

Introducing Sightsavers' Lab Map dashboard for Neglected Tropical Diseases

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Neglected Tropical Diseases

- 21 diseases have been classified as Neglected Tropical Diseases (NTDs) by the World Health Organization
- NTD are caused by a variety of pathogens (including viruses, bacteria, parasites, fungi and toxins); are prevalent in tropical areas; and disproportionately impact neglected and impoverished populations
- WHO has set control, elimination and eradication targets for NTDs. Progress to attaining these is tracked through assessments which may include a clinical exam, POC test or laboratory diagnosis
- Many NTDs warrant a One Health approach because they are zoonotic or because they can be transmitted via a vector



Neglected Tropical Disease	Zoonotic	Vector	Amenable to Preventative Chemotherapy
Buruli Ulcer			
Chagas Disease		X	
Dengue and chikungunya		X	
Dracunculiasis (Guinea worm)	X	X	
Echinococcosis	X		
Foodborne trematodiasis	X	X	
Human African trypanosomiasis (African sleeping sickness)	X	X	
Leishmaniasis (Kala-azar)	X	X	
Leprosy			
Lymphatic filariasis (Elephantiasis)		X	X
Mycetoma, chromoblastomycosis and other deep mycoses			

Neglected Tropical Disease	Zoonotic	Vector	Amenable to preventative chemotherapy
Noma			
Onchocerciasis (River blindness)		X	X
Rabies	X		
Scabies and other ectoparasitoses			
Schistosomiasis (Bilharzia)	X	X	X
Soil-transmitted helminthiasis (Intestinal worms)			X
Snakebite envenoming			
Taeniasis and cysticercosis	X		
Trachoma		X	X
Yaws			

Introducing Sightsavers and its work on Neglected Tropical Diseases

- Sightsavers is an international organisation working with partners in low- and middle-income countries to eliminate avoidable blindness and promote equality for people with disabilities <https://www.sightsavers.org/>
- Sightsavers works to treat and prevent the 5 Neglected Tropical Diseases (NTDs) amenable to preventative chemotherapy. There are: lymphatic filariasis, onchocerciasis, trachoma, schistosomiasis, and soil transmitted helminths (STHs)
- To differing extents, each of Sightsavers' 5 foci NTDs involve a laboratory diagnosis (even if it's just microscopy).

All diagnostic options for onchocerciasis are currently lab-based

- Serologic testing – Ov16 RDT. Dried blood spots processed in a lab to detect IgG4 antibodies
- Serologic testing – Ov16 ELISA
- Molecular testing – O-150 qPCR. Confirms *Onchocera volvulus* DNA in simulium black flies



Why blackflies? Essential in Ov life cycle as human with Ov is only through blackflies

Sample is blackfly heads, which can contain infective ready to be transmitted to humans

