

## Evidence for established livestock schistosomiasis transmission on Pemba Island, Zanzibar

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### Background

Livestock schistosomiasis is under reported in East Africa despite increasing recognition of its economic and One Health impact. The islands of Zanzibar are historically recognised as being allopatric for human urogenital schistosomiasis, caused by *Schistosoma haematobium*. However, during malacological surveys conducted in 2016 *Bulinus globosus* snails were found shedding *Schistosoma bovis*. Following this, in 2018 *S. bovis* miracidia were also retrieved from cow faecal samples confirming local transmission. In February 2026, we conducted a follow-up investigation to assess ongoing transmission dynamics in cattle and intermediate host snails.

### Methods

Three local cattle that were tethered on farm land in the North of Pemba Island, Zanzibar were screened for Schistosomiasis using the faecal egg hatching techniques. Any miracidia that hatched were captured and preserved for molecular analyses. Intestinal examinations were also conducted at two abattoirs (n = 5 cows in total) and any *Schistosoma* adult worms were recovered and preserved for molecular analyses. Concurrently, *Bulinus* snail surveys were undertaken at three freshwater sites with >100 snails collected. Snails were screened for cercarial shedding by exposure to fresh water and light. Basic molecular analyses of the samples was conducted to confirm species, geographical strain identities and confirm no genetic admixture with local *S. haematobium*.

### Results

Two of the five cattle screened by faecal egg hatching was positive for Schistosomiasis with many miracidia hatched. With an aim of determining the compatibility of these miracidia with the local *Bulinus* populations, eight juvenile snails collected from the same place that the cattle were grazing were exposed to 10 miracidia each. Preliminary molecular identification of the miracidia confirmed that the cattle were infected with *S. bovis*. At the first abattoir, *Schistosoma* adult worms were not found in either of two examined intestines. However, at the second abattoir, two of three cattle harboured adult *Schistosoma* worms within mesenteric vessels. Molecular analyses of the samples is ongoing and will be further presented during the conference. All examined cattle were locally reared rather than imported, supporting local transmission. Of >100 field-collected snails, only one was observed shedding *Schistosoma* cercariae which was molecularly confirmed to be *Schistosoma haematobium*.

### Conclusions

Our findings provide further evidence of active livestock schistosomiasis transmission on Pemba Island, Zanzibar. Ongoing molecular analyses will clarify species and strain

composition to provide a better understanding of the impact that livestock Schistosomiasis may have in Zanzibar.