



LAKE TANGANYIKA  
FLOATING HEALTH CLINIC

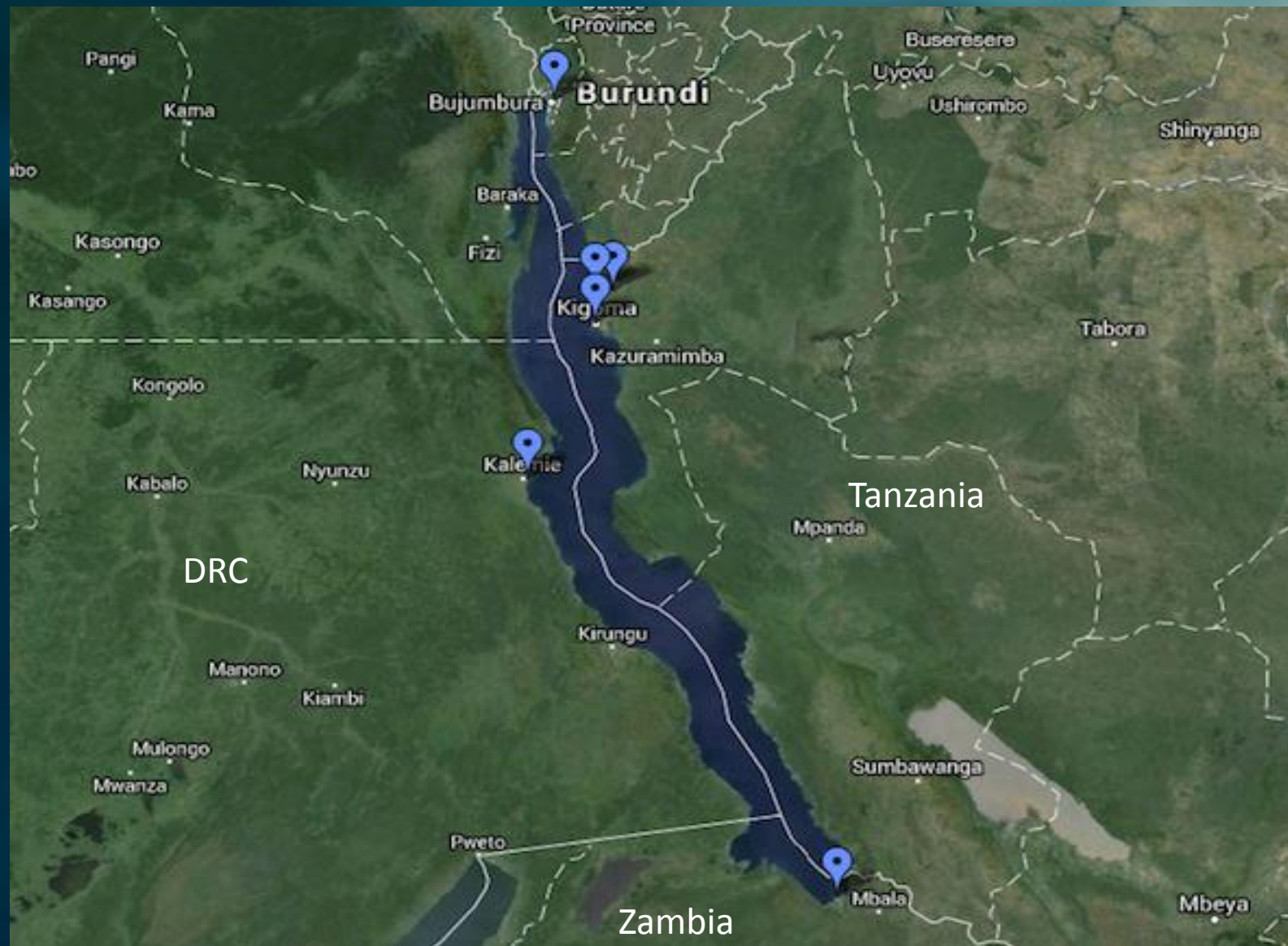
# The Bed Net Dilemma on Lake Tanganyika

## *A Cluster Survey*

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Lake Tanganyika Floating Health Clinic





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An aerial photograph of the Lake Tanganyika coastline. The lake's deep blue water occupies the right half of the frame. The shoreline is a mix of sandy beaches and small, scattered villages. To the left of the lake, there are rolling green hills and mountains under a blue sky with some clouds.

