



The Alliance for  
Malaria Prevention



Alliance pour la  
Prévention du Paludisme

## Campaign Digitalization Meeting

Réunion sur la numérisation des  
campagnes

Lunch Break

Pause-déjeuner

We will return shortly

A tout à l'heure



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**REPÚBLICA DE MOÇAMBIQUE**

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**MINISTÉRIO DA SAÚDE**

**DIRECÇÃO NACIONAL DE SAÚDE PÚBLICA**

**PROGRAMA NACIONAL DE CONTROLO DA MALÁRIA**

# Findings from the Digitalization of Multiple Malaria Campaigns with a Common MOH Platform: Impact, Costs and Lessons

Mariana da Silva

April 2025



# The Malaria Campaign Landscape in Mozambique

Given the epidemiology of malaria in the country a variety control and prevention strategies are implemented at scale through mass campaigns; recent efforts have focused on their digitalization.

## Malaria in Mozambique:

**3.5 %**

Of global malaria cases occur in Mozambique

**5<sup>th</sup>**

Place in malaria cases, worldwide

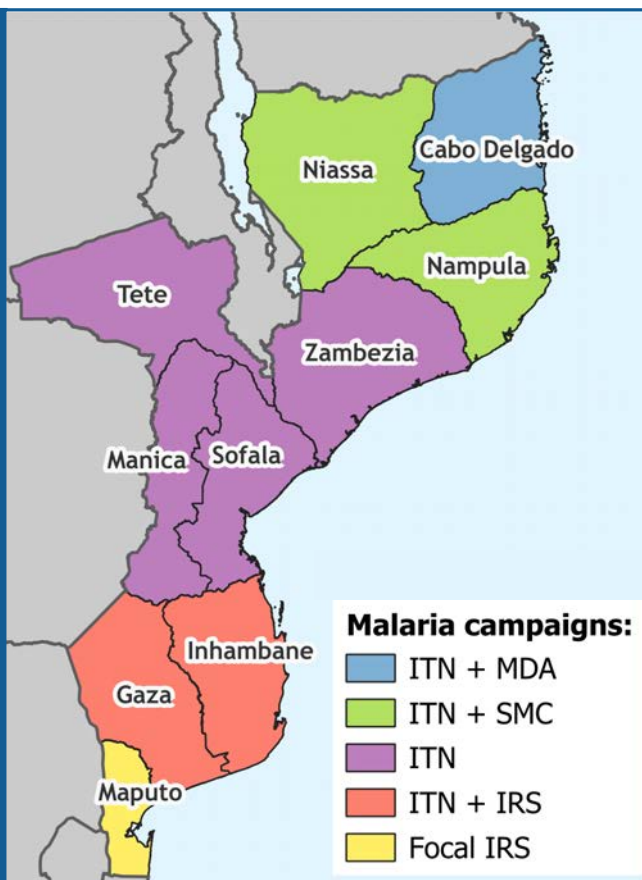
**275**

Incidence per 1,000

**6<sup>th</sup>**

Place in malaria deaths, worldwide

(WMR 2024)



## Mass Drug Administration

- Used as an emergency response measure.
- First digitalized in **2020**, through SurveyCTO + PowerBI



## Insecticide Treated Nets

- Main prevention strategy in the country.
- First digitalized in **2022-2023**, with:
  - DHIS2 (7 provinces)
  - SALAMA (2 provinces)



## Seasonal Malaria Chemoprevention

- Strategy for highly seasonal provinces.
- First digitalized in **2024**, using SALAMA



## Indoor Residual Spraying

- Used to accelerate reduction of malaria in lower burden areas.
- First digitalized in **2024-2025**, using SALAMA

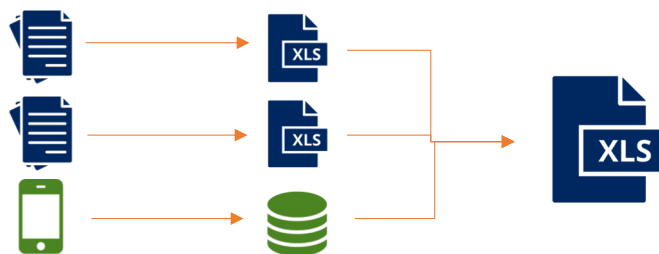


## Challenges in Campaign Management Prior to Integration

Malaria campaigns historically used distinct systems to collect, manage and visualize data, mainly relying on paper and Excel files, resulting in many inefficiencies.



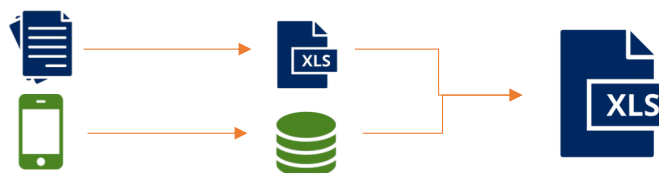
IRS



ITNs



MDA/SMC



### Operational inefficiencies

Using different tools for each campaign led to:

- Data access delays
- Duplication of effort
- Inconsistent capacity-building for staff
- Independent procurements = No hardware coordination
- Difficulties with NMDR integration
- No sharing of common goods (enumeration data, microplanning templates, village lists).



# SALAMA: Mozambique's Integrated Campaigns Platform

Following experiences with multiple digital tools, the NMCP decided to integrate all interventions into **SALAMA**: aiming to improve campaign planning & implementation through a single MOH-owned platform.



**DIGIT Health Campaign Management** (also called **SALAMA** in Mozambique) is co-created with and owned by the Ministry of Health, Moz

## Mobile data collector



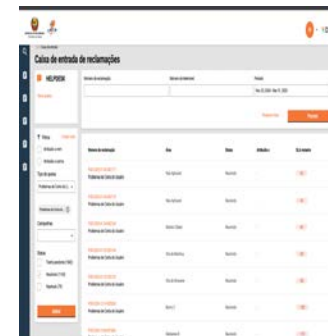
- Easy-to-use mobile app
- Guided user flows and analytics
- Simplified routine tasks with built-in error checks
- Works offline

## Dashboard for Data Visualization



- Track and monitor campaigns in real time
- Real-time data dashboards
- Track registration, service delivery, and campaign progress

## Management Tools



- Set up and configure multiple campaigns
- Staff management
- Centralized help desks and complaint management
- Easy integration with DHIS2 and other open-source products



## Ongoing Evaluation of Campaigns & their Digitalization

NMCP and partners have designed mixed-methods evaluations and embedded them onto the campaigns' lifecycles to continuously measure the impact of digitization, implementation strength, and costs.

*Campaigns:*



ITNs



SMC



IRS

*Data Sources for 2022-2024 Evaluations:*



Programmatic  
malaria data



Operational  
campaign data



Key informant &  
user interviews



Post-campaign  
household surveys



The structure for these evaluations was based around the WHO campaign digitization M&E guidance.



# Results of the Evaluations of Mozambique's Digitalized Campaigns

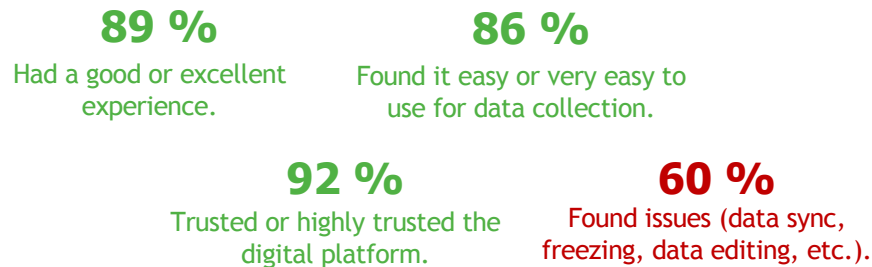




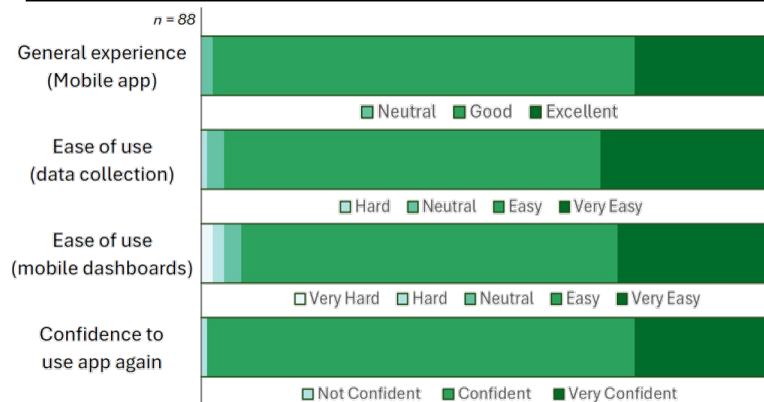
# Digitalization was Well-Received by the Users and Staff

Workers reported high satisfaction with SALAMA across campaigns, whereas the leadership of SMC noted SALAMA as a tool superior to paper for management in all examined categories.

