



ONCHOCERCIASIS OVERVIEW IN AFRICA

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OUTLINES

- Introduction
- International Communities Interventions in Africa ?
- Challenges of onchocerciasis elimination in Africa?
- Conclusions

INTRODUCTION

- Onchocerciasis is endemic in 31 countries in sub Sahara Africa, between Sudan and Malawi as well as Ethiopia and Senegal
- It is caused by the filarial nematodes, *Onchocerca volvulus*, which is transmitted by the bites of blackflies of the genus *Similium*.
- Recently, the Global Burden of Disease Study suggest that 1.1 million disability-adjusted life-years (DALYs) were lost in 2015 due to onchocerciasis, associated with a decrease in productivity.

INTERNATIONAL COMMUNITIES INTERVENTIONS IN AFRICA

1974-2002

- Onchocerciasis Control Programme (OCP)

1995-2015

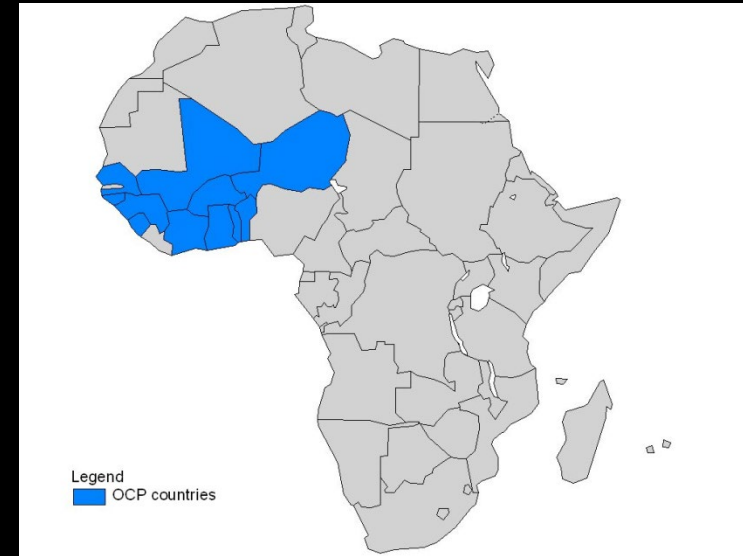
- African Programme for Onchocerciasis Control (APOC)

