Drone Application of Larvicides in Madagascar

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U.S. President's Malaria Initiative

U.S. PRESIDENT'S MALARIA INITIATIVE

vectorlink

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Objective

- Assess the feasibility of larval source management (LSM) as a complementary vector control tool to LLINs in Madagascar from 2021 to 2023.

- Does complementary LSM of aquatic habitats / rice fields in combination with pyrethroid-only LLINs provide additional control of malaria vectors in Madagascar by reducing larval and adult densities?

- Does complementary LSM reduce transmission of malaria?

General Overview

- SIEE (Supplemental Initial Environmental Examination) approved
- Mapping through Geospatial assessment of the presence / absence of larval habitats and quantification of the area of larval habitats
  - Ensure that the appropriate volume of larvicide is acquired by VectorLink and used to cover the entire water surface.
- Larviciding via drones in 2 districts with high malaria prevalence where irrigated rice fields are common larval habitats
  - Morombe (6 fokontany)
  - Ankazobe (11 fokontany)
- Using Bti (Bacillus thuringiensis israelensis) on vector populations
- All breeding sites located within 1 km of the fokontany
- Frequency of larviciding: twice a month

Map of Intervention Areas

Evaluation Criteria

Entomological Monitoring:

- Density of adult *Anopheles* indoors and outdoors using human landings captures (HLC) and CDC light traps
- Human biting rates
- Larval density
- Sporozoïtes rates

Epidemiological Monitoring:

- Malaria Case Incidence based on the number of cases confirmed using rapid diagnostic tests (before and after the intervention)

Evaluate the cost, logistics and cost-effectiveness of LSM in Madagascar

Qualitative Study for the Acceptability of LSM

- Collect data on perceptions and behaviors of the target population

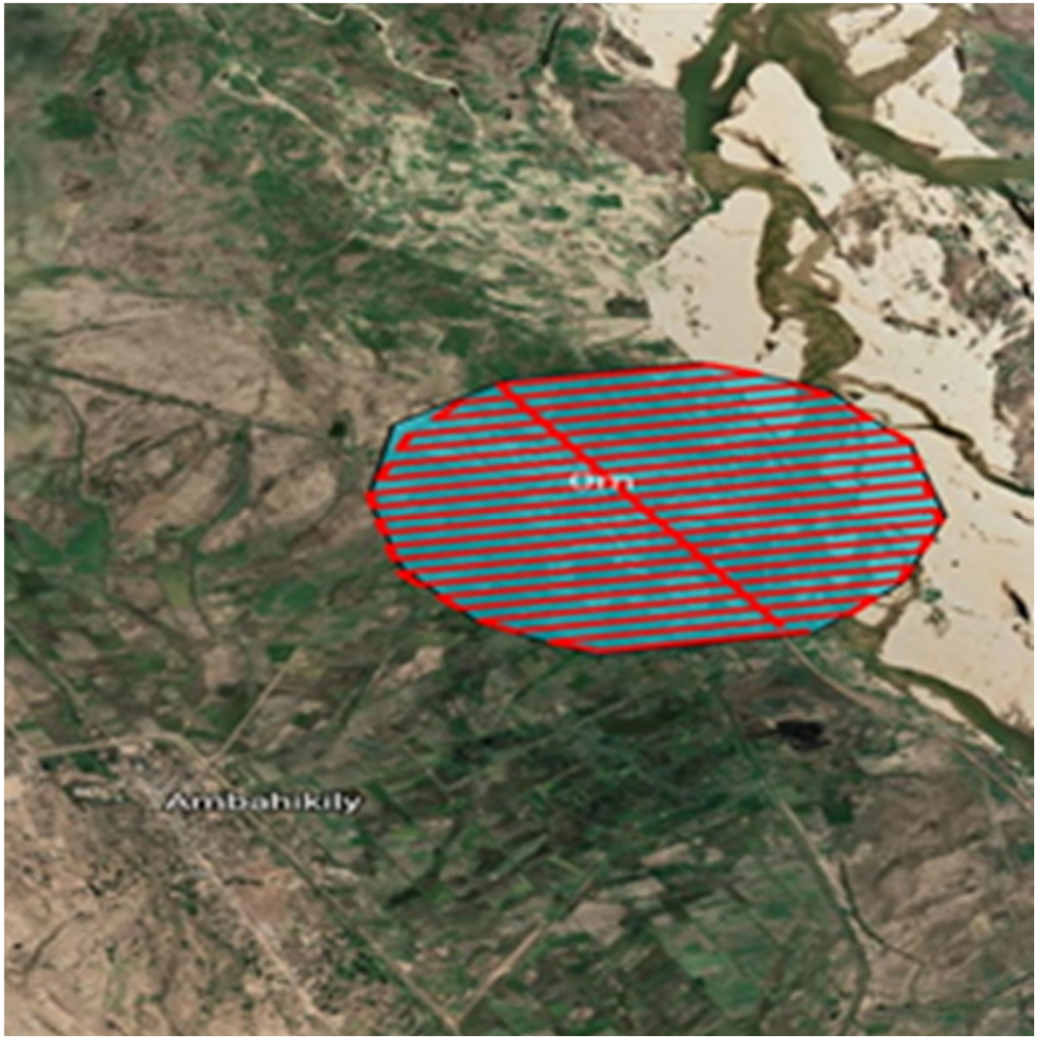
VectoBac WDG Storage

Advocacy Meetings

Mobilization Activities

Field Testing

Mapping Drone Operation



Mixing of Bti

Larviciding Operations

Entomology Activities

Challenges