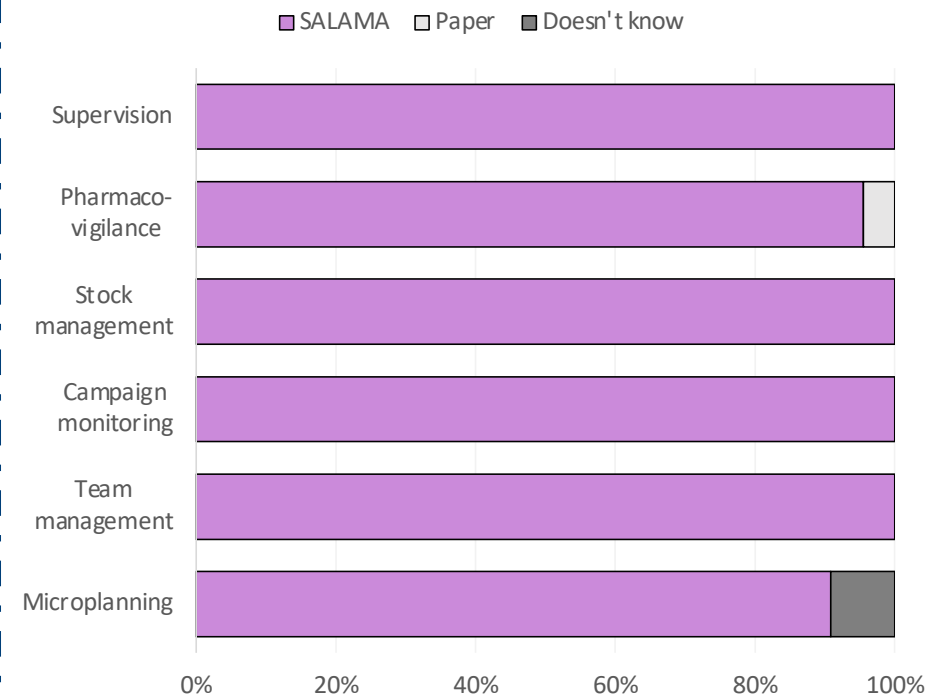
## End user opinions of SALAMA for SMC:



## ITN and SMC worker satisfaction with SALAMA:



## Data system preference of SMC leadership across categories (SALAMA vs paper; n = 24):







# The Impact of Digitalization-Enabled Data Use

A key decision during the ITN Campaign was whether to prolong the duration of distribution.



Distributions are planned to last 5 days.



As campaign data is collected, it is visible in near **real-time** in the dashboards.



During daily monitoring, staff can identify **areas with poor coverage** and request **informed** campaign extension.

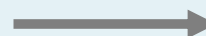


Deployed resources can continue operations in **at-risk areas**, removing the need to plan and execute mop-ups.

National ITN Population Coverage:

79%

Original campaign dates



90 %

With extension days

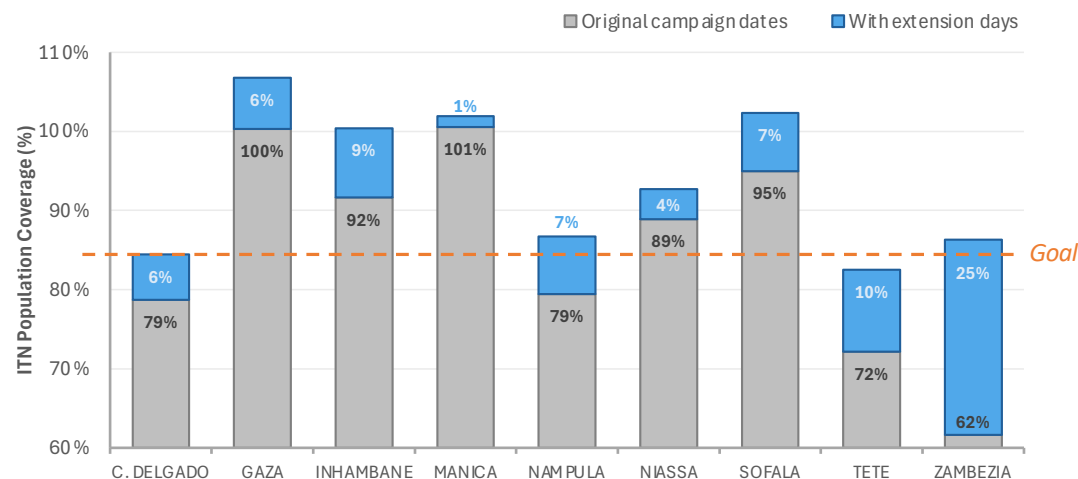
Campaign extensions were needed to reach the target coverage, and delivered:

**1,956,786 ITNs**

affording additional protection to:

**3,522,215 people**

## Effect of Campaign Extension Days on ITN Population Coverage, by Province:





# Campaigns Struggled with Inexact Population Denominators

In the absence of enumeration activities, population sizes have been estimated but this has led to some unrealistically high coverages. Post-campaign surveys were deployed to validate results.



## ITNs: Household ITN coverage estimates, 2023:

### Campaign estimate:

Sofala province:

**128%** → **96 %**

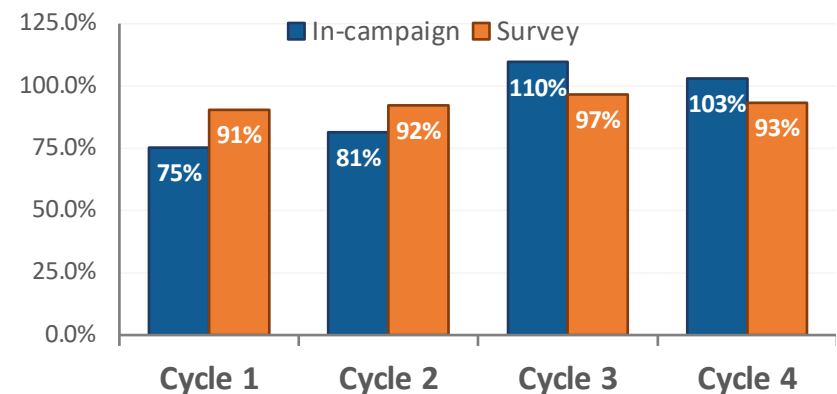
Zambezia province:

**106%** → **86 %**

### Post-distribution survey estimate:



## SMC: Coverage of children with >1 dose SPAQ per SMC cycle, 2024:



Population and HH estimates are calculated based on census, data from previous campaigns, population growth rates and local knowledge.

There is room for improvement in the approach.

Though coverages were found to remain generally high, post-campaign validation surveys (like through LQAS) were a reliable system for determining the reach of mass health campaigns.

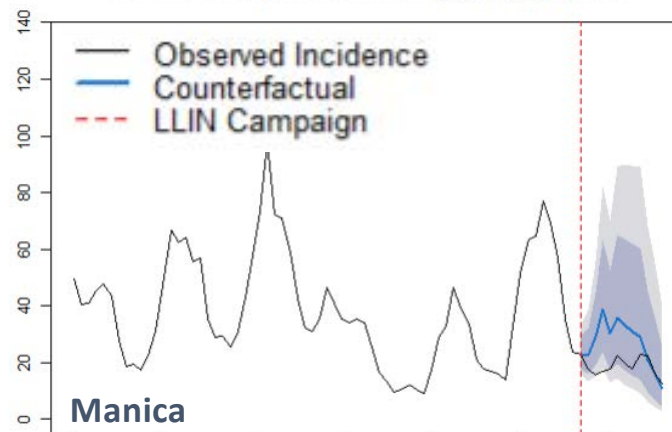


# The Impact of the Digitalized ITN Campaign

The effect of the ITN distribution campaign on malaria incidence was assessed through ARIMA modelling

Malaria incidence was modelled alongside environmental and ITN covariates to understand what incidence would have looked like in the absence of the ITN campaign.

Forecasts are limited to the 12 months following the intervention, and in **three out of nine provinces, no effect was detected.**



For example, in Manica, the **observed incidence** remains within the area of uncertainty for the **counterfactual**.

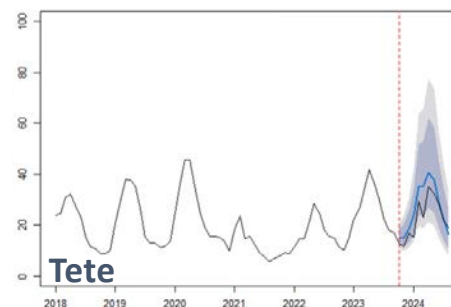
While no statistical impact was detected, cases remained very low, even during usual high-burden months.

