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Characteristics of *Anopheles funestus* larval habitats in south-eastern Tanzania

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	Anopheles arabiensis	*Anopheles funestus s.l*
Total number of mosquitoes collected by CDC Light Trap (Jan 2015 to Jan 2016)	20135	4759
Total number of trap nights	1152	1152
Biting rate per night	17.48	4.13
Relative efficiency (CDC-LT) relative to HLC (Derived from Okumu et al 2008)	0.3	0.68
Corrected biting rate	58.26	6.08
Total number of mosquitoes analysed for *Plasmodium falciparum* circumsporozoite protein (CSP)	20135	4759
Total number of sporozoite positive mosquitoes	4	25
Sporozoite rate	0.0002	0.0053
Annual EIR (Adjusted)**	**4.22**	**11.65**
% EIR Contribution (Adjusted)**	**26.61%**	**73.39%**
Annual EIR (not adjusted)	**1.27**	**7.92**
% EIR Contribution (not adjusted)	**13.79%**	**86.21%**

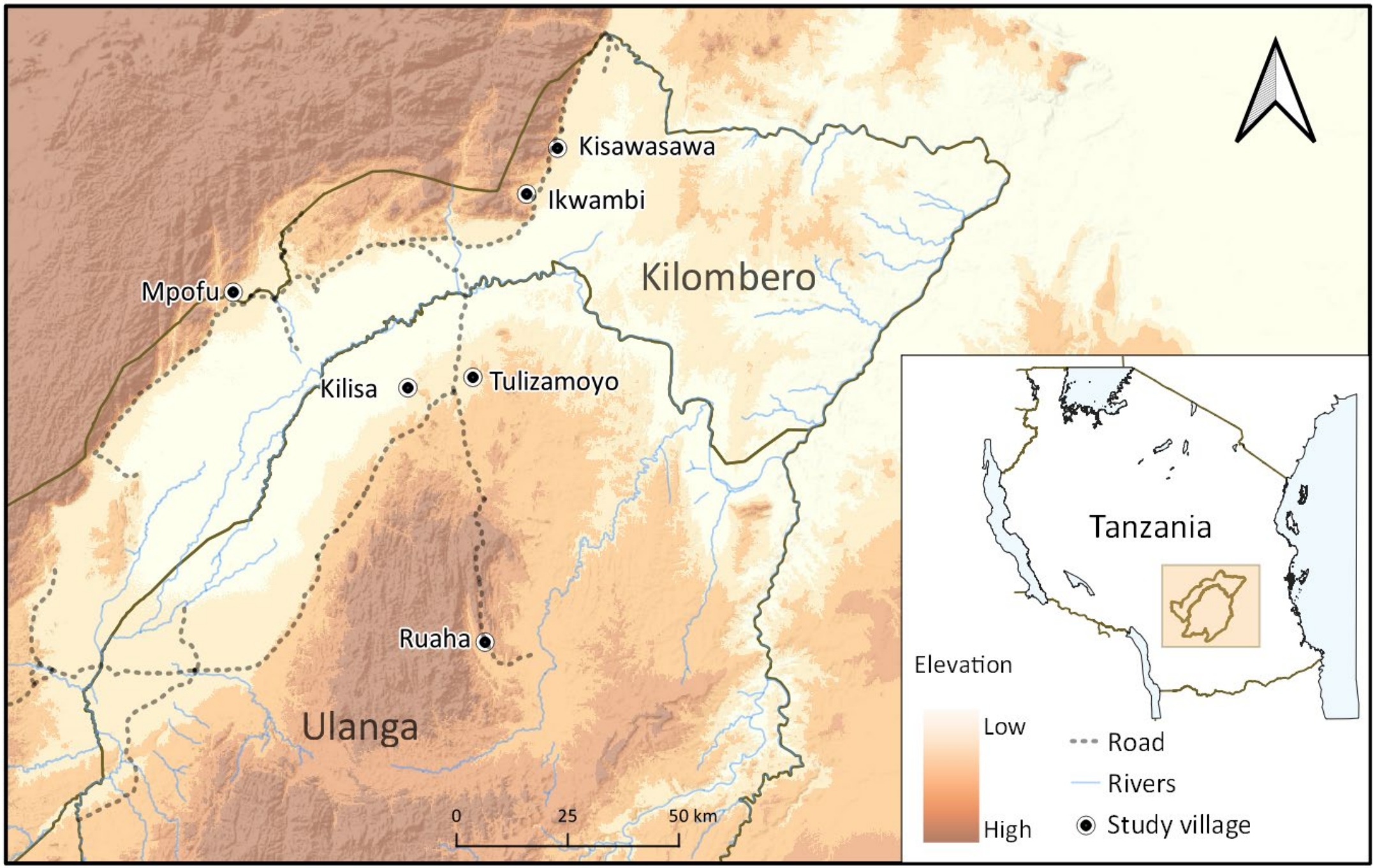
Kaindoa *et al*. (2017)