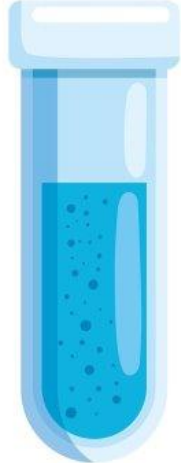
O-150 qPCR Process

Blackfly head viewed under a microscope



1

100 blackfly heads pooled into tubes containing alcohol



2

The 100 heads are crushed and DNA extracted using this Kit



3

DNA Pools in small tubes placed in a PCR machine



4

PCR Machine for DNA amplification of O.v DNA



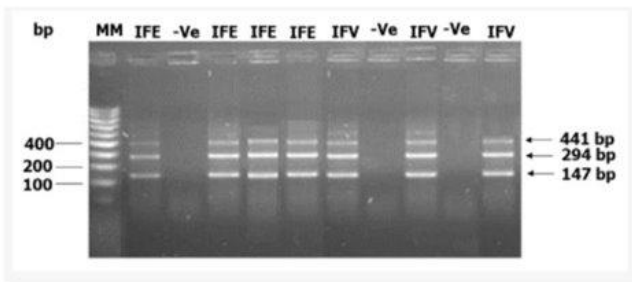
5

DNA transferred to a Gel for viewing



6

Photo of the Gel



7

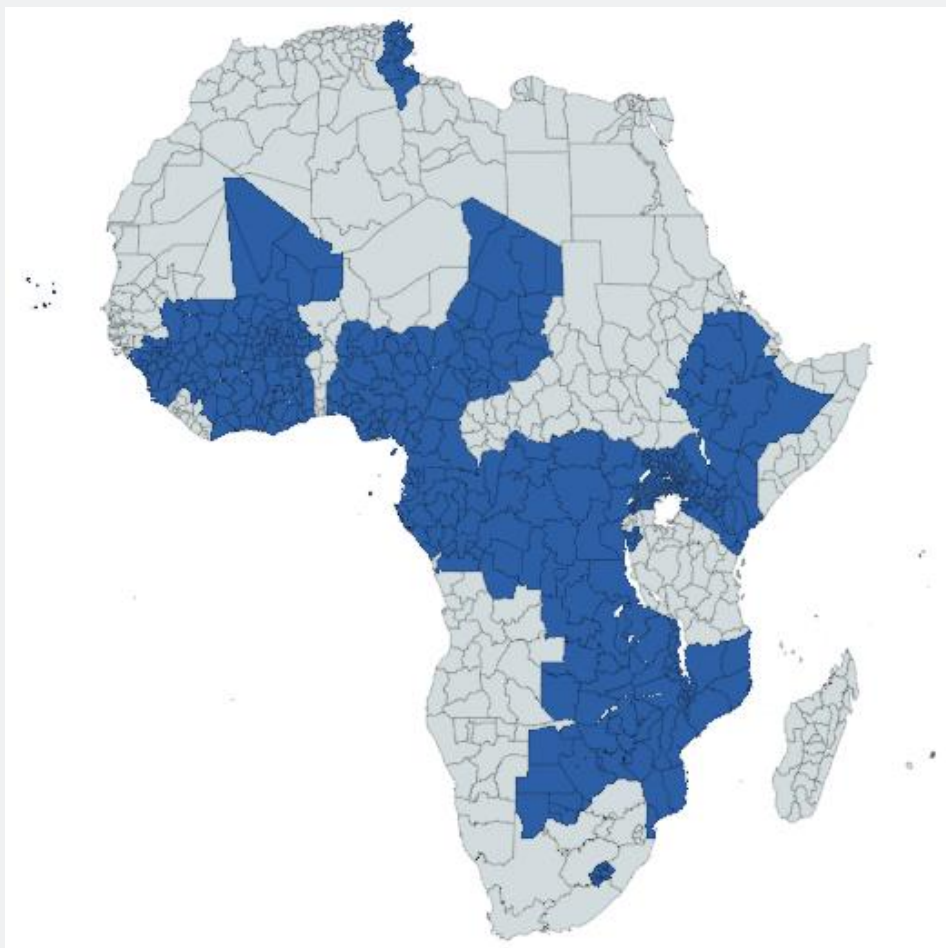
Recognising the critical role laboratories play for NTDs Sightsavers signed an MoU with ASLM in 2025

Sightsavers uses labs for:

- For research
- For disease specific assessments (e.g. onchocerciasis)
- For addressing endgame challenges like persistence and recrudescence (e.g. trachoma)
- Post-validation surveillance



LabMap progress to date



Since 2018, the program has mapped **5,558** laboratories in **29** African countries

Source: *ASLM Annual Report 2025-2026*; p11

Progress in building prototype Lab Map PC-NTDs

1. Sightsavers contributed to an update of the LabMap survey form:

- Adding new test options for LF, STH and schisto
- Adding new disease headings and test options for oncho and trachoma
- Informing major equipment questions to capture detail on a lab's potential to undertake PCR and multiplex testing

Strategic Priority 3: Innovate and Grow to Stay Relevant



Output 1:
Technical Innovations

Sub-Output 1: ASLM's work is expanded to include additional laboratory diagnostic areas