## Other provinces without a detected effect:



Humanitarian emergencies in Cabo Delgado have disrupted access to care, intervention coverage and reporting.

**ITN coverage:** 84%



While no statistical impact was detected in Tete, cases post CCU were lower than the previous year.

**ITN coverage:** 82%



# The Impact of the Digitalized ITN Campaign

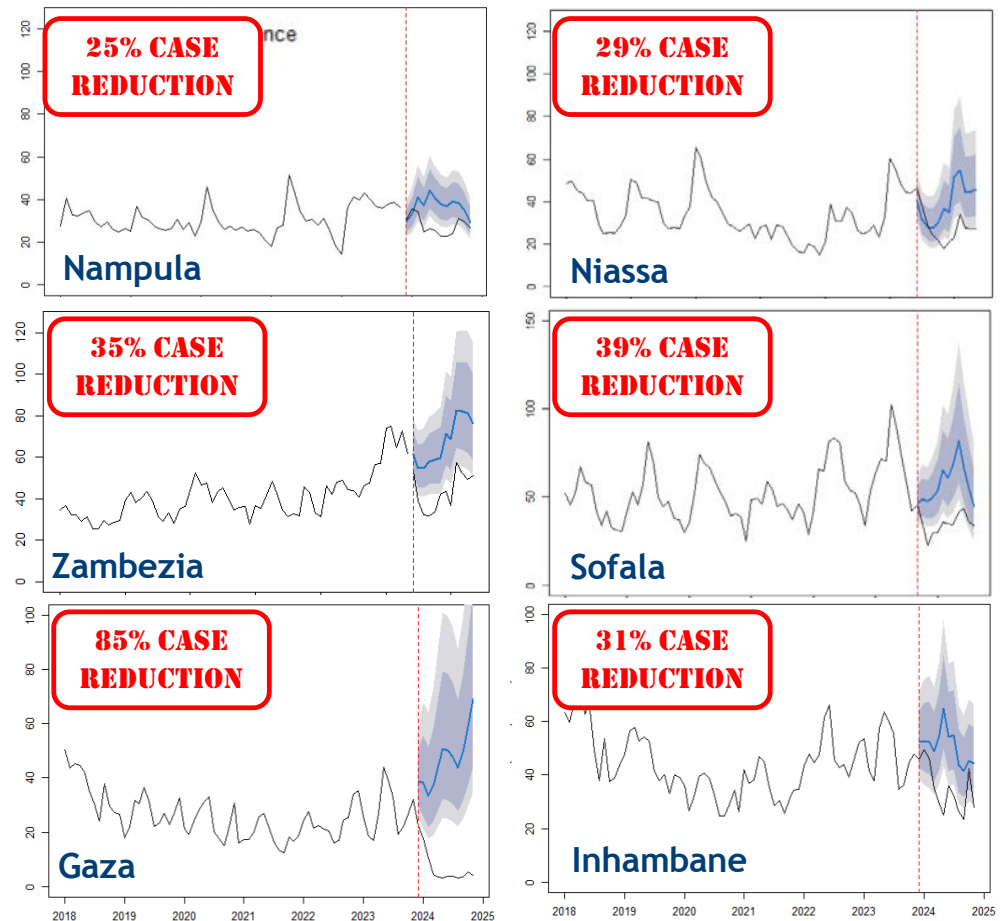
The effect of the ITN distribution campaign on malaria incidence was assessed through ARIMA modelling

But in six provinces, modelling did note that ITN distribution had a significant effect on incidence.

Cases averted in the 12 months following ITN distribution:

Province	Cases averted
Nampula	624,184
Niassa	260,543
Zambezia	1,740,748
Sofala	529,327
Gaza	637,611
Inhambane	289,793
Total:	4,082,206

Models suggest that **over 4 million malaria cases** were averted through the mass distribution of ITNs in the year following the campaigns.





## Population was Scant in Areas Missed by the ITN Campaign

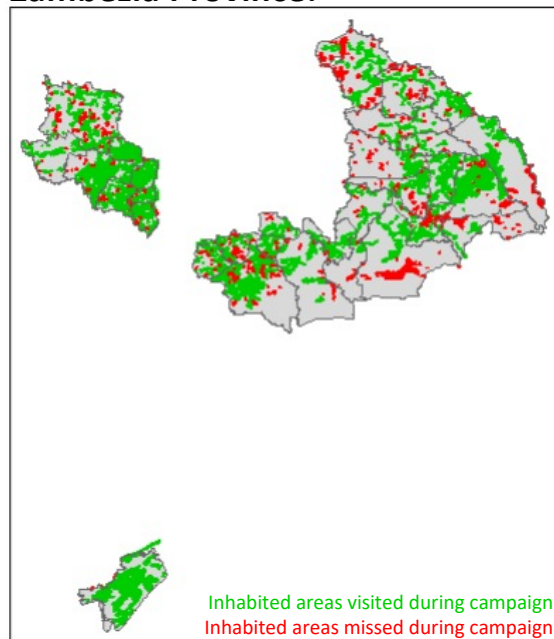
By relying on GRID3's satellite settlement data, a methodology was developed to identify potentially inhabited areas, which was then contrasted to the ITN campaign's household GPS points.

In the eight study districts, a total of 1,571 potentially inhabited areas were defined.

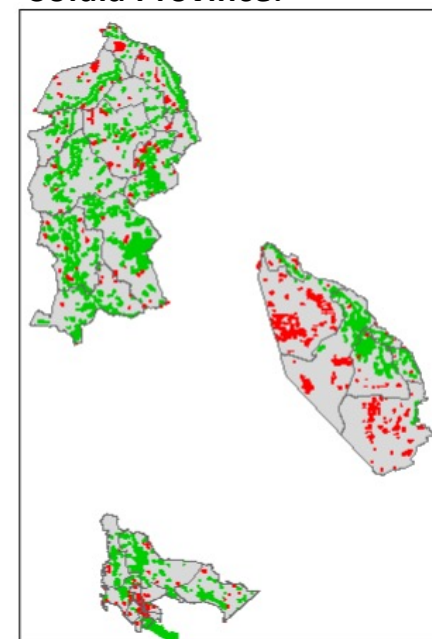
After comparing to campaign geodata, **667 of these areas (42%) were found to not have been visited during the ITN campaign.**

However, a comparison with a population layer revealed that **only 4% of the population mapped to these inhabited areas**. This suggested that missed areas may not have contributed as much to reduced coverages as missed households in visited areas.

**Zambezia Province:**



**Sofala Province:**



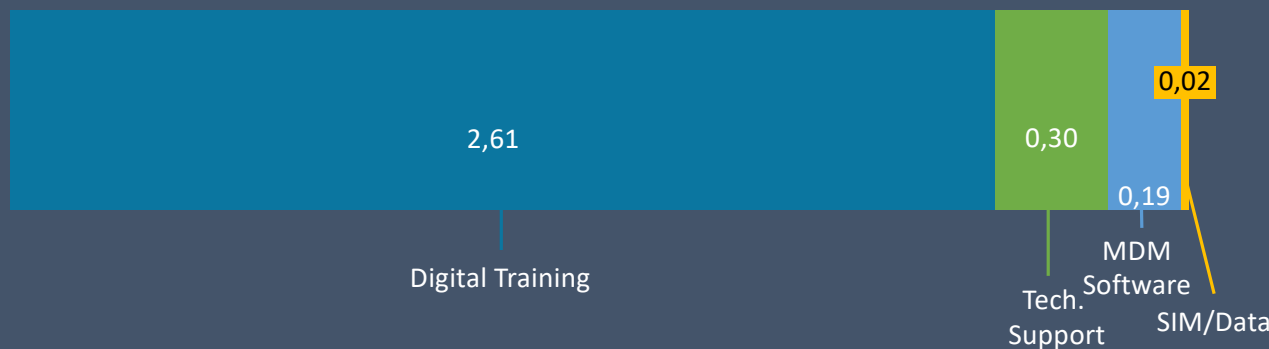
The methodology is being examined to determine how it will be used in the upcoming campaign (i.e. support microplanning or monitoring the reach of distribution).



# The Costs of Implementing Digitalization

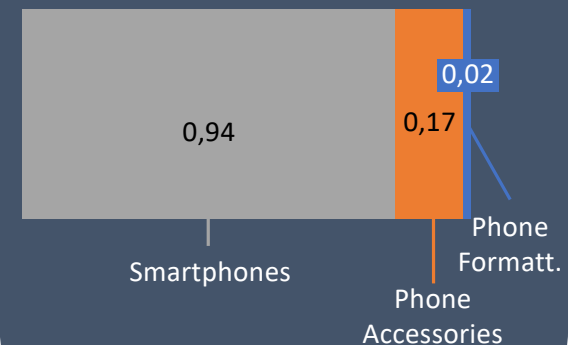
Transitioning from paper to digital campaigns required initial capital investment, but an integrated approach means that some assets are re-used and shared across multiple campaigns.

