

Optimizing technical platforms in the healthcare sector: Online platform for managing investments and fixed assets

PIMS Project

Sales presentation

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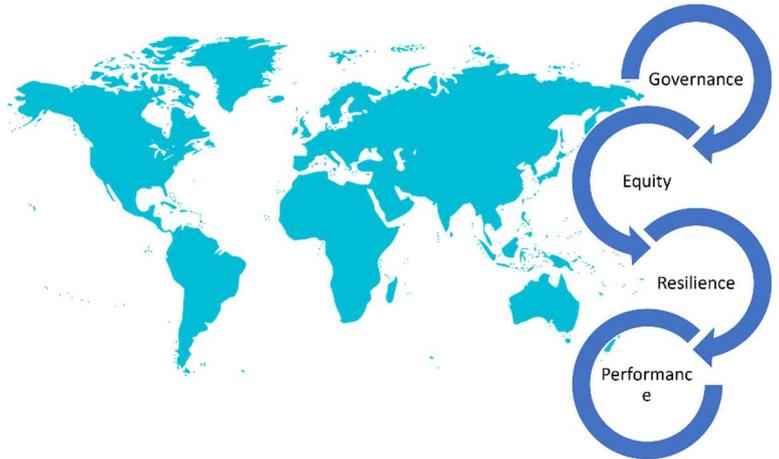
1. Context and justification

In a global context of increasingly significant governance challenges, As equity, resilience and performance become challenges for health systems, having comprehensive, reliable and up-to-date knowledge of the national health infrastructure and being able to plan investments based on standards and methods known to all becomes a strategic necessity.

Figure 1: *The challenges of health systems*

It is in this context that the PIMS project was designed and is being offered to national health systems to contribute to:

- Optimize the operating costs of technical platforms by improving the recording, visibility and traceability of any event that occurs in this ecosystem.
- Strengthen the tools enabling objective and equitable investment planning in the country.
- Facilitating the development of advocacy materials based on factual information
- Supporting the mobilization of human and financial resources necessary to improve the quality of technical platforms.



2. The PIMS project

The PIMS project is a continuous improvement process for hospital technical platforms based on a method and an online platform called PIMS. The process unfolds in six stages:

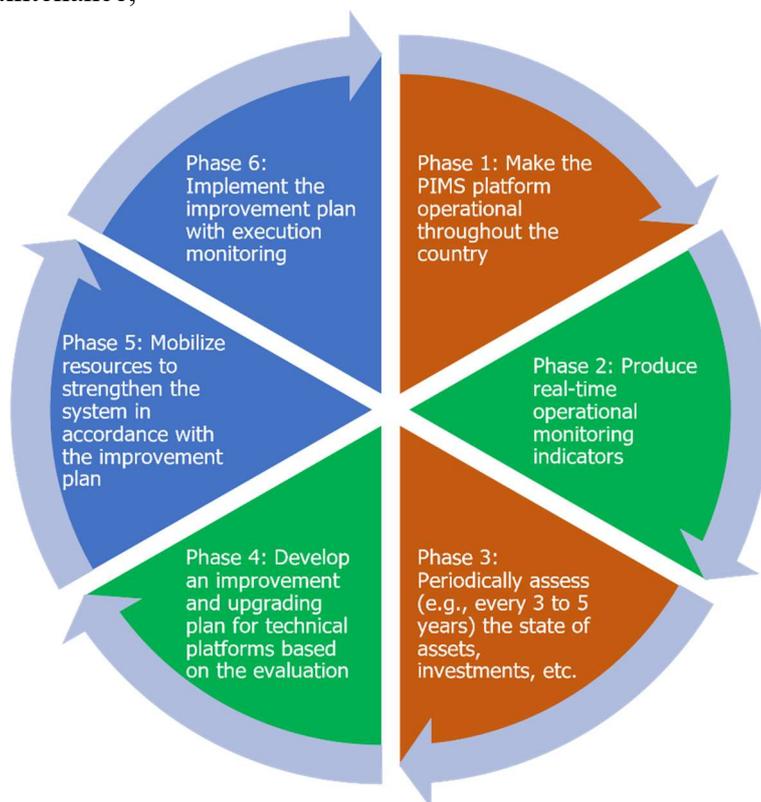
1. Make the platform operational by ensuring that all information and data concerning inventories and maintenance management are collected through the platform. This will involve:
 - Deploy the application to the server
 - Install the mobile versions
 - Perform post-deployment testing (compliance and reliability testing)
 - Train the users
 - Configure the platform with country information (health divisions, list of administrative localities in the country, different types of health facilities existing in the country, list of health facilities in the country, standards and norms for equipment of each type of facility in accordance with the ¹PMA, vaccination schedule, approved list of companies, approved list of people who can be part of a procurement committee, etc.)
 - Develop the ²necessary APIs to send data to other platforms.
 - Analyze the product indicators

¹ Minimum Activity Package

² **Programming Application Interface**

2. Produce real-time operational monitoring indicators for assets, maintenance and investments to feed into the operational/tactical decision-making process;
3. Periodically assess (e.g., every 3 to 5 years) the current state of the assets, maintenance, investments, and human resources involved in the implementation of PIMS. A thorough document review will be carried out during the first assessment;
4. Develop a plan for improving and upgrading technical platforms based on inventory data and the standards and norms for equipment in the country's health facilities;
5. Mobilize funds to strengthen technical platforms, technician capacities and the number of agents needed for the system to function in accordance with the improvement plan;
6. Implement the improvement plan while monitoring its execution in accordance with the indicators described in the plan.