- Their larval habitats were characterized to understand the basic cues influencing their oviposition

- This will help to develop new ways for targeting these habitats for malaria control

Objectives

- Identification and characterization of the larval habitats of *An. funestus*
- Assessing physicochemical characteristics of *An. funestus* larval habitats


Kisawasawa
Ikwambi
Mpofu
Kilombero
Kilisa
Tulizamoyo
Ruaha
Ulanga
0
25
50 km
Tanzania
Elevation
Low
High
Road
Rivers
Study village

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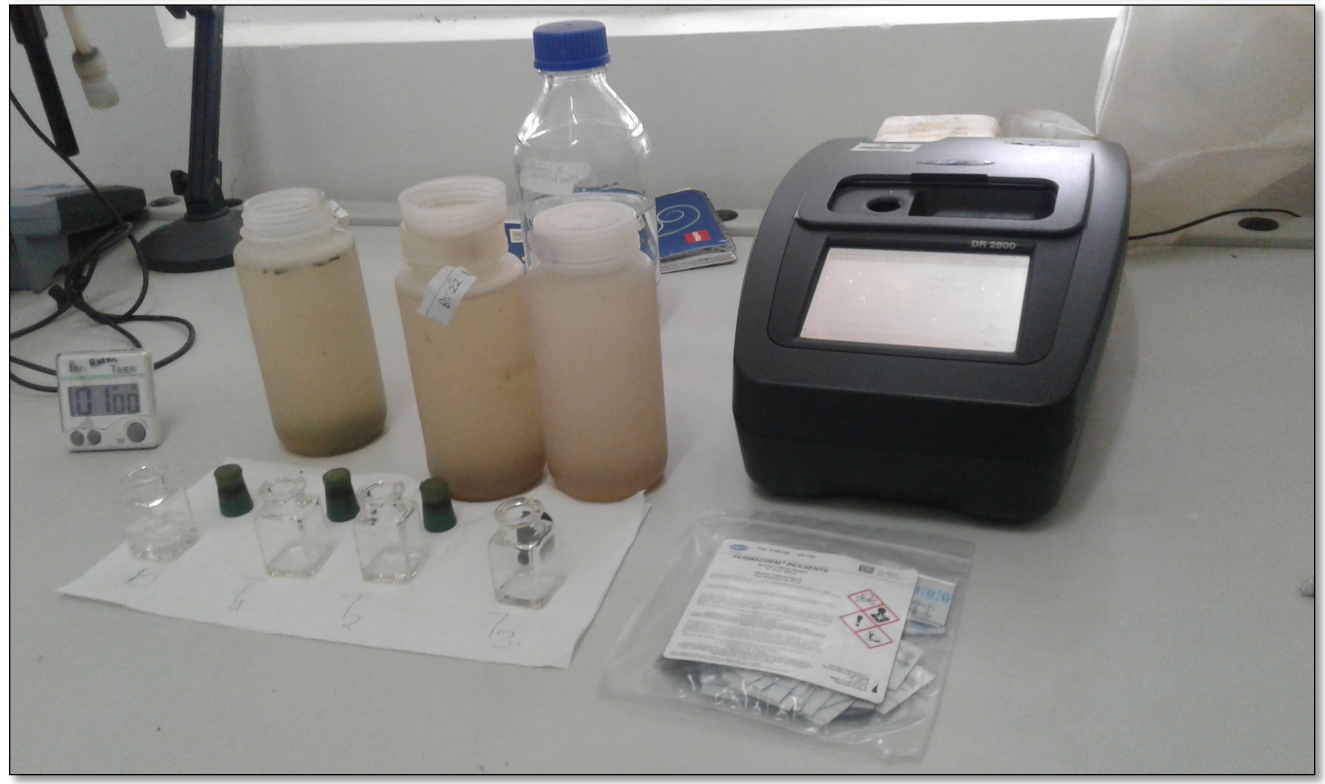
Physicochemical characteristics

- Conductivity (µS/cm)
- pH
- Temperature (ºC)
- Tds (mg/L)
- Nitrate (mg/L)
- Turbidity (NTU)



