

A young boy stands in the center of a rural landscape, holding a wooden staff. He is surrounded by three oxen: a black and white one on the left, a brown one in the middle, and a dark one with large horns on the right. The background shows rolling green hills under a clear sky.

# Targeting Vector Control for High Risk Agricultural Workers and Cattle Herders

Alliance for Malaria Prevention


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**Jerobeam Hamunyela (MoHSS Namibia)**


**Cara Smith Gueye, University of California, San Francisco (UCSF)**

# Outline

- High risk populations surveillance and response overview
- Formative assessment: Methods, results and recommendations
- Demonstration project: Methods and preliminary findings



# High Risk Populations Surveillance and Response: Overview



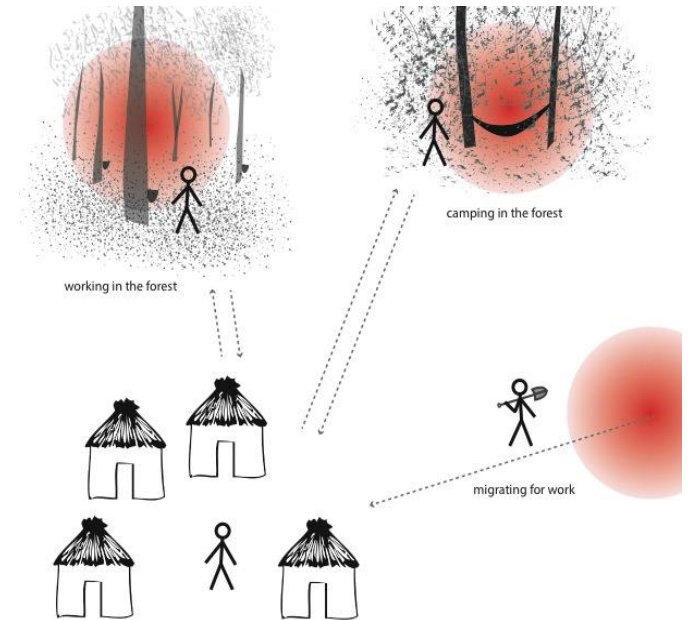
# High risk populations

As malaria transmission declines, the risk of infection becomes clustered in specific geographic areas and population groups.

- **High-risk populations:** defined by shared socio-demographic and behavioral risk factors that place them at a higher risk of malaria infection

## The challenge:

- Low or no access to malaria prevention and care services – an equity problem
- Persistent challenge facing malaria elimination programs
  - May seed or sustain malaria transmission in some areas, higher morbidity and mortality
  - Mobile and migrant populations (MMPs) and cross-border travelers
- NMCPs frequently request technical assistance addressing these populations



# Approaches for High Risk Populations

- UCSF's HRP Guide and the GFATM and RBM Malaria Matchbox Tool provide approaches
- In Namibia we applied the HRP Guide – the approach:
  - Assemble knowledge/data on high risk population profiles (who, where, when, how to target) (Formative assessments)
  - Identify risk factors for malaria infection (Epidemiological studies)
  - Pilot interventions targeting high risk populations with measurement of impact (Epidemiological pilot studies)
  - Adapt surveillance and response strategies based on findings (Policy and/or implementation changes)

## UCSF's HRP Guide



## End targets for HRP surveillance & response

- Well-characterized HRPs and exposure profiles
- Tailored **intervention packages** that address key exposures and needs of population (including indoor and outdoor exposures)
- Demonstrate **programmatically feasible and impactful approaches** to increase access to malaria prevention, diagnosis and treatment in HRPs

**Fill gaps in intervention coverage and eliminate malaria transmission**

# Namibia

- Malaria transmission centered in the north
- Focus on districts of Zambezi and Ohangwena, where previous research was conducted
- High Risk Populations believed to be cattle herders and learners
- Gaps in intervention coverage