Figure 2: PIMS Process

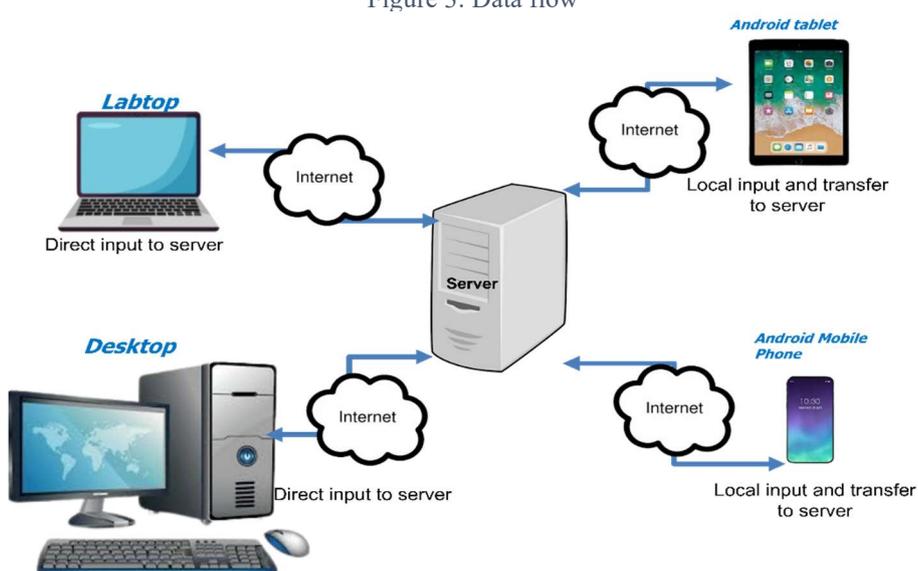


3. PIMS Platform

The **PIMS platform** is an integrated information system, oriented towards information technologies (Web & Mobile), designed to inventory, analyze, maintain and enhance the entire health heritage of a country.

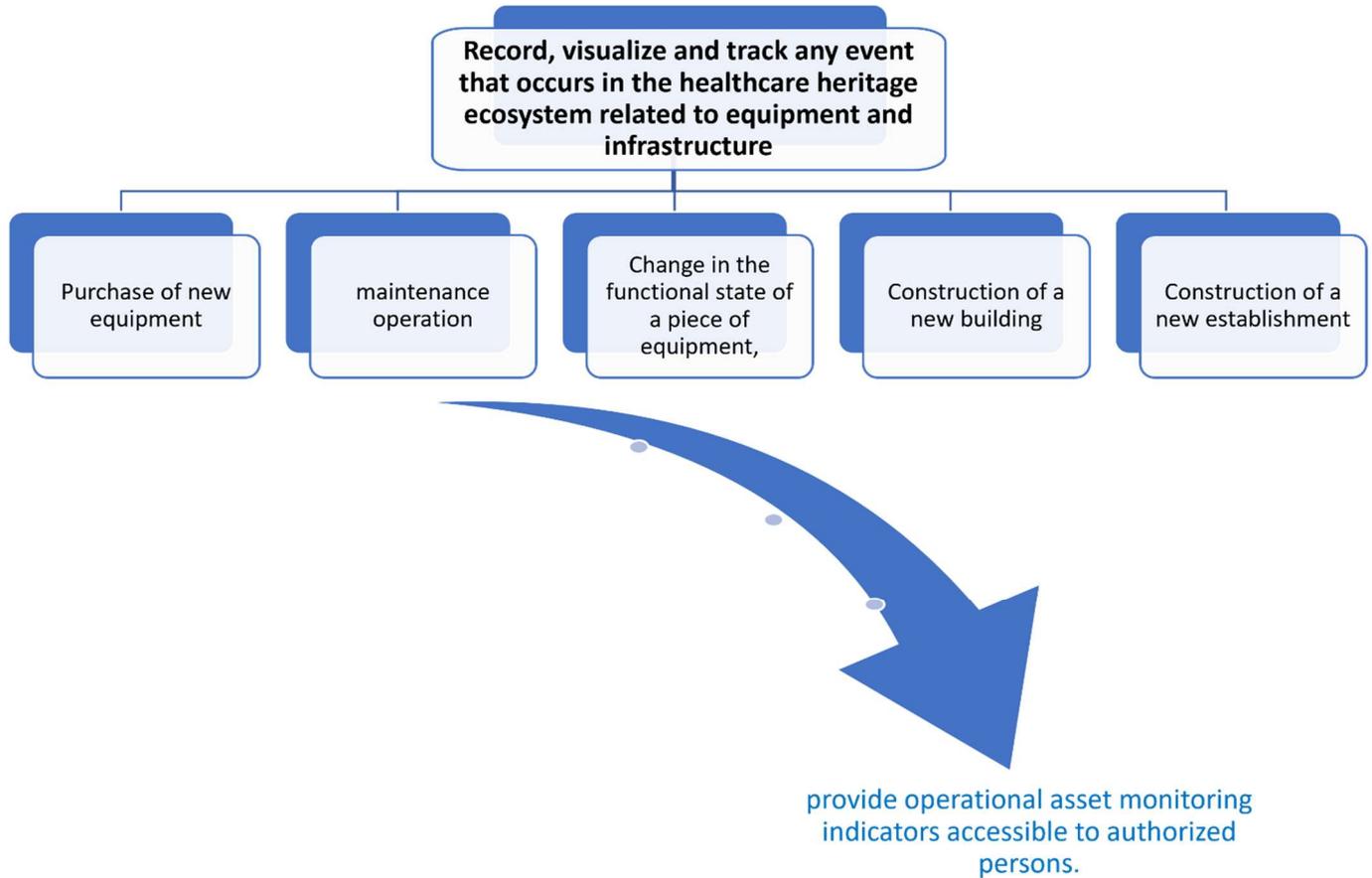
More than just an inventory tool, PIMS is an intelligent platform that collects, structures, and leverages multidimensional data (infrastructure, equipment, amenities, maintenance, financing) to produce dynamic, geolocated performance indicators aligned with the levels of the healthcare pyramid. The system offers

