

# THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE: PREVENTING AFRICAN SLEEPING SICKNESS IN UGANDA AND CHAD

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In 2014, the Shefa Fund awarded a grant of \$204,000 to the Liverpool School of Tropical Medicine to extend their work controlling tsetse flies, the insect responsible for transmitting human African trypanosomiasis, which is more commonly known as sleeping sickness. The project focused on two areas where the Gambian strain of sleeping sickness is present: the West Nile region of Uganda and the Mandoul region of Chad.

In the two project regions, the Liverpool School used “tiny targets”, which are insecticide-treated nets that attract and kill tsetse flies. Tiny targets are a relatively new tool used by researchers, but have proven to be

an affordable and effective tool in reducing tsetse fly populations. Since 2011, the use of these targets correlates to a greater than 90 percent reduction in tsetse fly populations in targeted regions.

The Liverpool School is the oldest research and teaching organization in the field of tropical medicine. It works in more than 70 countries, applying research innovation and scientific breakthroughs to improve the health of the world’s poorest people.

## MORE THAN 47,000 TINY TARGETS DISTRIBUTED

At the cost of just \$1 per insecticide-treated target, the Shefa Fund grant allowed the Liverpool School to purchase and distribute 47,697 targets—covering 2,500 square kilometers in Uganda and 300 square kilometers in Chad. The project aimed to reduce fly populations by 80 percent; it exceeded expectations as the Liverpool School reported a 90 percent reduction in tsetse fly numbers in the Uganda site area, and found only three flies in the Chad site—representing a more than 99 percent reduction in fly population for that region. These impressive results suggest that transmission of the disease has been significantly interrupted in both regions—and, consequently, more than 1 million people stand to benefit from reduced transmission of sleeping sickness.

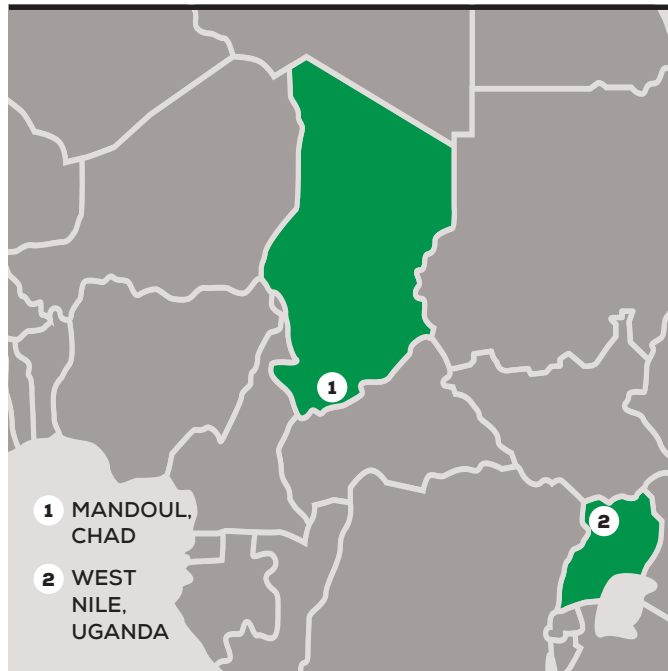
The Shefa Fund grant also supported community awareness activities about sleeping sickness and the monitoring and evaluation required to measure the outcomes of the project.

## WHY PREVENTING SLEEPING SICKNESS MATTERS

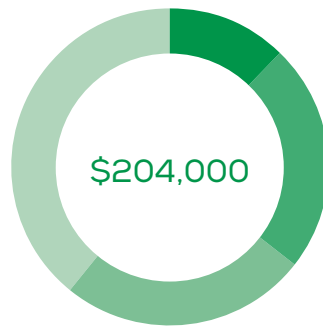
Sleeping sickness is a deadly parasitic disease transmitted by the tsetse fly. The disease is present in 36 countries of sub-Saharan Africa, placing more than 70 million people at risk, primarily in rural areas. Onset of the disease is characterized by fever, headache, joint pain, and itching. If the disease progresses, it enters the central nervous system and can cause sensory disturbances and poor coordination. If left untreated, the disease can lead to death.

Sleeping sickness requires proper diagnosis and a complex treatment regimen; therefore, it is important to address prevention of the spread of the disease in addition to treating infected individuals. Programs across Africa currently focus on integrating monitoring and treatment of those already infected, and initiatives to control tsetse flies using tools like the tiny targets developed by the Liverpool School of Tropical Medicine.

## REGIONS TARGETED IN UGANDA AND CHAD



## GRANT FINANCIAL ALLOCATION



- \$25,173  
Travel to and from Uganda/Chad to distribute tiny targets
- \$47,697  
Purchase and distribution of insecticide-treated targets
- \$51,635  
Sub-grant to local implementing partner International Relief and Development in Chad
- \$79,495  
Administrative costs, including employee salaries and consulting fees

### PROJECT SUCCESSES

- **Tsetse fly population dramatically reduced in project regions.** Two recent surveys detected only three flies in the Mandoul region of Chad. As a result, these communities are safe from this disease—but tiny targets will still be used and monitoring will continue to ensure there are no new cases.
- **Tiny targets were shown to be an effective and low-cost method of interrupting sleeping sickness transmission.** The Liverpool School's use of tiny targets in these two regions demonstrates conclusively that full-scale interventions successfully and affordably interrupt sleeping sickness transmission.

Evidence from this project will help other endemic countries organize and plan for the use of tiny targets as part of their efforts to control the disease.

- **An estimated 1,050,000 people were protected from sleeping sickness using the tiny targets developed by the Liverpool School.** Only six cases of sleeping sickness were reported in Uganda in 2014, and cases have been reduced by 50 percent in Chad as a result of the reduction in the tsetse fly population.

### PROJECT CHALLENGES

- **Conflict challenged some operations.** The Liverpool School teams needed to monitor tiny fly targets and new cases of sleeping sickness within local communities in regions close to conflict zones—the Mandoul region of Chad is not far from the northeastern border of Nigeria, where extremist groups have forced much of the population to flee. Control of disease transmission and treatment of the sick are difficult with refugee populations on the move. Though the Liverpool School team completed all planned activities for this project, some risk to personnel was involved, and future work in certain areas is likely to be interrupted until violence in neighboring Nigeria is contained.