Since 2016

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

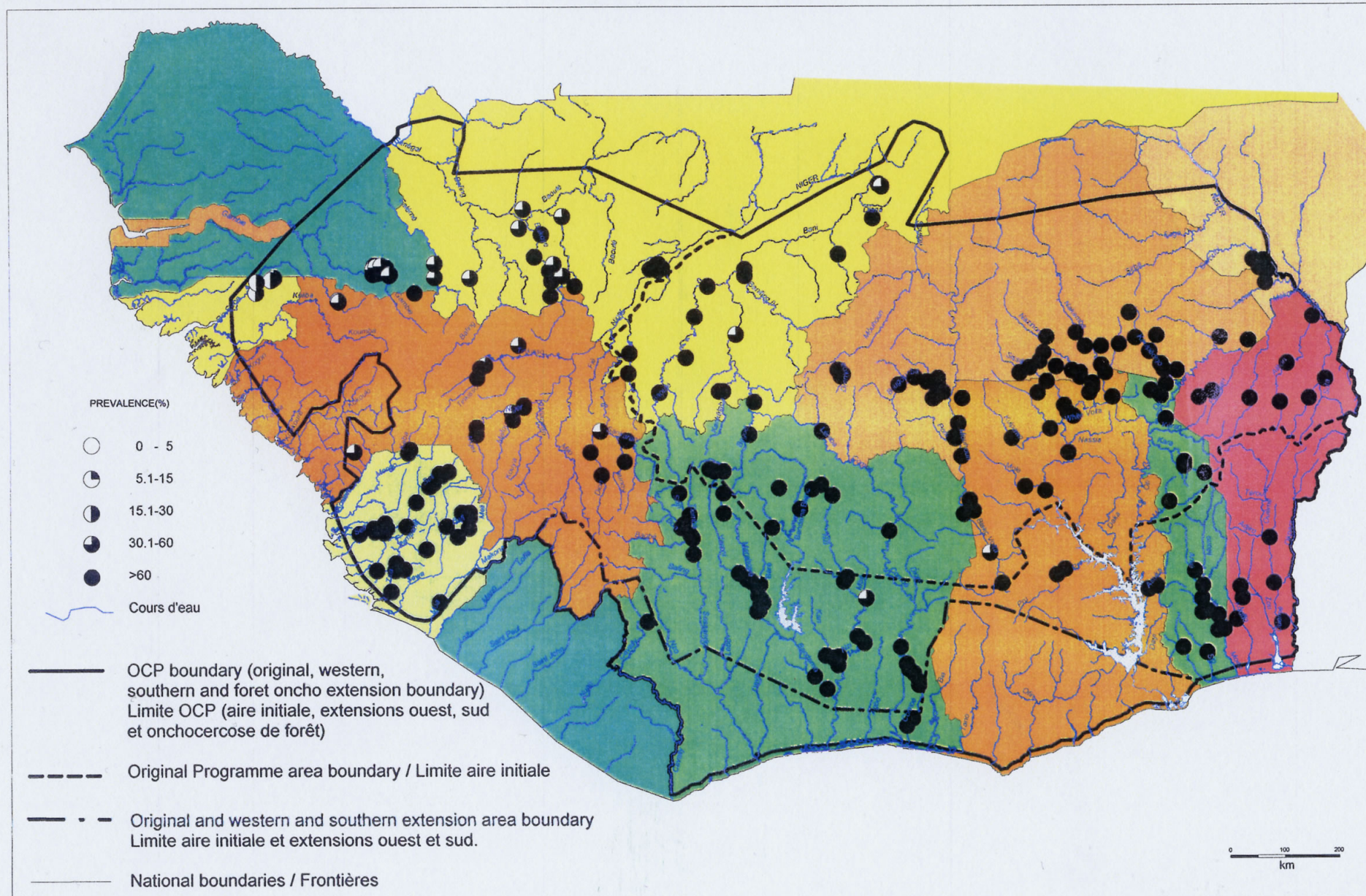
EX-OCP

- Launched in 1974 in 11 countries in West Africa
- Main strategy: vector control
- From 1988, ivermectin mass treatment (Mectizan®) was added to supplement vector control
- Closed in 2002, except in 5 Special Interventions Zones (SIZ) up to 2007 (Benin, Togo, Ghana, Sierra Leone & Guinea)
- Surveillance activities in most countries
- Apart from Niger, MDA continues until now in all 10 remaining countries, through newly NTD programme.

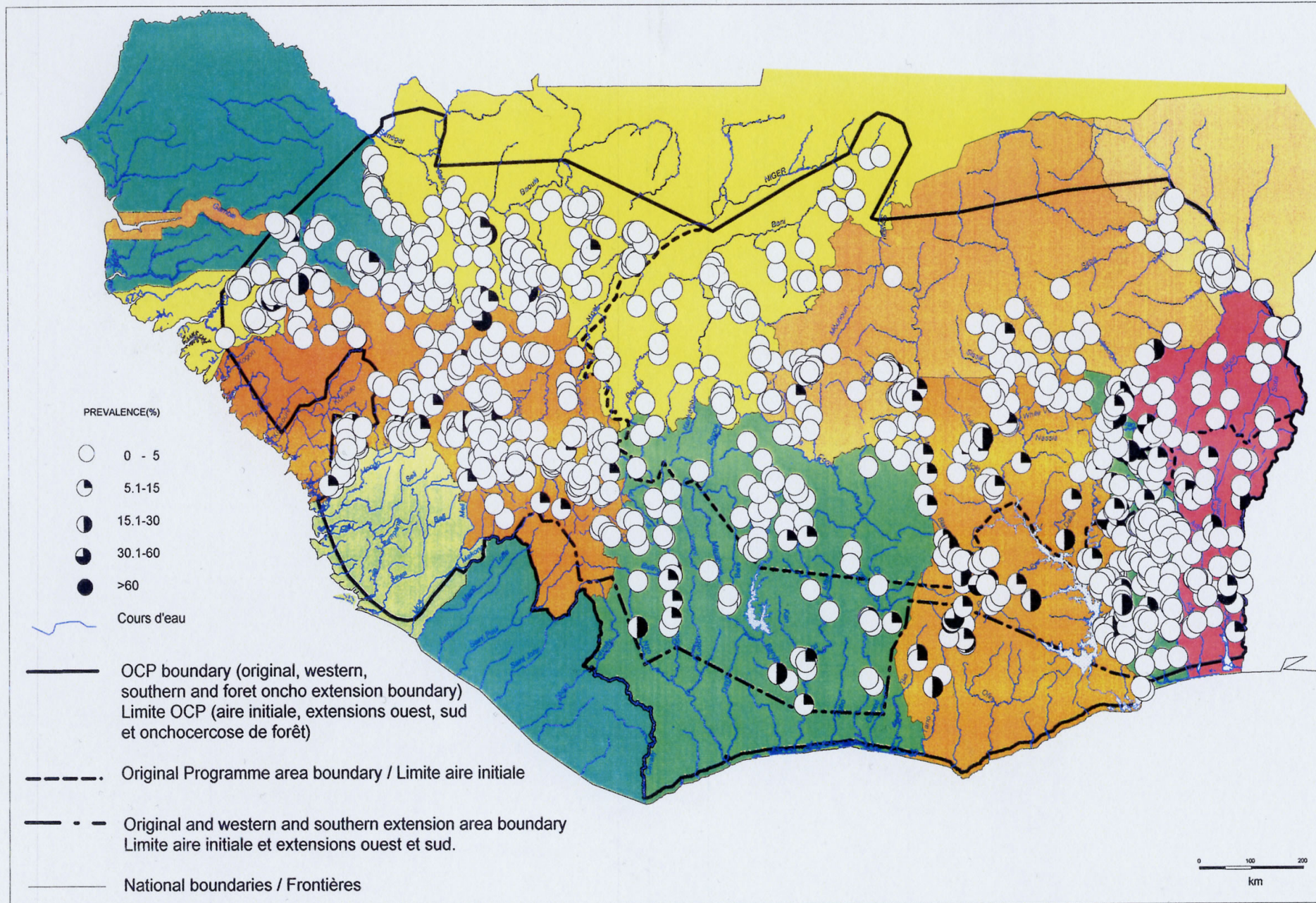


Map 4 : EPIDEMIOLOGICAL SITUATION OF VILLAGES EVALUATED BEFORE THE CONTROL
Carte 4 : SITUATION EPIDEMIOLOGIQUE DES VILLAGES EVALUES AVANT LE DEBUT DE LA LUTTE