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Findings

- At lower altitudes

  <300m

  - Spring-fed
  - Swamps

- At higher altitudes

  >400m

  - Rivers

Clear water

Emergent vegetation

Depth: >50cm

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	Univariate analysis	
	Odds (95% LC, UC)	**p-value**
Water color		
Clear	1	
Colored	0.17 (0.06, 0.47)	<0.001
Polluted	0.11 (0.01, 0.97)	<0.05
Vegetation type		
None	1	
Submerged	0.73 (0.07, 7.95)	0.799
Emergent	7.63 (2.03, 28.70)	<0.01
Floating	2.44 (0.53, 11.17)	0.249
Depth (cm)		
<50	1	
>50	2.17 (0.95, 4.96)	0.067

- pH **6.5-6.7**
- Temperature **25.2-28.8**ºC
- Nitrate level **2.9-6.6** mg/l
- Conductivity **134-165** µS/cm
- TDS **60.5-80.3** mg/l
- Turbidity **26.6-54.8** NTU

Rivers too are important aquatic habitat of *An. funestus*

At Ruaha in Ulanga district

- Clear water
- Emergent vegetation
- Slow moving water
- Near human habitations (<100m)

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Conclusion

- Bred in both lower and higher altitude areas
- *An. funestus* bred in the clear water
- Characterized by emergent vegetation
- Deep habitats (>50cm)
- Control strategies should consider these habitats when designing for a new intervention

Points for discussion

- Is larviciding feasible in these kind of habitats?
- Which are the most appropriate methods?
  - *Spraying?*
  - *Drones?*
  - *-By hands?*
- What would be the best timing of larviciding?
- What would be the optimal duration of larviciding?
- Are the habitats similar in other settings?

Acknowledgement

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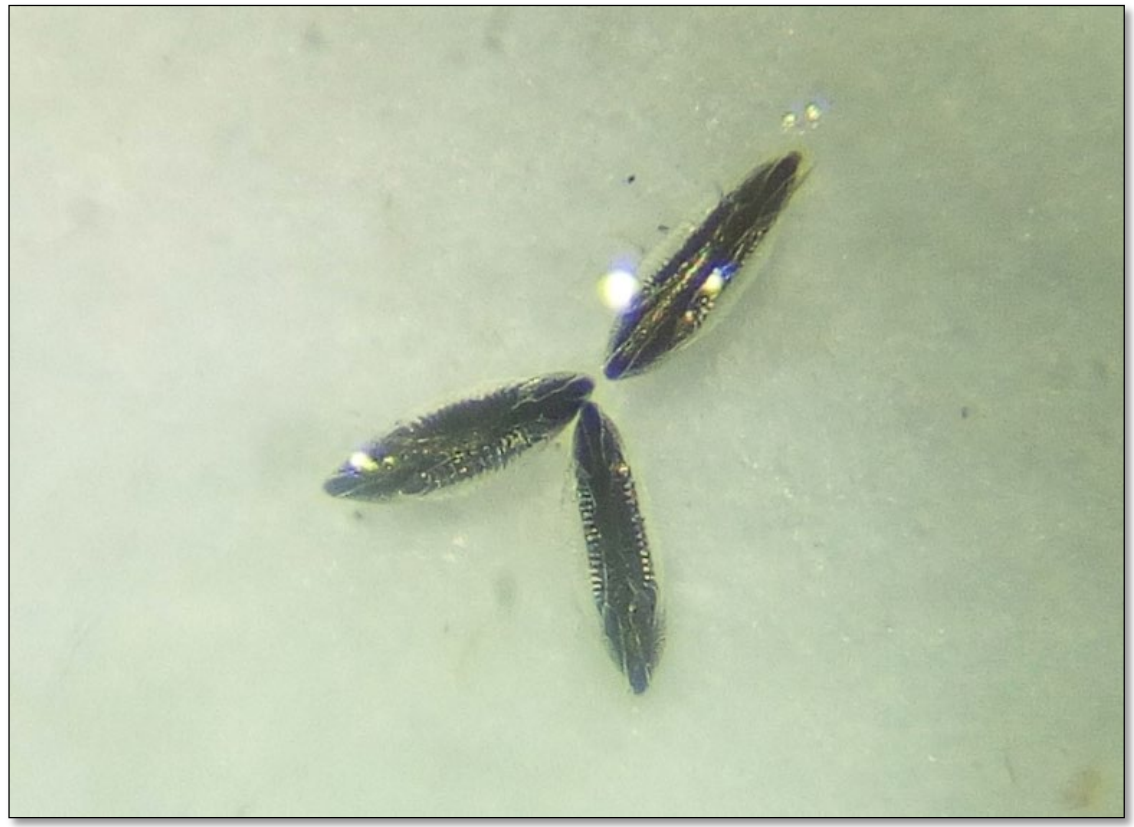

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