## Recurring Digitization Costs (ITN Campaign)



**\$3.12M**

## Capital Costs



**\$1.12M**

Initial investment (ITN campaign) = **\$4.25M**

Final, Estimated ITN Digitization Costs

**\$3.12M** + [**\$1.12M** x **19%**]

=

**\$3.35M**

But based on a forecast of device usage until the end of their useful lives, estimated percentage asset costs can be distributed across campaigns

Campaign	Device Usage
ITN	19 %
SMC	38 %
IRS	43 %



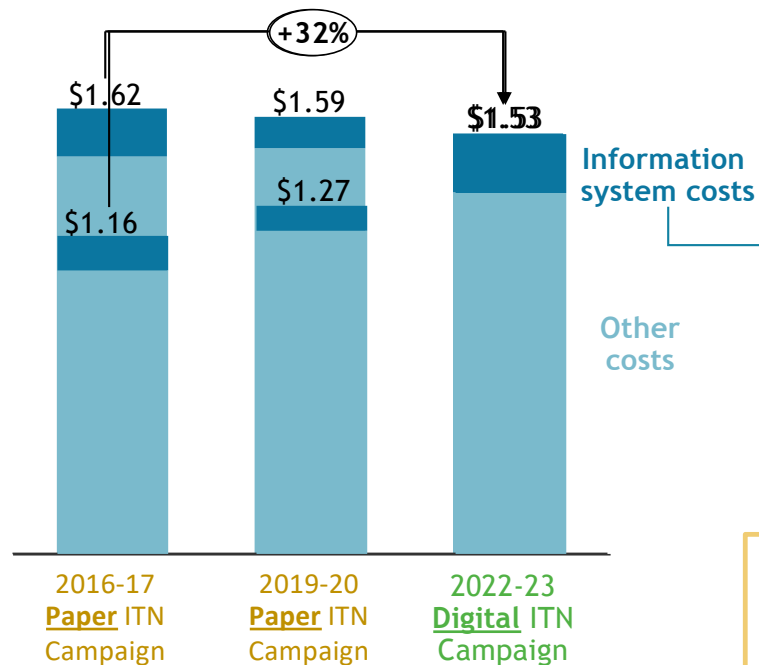


# The Costs of Implementing Digitalization

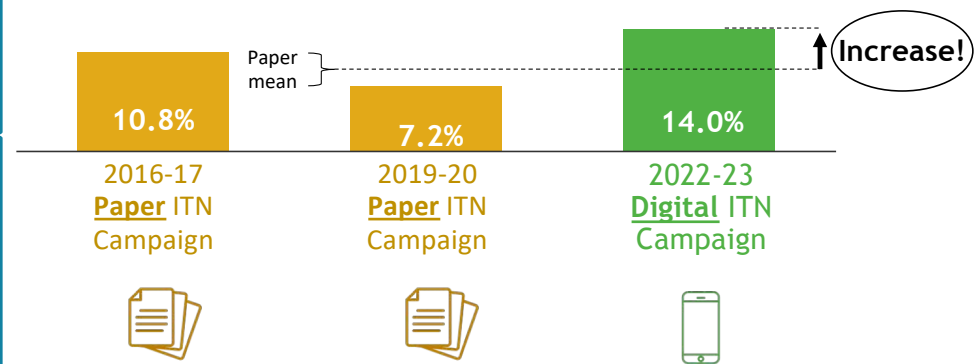
Given the considerable investment involved in the transition from a paper system, a cost analysis was carried out to assess how campaign costs had evolved over time.

Nominally, operational costs of the campaign increased by 32% from 2016 to 2022. However, when adjusted for inflation, a decrease of 5.6% was observed instead:

Campaign Campaign cost per net or inflation



Cost of Information System  
(as % of total operational costs)



In contrast to total campaign costs, the cost of the information system specifically **increased** when the campaign was digitalized. On average, this increase was only of **\$0.065/net**. The biggest driver of the increase were costs associated with worker trainings.

Although costs of the information system make digitization initially slightly more expensive, the ITN campaign cost in Mozambique has fallen when adjusted for inflation.



## Lessons Learned & Recommendations







## Toward the Consolidation of Master Datasets

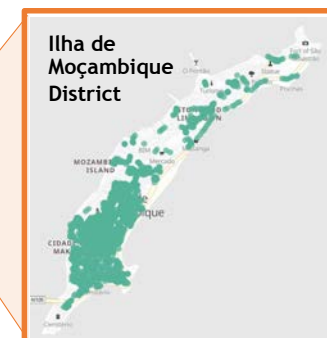
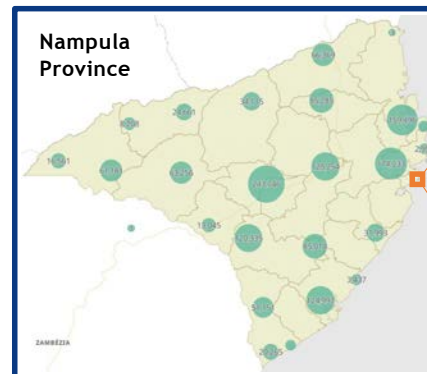
There is an ample need for updated, granular & accurate data common goods (population denominators, geolocated village lists) to support campaign planning and M&E.

Currently, an inter-institutional taskforce is now aiming to triangulate data to store in a CGR that will be fed into the campaigns' platform.



- NMCP & MOH
- Natl. Geospatial Agency
- Natl. Statistics Institute

### Geolocation of HHs Registered during the '24 SMC campaign:



In addition to census and satellite data, previous campaign data will feed the development of these master datasets, which will enable more accurate and cost-efficient microplanning processes, and will serve the needs of other campaign-implementing programs



# Worker Compensation: Digitalization of Payments

The payment module was developed in SALAMA but has yet to be used in a campaign. However, field attendance data has already started being captured through the attendance module and user activity logs in the system.

The module to capture field worker attendance was deployed in the IRS, SMC and ITN campaigns, forming the basis for payments.

A new module was developed that serve as Payment Advisor, the intent is to involve this module enabling seamless payment completion through integration with a mobile payment portal.

## Attendance Module

**Marcar Presença**  
02 Feb 2023 - Sessão da Manhã

Nome | Presença | ID

Nome	Presença	ID
Piyath HargiPal	Melo dia	08490598
Chandra	Ausente	08490598
Astrikah	Presente	08490598
Piyath	Presente	08490598
Chandra	Presente	08490598
Kishore	Presente	08490598
Nawal		08490598
Kishore		08490598
Kumar		08490598
Nawal		08490598
Nawal		08490598
Nawal		08490598
Nawal		08490598

## Module to Manage the attendance logs and payment

**MBADI HIGHLANDS (LBSRIDE KEY)**

Campaign worker	User name	Role	Number of days worked
David Davis	040-0001	Coordinator	5
David Smith	040-0002	Health Facility Worker	10
David Williams	040-0003	Coordinator	5
Emily Jones	040-0004	Coordinator	5
Emily Smith	040-0005	Healthcare Manager	5
John Davis	040-0006	Coordinator	10
Michael Jones	040-0007	Coordinator	5
Sam Smith	040-0008	Coordinator	5

**Bill Inbox**

**SMC Campaign Payments**

Country: Malawi Highlands  
Province: Grand Nio  
District: Ntcheu  
Total: 10

Approved registers (2) | Pending registers (2)

Attendance ID	Boundary	Approved by	Number of attendees
MBADI-HIGHLANDS-0001	Ntcheu	Michael Davis	5
MBADI-HIGHLANDS-0002	Ntcheu	Michael Davis	5

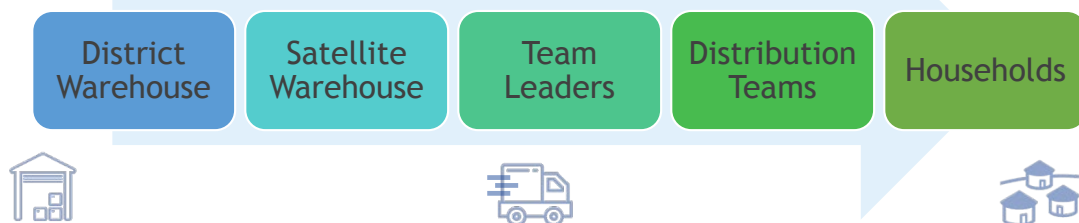
Bill generation is initiated. Please wait for sometime. You will be able to find your bill in My Bills.