Original OCP area (1974-1977)
 Southern extension Côte d'Ivoire (1979)
 Western and southern extension (1987-1990)

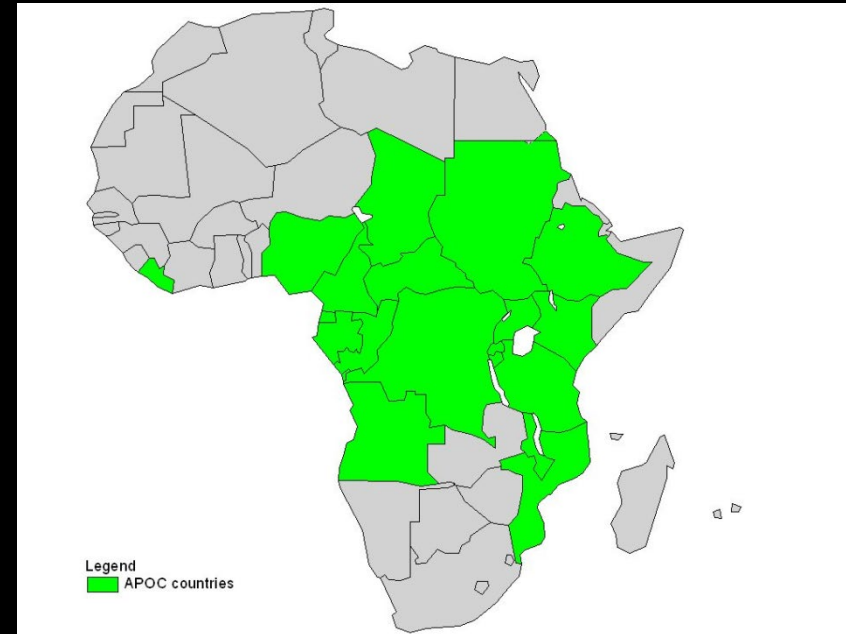


Map 5 : PREVALENCE OF MICROFILARIAE IN VILLAGES EVALUATED BETWEEN 2000 - 2001 IN OCP
 Carte 5 : PREVALENCE EN MICROFILAIRES DES VILLAGES EVALUES ENTRE 2000 - 2001 A L'OCP



EX-APOC

- Launched in 1995, initially in 19 countries; then 20 countries when South Sudan was acknowledged as the 47th country of WHO/AFRO during the WHA65 in 2012
- Population at risk: 102 million in 2012
- CDTI: mainly annual ivermectin mass treatment except in Sudan & Uganda
- Vector control in focal foci in Eq Guinea, Tanzania and Uganda with ground larviciding
- Delayed treatment in loiasis co-endemic & in post-conflict areas





Proof-of-Principle of Onchocerciasis Elimination with Ivermectin Treatment in Endemic Foci in Africa: Final Results of a Study in Mali and Senegal

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Abstract

Background: Mass treatment with ivermectin controls onchocerciasis as a public health problem, but it was not known if it could also interrupt transmission and eliminate the parasite in endemic foci in Africa where vectors are highly efficient. A longitudinal study was undertaken in three hyperendemic foci in Mali and Senegal with 15 to 17 years of annual or six-monthly ivermectin treatment in order to assess residual levels of infection and transmission, and test whether treatment could be safely stopped. This article reports the results of the final evaluations up to 5 years after the last treatment.

Methodology/Principal Findings: Skin snip surveys were undertaken in 131 villages where 29,753 people were examined and 492,600 blackflies were analyzed for the presence of *Onchocerca volvulus* larva using a specific DNA probe. There was a declining trend in infection and transmission levels after the last treatment. In two sites the prevalence of microfilaria and vector infectivity rate were zero 3 to 4 years after the last treatment. In the third site, where infection levels were comparatively high before stopping treatment, there was also a consistent decline in infection and transmission to very low levels 3 to 5 years after stopping treatment. All infection and transmission indicators were below postulated thresholds for elimination.

Conclusion/Significance: The study has established the proof of principle that onchocerciasis elimination with ivermectin treatment is feasible in at least some endemic foci in Africa. The study results have been instrumental for the current evolution from onchocerciasis control to elimination in Africa.