17% OF THE WORLD'S  
AVAILABLE FRESH WATER





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**BIODIVERSITY HOTSPOT**



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# Lake Tanganyika Floating Health Clinic

- Health focused NGO created by Dr. Amy Lehman in 2009
- Previous projects
  - Comprehensive malaria education program and distribution of 45,000 LLINs in Moba Territory and Nkasi District
  - Women's Health Outreach in Rukwa → completion of fistula repair surgery in 44 patients from the DRC and Tanzania
  - Communications and EMR pilot in Nkasi, now expanding in Kalemie Territory

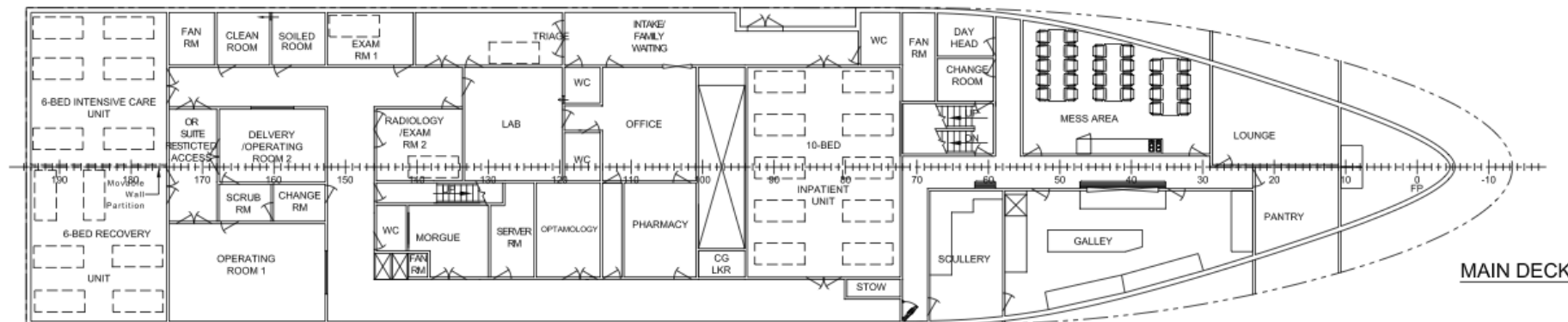
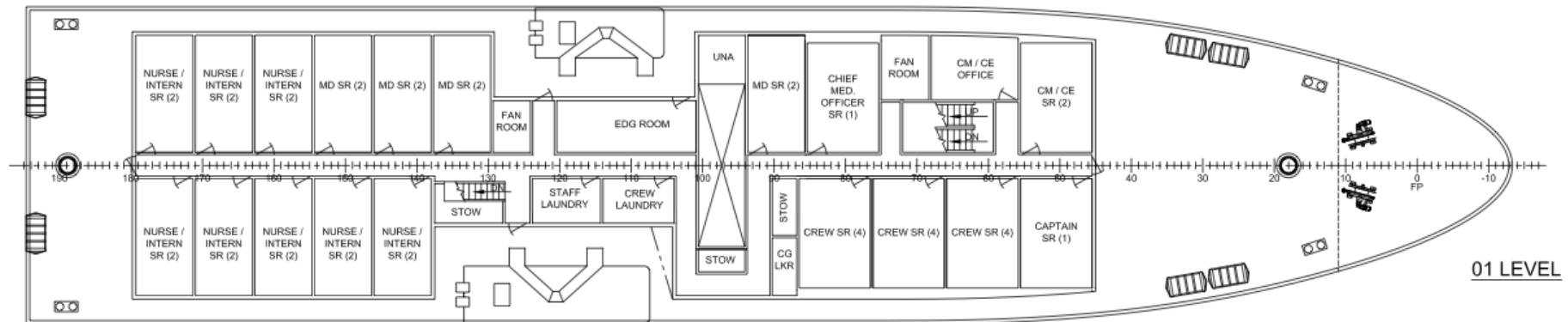


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## What Are We Seeing on Lake Tanganyika?







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# Background

- Malaria is the leading cause of death in the Lake Tanganyika Basin
- The WHO recommends LLIN distribution as part of a 3-pronged strategy for reaching malaria reduction MDGs
- Tanzanian law prohibits the use of fishing nets with a mesh size below 3in at the wings and 1.5in at the cod end
- Few studies have been published regarding the use of bed nets for fishing or quantifying the impact of such misuse



