

Contrasting features and opportunities for 'One health' infectious diseases surveillance system in Tanzania

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Passive Disease Surveillance in Tanzania

- **Human health:**
 - Integrated Disease Surveillance and response System is health facility based
 - Structured weekly and monthly reporting for specified diseases/syndromes
- **Animal health:**
 - Outreach system through community based animal health assistants and auxiliaries
 - Reporting is monthly, in principle
 - **But:** reporting from wildlife is erratic

Current system for primary disease surveillance in Tanzania



Primary outreach point for
community based surveillance



Primary surveillance point,
i.e. Health facility

Similarities in disease surveillance structure

Level	Animal Hlth sector	Human Hlth Sector
Peripheral (Community)	Farmers & Community-based CBAHWs	Community-based CORPs
Peripheral (Village & Wards)	LFOs & WAEOs	Health facilities (disp, hlth centres & hospitals)
Intermediate (District)	DVO/DALDO	DMO
Intermediate (Region/Zone)	VICs	RMO
Central (Ministry)	National Epi Section (NES)	National Epi & Disease Ctrl Section + Hlth Information and Research section
Regional/International	AU/IBAR, SADC, EAC, OIE	WHO, EAC

Data management systems

- **Public Health:**

- Excel with limited mapping capability but migrating to integrated database with enhanced mapping facility through Phone-for-Health

- **Animal Health:**

- GIS driven database with mapping and analytical capacity (FAO TADInfo system) - livestock

- **BUT:**

Challenges in Disease Surveillance: Current Status

- Compartmentalization in specific health sectors (human vs animal); yet >70% of EIDs are zoonotic
- Not designed to capture unknown disease conditions
- Information transmission is paper-based, can lead to >5 months delay before reaching national epidemiology units
- Predominantly passive surveillance is practised
- Difficult terrain and communication problems

SACIDS Approach

- Enhance capture of disease events at source (Community)
 - Adoption of Participatory Epidemiology in disease surveillance
 - Community-based Active Surveillance System (CBASS)
 - District Passive surveillance system (DPSS)
 - Adoption of ‘One Health’ approach for infectious disease surveillance
 - Apply mobile technologies to enhance capture, transmission and processing of disease data
 - Android driven Mobile Phones (Google G1, HTC Alcatel OT-980 & Huawei VF 845)



Disease surveillance terrain: Ngorongoro



Hands-on experience in Tanzania



EpiCollect

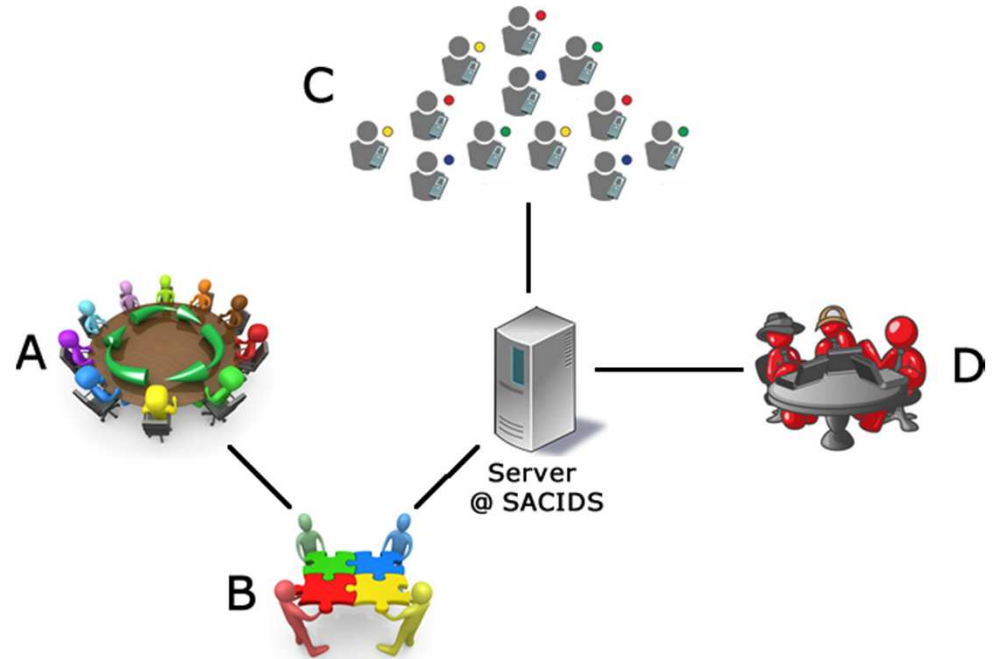
<http://www.epicollect.net/>

- **What is EpiCollect**
 - An application for android phones
 - Acts as a digital form for collecting data via mobile phone
 - Developed at Imperial college
- **How SACIDS uses EpiCollect**
 - Collecting human and animal data
 - Send this data to our servers
 - Any kind of surveillance data maybe collected using these digital