# Tracking of Commodities across the Supply Chain was a Challenge

A proposed benefit of digitalization was the improvement of data completeness across the campaign supply chain, but during the first ITN digitalized experience tracking of ITNs was suboptimal.

## ITN Supply Chain:



Based on the number of ITNs shipped out of district warehouses, between **21% to 44%** of ITNs were unreported in downstream logistics forms, a **significant blind spot** to tracking resources, and an important hurdle regarding **data completeness**.

However, digital data provide granularity not previously available, which can help us specifically track which users and warehouses are reporting, misreporting and not reporting.

## Campaign Groups 2-5:

ITN Supply Chain Step	ITNs	ITNs (%)
District warehouse (intake)	18,990,196	100%
District warehouse (delivered)	17,923,719	94%
Satellite warehouse (intake)	13,801,075	73%
Satellite warehouse (delivered)	12,249,044	65%
Team leader (intake)	10,010,873	53%
Team leader (passed on)	10,776,517	57%
Teams (distributed to houses)	15,599,079	82%

ITNs that were shipped out of district warehouses and toward communities

**RED:** ITNs that could not be tracked at each step of the supply chain.

ITNs that were successfully delivered to households in target communities.



# Tracking Individuals adds a Layer of Complexity

Inclusion of a unique identifier of individuals can increase the longitudinal tracking of the same

## SMC Nampula 2023/2025

- **Only 7% of children** were successfully tracked throughout the four cycles of SMC.



## SMC Niassa 2024/2025 (on going)

- **16.31% of children** were successfully tracked throughout the first two cycles of SMC

### Main Challenges :

- Lack of knowledge on how to search for and find the correct household and children in the application to reuse the data;
- Failure to down sync the data for reuse in the field.

### Improvement to help track the children

- Use of a unique identifier for children. This identifier was written in the child's card, which is given to the caregiver. And used to search and identify the child throughout the cycles.
- Focus on the reuse of data in the refreshment training between the cycles.



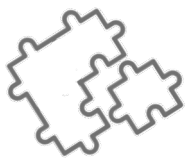


## Optimizing Management of the Digital Tool

Incorporating an iterative development process alongside the purposeful and targeted capacity strengthening of staff within the MOH are meant to ensure long-term sustainability of the digital tool.

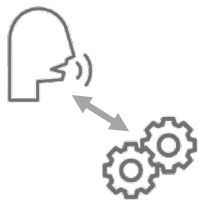
Iteration on design and operations is fundamental to maximize system usefulness and usability.

**Iteration has been informed by...**



Inclusion of new data sources and modules

Trial and error of system processes



Post-implementation user feedback

Strengthening of data use



Developing the skills of MOH staff beyond programmatic staff benefits multiple departments beyond NMCP.

**Training is being focused on...**

**NMCP and M&E staff**

Ongoing activities seek to foster a culture of data use and linking dashboards to action plans.

**IT specialists at DIS and DTIC:**

NMCP and Partners are working to upskill staff in Project Management, Helpdesk and DHIS2 Management.



# Thank you to the partners who supported the development, implementation and continued strengthening of digitalization

## Donors...



## Tech & Operational support...



## Campaign Implementers....



## And cross-cutting departments in the MOH:

- Programa Nacional do Controlo da Malária
- Departamento de Informação para a Saúde
- Departamento de Tecnologia, Informação e Comunicação



# OBRIGADO !





The Alliance for  
Malaria Prevention



Alliance pour la  
Prévention du Paludisme

## Discussion Questions & Answers

## Discussion Questions et réponses

### Remote participants:

Kindly use the Zoom Q&A feature to submit comments and ask questions, specifying the name of the speaker to whom the question is directed.

### Participants à distance :

Nous vous prions d'utiliser la fonction Q&A sur Zoom pour soumettre vos commentaires et poser vos questions, en précisant le nom de l'orateur à qui la question est adressée.

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# Coffee Break

## Pause café

We will return shortly!

A tout de suite!



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# Embracing Technology: Digitalization of Mass ITNs Replacement Campaign in Zanzibar

*Salim Faki Salim (BScENVH)*  
*Zanzibar Malaria Elimination Program*  
*Movenpick Hotel, Nairobi*



PMI

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MALARIA INITIATIVE

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THE  
GLOBAL  
FUND



# PRESENTATION OUTLINE

## **❑ Introduction**

- History background of ITNs mass campaign
- Challenges faced before mass ITNs digitalization

## **❑ Overview of campaign digitalization**

- Highlight digitalization implemented experience
- Digital tool and platform used and collaboration /partnership formed during campaign

## **❑ Improvement and Key achievement in campaign implementation due to digitalization**

## **❑ Challenges during implementation of campaign and how they were overcome**


## **❑ Lesson learned and recommendation for future digitalization in similar campaign**

# Historical background of mass ITNs in Zanzibar

- Zanzibar has implemented six rounds of MRC (2006, 2012, 2016, 2020, 2021, and 2023)
- Formerly, the ITNs mass campaign in Zanzibar was conducted traditionally
- By that time household registration, micro quantification, and ITN issuance were done manually through tough paper-based works
- After registration Beneficiaries were received a physical card to prove eligibility for ITN collection during the issuing dates



407 498



12/18

**WIZARA YA AFYA ZANZIBAR**  
KITENGO CHA KUMALIZA MALARIA ZANZIBAR

KAMPENI YA KITAIFA YA UGAWAJI VYANDARUA VYENYE DAWA YA MUDA MREFU

**DAFTARI LA KUANDIKISHIA WALENGWA**  
**WILAYA** Mtindi  
**SHEHIA** Tunduma

**KIJIJI / MTAA** BIN / CH **NAMBARI YA DAFTARI** 24

**NAMBARI YA SIMU YA SHEHA** ALI HAMDU SHIMBASI 9778 851510  
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# Challenges faced before mass ITNs digitalization

- **Manual Errors**

- Due to paper-based system during registration and issuance of ITNs

- **Delaying of Data entry**

- Transition of data from paper to digital format was led time wastage and campaign delay to some extent

- **Tracking in real-time was unavailable.**

- Tracking the number of ITNs issued in real time was challenging due to manual processes to be difficult and time waste

- **Loss of record**

- Hardcopy files were prone to be misplaced, damaged, or destroyed leading to missing of essential information campaign

- **Cheating**

- In the coupon given to registered individual eg no. 1 can be changed to 7, 2 to 8,



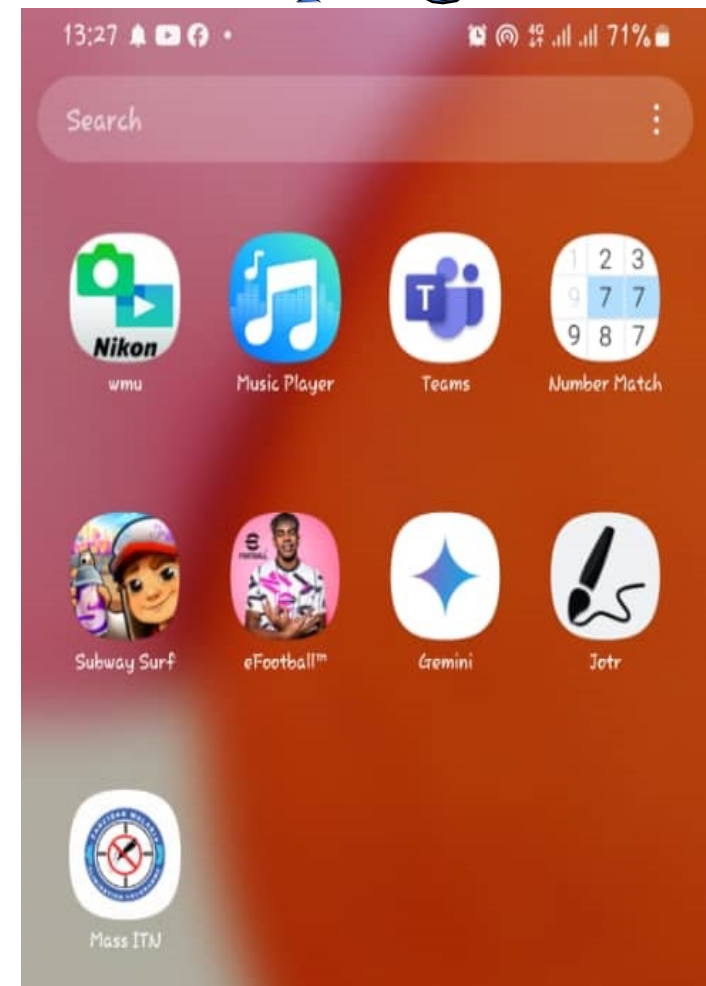
# Overview of digitalization implementation experience

