THE KANYEMBA COMMUNITY TSETSE ELIMINATION DILEMMA



Chuma. S

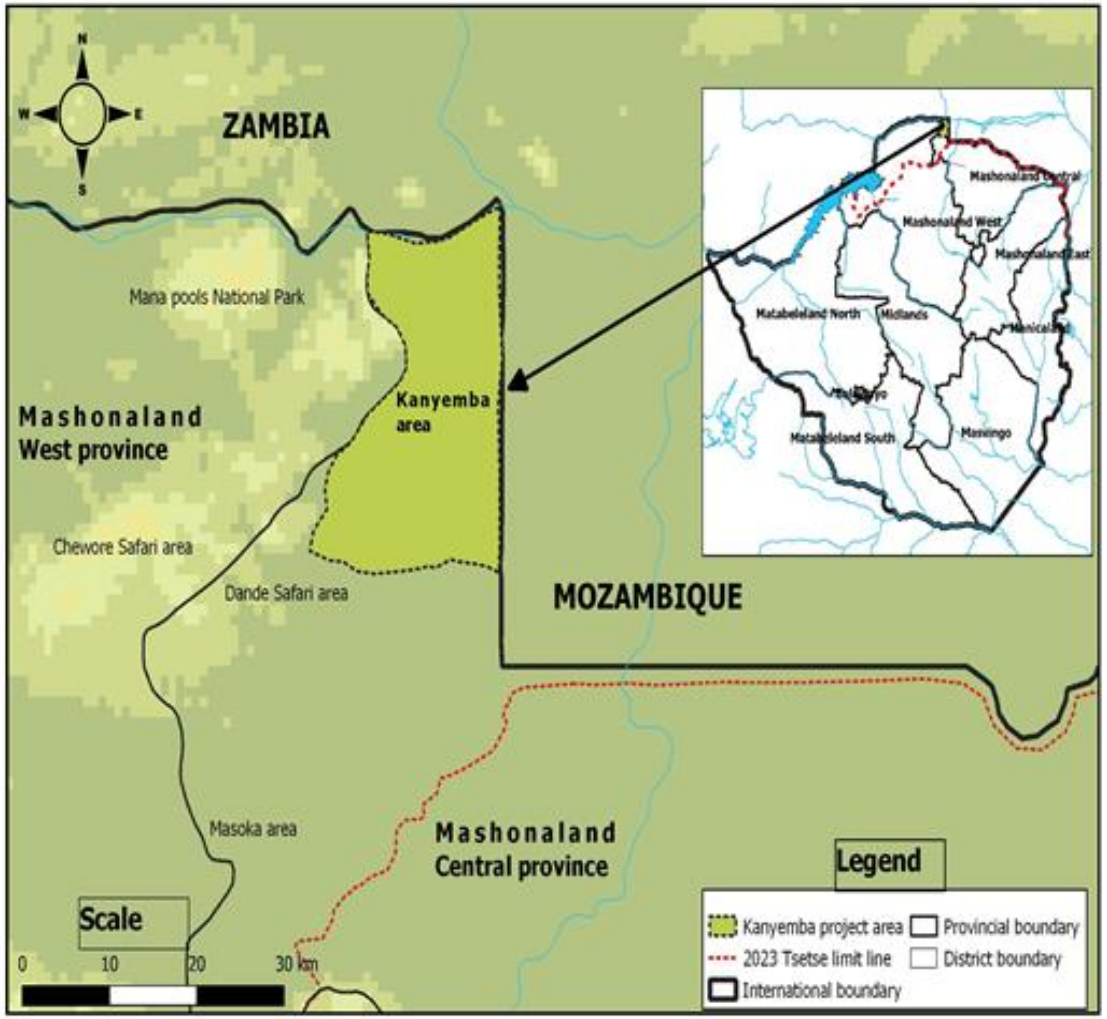
(ZIMBABWE)



