



REPÚBLICA DE MOÇAMBIQUE

MINISTÉRIO DA SAÚDE

Central de Medicamentos e Artigos Médicos

**Mobile solution for health logistics
management information systems
in resource-limited settings**



Mozambique

Context



- Located in the Southeast of Africa;
- Total pop 27,128,530;
- Divided into 11 provinces;
- 154 districts;
- 1,596 health facilities (INE-National Institute of Statistics)
- Health facility serves 16,556 pop
- Ratio Doctor per 100,000habitants is 7,6
- Ratio nurse per 100,000habitants is 29,0
- HIV prevalence of 13,2%
- 96% of health facilities are level 1 – supplied only with standard kits for health facilities (39 essential products to cover up to 1,000 consultations)

Mozambique Supply Chain

Central

CMAM – Central Medical Stores

International

Manufactures

Central Hospitals

Central Warehouses

3

Provincial

11 Provincial Stores

General & Provincial Hospitals

District

147 District Stores

Rural & District Hospitals

Community

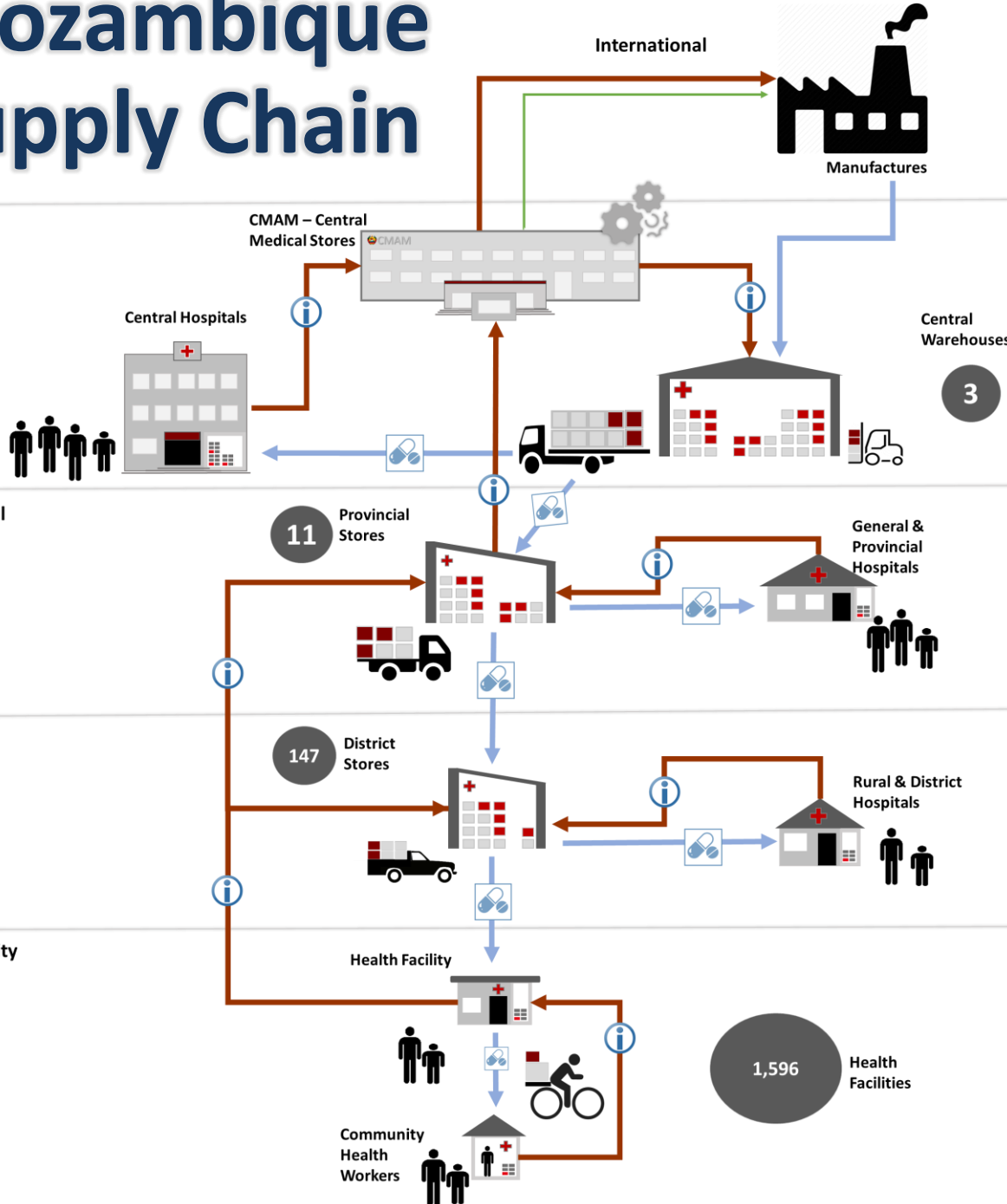
Health Facility

1,596

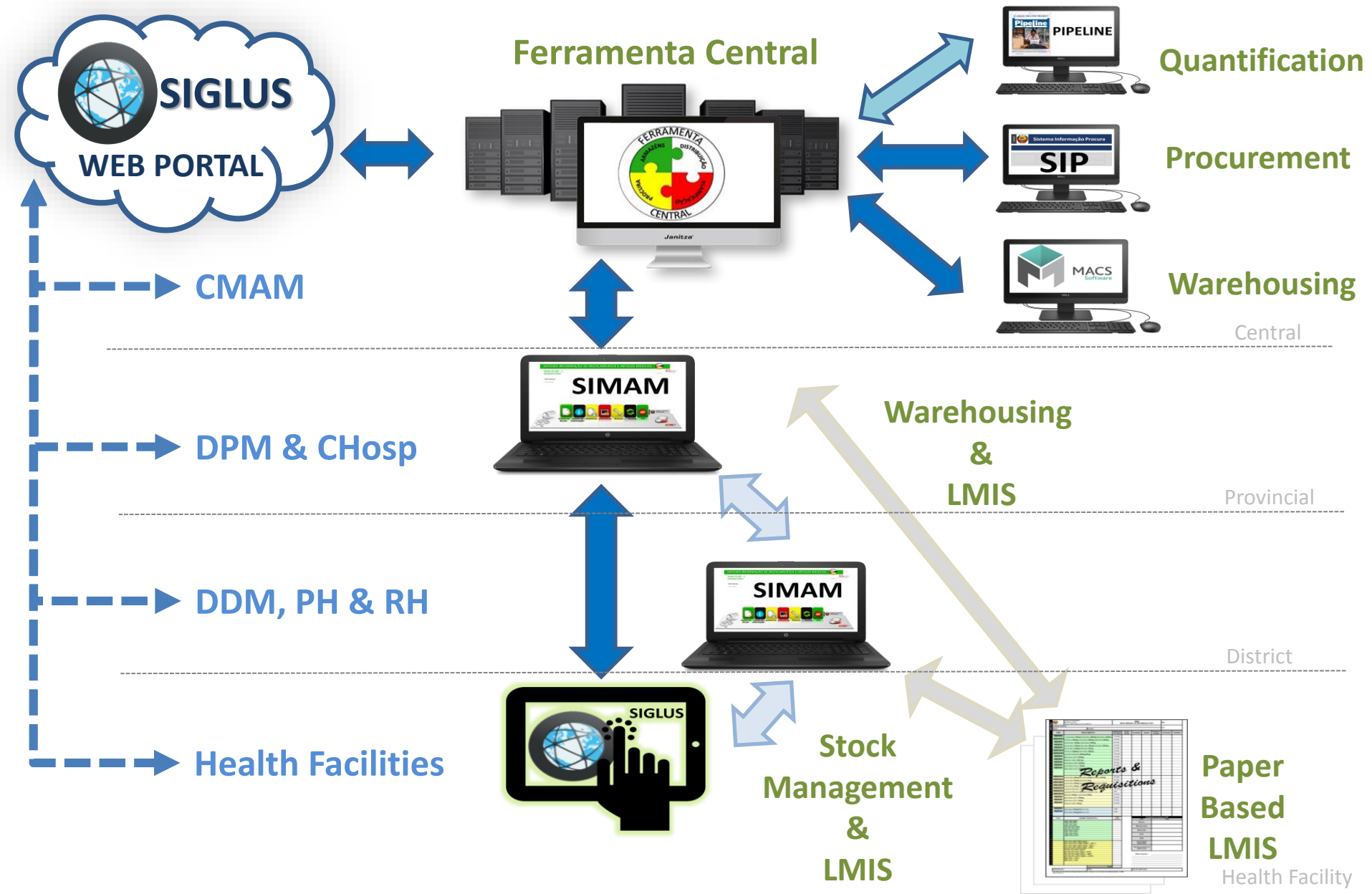
Health Facilities

Community Health Workers

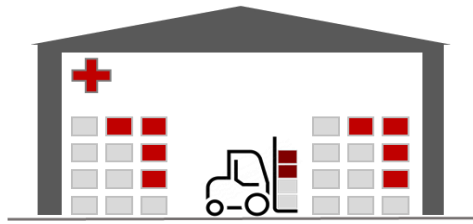
- Supply Chain Structured in 4 levels; plus the community
- Central Level Central Medical Stores & 3 Regional Warehouses
- 11 Provincial Warehouses
- 147 District warehouses
- 1,596 Health Facilities
- 3,500 plus Community health workers