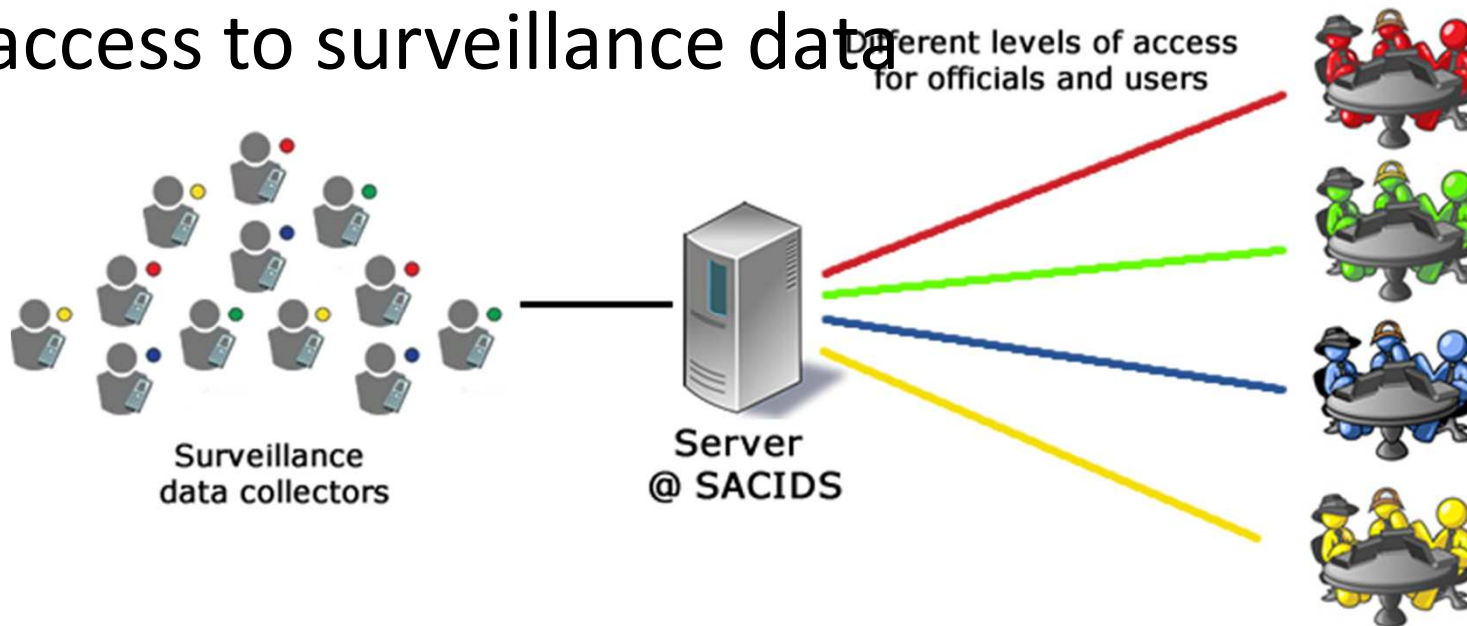
Our Current Setup

- A. Task team from **PUBLIC** and **ANIMAL** Health designed surveillance forms
- B. Digitized forms & uploaded to server (imperial + SACIDS)
- C. Users download form to their phones
 - Conduct survey using forms
 - Synchronize survey data to server