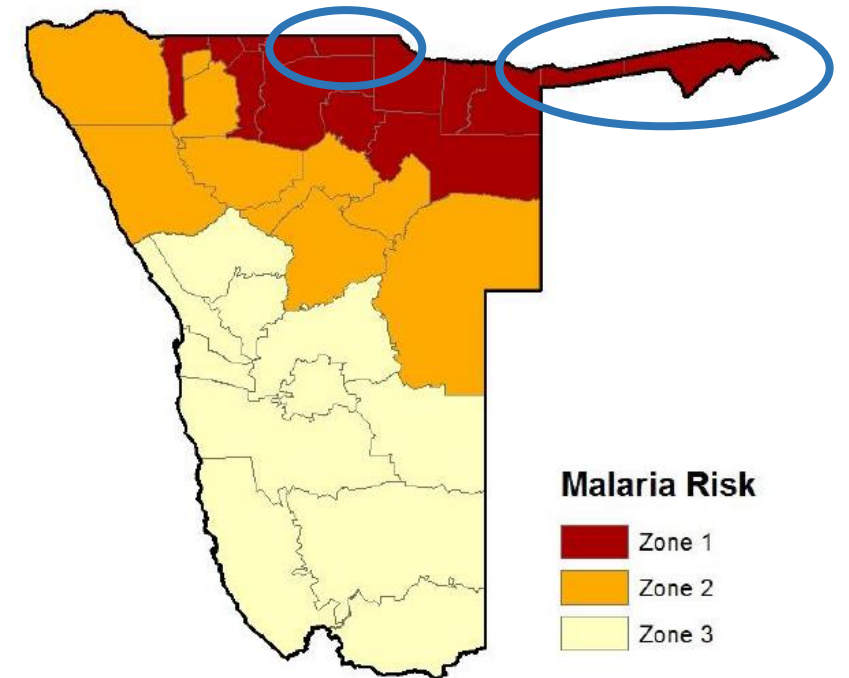


Figure 2: Risk Zones in Namibia, by district<sup>2</sup>



# Formative Assessment - Zambezi Region



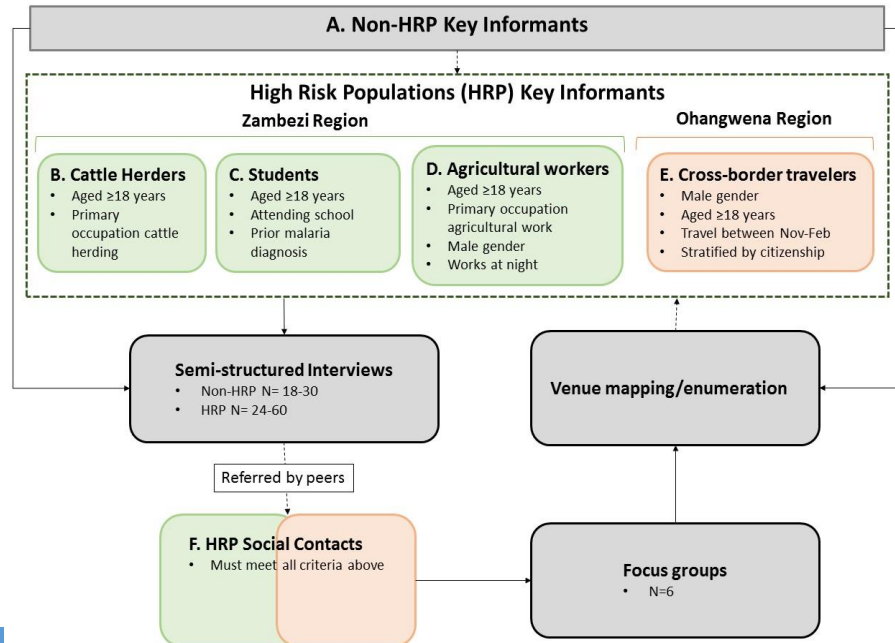


# Formative Assessment

## Methods

Aim: Collect information on priority HRP groups (which are based on prior case control study): Cattle herders, Agricultural workers, Learners. Assess barriers to accessing treatment and interventions and operational information to tailor strategies

1. Retrospective data review
2. Key Informant Interviews, FGDs and Venue Mapping



## Results

Consistent high risk populations/activities

1. Cattle herders
2. Agricultural workers
3. Learners

High indoor and outdoor exposure

- Spend time outside during mosquitos biting time without using prevention measures
- Poor housing conditions
- Evening studies in classrooms non sprayed
- Low IRS coverage
- No or low LLIN ownership and use

Access to prevention and care

- Limited access to health care (distance, cost, long wait)
- Low IRS coverage and no/low LLIN ownership and use

# Formative: Feedback and decision making

## Workshops

- Detailed report
- Results workshop with regional and national level teams
- Joint development of protocol for demonstration project to evaluate the impact of targeted strategies for these populations