Presentation Outline

1. Introduction
2. Objectives
3. Methodology
4. Results
5. Discussion
6. Conclusion
7. Recommendations

1. Introduction

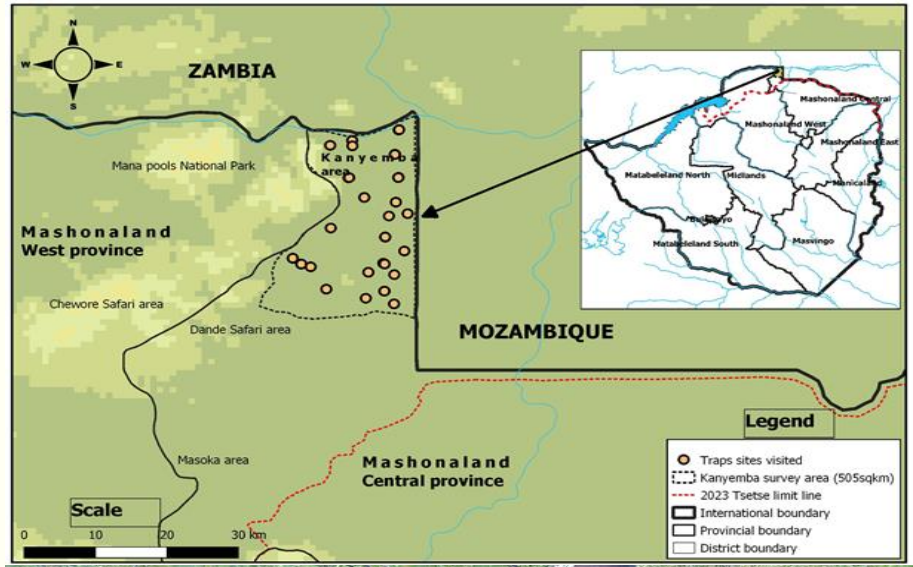


- The strategy and thrust of Zimbabwean government is to eradicate tsetse and trypanosomiasis in all tsetse infested communal areas
- Which is in line with our country's vision 2030
- The Kanyemba community is in the Northern part of the country bordering Zambia and Mozambique.

2. Objectives

- To eradicate tsetse and eliminate trypanosomiasis in the communal area using odour-baited insecticide treated targets by 2024
- To monitor tsetse population decline within the treated area for the period 2023-2024

3. Methodology





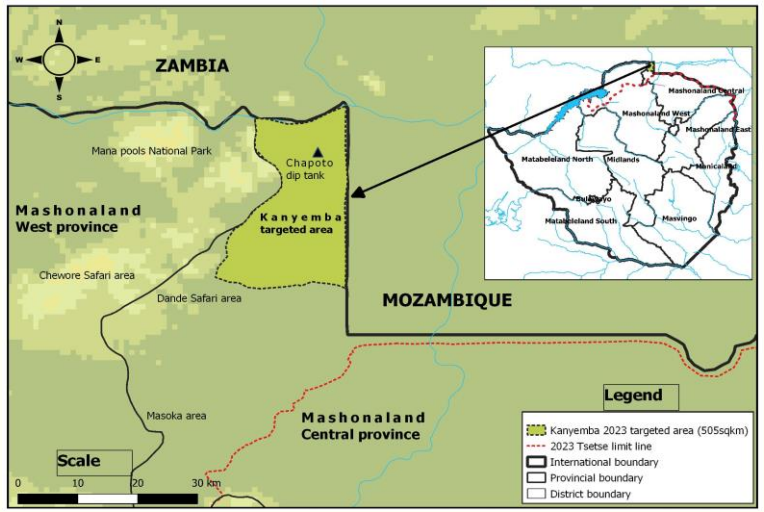
Description of study site

- Kanyemba area (505sqkm)
- The community, an infested tsetse zone, is one of the priority areas with an estimated human population of 4,500 people spread across 24 villages with an estimated 270 number of cattle.

Tsetse surveys using epsilon Traps

- Pre-and post treatment entomological data for 3 and 11 months respectively was collected using an average of 9 odour baited epsilon traps.
- Traps were monitored within an average of 30 days (monthly).
- Entomological data was collected from Feb 2023 to Sep 2024.

Methodology Cont..





