

Tsetse survey in Tanzania
Image Stephen Torr



Researchers reveal One Health benefits of Tanzanian animal health policy



Senior Technician Godfrey Mashenga with a tsetse trap
Image Stephen Torr



PhD student Rachel Lea examining field-caught tsetse with members of the VVBDR team at a guest house in Mugumu
Image Jennifer Lord

For more information about the ZELS programme please visit: bbsrc.ukri.org/zels

Sometimes a lack of obvious evidence for disease can point to findings of greater significance. Such was the case in northern Tanzania where the **Life on the edge: tackling human African trypanosomiasis on the edge of wilderness areas** ZELS project undertook its research.

Researchers working in an area bordering the Serengeti National Park sought to analyse the transmission dynamics of trypanosomes, the parasite spread by tsetse fly and which causes disease in both animals and people. In people, trypanosomes cause human African trypanosomiasis, better known as sleeping sickness. This is fatal without treatment and there is no protection against it. In animals, trypanosome infection leads to animal African trypanosomiasis, known as *nagana*. This kills more than a million cattle a year across sub-Saharan Africa, with consequent livelihoods impacts.

“Our project has provided preliminary but strong indications of how national governments might establish enabling environments that will deliver a One Health solution to the problem of sleeping sickness.”

Professor Stephen Torr, Principal Investigator

As wild animals such as warthogs and buffalo, as well as livestock, can carry trypanosomes,

the researchers expected to find evidence that sleeping sickness was spreading out of the wilderness areas. However, against all expectation, they found none.

Work undertaken by the project's PhD students provided an explanation. This showed that livestock-keepers were independently implementing a programme of insecticide use against the ticks and tsetse that transmit *nagana* and East Coast fever, another livestock disease, encouraged by a financial subsidy that the Government of Tanzania has actively promoted. The evidence revealed that this national policy to control sickness in animals appears to have created an enabling environment allowing livestock-keepers to protect themselves and their communities from the human form of the disease at the wilderness/farmland interface. Indeed, the levels at which the insecticides were found in the research to be used are consistent with the levels which models predict will interrupt sleeping sickness transmission.

This is a unique example of a successful One Health intervention against sleeping sickness – albeit an unwitting one. It shows that treating cattle with insecticides can contain the risk of sleeping sickness in people and suggests how other governments across East and Southern Africa might promote simple and cost-effective strategies to manage

this and other zoonoses associated with wilderness areas.

Life on the edge: tackling human African trypanosomiasis on the edge of wilderness areas

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