## Priority development:

- Cattle herders and agricultural workers
  - High mobility early and throughout the season, more xborder travel
  - Perceived to be source of infections
  - High exposure (indoor and outdoor)
  - Limited access to healthcare
- Interventions/policy gaps
  - Mapping and enumeration
    - Many new and unknown farms
  - Mop up IRS
    - Low IRS coverage ( houses locked or not sprayable)
    - Timing of IRS missing HRP
  - LLIN distribution
    - Low LLINs ownership and use
  - Topical repellents
  - RACD and presumptive treatment
    - Limited access to health services



# Pilot Demonstration in Zambezi Region



# Design of demonstration project

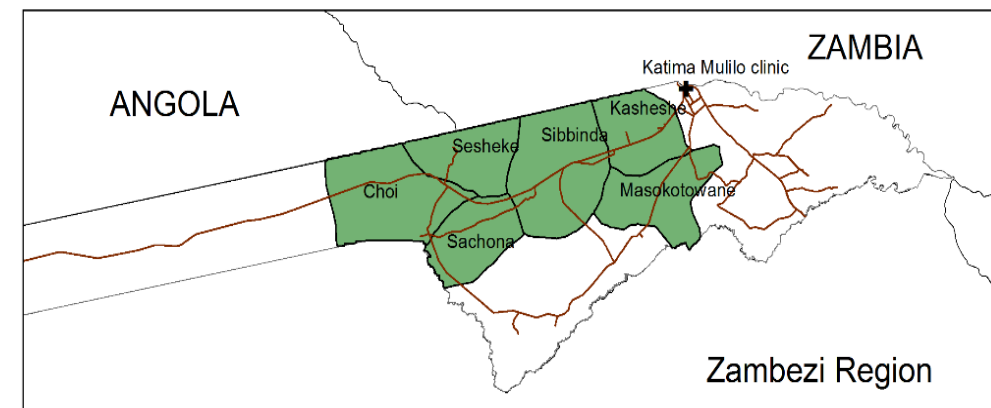
**Aim:** Determine the feasibility and effectiveness of targeted delivery of malaria interventions (including presumptive treatment and enhanced vector control) to high-risk cattle herders and agricultural workers for improving intervention coverage and reducing the prevalence of malaria within the target population in northern Namibia.

Sites: 3 intervention HFCA; 3 control HFCA

Target population: Cattle herders and agricultural workers

Period: November 2019 – June 2020

Also: mapping/enumeration, GPS loggers, entomological assessments



# Vector control interventions and distribution strategy

Intervention	Product, Manufacturer	Eligibility
IRS (mop up)	Actellic <sup>®</sup> 300 CS	All sprayable structures, tarps and tents in locations not covered by primary spray campaign.
Presumptive treatment	Komefan 140 <sup>®</sup> , Mylan Laboratories Ltd.	<p><b>Agricultural workers:</b> Works as an agricultural worker and slept regularly at a farm located within an intervention health facility catchment area over the past week</p> <p><b>Cattle herders:</b> Works as a cattle herder and slept regularly at a cattle post located within an intervention health facility catchment area over the past week</p>
LLIN	<a href="#">Olyset<sup>®</sup> Plus, Sumitomo</a>	<p><b>Agricultural workers:</b> Slept regularly at a farm located within an intervention health facility catchment area over the past week or will do over the next three weeks</p>
Topical repellent	Autan <sup>®</sup> , SC Johnson	<p><b>Cattle herders:</b> Works for a cattle post owner based in an intervention health facility catchment area</p>
Malaria education		



# Preliminary Findings

Analysis underway



# Other (important) learnings

- Operational information
  - Population size estimation is critical for program planning
  - Timing of intervention is crucial for a better coverage
  - Employers, village headmen, Health Extension Workers (CHW) are channels to best reach HRPs
- Acceptability of interventions
  - Targeted delivery of malaria interventions to HRPs is feasible and acceptable
  - Qualitative data collection with HRPs, employers, CHW and health workers regarding acceptability of interventions
- Operational feasibility
  - Qualitative data collection regarding feasibility (to be analyzed) - cost, timing, access

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- Community leaders/Employers/Owners of cattle posts/farms
- Traditional and political authorities
- Study team
- UCSF: Dr. Jenny Smith, Dr. Henry Ntuku, and many others





Thank you!