# Hypothesis:

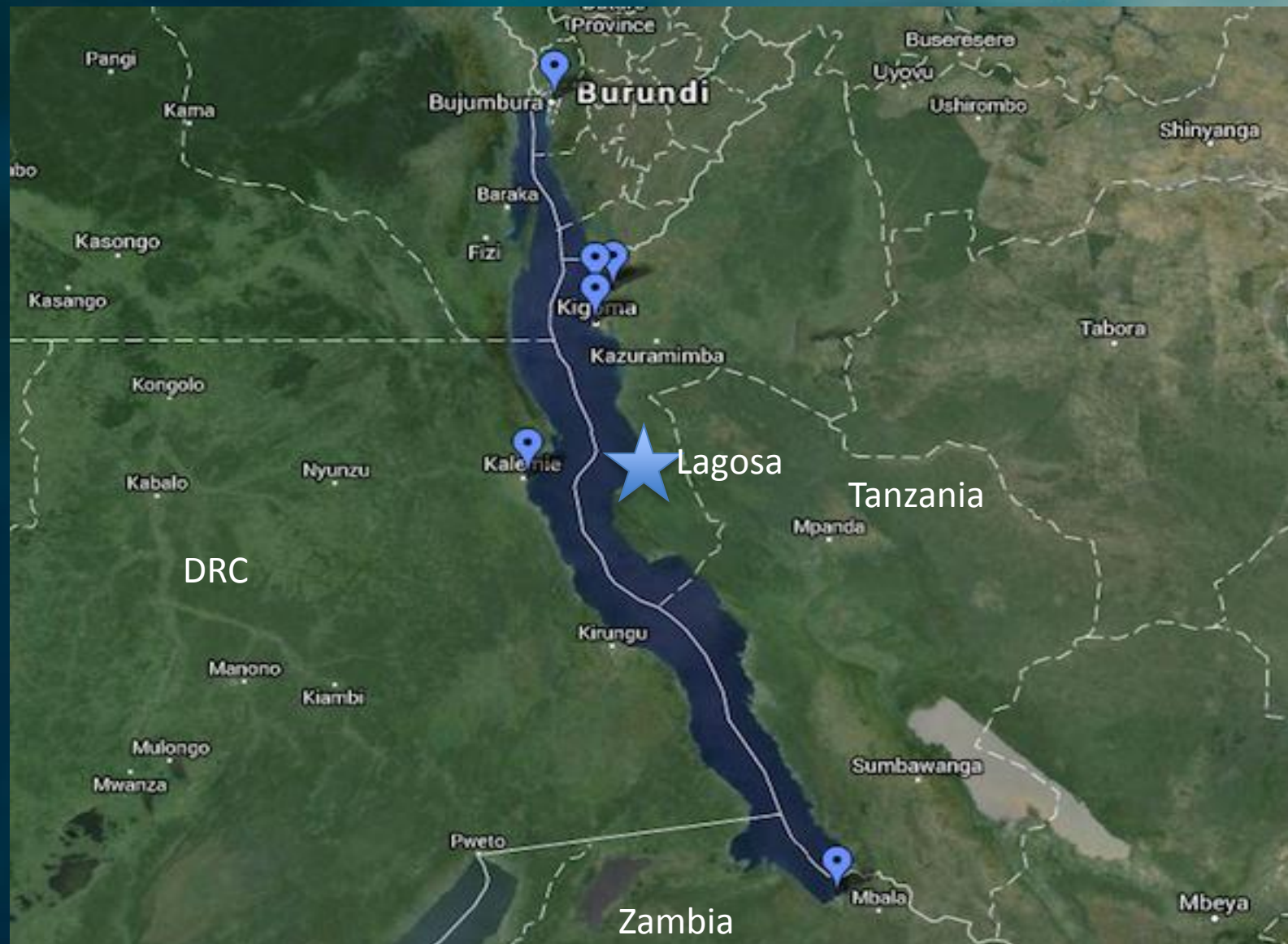
Bed nets are being used for  
fishing frequently on Lake  
Tanganyika





# Methods

- Cluster sampling study in 7 villages in Lagosa, Tanzania
  - Total population 40,805
- The government has divided each village into 2-6 sub-villages depending on population size
- 7 households per sub-village were randomly chosen for survey administration
- Survey comprised of 23 questions
  - Bed net practices, including use of bed nets for fishing
  - Perception of changes in the fish supply





# Results

- 196 households surveyed over 4 weeks
- Mean household size of 5.66 individuals (SD 2.16)
- Mean number of children per household 3.27 (SD 1.78)
- All households surveyed had owned a bed net at some point in time
  - 189 had received the bed net for free
- Median length of time since obtaining a bed net was 6-12 months





# Results

- 170 households (86.7%) reported having used a bed net to fish at some point in time
- 107 households (62.9% of those fishing with bed nets) report doing so more than once per day
- 191 (97.4%) report seeing others in their village using bed nets to fish
- 64 (37.6% of those fishing with bed nets) report doing so due to hunger
  - 80 (47.1%) state they need a fishing net and can't afford one



# Results

- 111 households (65.3%) report noting a subjective decrease in the fish supply in Lake Tanganyika
- 60 households (30.6%) report that if they were given another free bed net, they would use it for fishing
- 171 respondents (87.2%) are aware that fishing with bed nets is illegal
- Those who use bed nets for fishing have an average of 3.37 children, vs 2.35 for those who do not
  - Unadjusted analysis suggests this is a statistically significant difference ( $p = 0.015$ )



# Discussion

- LTFHC has observed bed nets being used for fishing in Tanzania and the DRC
- Our cluster survey indicates this might be a common problem in the Lake Tanganyika Basin and possibly other lakeside communities
- We are concerned about the potential impact of this continued practice
  - The fish supply in Lake T feeds 12 million poor villagers
  - Insecticides could pollute the water
  - Bed nets may not be the most effective choice for malaria prevention in waterside communities





# A Way Forward?

- Further studies are clearly indicated
- Insecticide treated window/wall/door coverings?
- Community education regarding the harms of fishing with bed nets?
- Address hunger?



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