- Transform from manual HH registration to electronic using smartphone devices
  - Total of 1,110 RAs to cover 2,100 distribution posts
- Mass ITNs App Dashboard - (real time track)
  - Count automatic number of HH registered and ITNs issued
  - Analysis of the entire campaign and final produce numerical report
- Quantification was done automatic rather than manual
- ITNs digital campaign was accurate efficient and real time



# Digital tool and platform used in campaign

- Android smartphone and mass ITN app downloaded from play store were fully utilized during the campaign
- Server-Data Management Systems also were used in campaign to store registration and issuance household data
- Open Data Kit: Enables offline data collection with android devices, syncing connected to the internet
- SMS based MRC was designated to remind household members
  - upcoming of the campaign
  - to be registered and
  - distribution points and issuing dates
- E-commerce mobile money such as Tigo was used for incentive payments to field workers



# Collaboration /partnership formed during campaign

- The campaign involved multiple partnerships for effective planning and ITN distribution, bringing together expertise, funding, logistics, and technology.
- Ministry of health Zanzibar (MOHZ) Lead campaign planning
- GF na PMI/USAID for funding support and ITNs procurement
- A to Z and Simba logistic for produce and supply ITNs
- Path & Digital square for technical assistance and digital innovation
- Telecom companies such as Tigo and Zantel (Yas) for support mobile transaction and SMS reminder to the household
- Blackthrough Action (BA) and CHW for mobilization and Health education about ITNs access and utilization





# **Improvements in campaign planning and implementation due to digitalization**

- **Improved Coverage Accuracy**

- Before MRC 2024 the coverage was below 80% but on MRC 2024 coverage was 99.09%

- **Improved accurate tracking of ITN distribution**

- For all previous MRC tracking of ITNs was unavailable in real time

- **Minimize fraud and duplication in ITN allocation**

- ITNs Mass digitilization was having chance to clear the multiple registration before issuance

- **Improved community participation and engagement**

- Through the digital SMS and platform for upcoming of campaign

- **Improved the ITNs supply chain and logistics to all targeted areas**

- **Improved human-related competency to use the innovation technology**

- Since all RAs used smartphone and application software to register and issue ITNs

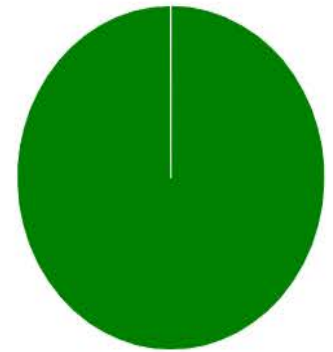
## **Comparison between the Non digitilized MRC and Digitilized MRC in Zanzibar**

- All previous non-digitilized ITNs campaign, the coverage were low, with none reaching above 81%. However, the coverage of digitalized mass ITNs in 2024 was 99.09%.
- Digitilized mass campaigns are significantly 40% faster due to the use of mobile technology to register and issue ITNs.
- Real-time tracking was available for digitilized campaigns, but it was not available for non-digitilized campaigns.
- The digitilized campaign used SMS and Instagram clips to enhance ITN utilization rates. In contrast, Zanzibar non-digitilized campaign involved the community meeting and IPC to improve the ITN use
- Results from the digitilized campaign are available on Mass ITNs software, while previous non-digitilized campaigns their recods on paper and some have been misplaced or damaged.

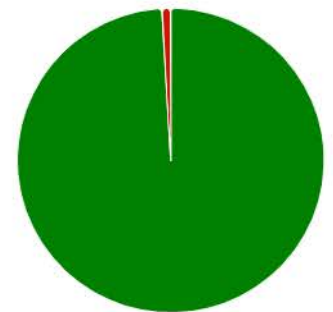
# Key achievements resulting from digitalization.

- A total of **290,203 (103.35%)** households have been registered out of target of **280,793 (100%)**
- **Moreover**, a total of 1,578,562 people were registered during the campaign
- **At the end of the campaign**
  - a total of **857,325 (99.09%)** ITNs have been issued to registered people
  - the baseline target was to issue 865,186 (100%) ITNs
- The campaign was supported with intensive pre, during and post SBC campaign
- Monitoring ITNs issuing on real time through MRC dashboard and physical visits to all campaign areas

## Household



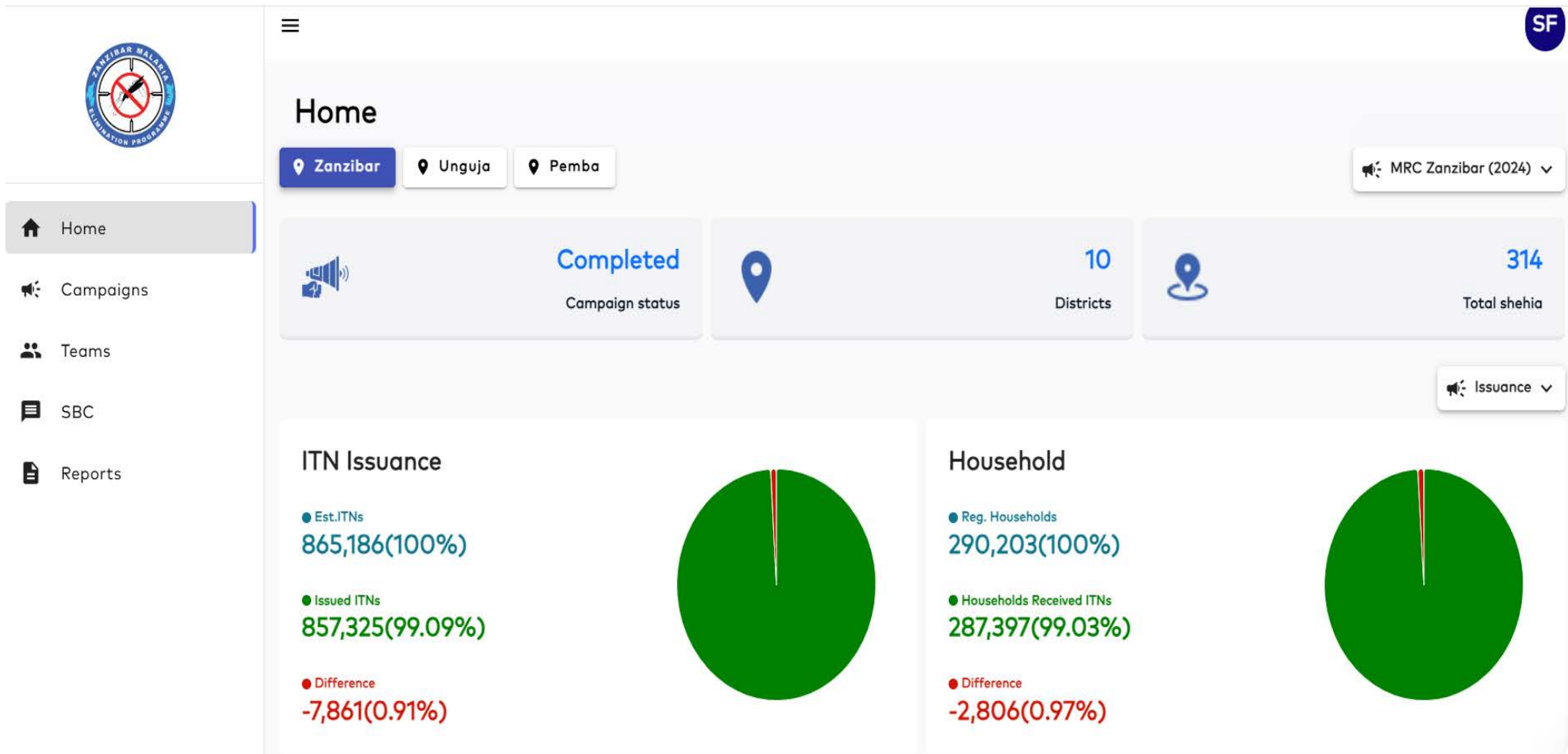
## ITN Issuance



## Number of ITNs issued in 314 shehias during the MRC April,2024

SN.	DISTRICTS	BASELINE POPULATION	REGISTERED POPULATION	BASELINE HOUSEHOLD	REGISTERED HOUSEHOLD	ESTIMATED ITNs	ISSUED ITN	% of ITNs ISSUED
1	Kaskazini A	157,369	175,923	33,257	37,088	98,049	97,563	99.50
2	Kaskazini B	99,921	116,200	21,553	24,106	64,457	63,903	99.14
3	Kati	131,561	139,971	30,278	30,549	77,999	77,093	98.84
4	Magharibi A	205,012	227,197	40,264	38,879	123,578	122,328	98.99
5	Magharibi B	194,326	188,601	40,344	33,570	102,682	99,372	96.78
6	Mjini	92,152	103,886	18,736	20,021	57,034	56,171	98.49
7	Chake Chake	136,298	161,194	24,557	27,279	87,740	87,522	99.75
8	Micheweni	123,379	146,760	21,948	23,800	79,694	79,501	99.76
9	Mkoani	135,052	150,566	23,229	26,075	82,433	82,388	99.95
10	Wete	148,712	168,264	26,627	28,836	91,520	91,484	99.96

