Implementing Partners

MINISTRY OF HIGH EDUCATION, SCIENCE, TECHNOLOGY AND INNOVATION

PROVINCIAL HEALTH CABINET OF HUILA

Technical Centre for Agricultural and
Rural Cooperation (CTA)

Huíla is a province of Angola.
It has an area of 79,023 square kilometers (30,511 sq mi) and a population of 2,354,398 (2014 census);

- 14 Municipalities;

- Lubango is the capital of the province.

Current Challenges in
Vector Control planning and monitoring

▶ "Time-Person-Place" epidemiology triad

▶ When & Who &Where & How (paper trail)

▶ Been there, done that? - Accountability

▶ Limited resources

▶ Impact monitoring and evaluation

▶ Resistance monitoring

▶ Literacy and HR rotation

▶ Location Accessibility

Precision Public Health vs. Precision Agriculture

- "The application and combination of new and existing technology which more precisely describe and analyse individuals and their environment over their life course, to tailor preventive interventions for at risk groups and improve the overall health of the population" – Precision Public Health, Tarun Weeramanthri, et.al. Frontiers in Public Health 2018.

Precision Public Health vs. Precision Agriculture

▶ Precision agriculture means application of precise and correct amount of inputs like water, fertilizer, pesticides etc. at the correct time to the crop for increasing its productivity/health and maximizing its yields based on over time observations. Precision agriculture management practices can significantly reduce the amount of crop inputs used while boosting yields. Farmers thus obtain a return on their investment by saving on water, pesticide, and fertilizer costs.

Precision Public Health vs. Precision Agriculture

- Tools available
  - Remote sensing : satellite imagery, drones;
  - Geolocation: GPS sensors;
  - Communication : cellular network, tablets, smartphones;
  - IT: data collection tools, data sets, software analysis, AI and machine learning;

Conventional Vector Control Activity Programming Cycle

- Malaria case numbers from Health Facility Registers collected on the monthly basis (not always);

- Monthly activity programming according to case numbers and resource and equipment available;

- Daily paper reporting from Municipal Vector Control Team to Municipal Malaria Supervisor and on a monthly basis sent to Provincial Level (not always)

- Provincial level compiles and shares with National level (paper report)

- From field to NMCP 2 month in paper format;

- Monitoring via Malaria case numbers increase or reduction.