Figure 3: Data flow



comprehensive functional coverage, from field data collection to strategic analysis, with an architecture adaptable to local contexts.

Figure 4: PIMS platform objectives



3.1. The challenges of PIMS

PIMS presents numerous challenges, both strategic and operational. These challenges will enable the optimization of healthcare asset management through improved monitoring of the condition of equipment and other materials, the strengthening of healthcare governance through a more strategic allocation of resources, the promotion of equitable and sustainable access to resources, and finally, the improvement of the quality of care for all.

3.1.1. Strategic issues

- Supporting the decisions of governments and partners , by providing a robust database for governance, budget programming and impact assessments;
- Strengthening the efficiency, resilience and performance of health systems in the face of current and future challenges;
- Reduce inequalities in access to care , by identifying under-equipped or poorly served areas;
- To ensure the traceability, transparency and quality of information related to infrastructure, equipment and maintenance operations;
- Centralize all health heritage data in a single, reliable and interoperable system;
- Support advocacy for fundraising through periodic evaluations and the provision of five-year improvement plans.

3.1.2. Operational challenges

- To produce powerful, dynamic and hierarchical decision indicators to guide strategies at all levels (peripheral, intermediate, national);
- Adapting asset management to the specific realities of each country through a modular and configurable architecture;
- Improve the annual completeness and timeliness of health asset data by allowing each structure to continuously and independently enter fixed asset inventories.
- Systematically update the country's health map using data entered from the peripheral device.
- Optimize the planning, monitoring and evaluation of healthcare investments by strengthening the visibility of hospital equipment acquisition and maintenance operations.
- Having complete and reliable data to develop multi-year rehabilitation and renewal plans enabling continuous upgrading of technical platforms.
- To produce dynamic tools for mobilizing funds for the ongoing upgrading of inadequate technical facilities

3.2. Structuring the PIMS platform

The performance of the **PIMS platform** is based on an intelligent modular architecture, designed to adapt precisely to the administrative and health realities of each country.

Thanks to a user-friendly and intuitive interface, users can easily enter data or import it from Excel, ensuring seamless consistency and reliable information throughout its use. This initial setup is facilitated by an ergonomic interface that allows for manual entry or automated import via Excel, guaranteeing semantic and structural consistency of the data throughout its lifecycle.

PIMS 's architecture is organized into three specific modules and three global modules. Thanks to this modular and configurable approach, **PIMS** offers a robust, scalable solution that complies with healthcare information system architecture standards.

3.2.1. The specific modules

There are three (3) specific modules:

- Multidimensional inventory,
- Equipment maintenance
- Strategic indicators

Figure 5: Structure PIMS



3.2.1.1. Multidimensional inventory

PIMS enables the structured, hierarchical, and georeferenced collection of all physical and functional entities within the healthcare system. Operators, using the mobile application or web interface, can inventory:

- Healthcare facilities (level, specialty, functional status, administrative affiliation...)
- Biomedical equipment (type, brand, model, age, condition, source of funding...)
- Buildings and premises (structural condition, surface areas, accessibility, safety...)
- Community amenities (access to water, electricity, GSM network, roads, etc.)