Mozambique Logistic Management Information Systems

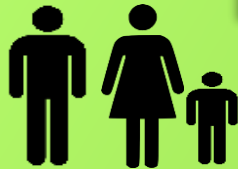
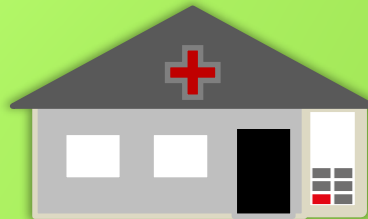


The data gap in supply chain



2%

98%

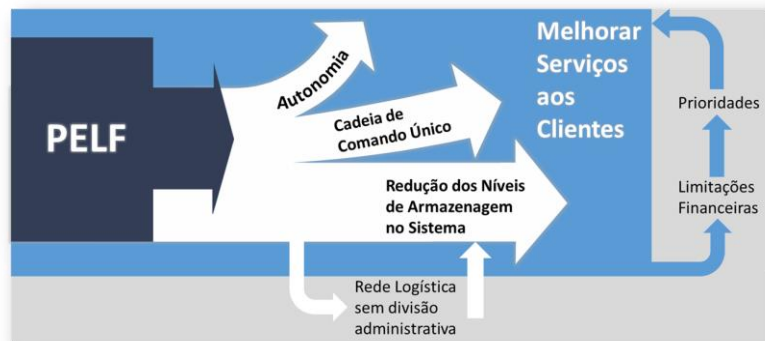


- Only Central, Provincial and District Warehouses have computerized system.
- Decision makers lack visibility over stock information in the majority of the public health system.
- Majority of the system rely on paper and aggregated data.
- No visibility of the large bottom of the Pyramid -98%
- Missing critical data of accessibility to medicines at Service Delivery Point.

Leading changes

PELF - 10-year Strategic Plan for Mozambique's Supply Chain

- Address the information gap
- Better inform and extent the data driven decision making.
- Visibility and control through the Supply Chain
- Aligned with PELF central objective of having the product available to those how need.



- This strategy will be delivered by **ensuring data exchange/integration** across the Supply Chain
- The various system piloted (iDART, CHANNEL, ESMS) for the health facility
- CMAM decided for the most aligned with **PELF** objectives
- With all the features that were evaluated as necessary from the various system, acknowledging the work and involvement of other partners in finding the best solution for the gap of visibility at the health facility;

Mobile solution for impact

Developed and piloted a mobile application for health facility logistics management information system (LMIS) using the **OpenLMIS** platform