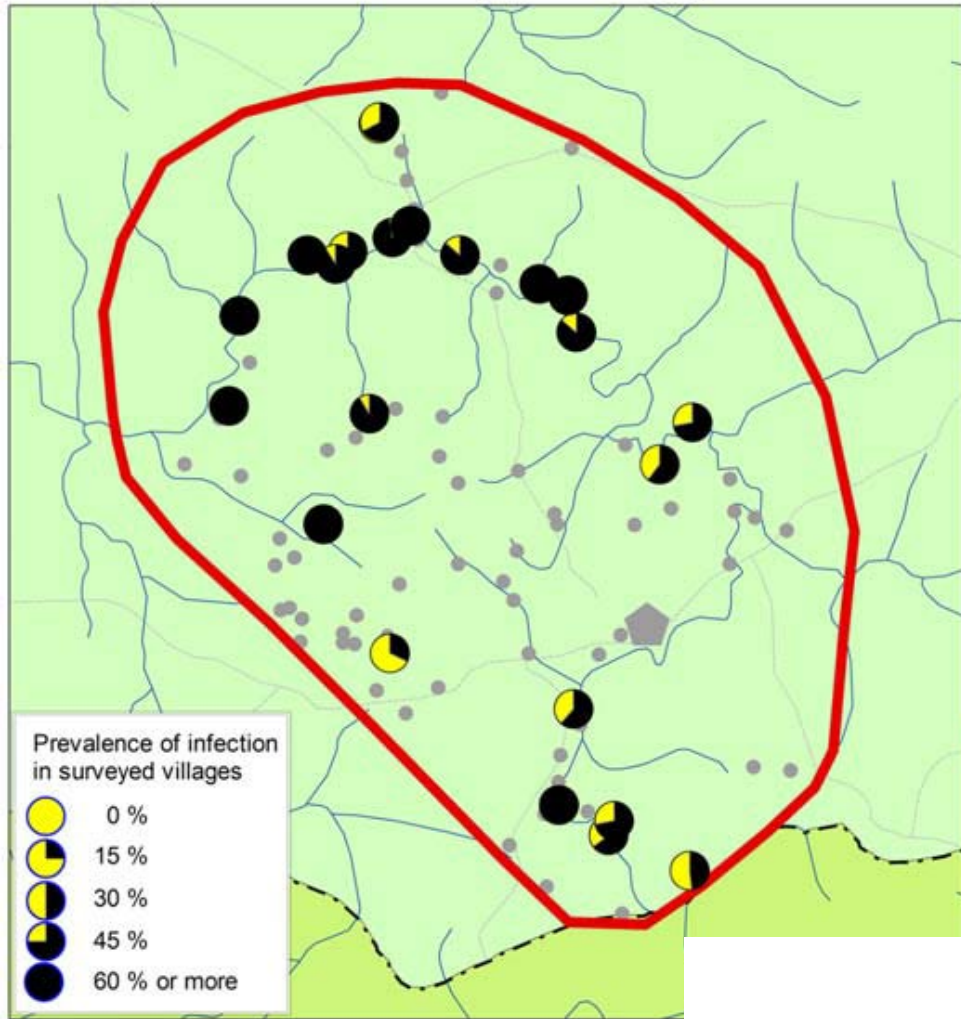
Citation: Traore MO, Sarr MD, Badji A, Bissan Y, Diawara L, et al. (2012) Proof-of-Principle of Onchocerciasis Elimination with Ivermectin Treatment in Endemic Foci in Africa: Final Results of a Study in Mali and Senegal. PLoS Negl Trop Dis 6(9): e1825. doi:10.1371/journal.pntd.0001825

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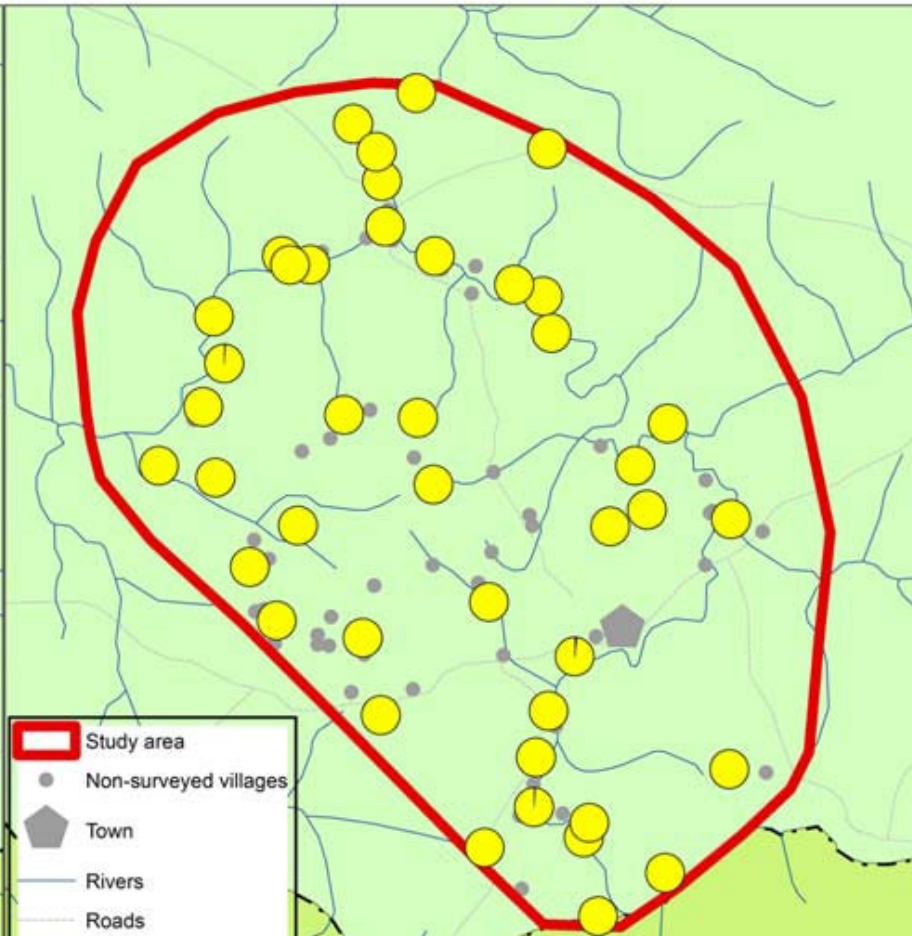
Received: May 28, 2012; **Accepted:** August 6, 2012; **Published:** September 13, 2012