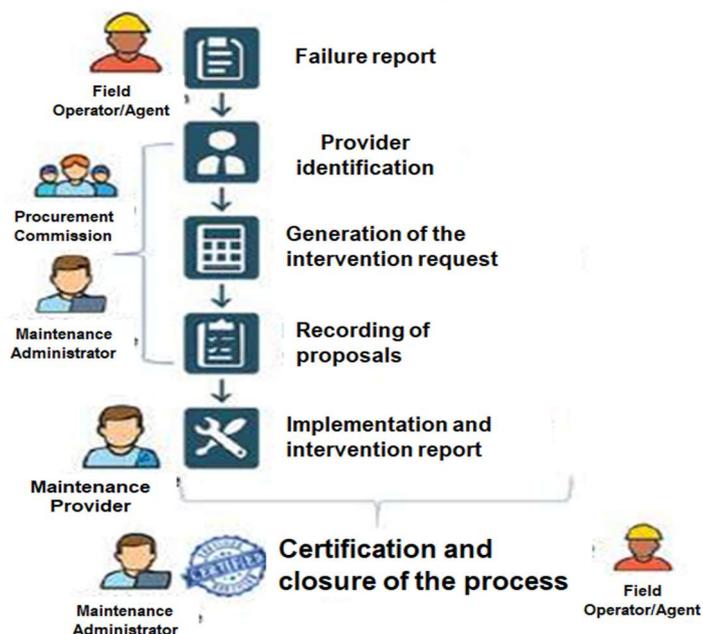
Each inventoried entity is linked to a series of standardized reference data, ensuring comparability, robustness and scalability of future analyses.

3.2.1.2. Equipment maintenance

In most countries, the monitoring of biomedical equipment maintenance remains manual, fragmented, or even non-existent. **PIMS** integrates A complete maintenance management module , structured around an automated process. This process includes:

Figure 6: Maintenance process

- Five entities are involved:
 - ✓ The process is triggered by a request for intervention.
 - ✓ The process coordinator (The maintenance administrator),
 - ✓ The reference list of service providers in the field of maintenance,
 - ✓ The procurement committee
 - ✓ The potential service provider identified to carry out the maintenance operation



- Three main actions are being implemented:

- ✓ The administrator processes the request, which consists of receiving the breakdown report, consulting the list of service providers to identify a shortlist, submitting the shortlist to the procurement committee, and notifying the selected provider of the commencement of work.
- ✓ The selected service provider will handle the outage, complete the online service report, and validate the report by the person who initiated the process.
- ✓ Issuance by the administrator of the voucher for payment of benefits

Each step is time-stamped , traceable and generates performance indicators (reaction time, efficiency of the procurement committee, efficiency of the service provider, repair time, etc.), enabling maintenance planning, intervention management and monitoring of services and service providers.

3.2.1.3. Strategic indicators

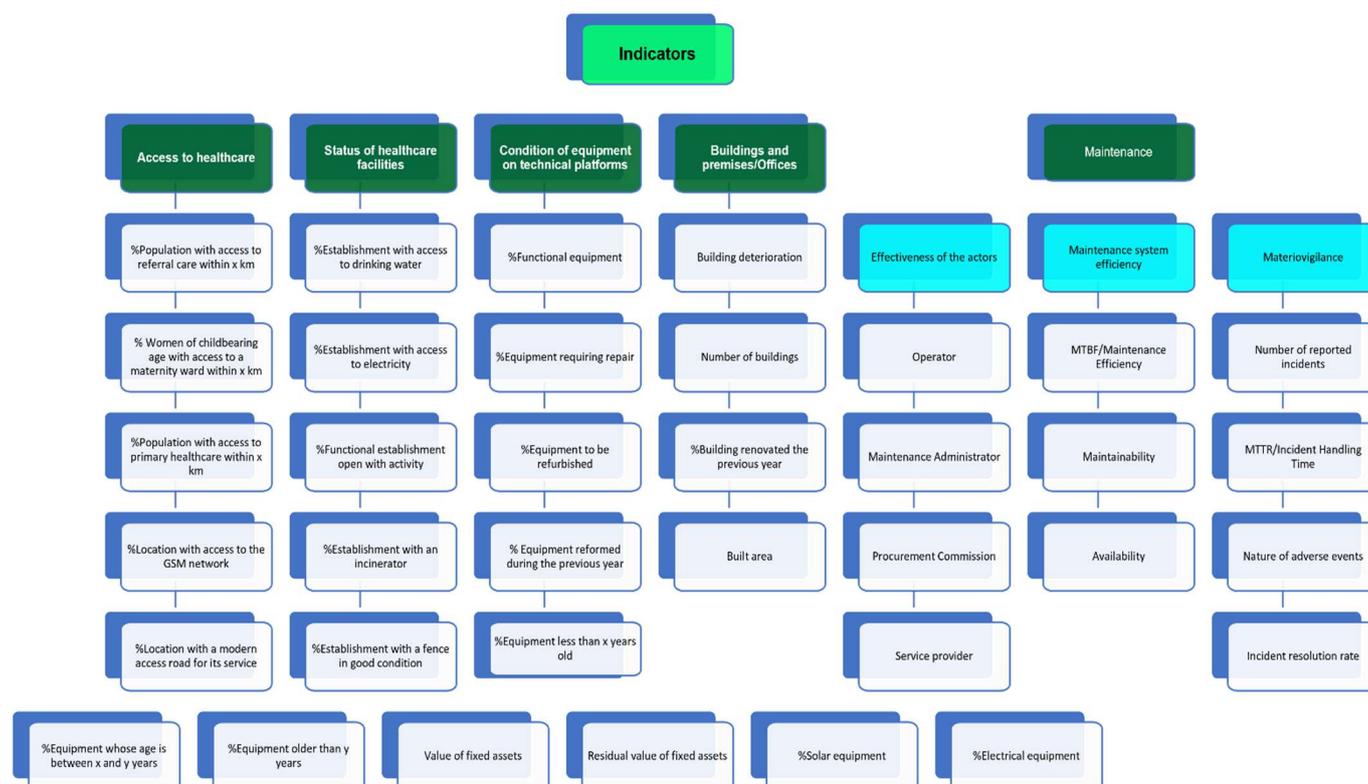
PIMS is not simply a data warehouse; it is a decision-making system with automated analysis engines that enables the generation of strategic indicators, dynamic graphical and cartographic visualizations, multi-level extraction (peripheral, intermediate, and national), and dashboards such as:

- Accessibility indicators (% Women of childbearing age with access to a maternity ward within x km, % Population with access to primary healthcare within y km, % Population with access to referral care within z km, etc.)
- Indicators of the condition of equipment and investments (obsolescence, functionality, depreciation rate of investments, etc.)
- Indicators of the condition of buildings and premises (age or deterioration, built area, number of buildings, etc.)
- Maintenance indicators (effectiveness of personnel, effectiveness of the maintenance system and materiovigilance)

In addition, thanks to the availability of inventory data and universal and country-specific norms and standards, **PIMS** provides hospital equipment specialists with all the information and data necessary for the development of quality reports on the state of the assets and realistic multi-year rehabilitation and upgrade plans for technical platforms in terms of accuracy and cost.

3.2.2. The global modules:

Figure 7: Potential strategic and specific indicators



There are three (3) global modules:

- System settings;
- Administration and management of profiles;

- Technology and security.

3.2.2.1. System settings

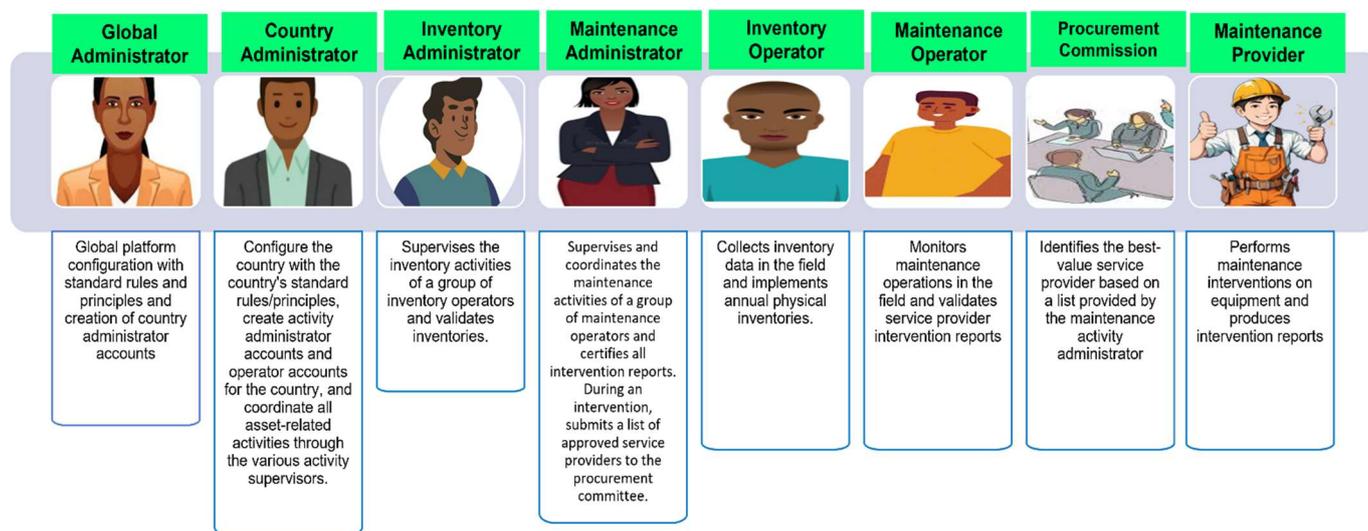
System configuration involves setting up the platform with all the necessary information and data regarding standards and norms for **PIMS operation** . This includes:

- General parameters: Information and data on norms and standards used by all countries (nomenclatures of equipment, health services, premises encountered in the health system, etc.)
- Country parameters: Information and data on norms and standards related solely to the country (health division, list of administrative localities in the country, different types of health establishments existing in the country, list of health establishments in the country, standards and norms regarding equipment for each type of establishment in accordance with the PMA, vaccination schedule, approved list of companies, approved list of persons who can be part of a procurement committee, etc.)

3.2.2.2. Platform Administration and Profile Management

PIMS is based on a secure and decentralized user management model. Each user in the system has a well-defined role, with granular access rights . User profiles are hierarchical:

Figure 8: Administration de la plateforme et communauté des utilisateurs



This system guarantees data security , while ensuring the autonomy of national actors in the daily management of assets.