Next step

- Provide different officials different levels of access to surveillance data



Piloting application of Android phones/EpiCollect in resource mapping

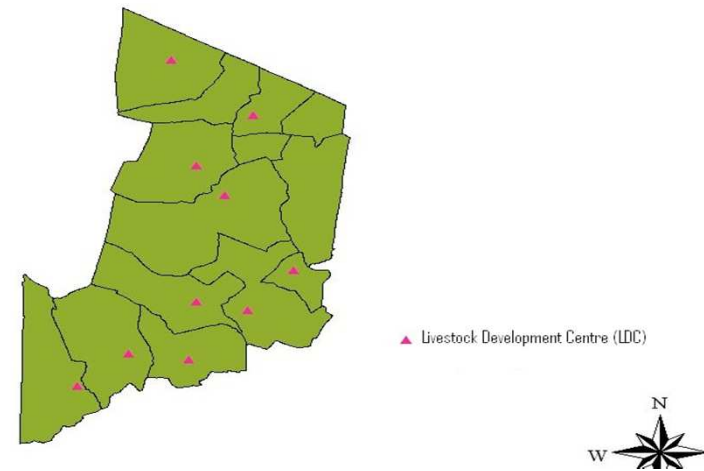
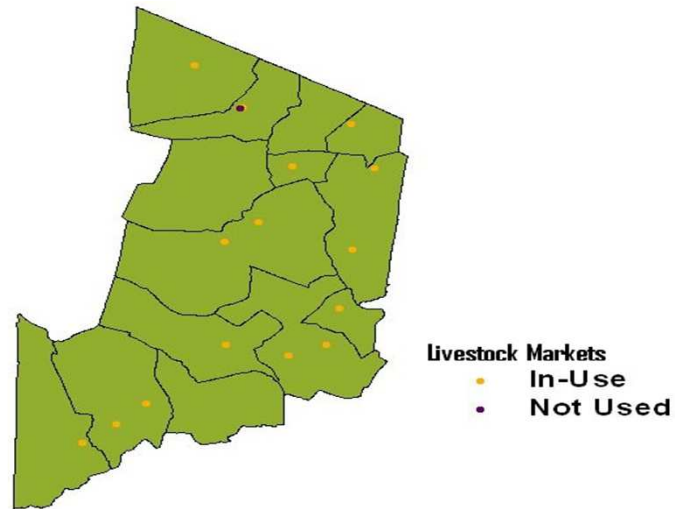
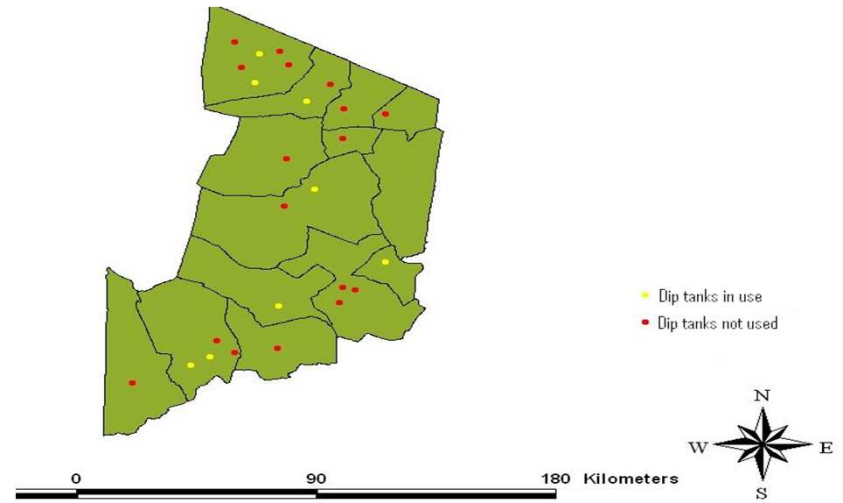
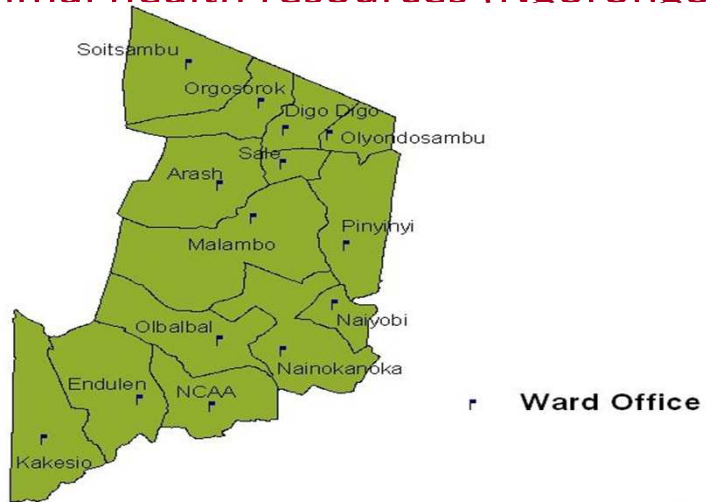
The screenshot displays the EpiCollect Server web application interface. The browser window title is "EpiCollect Server - Home - Windows Internet Explorer". The address bar shows the URL: <http://www.epicollect.net/project.html?name=HealthFacilityResources>. The page header includes the EpiCollect logo (with "BETA" in blue) and the title "HealthFacilityResources".

The main content area is divided into several panels:

- Navigation:** A list of facility types: dispensary, hospital, dispensary, dispensary, dispensary, dispensary, dispensary, dispensary, dispensary, dispensary, dispensary, hospital, dispensary.
- Map Panel:** A Google Earth map of Tanzania showing various locations. Markers are placed on the map, primarily in the northern and southern regions. The map includes labels for "Serengeti National Park", "Tsavo East National Park", "Tsavo West National Park", "Mombasa", "Tanga", "Zanzibar Town", and "United Republic of Tanzania".
- Chart View:** A pie chart titled "Type Visited" showing the distribution of facility types. The legend includes: dispensary (dark blue), medical (green), livestock (red), other (orange), hospital (light blue), and healthcent (purple).
- Owner of Facility:** A section for displaying facility ownership details.
- Time Slider:** A horizontal slider showing a time range from "Wed Apr 28 10:37:57 UTC+0300 2010" to "Tue Jun 8 14:27:33 UTC+0300 2010".

The bottom of the browser window shows the Windows taskbar with the "start" button, several open applications, and the system tray displaying "Internet", "125%", and "1:57 PM".

Animal health resources (Ngorongoro)



Acknowledgements



Thank you