Control measures using Odour baited insecticide treated targets

- A total of 2 020 insecticide treated targets were deployed in 505km^2 at a target density of 4 targets per km^2 in the month of May 2023.
- The targets were treated with a 0.54% Deltamethrin solution.
- Baited with one phenol sachet from 3-n-Propylphenol (3NP), 1-octen-3-OL (Octenol) and 4-Methyl Phenol (4MP) at the ratio of 1:4:8 respectively.

Methodology Cont… : Insecticide Treated Cattle (ITC)



- The Kanyemba cattle serves both as a barrier to tsetse reinvasion and a tsetse control intervention measure.
- The cattle are dipped with Deltamethrin based Acaricide which kills both the ticks and tsetse flies.
- However, due to limited number of cattle as well as limited cattle inspection centres in the area, this become a challenge in controlling both the disease and the vector.

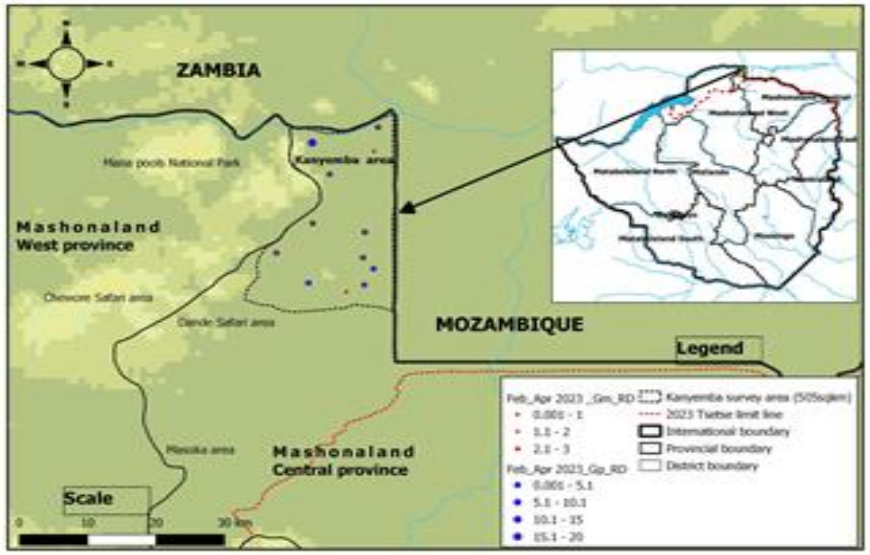
▪ *blood sample are currently being collected from the Kanyemba communal inspection centre for trypanosomiasis surveillance*

4. Results: Entomological data collected using epsilon traps

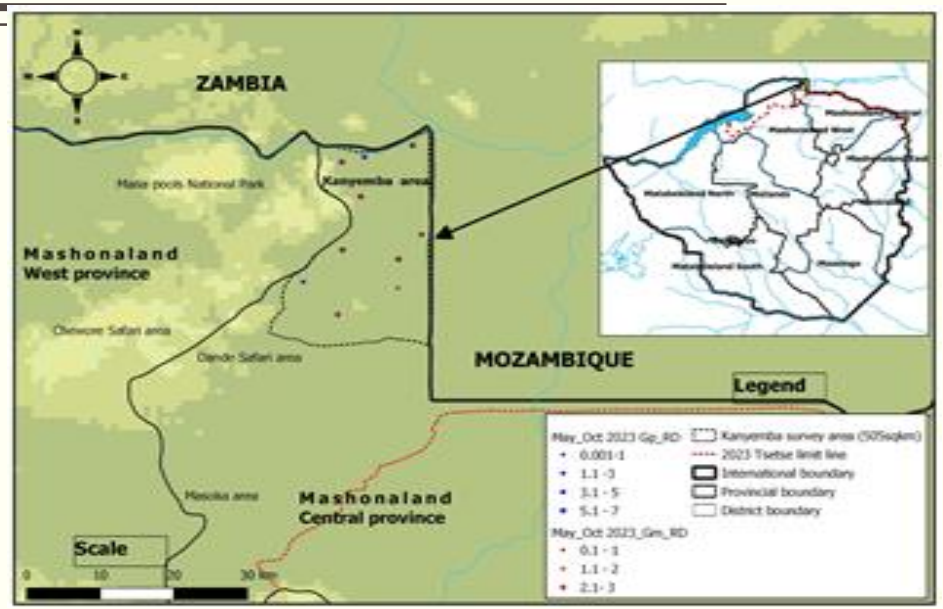
Period	Year	Month	RD_Gm	RD_Gp	Area_RD	No. of traps
Pre-treatment data	2023	February	0.002	0.003	0.005	16
		March	0.027	0.044	0.071	22
		April	1.114	2.344	3.458	12
Post-treatment data		May	0.206	0.809	1.015	9
		June	0.138	0.406	0.544	9
		July	0.29	0.012	0.301	11
		August	0.006	0.28	0.286	6
		September	0.034	0.213	0.247	8
		October	0.03	0.011	0.042	8
		November	0.022	0.055	0.077	8
		December	0.084	0.206	0.29	8
	2024	January	0.015	0.03	0.045	4
		February	0.751	0.498	1.249	5
		March	0.011	0.023	0.034	7
		April	0.013	0	0.013	7
		May	0	0.149	0.149	8
		June	0.471	3.243	3.714	7
		July	#N/A	#N/A	#N/A	0
		August	0.095	1.158	1.253	6
		September	0.229	0.975	1.204	6