# HOW THE MASS ITN 2024 DASHBOARD LOOK LIKE



# Challenges faced during digitalization implementation

- **Poor internet connectivity**
- **Data Accuracy and Integrity**
  - multiple record and incomplete information during registration
- **Inadequate Digital Literacy**
  - Some RAs were not familiar with mobile application and digital tool
- **Limited server space**
  - Led slow flowing of registration data
- The mobile app could not pick up some coupons for unknown reasons

The image displays two screenshots of a mobile application interface. The left screenshot shows a dashboard titled 'Dashibodi' with a progress bar for 'Kipima ugawaji' (Coupon Distribution) showing 26 out of 7 coupons, and a section for 'Ingiza kuponi kugawa chandarua' (Enter coupon to distribute) with a numeric keypad and a 'Gawa chandarua' button. The right screenshot shows a login screen with a 'Fiche' (Fiche) field, a 'Badili neno la siri' (Change password) link, and three 'Changamoto ya kuingia' (Login attempt) buttons.

**Left Screenshot (Dashboard):**

- Header: **Dashibodi**
- Section: **Kipima ugawaji**
- Progress: **Vilivyotolewa 26** (out of **Lengo 7**)
- Progress bar: 0% to 100%
- Section: **Ingiza kuponi kugawa chandarua**
- Numeric keypad: 0, 4, 1, 5, 3, 2, 4, 1
- Button: **Gawa chandarua**
- Bottom bar: **Kuponi haipo** (Coupons not found)
- Bottom navigation: **Nyumbani** (Home), **Vyandarua** (Coupons), **Mipangilio** (Settings)

**Right Screenshot (Login/Registration):**

- Header: **INGIA** (Login)
- Field: **0679 336 101** (Phone number)
- Field: **411223** (Fiche/ID)
- Button: **Ingia** (Login)
- Link: **Badili neno la siri** (Change password)
- Buttons: **Changamoto ya kuingia** (Login attempt)



# How they were overcome

- System developers has been updated app to work offline and sync data when connected to the internet.
- Supervision and monitoring has been conducted to fix all mistakes arosed
- Data clearance before issuance has been conducted by ITNs officer and system developer to fix multiple registration
- System developers upgraded the server space from 8 cores to 12 cores

# Key lessons learned from the digitalization process

- The digitization of the campaign provided program management with real-time data to inform decisions addressing operational campaign issues/challenges.
- Digital record ensure highest ITNs coverage due to availability of real time dashboard
- Enhancing the strong colaboration and community mobilization on benefit of collected ITNs due to the regular reminder digital SMS
- Improved Data Accuracy(Digitalization alway reduces error in all registration and distribution record
- Digital platform ensure ITNs reach to the right and targeted household
- Digitilization Implementation of MRC take short time compare to Tradional due to elimination of manual error

## **Recommendations for future digitalization efforts in similar campaigns**

- Stronger collaboration between government, donor and community leaders
- Uses of fingerprint during registration can minimize the multiple registration
- App should be work offline during data collection and sync when connected to the internet
- Provide real-time campaign progress for public and stakeholder accountability.
- Capacity building to ensure field workers can effectively use smartphone and apps before campaign.
- Introduction of Geospatial Mapping (GPS) to track the distribution and issuance coverage
- Community engagement through digital advocacy such a SMS through their phone on progress of campaign

Thank you very much **+CIFRC**  
for sponsorship

Karibu Zanzibar



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# **AMP 2025 ANNUAL MEETING**

## **USING DIGITAL PLATFORM FOR EFFECTIVE ITN DISTRIBUTION IN LIBERIA**

*Joseph O. Alade  
NMCP-Liberia*

# OUTLINE

- Political profile and Malaria situation
- Background
- From paper-based to digitalization
- Campaign digitalization
- Achievements/Best practices
- Challenges and mitigation methods
- Recommendation



# Political Profile of Liberia

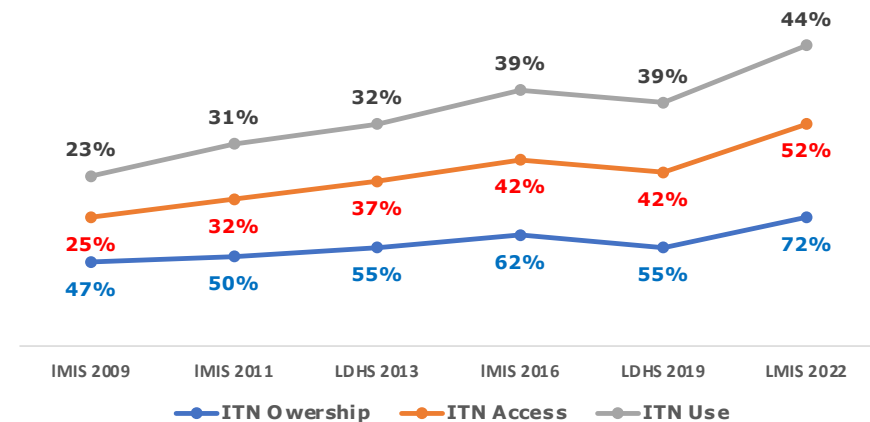


- Liberia is a west African nation
- Liberia is divided into 15 political sub-divisions and 98 Health Districts
- Projected 2025 population of 5,737,021

# Malaria Situation in Liberia

- Malaria is endemic in Liberia with the entire population at risk
- Malaria accounts for 34% outpatients' attendance and 23% of inpatients' deaths in Liberia
- Malaria prevalence is 18% and 10% using mRDT and Microscopy respectively (LMIS-2022)
- Four rounds of ITN mass campaigns have been conducted since 2015 with the recent (2024) digitalized

Trend of ITN Ownership, Access and Use

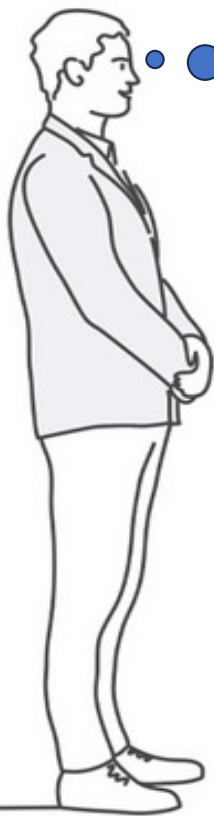


# BACKGROUND

- During the past three (2015, 2018 and 2021) campaigns, Paper-based forms were used throughout
- Various forms (household Registration, supply-chain and distribution) were printed and used for data collection, collation and reporting
- Summaries forms were used for the collation of campaign aggregated data
- Data Managers were the sole authority of the campaign data
- Even with the use of KoboCollect application, only the data managers had access to the data. What they reported were final

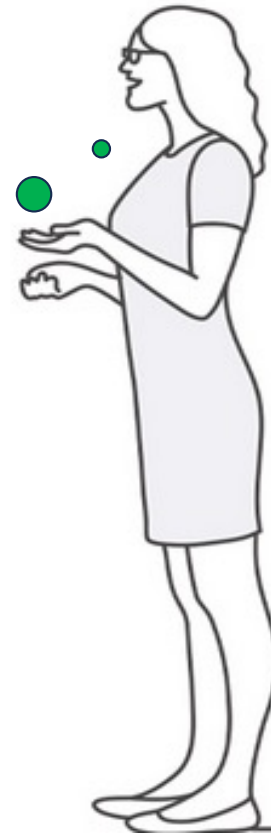
# Paper-Based Major Challenge

**Campaign Manager**



I have a meeting in few hours, can you provide data on the progress of the campaign in your county?

