to stop treatment can be made. We are pleased to partner with Merck & Co., Inc.,\* The End Fund, endemic countries, and other stakeholders to support this new initiative in coordination with ESPEN to accelerate elimination of river blindness in Africa.

Three years ago the Abu Hamid focus in Sudan celebrated stopping treatment for river blindness; other foci followed in Uganda. We look forward to adding additional foci from these and other countries to this list of success stories, and congratulate everyone involved in Abu Hamid for completing three years of post-treatment surveillance with no signs of recurrence.

We also congratulate Mexico for receiving official verification by WHO in 2015 that the country is free of river blindness. Colombia and Ecuador were the first two countries to celebrate elimination and Guatemala is close behind – a dossier was submitted to WHO for evaluation and verification in 2016. This means four of the six endemic countries in the Americas will be free of the disease, leaving only a small focus on the border between Brazil and Venezuela inhabited by the Yanomami Indians. The governments of Brazil and Venezuela signed an agreement in 2014 to work together to ensure river blindness



is eliminated in this final focus in the Western hemisphere.

This cross border collaboration is an example that needs to be followed in Africa where there are many cross border foci. Countries in Africa who are close to elimination need to work with neighbours across national or state borders as they move to elimination. Countries need to begin making elimination plans part of their National Master Plans, which MDP respectfully requests to be copied on. This will help us plan for future needs and refine forecasting for drug supply.

In Yemen, the National Onchocerciasis Elimination Plan is ready to be implemented as soon as the political climate in the country has stabilized. Some activities have gone ahead, including a survey in Yemen using the OV 16 antibody test. Protocols will be developed for more detailed mapping of the disease. This technique could also be applied to areas in Africa that are hypo-endemic (less prevalent) where it is unknown whether transmission of the disease is ongoing.

Mectizan and albendazole treatments for LF continued to increase in 2015; however, there are still countries that have not yet started MDA for LF elimination. These countries will not be able to complete the minimum of five years of treatment before LF can be eliminated and will unfortunately miss the WHO goal for elimination of LF by 2020. Though Africa is lagging behind most of the rest of the globe, there are some encouraging signs. The African Regional Program Review Group approved several Transmission Assessment Surveys in 2015, which resulted in several areas stopping treatment.

2016 brings a number of encouraging activities along with some challenges. We remain optimistic that together, through partnership and close collaboration, we will move closer to the elimination goals for both river blindness and lymphatic filariasis.

# Onchocerciasis Achievements

In 2015, 81.7 treatments were approved for mass treatment for onchocerciasis control/elimination in 21 countries in Africa and in Latin America (Figure 1). The reduction in the number of treatments approved for river blindness in 2015 is a due to several application approvals that were deferred until 2016.



Women washing clothes in the river in an onchocerciasis endemic village in Nigeria.

In most countries, Mectizan is distributed once annually for the control and elimination of river blindness (onchocerciasis). In some settings where elimination efforts have been intensified, multiple treatments are administered either twice yearly or, in the case of Brazil and Venezuela, quarterly. In Africa, countries treating twice yearly include Burkina Faso, Ghana, Sudan, Togo, Ethiopia and Uganda. Yemen has also been approved by the Mectizan Expert

Committee to treat twice annually. Map 1 illustrates the targets to stop mass treatment for river blindness in Africa.

In the Americas, the struggle continues to provide quarterly treatments in the small, remote Yanomami Indian region that overlays the hard to reach border area between Brazil and Venezuela. The trip to reach these remote indigenous populations is arduous. It takes weeks to travel via river and over land through dangerous circumstances. However, there is strong commitment and collaboration between the two country programs to focus their efforts on the target of eliminating river blindness.

Since the Mectizan Donation Program (MDP) began in 1987, 1.5 billion treatments have been approved for the control and elimination of onchocerciasis globally.

Map 1: Targets for Stopping Treatment for Onchocerciasis (River Blindness)