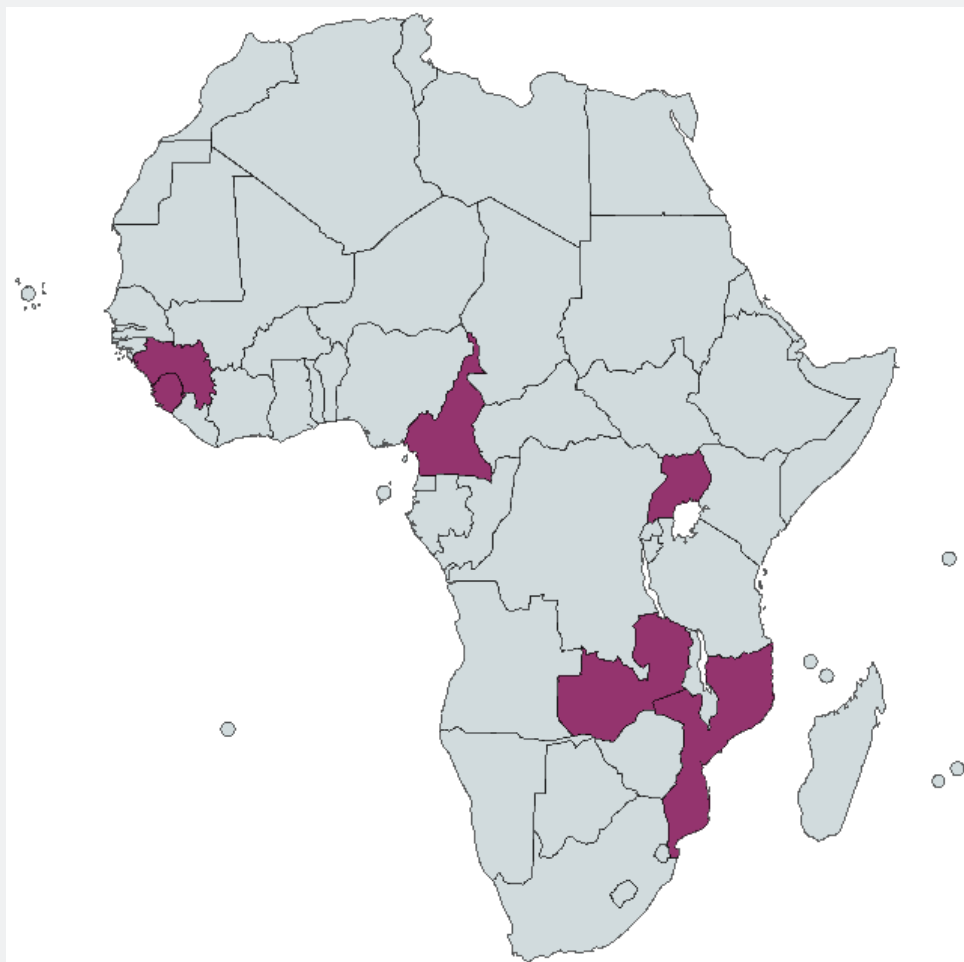
Key Achievements:



The LabMap tool has been expanded to include assessments for Priority diseases as listed by Africa CDC, Antimicrobial Resistance (AMR), **Neglected Tropical Diseases (NTDs)** and Chemical laboratories

Source: *ASLM Annual Report 2025-2026*; p33

Lab Map PC-NTDs



Imported LabMap data from 6 country datasets:

- Cameroon
- Guinea
- Mozambique
- Sierra Leone
- Uganda
- Zambia

Development of a prototype Lab Map for NTDs

We are working with six country datasets shared with Sightsavers by ASLM, in addition to a selection of other country lab data.

Development model:



2A. Data processing

Julius AI to develop a standardised data cleaning approach and associated python code.



2B. Geo-enrichment

ESRI ArcGIS PRO to run a spatial join to EPSEN cartography to facilitate enhanced geographic data analysis.