FEASIBILITY OF ONCHOCERCIASIS ELIMINATION WITH IVERMECTIN TREATMENT IN ENDEMIC FOCI IN AFRICA: FIRST EVIDENCE FROM STUDIES IN MALI AND SENEGAL

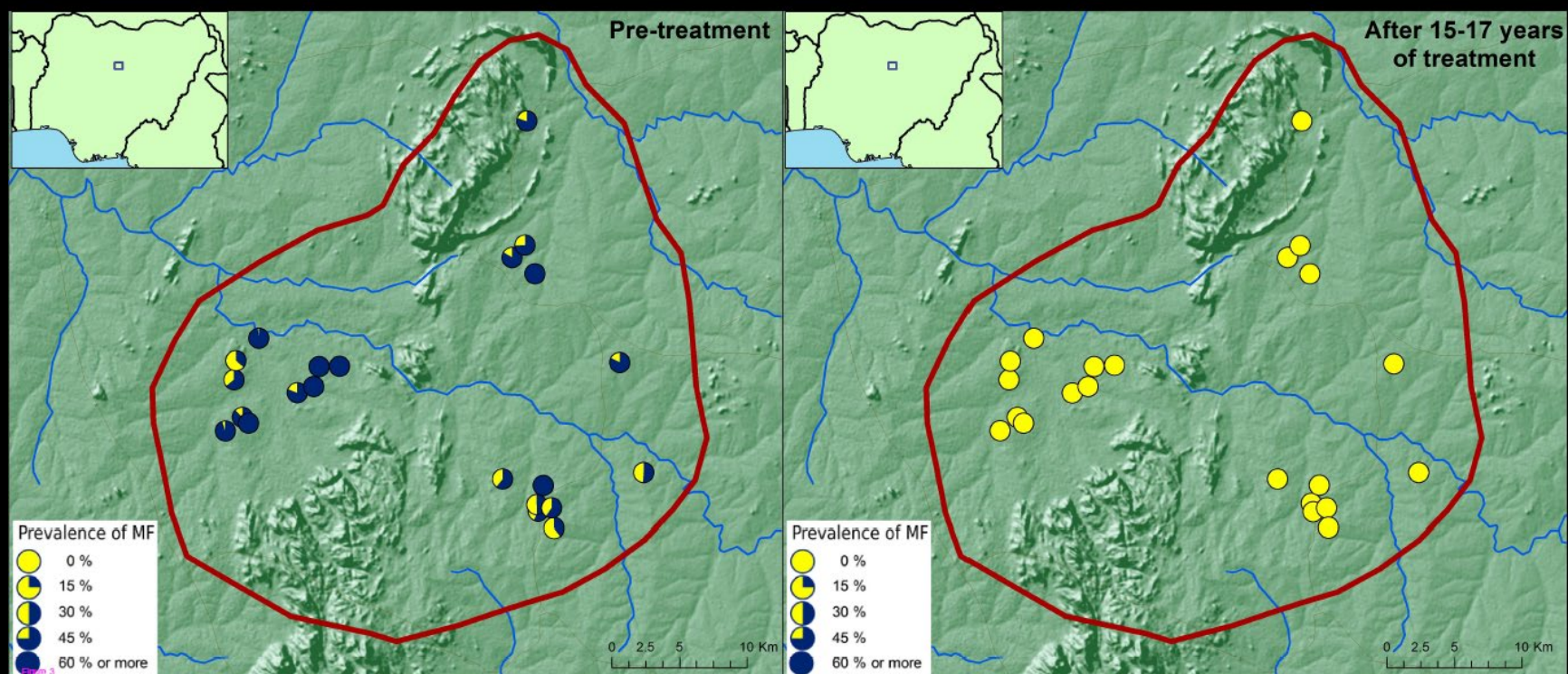
a. Pre-control (1985-1988)