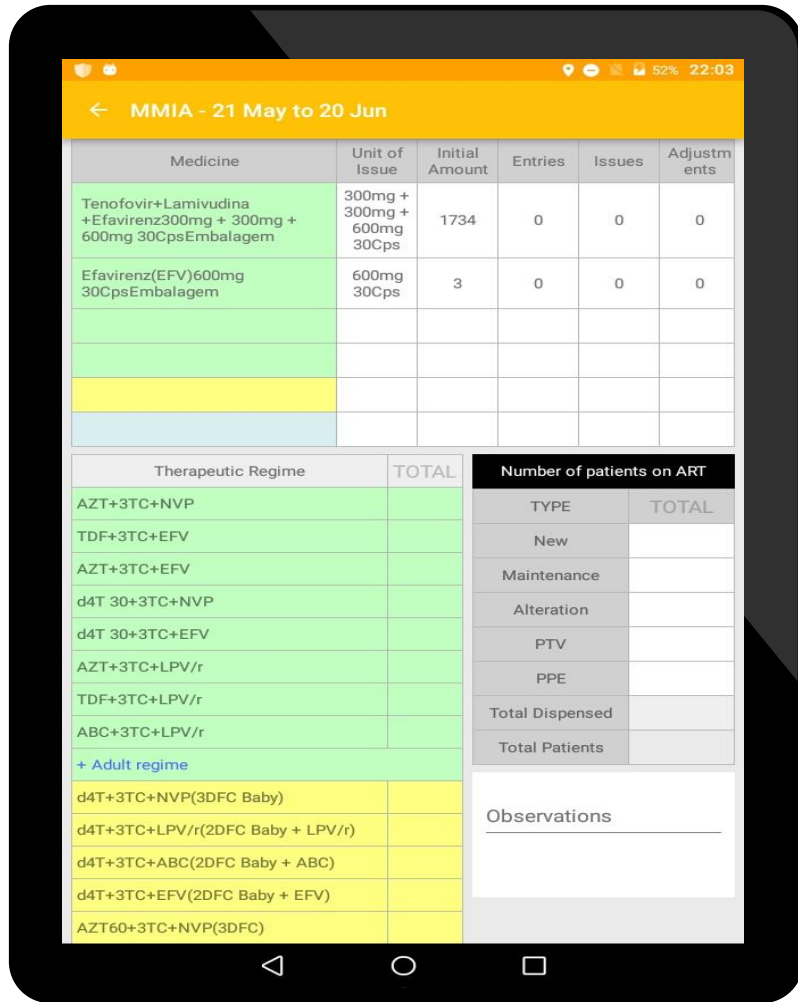


- This work proved the concept for:
- Transactional stock-management tool
- Workflow contextualization from an Open Source system
- Health-facility level electronic LMIS solution
- User-accepted Android application on tablets

SIGLUS

**Logistic Management Information System
for the Health Facilities**

Characteristics of the solution (1)



SIGLUS

**Logistic Management Information System
for the Health Facilities**

- Online/offline functionality with automatic synchronization when mobile signal available
- Transactional workflows (as opposed to a reporting tool), therefore assists healthcare worker with their job
- Automated calculations for requisition process, including suggested reorder amounts to help reduce workload and improve uptake
- Alerts for low stock levels, overstocking, and upcoming expiries
- Lot information permits more granular product management
- Submission process sends requisitions to supply node
- User interface mimics paper forms familiar to healthcare workers to reduce training burden

Characteristics of the solution (2)

Stock Overview

Sort alphabetically: A to Z Total:24

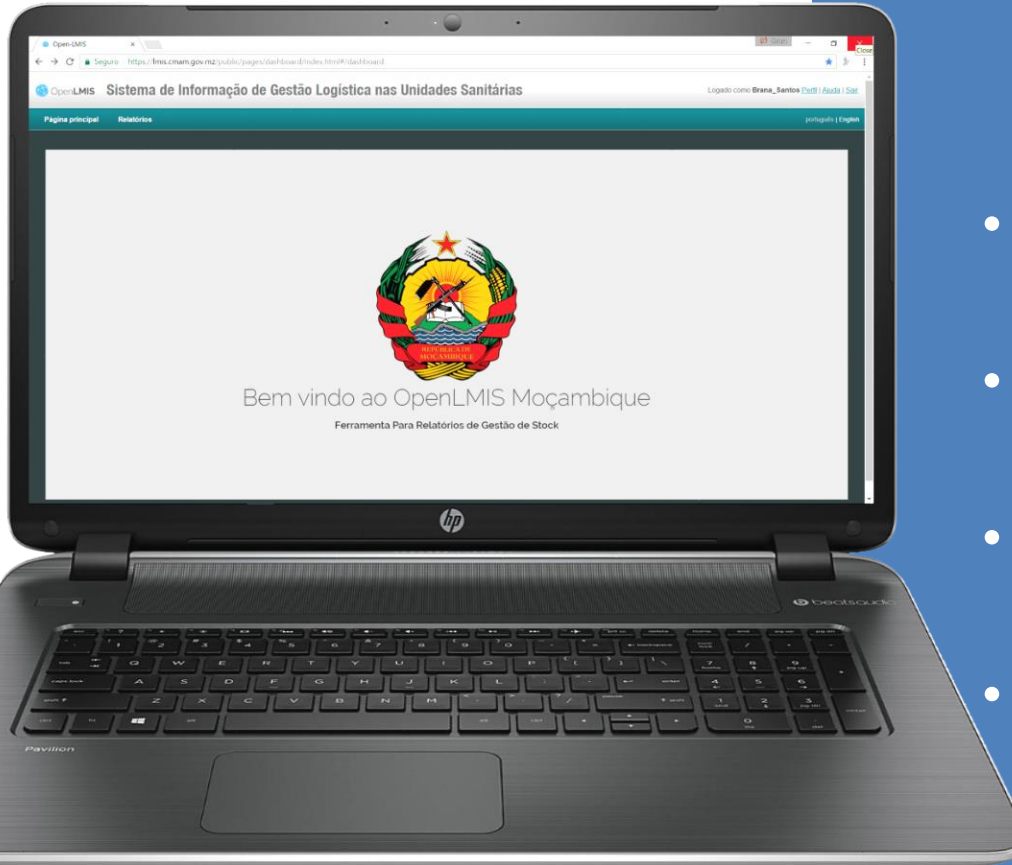
Levonor+Etinilest(Microlut) [04F0YU] 0.03mg Ciclo	60
Luvas de examinacao, Latex, medium ligeiramente polvilhadas [MMC00002] SEM DOSAGEM Sem	300
Oxitocina [04B05] 5 UI/mL Injetável	60
Plump' Nut (manteiga) [12A0ZX] 0,2% Pó	30
Praziquantel [08N06] 600mg Comprimidos	Over stock 90
Preservativos Femininos [04F0XX] 0,2% Preservativo	0
Rifampicina+Isoniazida; 300mg+150mg; Comprimidos [08L07X] 300mg+150mg Comprimidos	650
Sais de Rehidratacao Oral 20.5g, WHO mod. Saquetas [11A23B] 20.5g Saquetas	150
Salbutamol [05A09] 2mg Comprimidos	Over stock 2000
TDR de Malaria [22A08] kit de 25 Tests	Low stock 10
Tenofovir+Lamivudina+Efavirenz [08S18Y] 300mg + 300mg + 600mg 30Cps Embalagem	Expiring 09/17 Over stock 1734
Zidovudina(AZT) [08S17Y] 50mg/5mL 100ml Suspensão	20