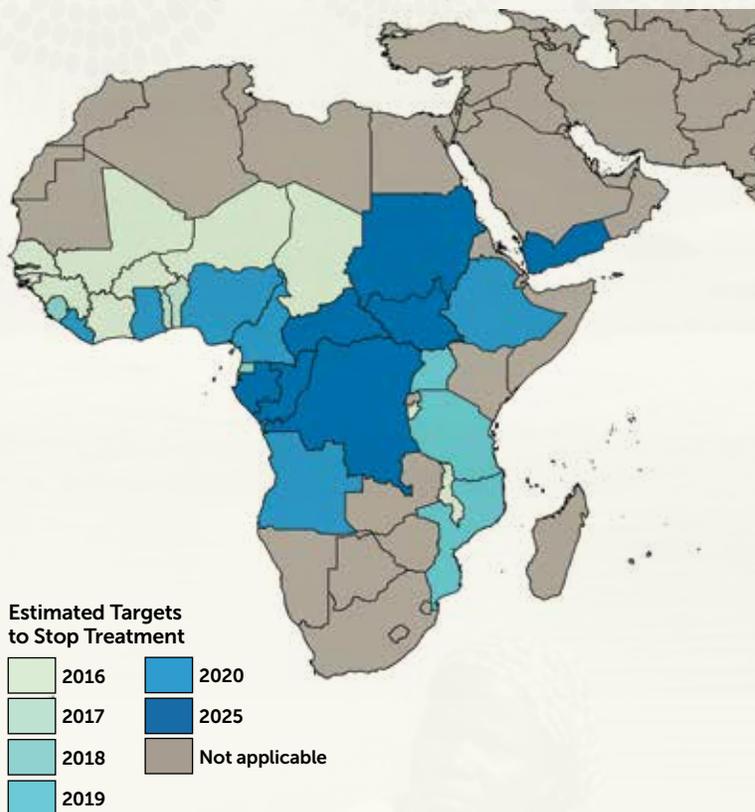
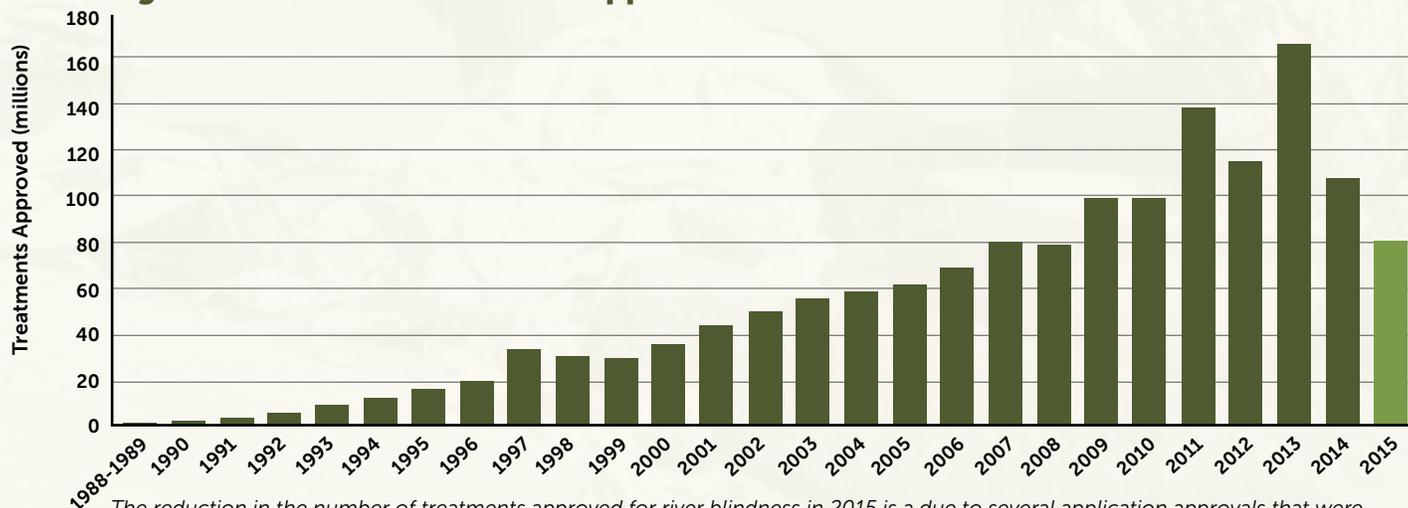


Figure 1: Mectizan Treatments Approved for Onchocerciasis



The reduction in the number of treatments approved for river blindness in 2015 is a due to several application approvals that were deferred until 2016.

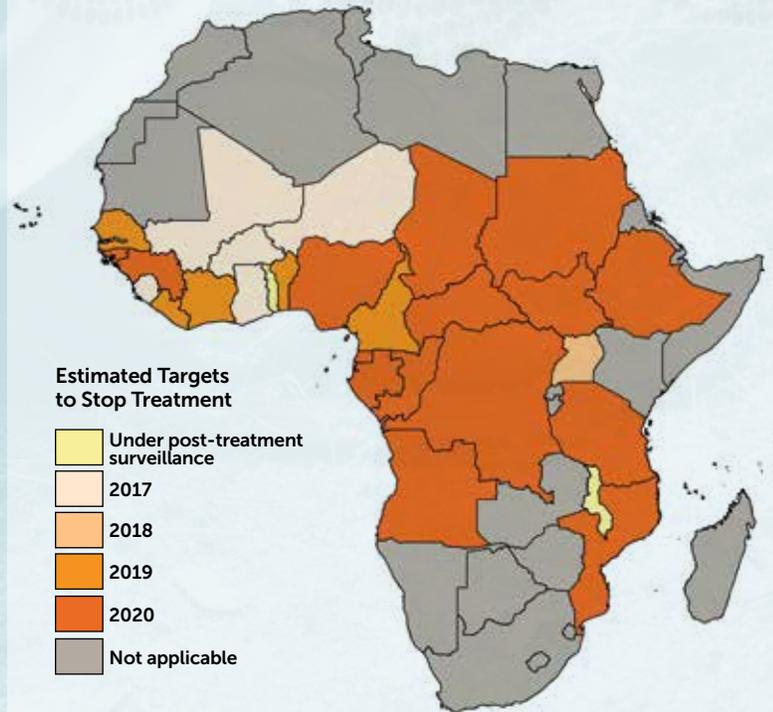
# Lymphatic Filariasis (LF) Achievements