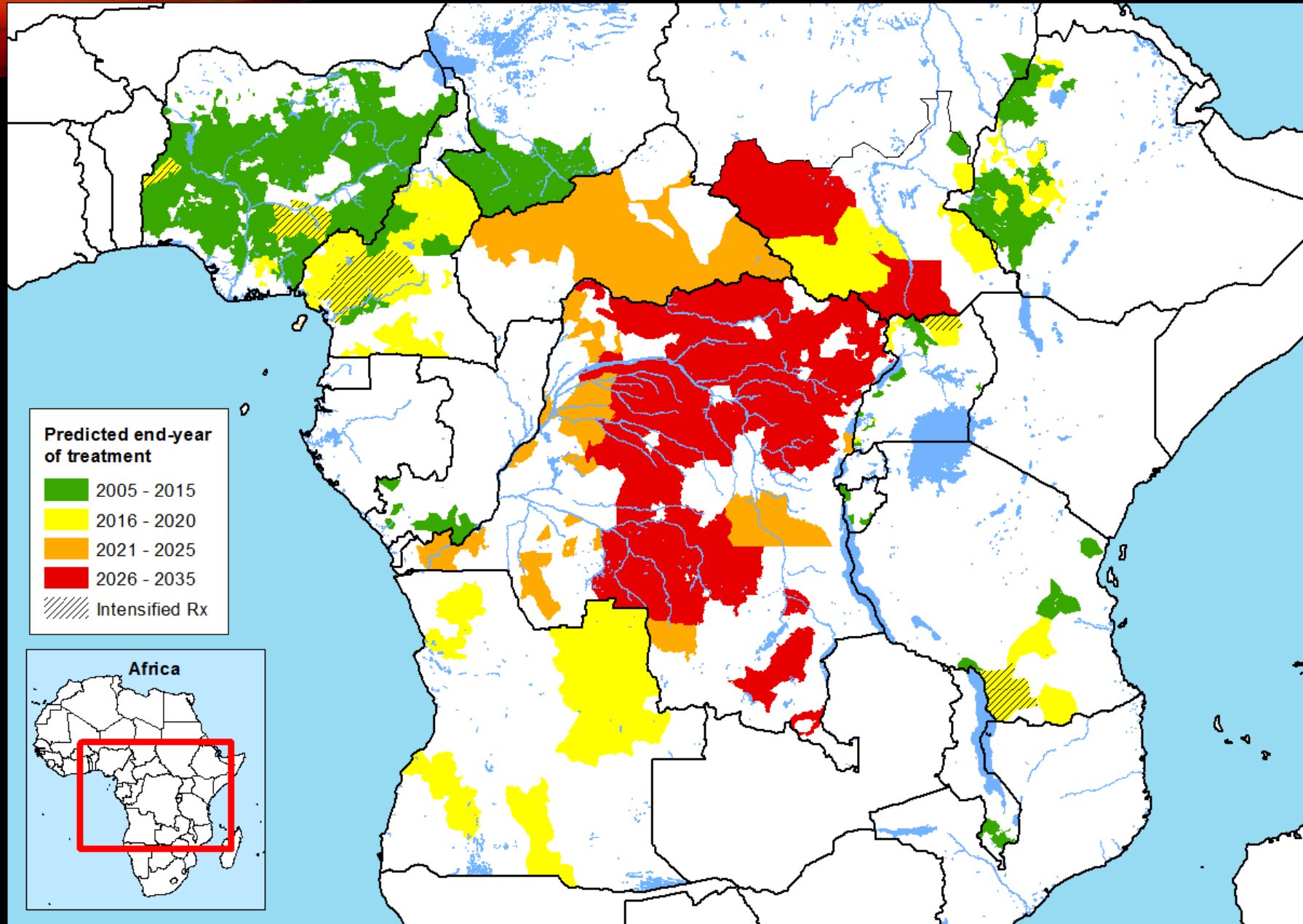
b. After 16 years of 6-monthly ivermectin treatment