SIGLUS

Mobile application screen shot

- Searchable/sortable stock on hand product list
- Color coded alerts for over stock and upcoming expiries
- Optimized for 9" tablets
- All Essential Products including
 - Anti Malaria drugs
 - Anti-retroviral
 - Contraceptives
 - Rapid Diagnostic Tests
 - Antibiotics
 - Essential Medicines
 - Key Medical Articles

Characteristics of the solution (4)



SIGLUS

Web Portal

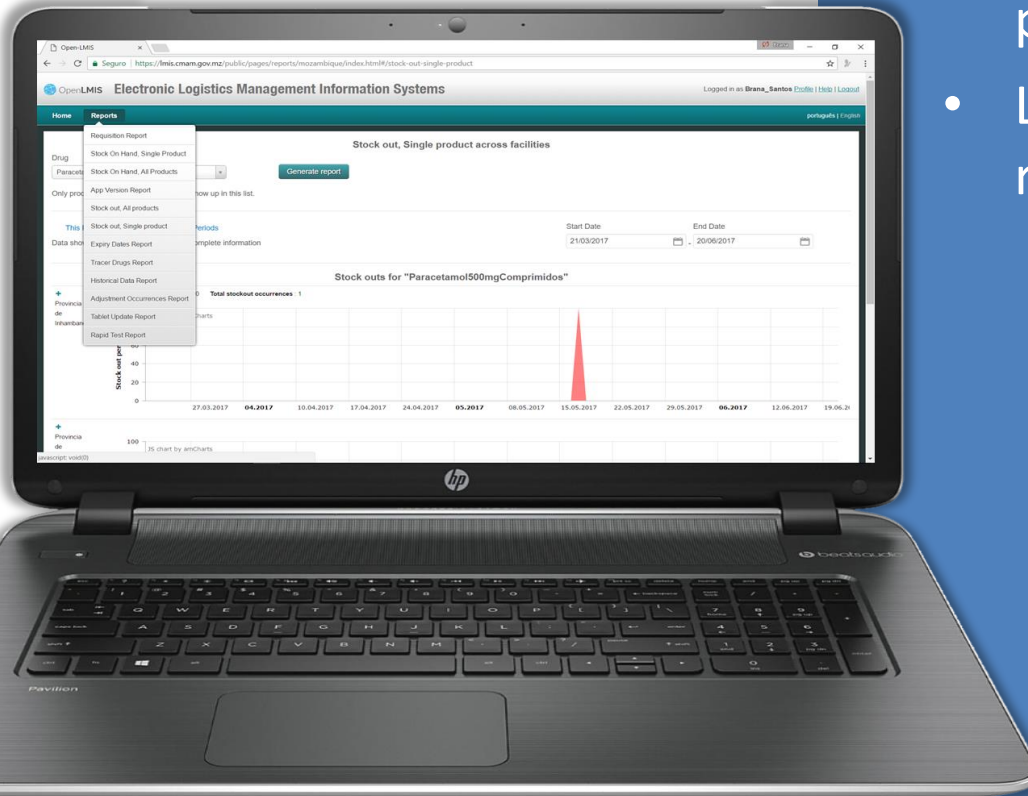
Web portal highlights:

- Leverage OpenLMIS interface, administrative functions and user management
- Facility-level and aggregate reports and visualizations
- Data export for further analysis
- Access to all submitted requisitions
- Tracking of synchronization status and order requisition timeliness
- Customized reports for Mozambique, such as weekly tracer medicine stock-out report

Characteristics of the solution (3)

Web portal key Reports

- Uses OpenLMIS standard web portal framework
- List of variety of standardized reports
 - ✓ Requisitions
 - ✓ Stock on Hand by product
 - ✓ Stockouts, All product
 - ✓ Expiry Dates
 - ✓ Tracer Drugs
 - ✓ Historical Data
 - ✓ Adjustments Occurrences
 - ✓ Rapid Tests Report

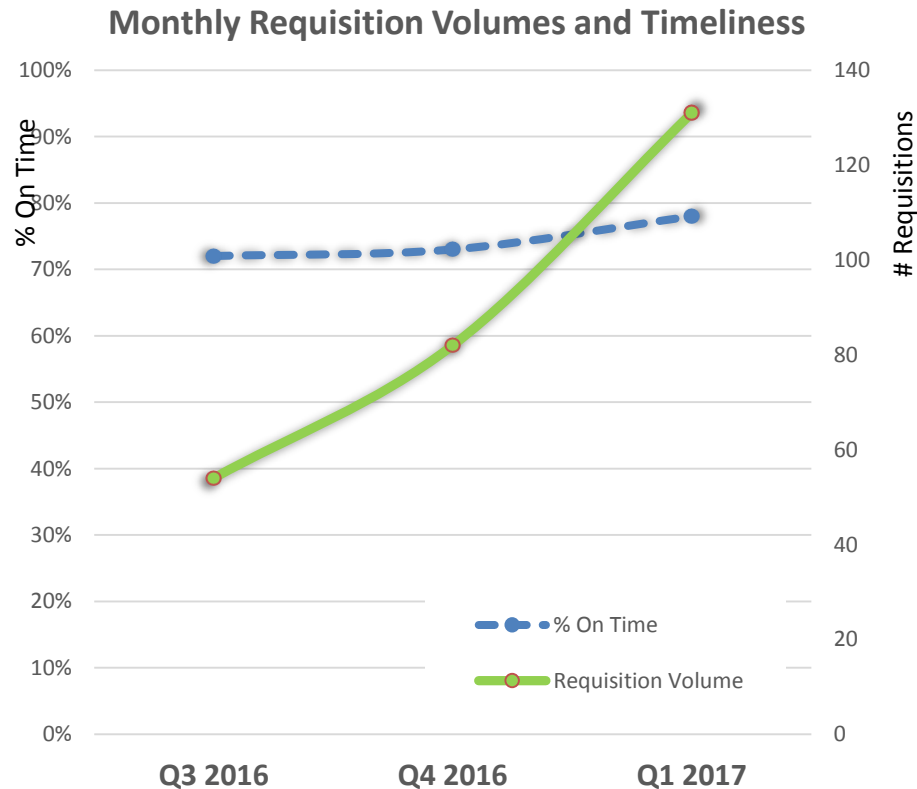


SIGLUS

Web Portal

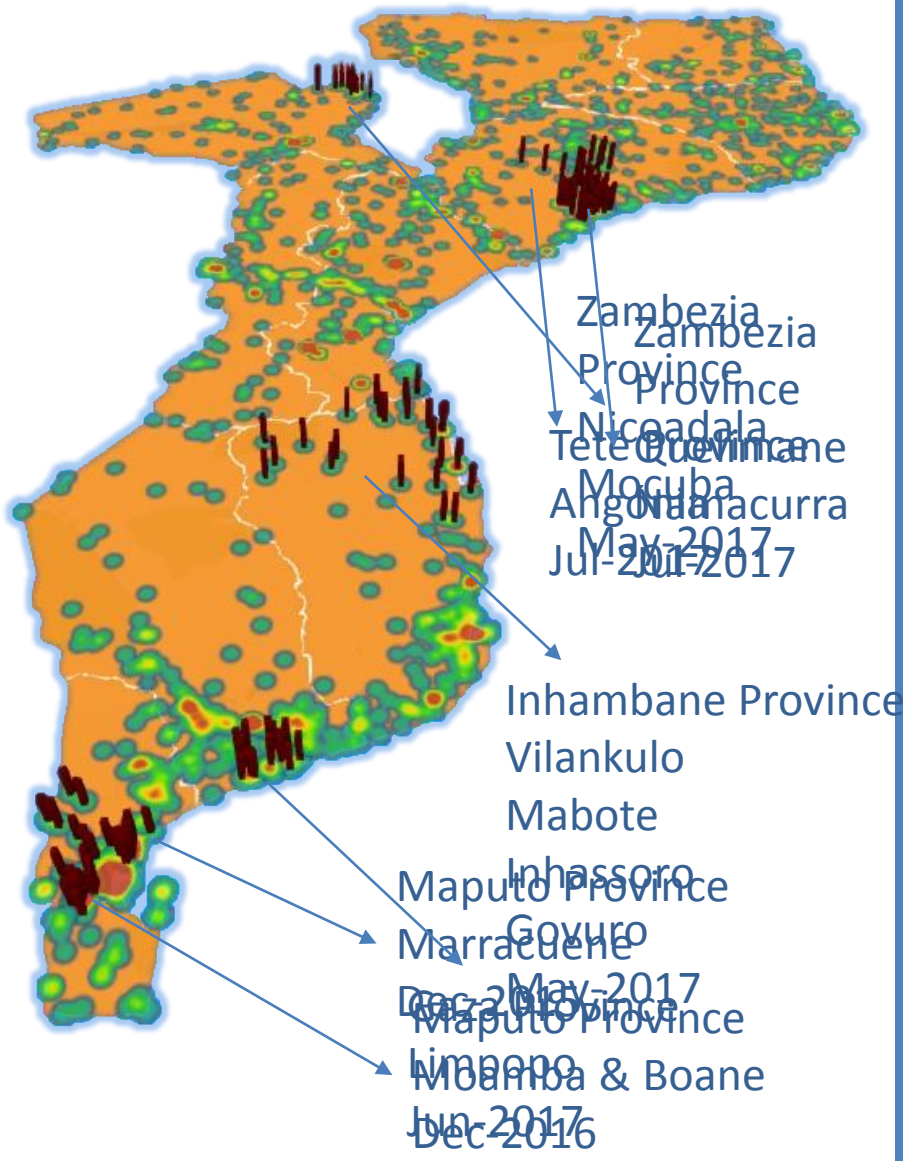
Moving from Concept to Scale (1)

SIGLUS - Scale Up



- Transition in early 2017 of the project to CMAM with implementation partners USAID/PSM
- Lead the ongoing enhancement of the solution and its national scale-up with CMAM.
- Scale-up data show transition from 9 pilot sites to 34 implementation sites: the requisition volume increased significantly whilst the % on-time improved

Moving from Concept to Scale (2)



SIGLUS - Current expansion

- Targeted investment by PSM to achieve geographic diversity in the SIGLUS footprint