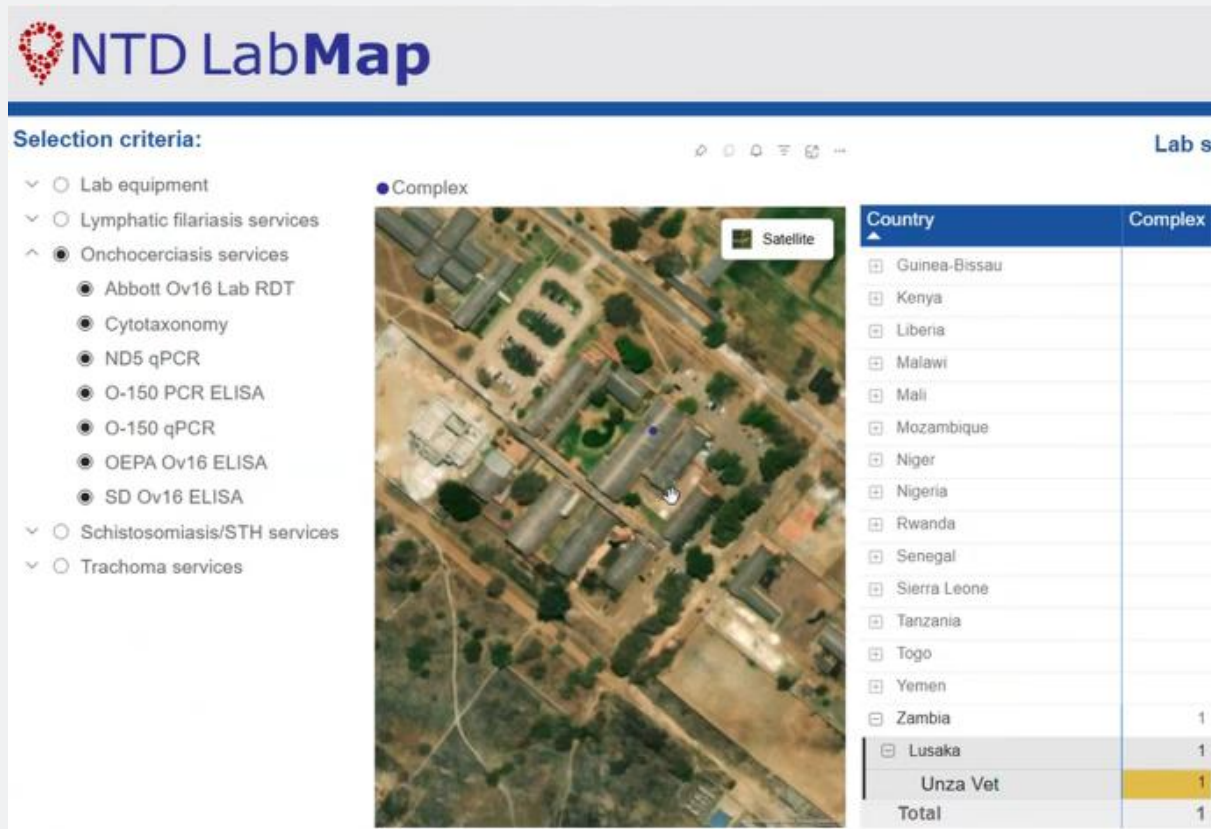


2C. Data modelling

PowerBI to consolidate and model datasets into an optimal format for data visualization.

Dashboard demonstration

Spotlight on UNZA Vet lab, Zambia



Utilising existing LabMap data to map lab services: Broader applications for One Health

- Adopting a labs services model makes it easier to identify labs you want to work with and invest accordingly
- Approach could be used to grow national, regional and continent-wide OH disease-specific lab networks and communities of practice, linking up services between human, veterinary and environmental labs
- Approach is adaptable and replicable for other lab service visual products
- Sightsavers will share our learnings on data cleaning and data visualization of LabMap
 - E.g. post opensource code on GitHub...

We would like to thank our collaborators on this project



Questions

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Thank you!