**County Supervisor**



Okay, Let me contact my Data Manager and will get back to you in an hour

Difficulty in getting immediate and/or reliable information

# **Digitalization of Liberia 2024 ITN Mass Distribution Campaign**

- Campaign's digitalization partners was eGovernment Foundation
- The Liberia Health Campaign Management (HCM) platform powered by DIGIT was deployed for the 2024 campaign
- The ManageEngine (mobile device management) software was used to manage and control the digital devices
- Components digitalized were:
  - Household Registration (HHR)
  - Supply-chain
  - Distribution
  - Monitoring and supervision
  - Training Attendance

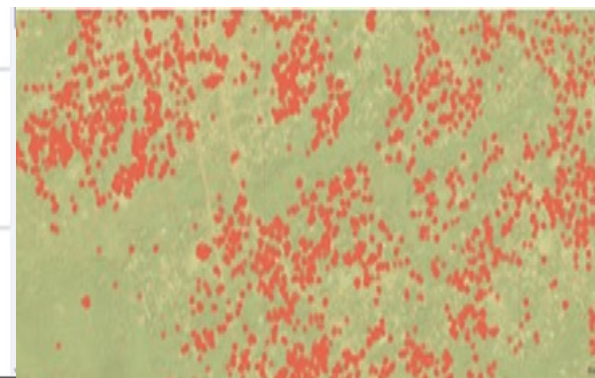
## Real-time Availability of Household Registration (HHR) and Distribution Data



Use of gadget during HHR



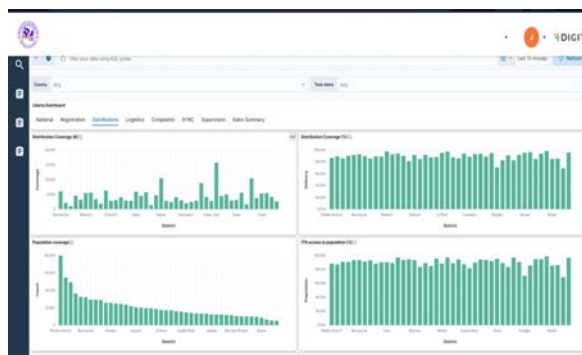
Dashboard display during HHR data



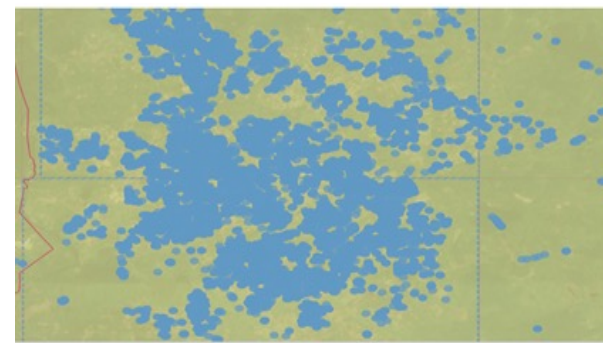
Geo points of HHR data



Use of gadget during Distribution



Dashboard display of Distribution Data



Geo points of Distribution data

# STOCK MANAGEMENT

Bale scanning:

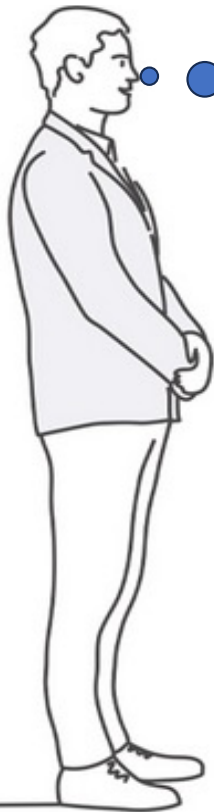
- At regional warehouses upon receipt
- At districts' warehouses upon receipt
- Data were synced to the Liberia HCM cloud server which provides information on which county/district each of the bales was received.





# Real-Time availability of campaign information

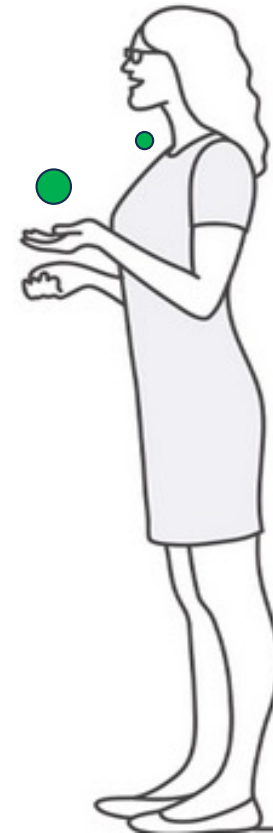
**Supervisor**



Why are you still lagging behind with your target today

Yes, Sir we are aware.  
We have network issues in our catchment areas.  
BY mid-night, we will sync our data

**Supervisee**



From the Dashboard, <http://www.liberia-hcm.digit.org/digit-ui/employee/user/login> supervisor knows the performance of each team/District/county

# EVIDENCE/IMPACT OF DIGITALIZATION AND NEXT STEPS

## IMPACT OF DIGIT HCM ON THE 2024 CAMPAING

Real-time availability and visibility of data throughout the campaign

Improved accountability of campaign resources

Trained central and country levels staff in the implementation of digital ITN campaign

Country now owns a digital platform that cam be leveraged on by other health programs

Over 90% of ITNs distributed

## NEXT STEPS

Seamless data migration (interoperability with DHIS2)

Work with eGov to upgrade the application for a more seamless data collection and down syncing

Continuous use of Liberia DIGIT HCM for future mass ITN distribution campaigns

Address operational challenges

# ACHIEVEMENTS/BEST PRACTICE

## Coordination: Planning

- Technical sub-committees (Logistics, SBC, M&E and Digital) including the joint Technical Steering Committee (JTSC) were formed
- There were Weekly sub-committees' meetings
- The JTSC was the clearing house of the campaign

## Coordination: Implementation

**Daily coordination meeting:** During the HHR and distribution exercises, daily virtual meetings with all counties were held

Issues (bottlenecks county/district performance) were discussed and resolved. Actions necessary for the success of the data collection were taken.

**WhatsApp Groups:** WhatsApp groups were formed at all levels (national, County and Districts). Technical issues (application) were discussed and resolved via the groups.

Liberia Helpdesk: National ICT4D and eGov

Regional Helpdesk: National ICT4D and Counties

County Helpdesk: Counties and Districts

Technical Helpdesk: eGov Team

# CHALLENGES AND MITIGATION MEASURES

Challenges	Mitigation Measure
Limited training on the use of the application especially scanning of vouchers	Focus was placed on specific personnel to serve as team lead
Unlinked vouchers during HHR which resulted to “match not found” during distribution	Those vouchers were separated during distribution and captured through kobo Collect database for accountability
Poor/lack of internet connective in some counties and districts	During the microplanning, active spots were identified and used for syncing
Same QR codes on multiple vouchers due to printing mishap	<ul style="list-style-type: none"> <li>New codes were generated and attached to households affected and backend delivery was done my eGov</li> </ul>
Bale Scanning at districts’ level: <ul style="list-style-type: none"> <li>The nets were already stacked in warehouses before the phones were made available for bales scanning</li> </ul>	<ul style="list-style-type: none"> <li>Bales were unpacked from the warehouses, scanned and reparked</li> </ul>

# RECOMMENDATIONS



Continuous improvement of the DIGIT HCM platform to suit countries contexts



Liberia to address operational challenges



eGov to focus on Data migration with DHIS2 (enhancement of interoperability)



Upgrade DIGIT HCM to include Microplanning module and others



Improve user friendliness of DIGIT HCM

# ACKNOWLEDGEMENTS







THANK YOU



The Alliance for  
Malaria Prevention



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Prévention du Paludisme

## Campaign Digitalization Meeting – Friday Afternoon Workshops

As part of the upcoming **Campaign Digitalization Meeting**, we invite you to select the **working session** you would like to attend on **Friday afternoon**. Please choose one of the following sessions:

1. Kindly choose the session you wish to attend on Friday afternoon \*

- ☐ Workshop 1 – Use of Bring Your Own Device (BYOD) for ITN campaigns
- ☐ Workshop 2 - Integrated campaigns and cross-program digitalization
- ☐ Workshop 3 – Optimizing Campaign Data Reuse: Establishing a Framework for Leveraging Malaria ITN Distribution Data Across Health Campaigns and Multi-Purpose Health Initiatives
- ☐ Workshop 4 – Enhancing payment efficiency through the use of digital tools

For technical difficulties / Pour les problèmes techniques: please use the Zoom Chat and/or email [info@tiseh.com](mailto:info@tiseh.com)



The Alliance for  
Malaria Prevention



Alliance pour la  
Prévention du Paludisme

Campaign Digitalization Meeting –  
Friday Afternoon Workshops



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The Alliance for  
Malaria Prevention



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Prévention du Paludisme

**Thank you for attending Day One!  
We look forward to seeing you  
tomorrow at 9:00 AM EAT for Day  
Two – Almasi 1 – 4<sup>th</sup> floor**

**Réunion annuelle des partenaires  
de l'APP Merci d'avoir participé à  
la première journée !  
Nous nous retrouvons demain à  
9h00 EAT pour la deuxième  
journée – Almasi 1 – 4<sup>e</sup> étage**

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