3.2.2.3. Technologies Used and Security

PIMS is based on a **A modern web architecture** , supported by a robust relational database, interconnection APIs, and visualization modules (maps, graphs, tables, etc.). In this configuration, PIMS is easy to use and compatible with various IT environments. It combines a solid database, visualization tools (maps, graphs, tables), and options for connecting to other systems (interconnection APIs).

Its main technical characteristics are:

- **Responsive web platform** and **mobile application** for use on computer, tablet or smartphone;
- **Secure connection** with password, SSL encryption and logging system (audit);
- **Flexible deployment** , online (SaaS) or on the client's servers (on- premise) ;
- **Interoperability** with other national systems such as DHIS2, eLMIS , Medical , etc.

3.3. ³Some input interfaces and tracking indicators

Figure 9: Web Application Login Screen



The login screen is divided into two main sections. On the left, a blue vertical panel contains the PIMS logo (a stylized 'J' and 'P' with a green dot) and the text 'PIMS PATRIMONIAL INTELLIGENCE MANAGEMENT SYSTEM'. Below the logo, the text reads 'Plateforme Intelligente de Gestion du Patrimoine Sanitaire'. On the right, a white panel features a blue circular lock icon at the top. Below the icon are two input fields: the first is labeled 'Saisissez votre login' and the second is labeled 'Saisissez votre mot de passe'. Underneath the password field is a checkbox labeled 'Se souvenir de moi'. At the bottom of the white panel are two blue buttons: 'Connexion' and 'Quitter'.

³ All data used is fictitious and used for illustrative purposes.

Figure 10: Mobile app login screen



Figure 11: Web application location data entry screen

Fermer
!

Consultation des commodités de : Marabadjassa

Localité *	Marabadjassa		
Date collecte informations	26/11/2007 📅	Année statistiques population	1998
Latitude GPS	5,3500000000	Longitude GPS	-3,9667000000
Population totale	2 157	Zone d'habitation *	NE SAIS PAS ▼
% enfants de 0-11 mois	0,00	Réseau GSM *	Non ▼
% des femmes en âges de procréer	0,00	Principale voie d'accès *	Piste naturelle ▼
Alimentation électrique *	▼	Alimentation en eau *	Eau courante ▼

Distance

District le plus proche (Km)	48	Distance ville (Km)	47
Ville la plus proche *	Beoumi	Distance Etablismt (Km)	48
Etablissement de réf.	Clinique ANGE GARDIEN	Distance Maternité (Km)	0
Maternité la plus proche *	CSU MARABADJASSA	Distance Dispensaire (Km)	0
Dispensaire le plus proche *	CSU MARABADJASSA		
Service de maintenance	0		