- Diverse site selection to garner support from various implementation partners;
- Lessons learned for operationalization at scale;
- Gauge early impact to mobilize further deployment
- 2017 target with PSM funding: reach 109 strategic sites.
- UNFPA guaranteed electronic equipment and internet bundle for most sites;
- 2018+: wider scale-up leveraging additional funding partners

Opportunities

SIGLUS - Opportunities

- Cultivate OpenLMIS community globally and regionally to ensure support, maintenance.
- Shared investment, Shared benefits (OpenLMIS 3.0) for regional platform.
- Evidence based decision making;
- Interconnectivity with Ferramenta Central & SIMAM
- Support from PEPFAR Implementing Partners to maintain the scale-up pass

← Tenofovir+Lamivudina+Efavirenz300mg + 300mg + 600mg 30CpsEmbalagem [08S18Y] MOVEMENT HISTORY

Stock Card

C.M.M. Lot Information

521.67 EISA15075-A - Sep 2017 - 1500 3047949 - Mar 2018 - 234

Date of Movement	Origin/Destination of Movement	Document Number	Entries	Negative Adjustme	Positive A djustment	Issues	Stock on Hand	Requested	Signature
26 Apr 2017	Public pharmacy					12	989	12	fla
30 Apr 2017	Public pharmacy					128	861	128	fla
30 Apr 2017	District(DDM)	9665/17	1022				1883		fla
10 May 2017	Public pharmacy					149	1734	149	fla
02 Jun 2017	Inventory						1734		jms