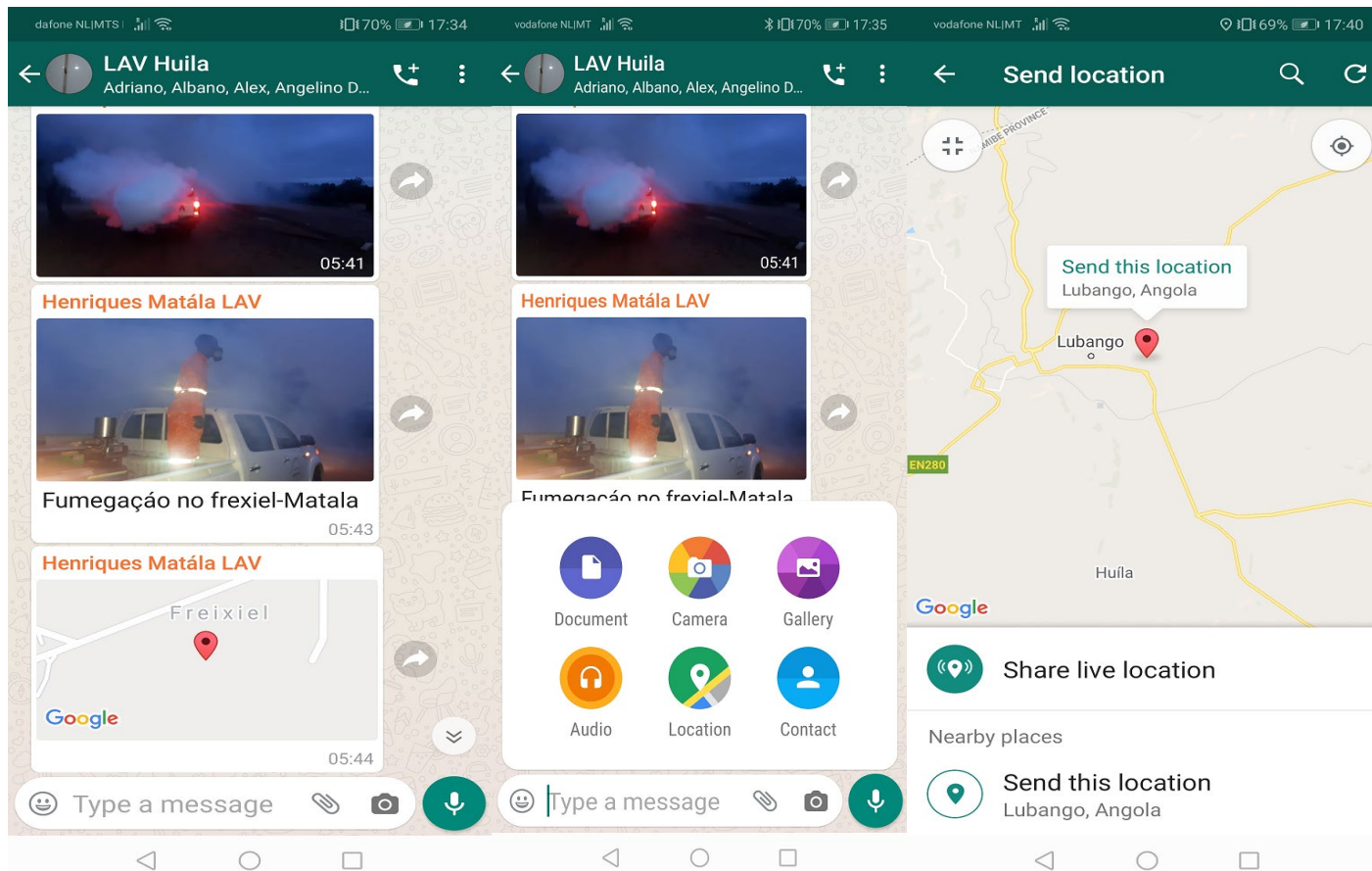# Pilot Project Vector Control Activity Programming and Monitoring Cycle

- Malaria case numbers from Health Facility Registers collected and reported **daily** from Health facility to Municipal Level and shared **weekly** with Provincial level in Excel created table;

- **Weekly** activity programming according to case numbers, resource and equipment available;

- **Live** field reporting from Municipal Vector Control Team via WhatsApp group on daily activities with images and geolocation which allows to instantly evaluate work plan execution and correlate with epidemiological data;

- Provincial level compiles **daily** Vector Control reports and builds visual maps that are shared with all levels;

- From field to NMCP and the world daily;

- Monitoring of activities per category i.e. breading site location, type of vectors; vector control activities: fumigation, larvicide application, IRS application and LLIN distribution; IEC activities and case numbers increase or reduction evaluated and graphically visualized on weekly basis per neighborhood.

Pilot project Vector Control Activity tools used

▶ Cellphones with data enabled with WhatsApp Using Attach=> Location=> Send Your Location option ;

▶ GPS tracker equipped vehicles and motorcycles;

▶ Drones for fast community evaluation and potential breeding site identification (actual number of households, standing water, waste dumps etc.);

▶ Computers with Excel for data collection, reporting and visualization with time scale on Map 3D (Excel 2016);

▶ QGIS, Agisoft Metashape for community base map (orthofotoplans) creation using drone collected images;

ANTI VECTOR

CONTROLO INTEGRADO DE VECTORES

CONTRIBUINTE 5417207632

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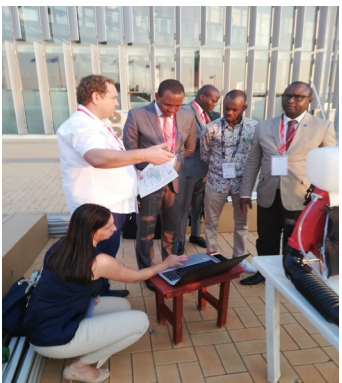
Pilot project Vector Control Activity tools used

▶ Satellite images (Google Maps, Bing) and UAV (Drone) images and videos for fast spatial community evaluation and potential breeding site identification (actual number of households, standing water, waste dumps etc.);