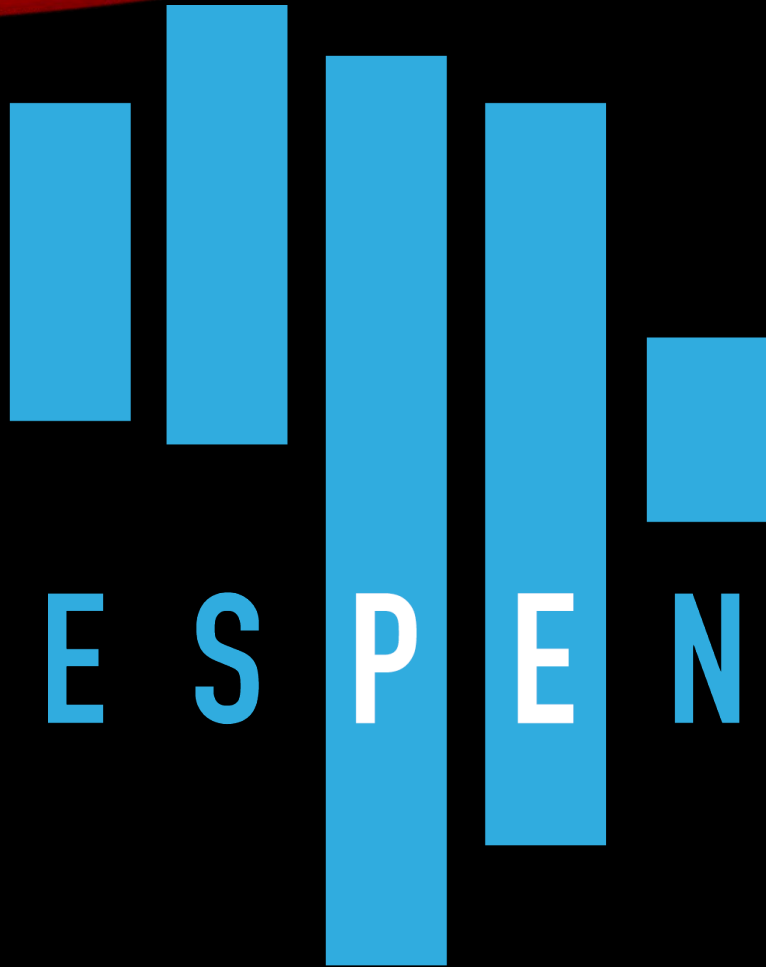


IMPACT OF LONG-TERM TREATMENT OF ONCHOCERCIASIS WITH IVERMECTIN IN KADUNA STATE, NIGERIA: FIRST EVIDENCE OF THE POTENTIAL FOR ELIMINATION IN THE OPERATIONAL AREA OF THE AFRICAN PROGRAMME FOR ONCHOCERCIASIS CONTROL