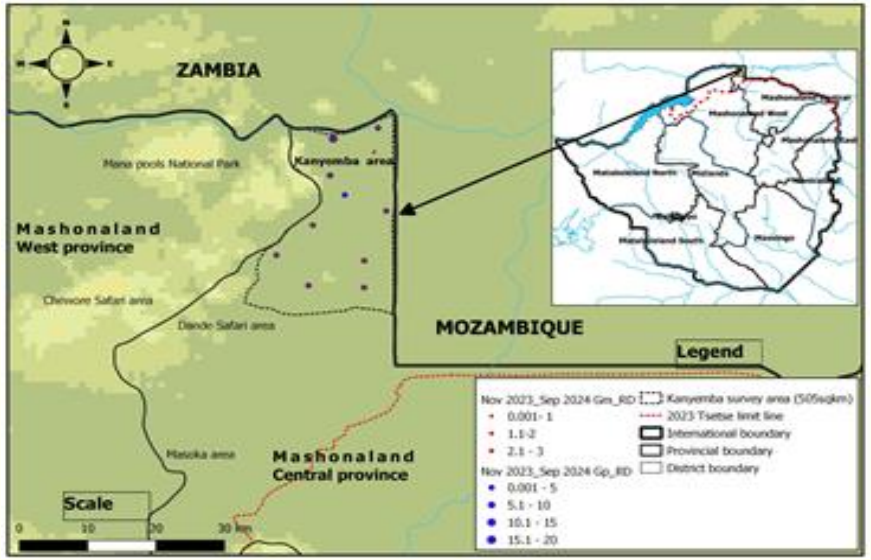
Results cont…



- Feb-Apr 2023

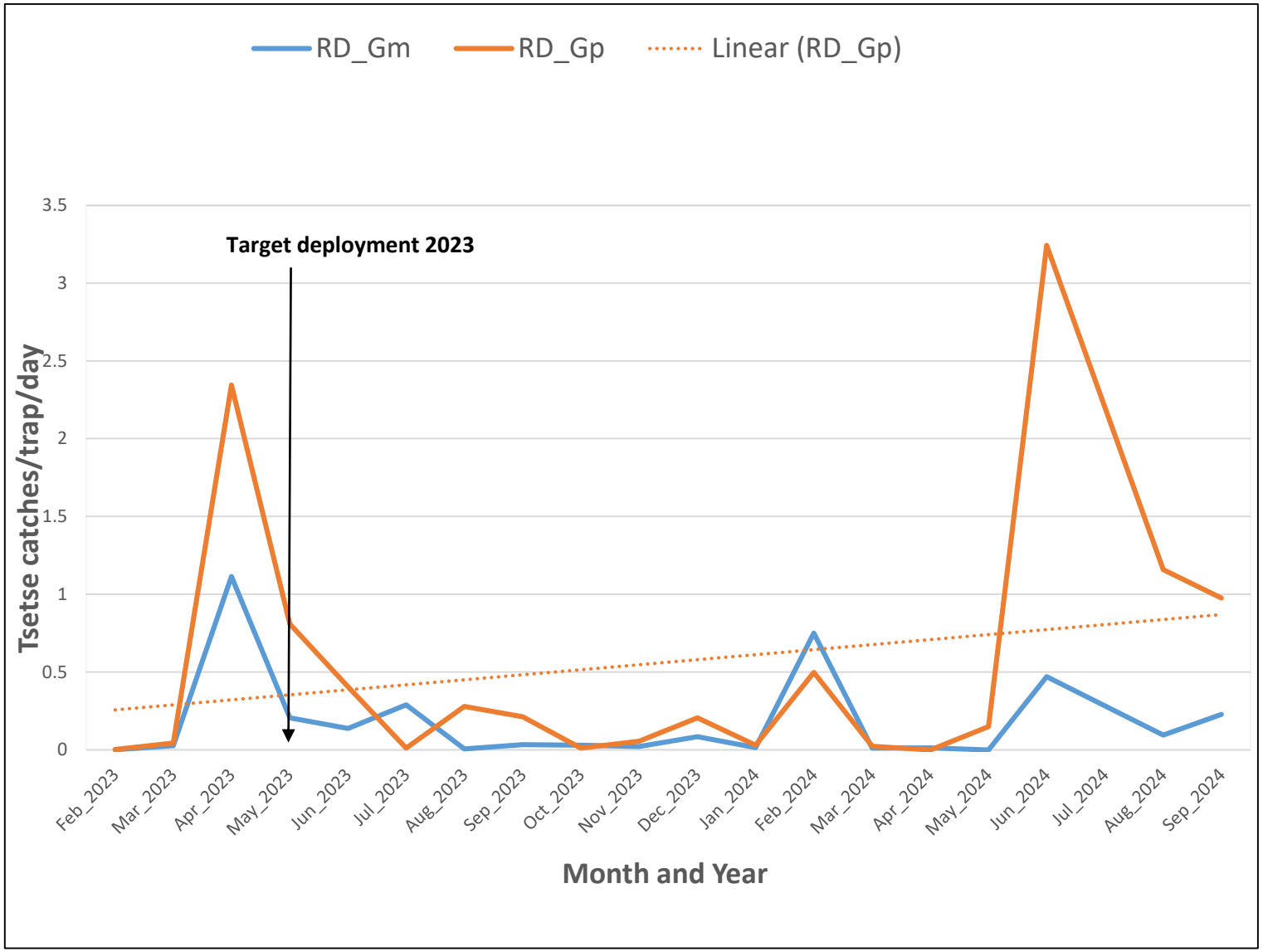


- May-Oct 2023



- Nov 2023-Sept 2024

Tsetse responses following deployment of targets in Kanyemba Communal Area



- There was a noticeable decrease in tsetse relative density after tsetse control interventions in May 2023 as shown on the graph.
- However, there was a constant tsetse reinvasions in the Kanyemba area from Chewore Safari Area in the west, Dande Safari area in the south and **possibly** Mozambique on the eastern side which causes some fluctuation on the relative densities.