NEW MOVEMENT

SIGLUS

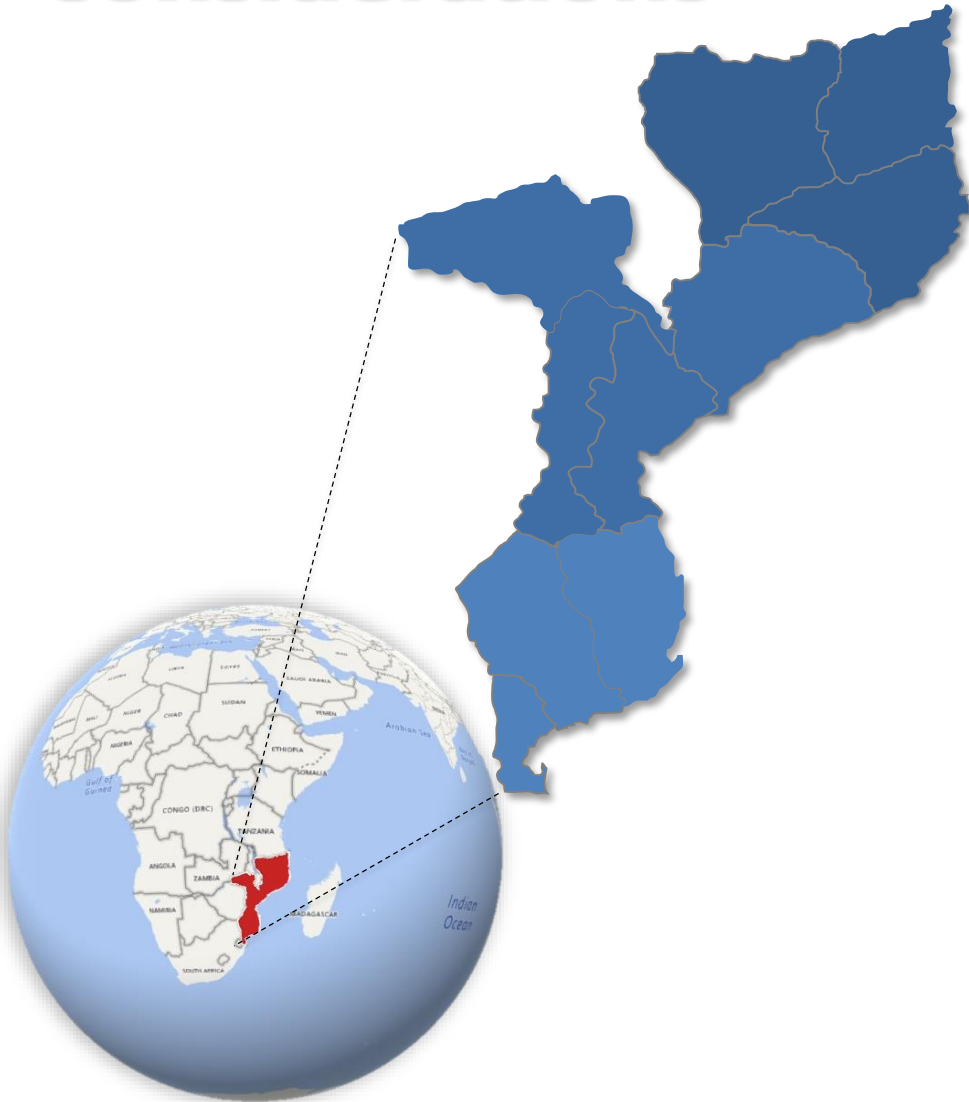
Logistic Management Information System
for the Health Facilities

Scale-up challenges

- Auditability of the system;
- Removing paper based system for processes;
- Ensuring continuous support and accountability of local partners in implementation;
- Ensuring support and scale-up funds by the government;
- Changing from data access to decision-making

- ✓ Approval at the highest government authorities to make an official national system;
- ✓ Involvement of all departments within CMAM in the scale-up process;
- ✓ Involvement of all partners in the implementation
- ✓ Inclusion of internet costs in the local budgets as well as national budget;
- ✓ Leverage local partnership with IS companies to continue support and development of product;

Considerations



- Beyond the adversities, the country is moving forward and committed to a more efficient supply chain, which is integrated, informed and optimized.
- Commitments of the various partners were the key to the early success of our strategy!
- Experiences from other countries and organizations with the platform and scale-up of same type of technologies are also essential to our success;

“Shared Investment with Shared Benefit”



USAID
FROM THE AMERICAN PEOPLE



Open**LMIS**

VILLAGE REACH
Starting at the Last Mile



ThoughtWorks[®]



USAID
DO POVO AMERICANO

USAID Global Health Supply Chain -
Procurement and Supply Management



88% 1:28 PM

Machubo



OBRIGADO!

Thank you!

Kanimanbo!

Merci!

Tak!

● 1 hour since last sync