Predicted End Year of Treatment for APOC Projects

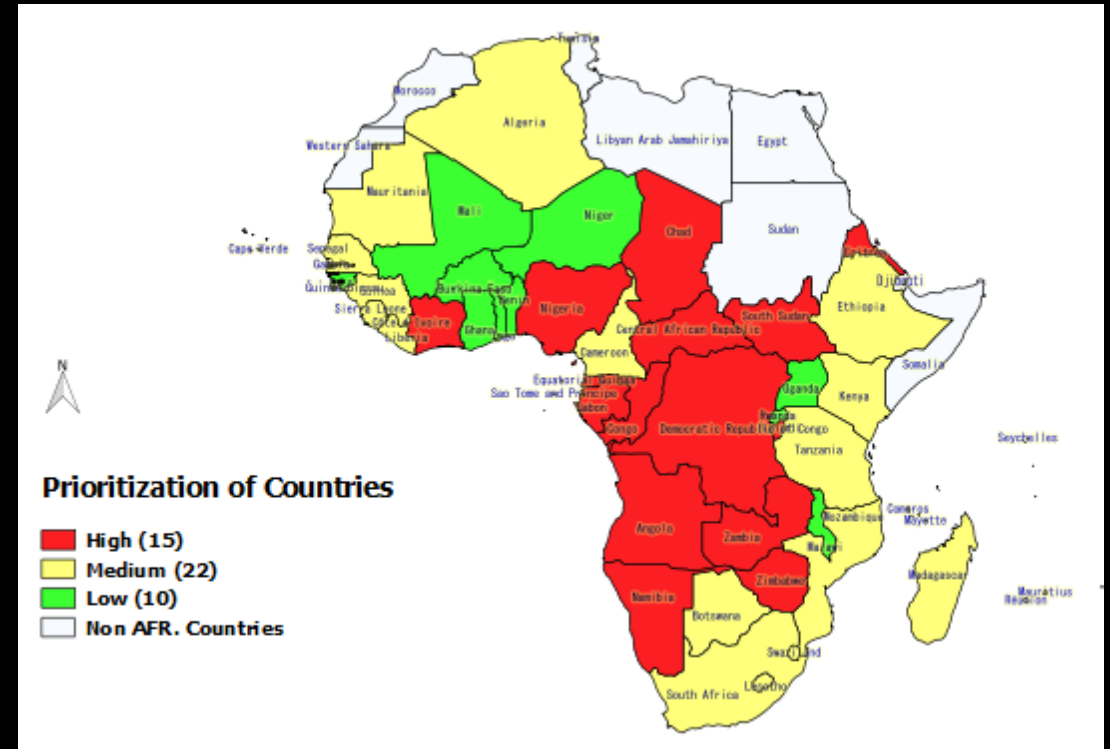




EXPANDED SPECIAL PROJECT FOR ELIMINATION OF NEGLECTED TROPICAL DISEASES

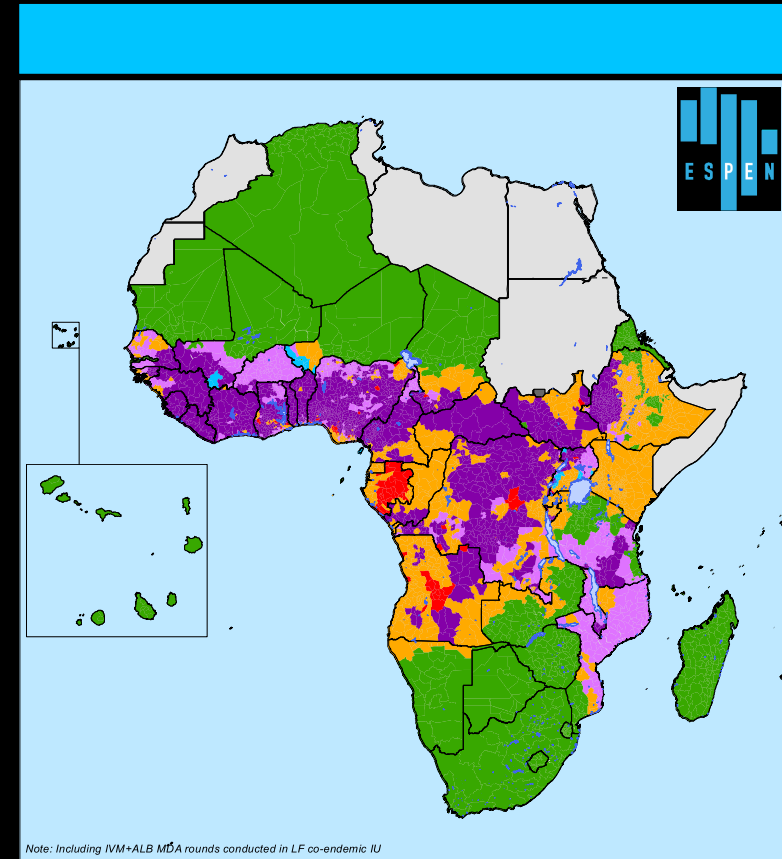
ESPEN

- Launched in May 2016 during the WHA69 for a period of 5 years (2016 – 2020)
- Overall goal: Contribute to an accelerated reduction in the burden of 5 PC-NTDs” by providing support to endemic countries in their efforts to control and eliminate targeted NTDs



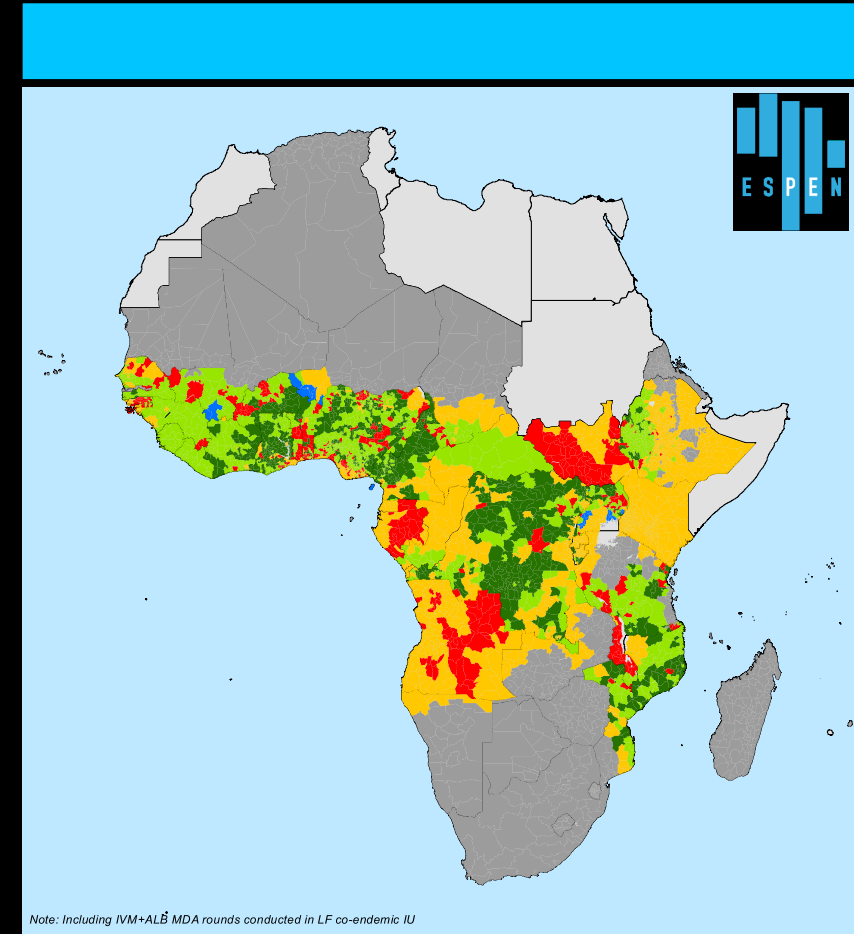
STATUS OF MDA FOR ONCHO IN 2016

- Ongoing: 23 countries
- No data: 3 countries
(Equatorial Guinea, Guinea-Bissau & South Sudan)
- No MDA: 2 countries
(Gabon & Mozambique)
- Specific status: 3 countries
(Kenya, Niger & Rwanda)



2016 DETAILED STATUS OF IVERMECTIN TREATMENT IN AFRICA

- Total population requiring MDA: 198,148,595 inhabitants of whom 197,294,034 people are in Africa (99.6 %)
- Total number of treatments in 2016: 132 million with an increase of 13.7 million comparing to 2015 (Gap of 65 million people)
- Several countries have reported focal interruption of transmission of *Onchocerca volvulus* and only Uganda and Sudan had stopped MDA and some of their foci had reached elimination of onchocerciasis.



CHALLENGES FOR ONCHOCERCIASIS ELIMINATION IN AFRICA

1. Political commitment & country leadership
2. Funding limitation of inter-governmental organizations (ESPEN)
3. Limited collaboration of existing funding partners
4. Cross-border issues (countries sovereignty, language, etc...)
5. Transmission delineation zones

CONCLUSION

Despite the efforts of the international communities in eliminating river blindness during more than the last 4 decades with both vector control and microfilaricidal drugs, there are still challenges to be addressed in order to reach onchocerciasis elimination in Africa!

THANK YOU!