The Mectizan Donation Program oversees the donation of Mectizan and albendazole for 28 countries in Africa countries and in Yemen where onchocerciasis is co-endemic. Since the addition of LF elimination to the MDP mandate in 1998, more than 1.2 billion treatments have been approved for LF elimination in Africa and Yemen. Similar to onchocerciasis, the reduction in the number of treatments approved for lymphatic filariasis in 2015 is due to several application approvals that were deferred until 2016.

In 2015, 120.7 million treatments were approved in 23 countries (Figure 2).

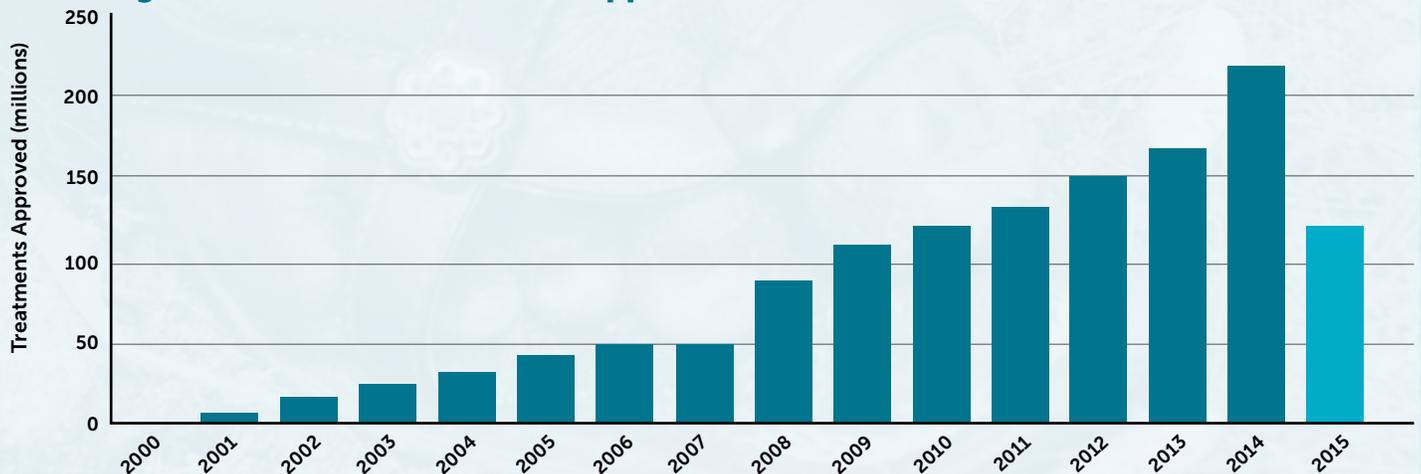
LF elimination efforts in Africa are simultaneously scaling up in some countries and scaling down in others. Map 2 illustrates the status of elimination efforts in each country in Africa.

**Map 2: Targets for Stopping Treatment for LF**



*A woman whose feet are too swollen by LF lymphedema for her shoes to fit properly. Good footwear is important for LF sufferers to prevent bacterial infections, which cause additional swelling.*

**Figure 2: Mectizan Treatments Approved for LF**



*The reduction in the number of treatments approved for lymphatic filariasis in 2015 is due to several application approvals that were deferred until 2016.*

# Appreciation for the African Programme for Onchocerciasis Control (APOC)



*Community Directed Distributors visiting APOC Headquarters in Ouagadougou in 2007.*

The African Program for Onchocerciasis Control (APOC) closed its doors at the end of 2015. The Mectizan Donation Program is proud to have been an APOC partner. The massive scale up of Mectizan distribution for river blindness control and elimination would not have happened without APOC's leadership and remarkable efforts to ensure that the Community Directed Treatment with Mectizan (ivermectin) (CDTI) strategy was successful.



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Through the Mectizan Donation Program, Merck & Co., Inc. donates Mectizan for the elimination of onchocerciasis as a public health problem in Africa, Latin America, and Yemen. For the elimination of lymphatic filariasis in Africa and Yemen, where onchocerciasis is co-endemic, Mectizan is co-administered with albendazole, which is donated by GlaxoSmithKline.

\* Merck & Co., Inc. is known as MSD outside the US and Canada. Mectizan is not approved for use in the United States.