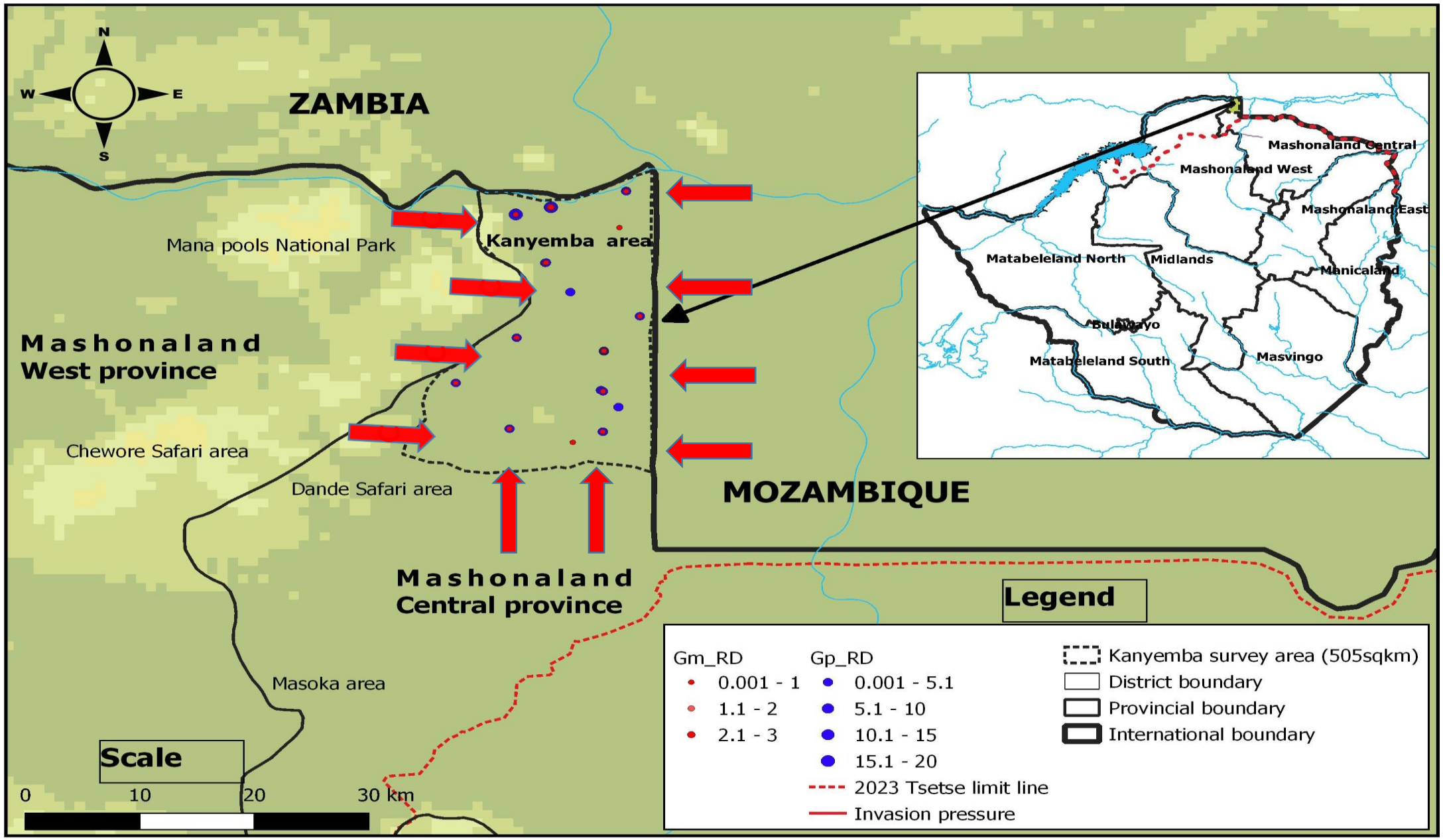
5. Discussion

- Tsetse relative densities before treatment was 1.114 and 2.344 for G. *m. morsitans* and G. *pallidipes* respectively for the month of April.
- Post-treatment entomological data indicated a fluctuating decrease in tsetse relative densities to 0.03 and 0.213 by October 2023.
- There was a sharp decrease of tsetse relative densities within the first 6 month after target deployment by 98.8%.
- Average tsetse densities started to increase to 0.471 and 3.243 for *G. m. morsitans* and *G. pallidipes* respectively translating to 98.9% in 14 months after target deployment.

6. Conclusion

- The increase in tsetse relative densities after control intervention is attributed to tsetse reinvasion from the surrounding areas which are the Dande safari area, Chewore safari area and possibly the neighbouring Mozambique.

The control dilemma



7. Recommendation

- Intensive integrated area-wide tsetse surveillance along the tsetse belt by the concerned countries
- The Department of Tsetse Control in Zimbabwe needs to conduct progressive tsetse eradication in the Dande safari area and erect a target barrier to prevent reinvasion from Chewore safari area.
- The success to eradicate remnant tsetse in Kanyemba community is hinged on Area-Wide Integrated Pest Management approaches among Zimbabwe, Zambia and Mozambique.

The End

Thank you