Figure 12: Locality data entry screen Mobile application

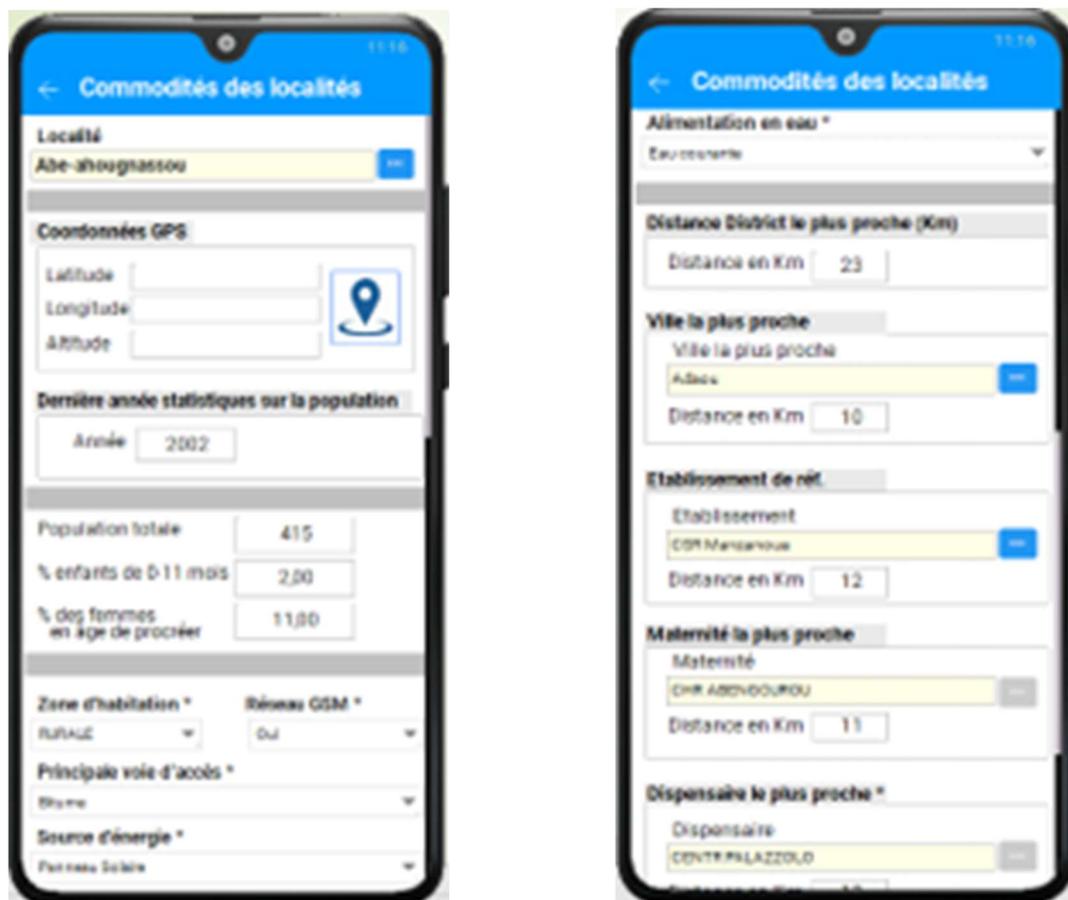


Figure 13: Data entry screen for the establishment's web application version

Fermer

Consultation des commodités d'un établissement

Etablissement *	CSU KONDROBO		
Localité *	Totokro		
Etablissement ravitailleur *	DDS BEOUMI		
Latitude GPS	<input type="text"/>	Longitude GPS	<input type="text"/>
Téléphone Fixe Ets	<input type="text"/>	Nom personne contact	<input type="text"/>
E-mail Etablissement	<input type="text"/>	Prénoms personne contact	<input type="text"/>
Statut Ets **	Public	Tél. Mobile du responsable	<input type="text"/>
Population *	<input type="text"/>		
Etat fonctionnel **	Fermé sans activité	Raison Fermeture **	<input type="text"/>
Alimentation en eau **	Pompe villageoise	Collecte d'ordure **	<input type="text"/>
Alimentation électricité **	<input type="text"/>	Existence d'un incinérateur **	<input type="text"/>
Fosse à ordure **	<input type="text"/>	Etat de la Clôture	Inexistant
Type aménagement site **	Ne sait pas		
Surface Etab (m2)	<input type="text"/>	Date 1ère ouverture	24/06/2022 <input type="text"/>
Dernière Réhabilitation en	<input type="text"/>	Date Inventaire	30/10/2007 <input type="text"/>
Dernier équipement en	<input type="text"/>	Effectuée par	<input type="text"/>
Observations	<input type="text"/>	Effectué par	<input type="text"/>

Figure 14: Data entry screen for the establishment's mobile application version

The figure shows two screenshots of a mobile application interface for data entry. Both screens are titled 'Commodités des localités'.

Left Screenshot:

- Localité:** Abe-ahougnassou
- Coordonnées GPS:** Latitude, Longitude, and Altitude input fields with a location pin icon.
- Dernière année statistiques par la population:** Année: 2002
- Population totale:** 415
- % enfants de 0-11 mois:** 2,00
- % des femmes en âge de procréer:** 11,00
- Zone d'habitation *:** RURALES
- Réseau GSM *:** Oui
- Principale voie d'accès *:** Route
- Source d'énergie *:** Panneau Solaire

Right Screenshot:

- Alimentation en eau *:** Eau courante
- Distance District le plus proche (Km):** Distance en Km: 23
- Ville la plus proche:** Ville la plus proche: Aboia; Distance en Km: 10
- Etablissement de réf.:** Etablissement: CDR Mankonou; Distance en Km: 12
- Maternité la plus proche:** Maternité: CDR ABONDOROU; Distance en Km: 11
- Dispensaire le plus proche *:** Dispensaire: CENTRALAZZOLO

Figure 15: Equipment inventory entry screen (web application version)

The figure shows a screenshot of a web application interface for equipment inventory entry. The form is titled 'Fiche inventaires des équipements' and includes the following fields:

- Buttons:** 'Enregistrer' (green) and 'Fermer' (red).
- Establishment *:** DIU Dioulakro
- Service *:** Dispensaire
- Unité fonctionnelle **:** Dispensaire
- Equipement **:** Lit d'hospitalisation adulte
- Précision sur la désignation:** (empty)
- Marque **:** (empty)
- Modèle **:** (empty)
- Etat fonctionnel **:** Fonctionnel
- Raison non fonctionnalité **:** Rien à signaler
- Action à faire **:** Reformer
- N° Série **:** (empty)
- Financé par **:** (empty)
- Prix unitaire Achat **:** (empty)
- Année Achat **:** 1984
- Source energie **:** Inconnu
- Observations:** (empty)
- Quantité:** 3
- Volume passif en (litre):** (empty)
- Volume à +5°:** (empty)
- Volume à -25°C:** (empty)
- Volume ultra froid:** (empty)
- Kg de glace fabriqué par jour:** (empty)

Figure 16: Equipment inventory entry screen (mobile application version)

