



Title: Enhancing Neglected Tropical Diseases Control Through Geospatial Technology in Southern Tanzania

By

Dr. J. Bakuza * - Biological Sciences Dept, Dar es Salaam University College of Education, Tanzania
Dr. E. Mwita – Geography Dept, Dar es Salaam University College of Education, Tanzania
Ms G. Stanley – GIS Unit, National Institute for Medical Research, Dar es Salaam Tanzania
Mr. M. Shand - School of Geographical Sciences, Glasgow University, UK
*Principal Investigator (bakuza Jared@yahoo.co.uk)



World Health Organization



University of Glasgow



1. Summary

- **Funding source:** World Health Organization (WHO-2015/16) & Tanzania Partnership Programme
- **Objectives:** Improve local communities' health in Lindi and Mtwara Districts Tanzania by incorporating geospatial analysis in disease mapping at the focal level and produce data that would guide treatments and other control measures.
- **Benefits:** Production of information on disease burden and Geospatial mapping to enhance disease control in Lindi and Mtwara Districts.

- **Implementation stages:** Obtaining GPS coordinates and distance of waterbodies/farms from residential areas and analyze their association to disease burden in the 1st quarter of the study period.
- Establish disease burden within half of the study period through stool/urine analysis and snail survey
- Report writing and submission of final report to funders to be conducted in the project's last quarter period.
- Hold workshop on data dissemination and assessment of project success during the study's last month

- **Ongoing activities:** Systematic sampling of stool and urine from 2250 people to establish levels of disease infection and map their distribution patterns.
- **Activities achieved so far:** Stool and urine samples obtained from 250 adults and non-school children from Milola Ward in Lindi District analysed for parasites and treatment provided to infected participants

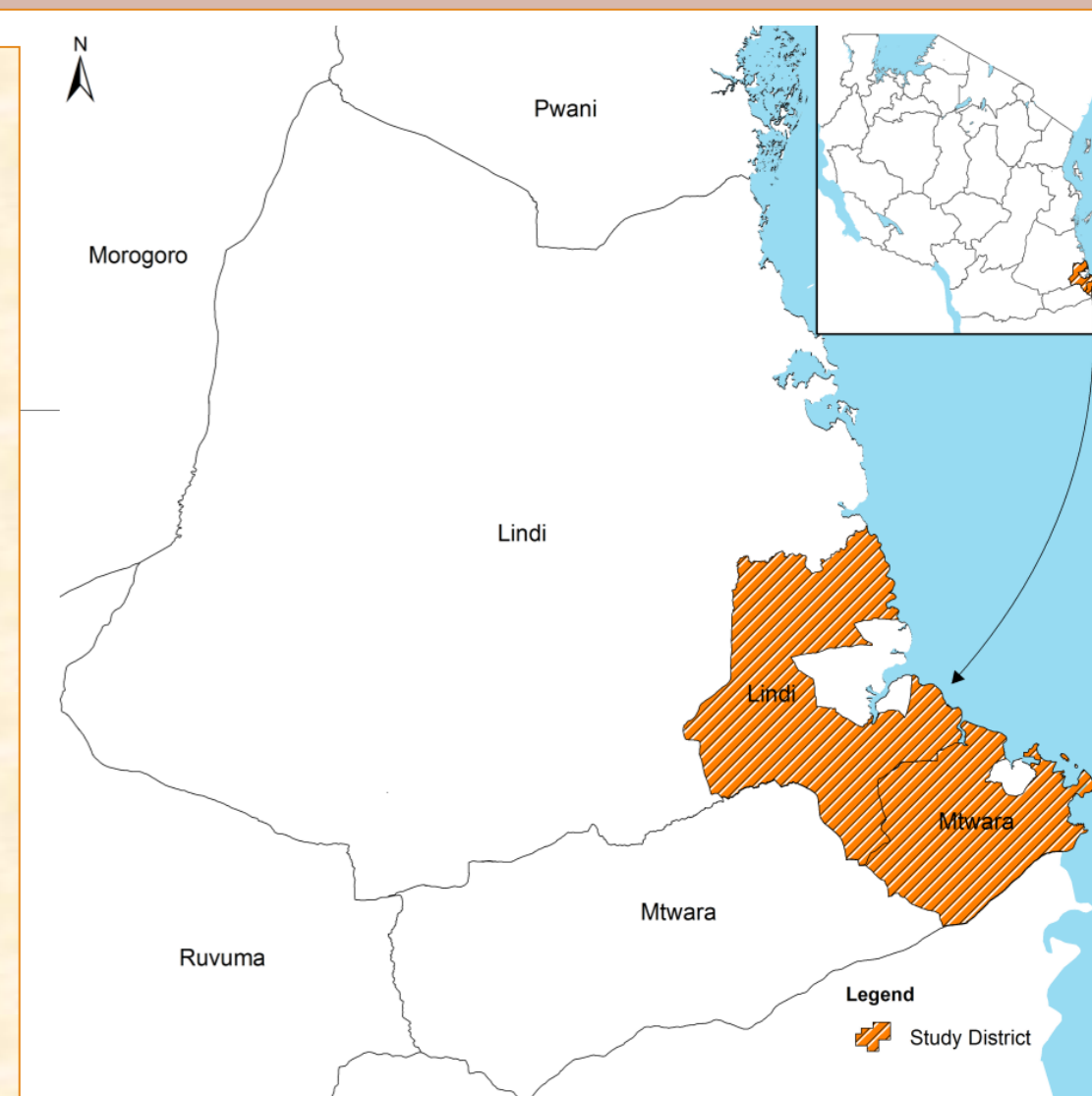
2. Background

- Geographical Information Systems (GIS) technology is a speedy, efficient and affordable means for disease mapping
- However, its use in disease control in Tanzania has not been properly implemented.
- This study was initiated to (1) determine infection status of neglected tropical diseases (NTDs) and their major risk factors in Lindi and Mtwara Districts
- (2) integrate GIS in mapping the distribution, burden and risk factors for NTDs in southern Tanzania and (3) provide data for Tanzania's NTD control and elimination programme.

3. Materials and Methods

- Fieldwork research conducted in Lindi and Mtwara Districts (Fig. 1)
- Research conducted during Sept-Oct. 2014, March-May 2016 and July-Sept. 2016 involving:
 - Faecal and urine sampling and environmental variable (GIS) analysis
 - Risk factors assessment through questionnaires
 - Snails survey to establish transmission points or foci for schistosomiasis in the villages
- Data analysis in QGIS and R to be conducted Oct-Nov. 2016
- Report writing and final report submission by Dec. 2016

Figure 1: Location of Lindi and Mtwara Districts in southeastern Tanzania



4. Preliminary Results and Conclusion

- Baseline data on parasitic infections obtained for Milola Ward Lindi District by April 2016
- Main parasites found; *Schistosoma haematobium* (23.4%), hookworms (6.8%) and *Trichuris trichiura* (2.8%).
- Data analysis indicated age to influence parasite transmission in Milola Ward where non-children below 18 years old are at the risk of acquiring the infections compared to adults
- The findings confirm widely known relationship between prevalence and age
- Average age of peak prevalence in a population decreases as transmission pressure increases.

5. References:

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- URT (2008) Tanzania's Strategic Plan for Red. of Maternal, Newborn and Child Death 2008-2015.
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6. Acknowledgements

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