Pilot project Vector Control Activity tools used

► Computers with Excel for data collection, reporting and visualization with time scale on Map 3D (Excel 2016);
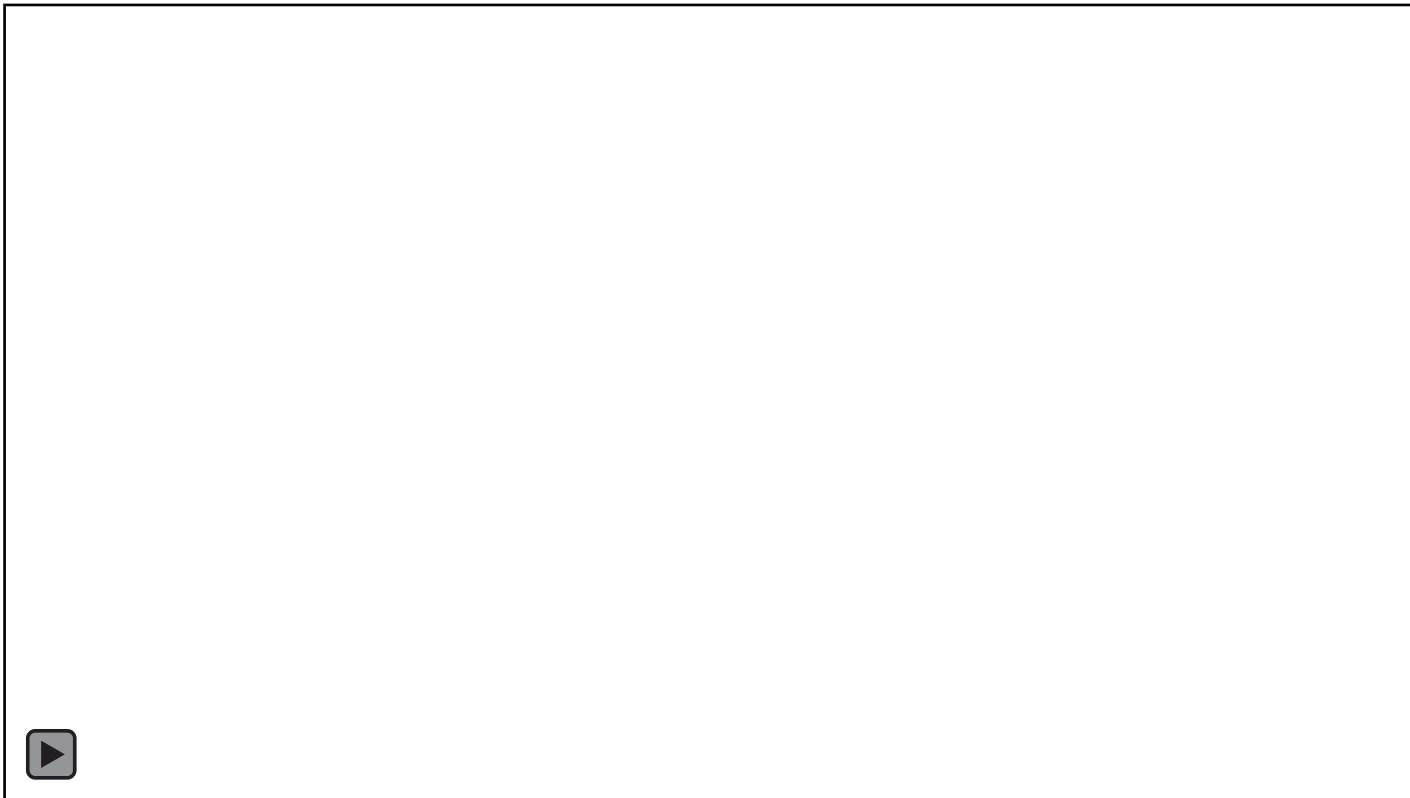
Pilot project Vector Control Activity tools used

- QGIS, Agisoft Metashape for base map creation based on drone captured images;

Results obtained

▶ Real time field data easily processed and shared;

▶ Improved operational organization of Vector Control Activities;

▶ Accountability;

▶ Shaped to scale interventions based on real time data;

▶ Low cost easily set up model;

▶ Breading site interactive database.

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THANK YOU

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