The image displays two mobile application screens for equipment inventory entry. Both screens have a blue header with a back arrow and the title 'Fiche inventaire Équipement'.
 The left screen shows the following fields:
 - 'Etat fonctionnel': dropdown menu
 - 'Raison non fonctionnalité': dropdown menu
 - 'Action à faire': dropdown menu
 - 'Quantité': input field
 - 'N° Série *': input field with 'NA' entered
 - 'Financé par *': dropdown menu with 'INCONNU' selected
 - 'Année d'acquisition*': input field
 - 'Coût d'acquisition*': input field with '00000000' entered
 - 'Observations': text area with '00000000' entered
 - 'Date collecte informations': date picker showing '26/01/2025'
 - 'Valider' and 'Annuler' buttons at the bottom.
 The right screen shows the following fields:
 - 'Etablissement': dropdown menu with 'CSR DELAKRO' selected
 - 'Service': dropdown menu with 'Vaccination' selected
 - 'Unité fonctionnelle': dropdown menu with 'Vaccination' selected
 - 'Équipement': dropdown menu with 'Congélateur PEV' selected
 - 'Précision sur la désignation': input field
 - 'Marque': dropdown menu with 'Electrolux' selected
 - 'Modèle': dropdown menu with 'FCW 20 EG/CF' selected
 - 'Source energie *': dropdown menu with 'Electricité' selected
 - 'Volume passif en (litre)': input field with '0.00000' entered
 - 'Volume à +5°': input field with '14.00000' entered
 - 'Volume à -25°c': input field with '0.00000' entered
 - 'Volume ultra froid': input field with '0.00000' entered
 - 'Kg de glace fabriqué par jour': input field with '2.00000' entered

Figure 17: Web version building inventory entry screen

The image shows a web-based form for building inventory entry. At the top, there are two buttons: 'Enregistrer' (green) and 'Fermer' (red). The main title is 'Fiche inventaires des bâtiments'.
 The form fields are as follows:
 - 'Etablissement *': dropdown menu with 'CHR SAN PEDRO' selected
 - 'Service *': dropdown menu with 'Imagerie medicale' selected
 - 'Code Bâtiment *': input field with 'CIVDSP-SPO-02IMAO' entered
 - 'Désignation du bâtiment *': input field with '0' entered
 - 'Propriétaire du bâtiment *': input field with 'MSP' entered
 - 'Nbre d'étages du bâtiment': input field with '1' entered
 - 'Surface emprise (m2)': input field with '372' entered
 - 'Année construction *': input field with '0' entered
 - 'Financé par *': input field with 'Projet BAD' entered
 - 'Année Dernière Réhabilitation*': input field with '0' entered
 - 'Dernière réhabilitation par': input field with 'P.BAD' entered
 - 'Etat toiture*': dropdown menu with 'Réparation majeure' selected
 - 'Etat du mur et de la structure *': dropdown menu with 'Petite reparation' selected
 - 'Etat de la peinture extérieure *': dropdown menu with 'Reparation moyenne' selected
 - 'Etat du raccordement électrique *': dropdown menu with 'Reparation moyenne' selected
 - 'Etat du raccordement d'eau*': dropdown menu with 'Petite reparation' selected
 - 'Etat du raccordement d'eaux usées *': dropdown menu with 'Bon' selected
 - 'Etat du trottoir et du pied du bâtiment*': dropdown menu with 'Petite reparation' selected
 - 'Etat du soubassement *': dropdown menu with 'Bon' selected

Figure 18: Building inventory entry screen (mobile application version)

The image shows two mobile application screens for building inventory entry. The left screen displays the following information:

- Etablissement:** CSU Agnibilekro
- Service:** Prevention maternelle et infantile
- Bâtiment *:** 1
- Propriétaire:** [Empty field]
- Nombre étages:** 1
- Surface emprise:** 376 m
- Année construction:** 1990
- Financé par:** COMMUNE
- Dernière année de réhabilitation:** Année [Empty field], Effectuée par [Empty field]
- Etat toiture*:** Petite réparation
- Etat du mur et de la structure*:** Réparation moyenne

The right screen displays the following information:

- Etat du mur et de la structure*:** Réparation moyenne
- Etat de la peinture extérieure*:** Réparation majeure
- Etat du raccordement électrique*:** Bon
- Etat du raccordement d'eau*:** Bon
- Etat du raccordement d'eaux usées*:** Bon
- Etat du trottoir et du pied du bâtiment*:** Bon
- Etat du soubassement*:** Bon
- Date collecte informations:** [Yellow button]
- Buttons:** Valider, Annuler

Figure 19: Inventory entry screen for premises and offices (web application version)

The image shows a web application interface for premises and offices inventory entry. The interface includes the following elements:

- Header:** Enregistrer (green button), Fermer (red button with info icon)
- Title:** Fiche inventaire locaux et bureaux
- Form Fields:**
 - Service *:** Imagerie medicale
 - Unité fonctionnelle *:** Radiologie
 - Local/bureau *:** Chambre noire
 - Code Désignation Local dans l'unité fonctionnelle *:** 04
 - Surface Local utilisée (m2):** 15
 - Etat du mur et de la structure *:** Bon
 - Etat de la peinture extérieure *:** Réparation moyenne
 - Etat du raccordement électrique *:** Petite réparation
 - Etat sol et revêtement *:** Bon
 - Etat menuiserie porte *:** Bon
 - Etat menuiserie fenêtre*:** Inexistant
 - Etat plomberie *:** Petite réparation
 - Etat plafond et faux plafonds *:** Réparation majeure
 - Observations:** [Empty text area]

Figure 20: Inventory entry screen for premises and offices (mobile application version)

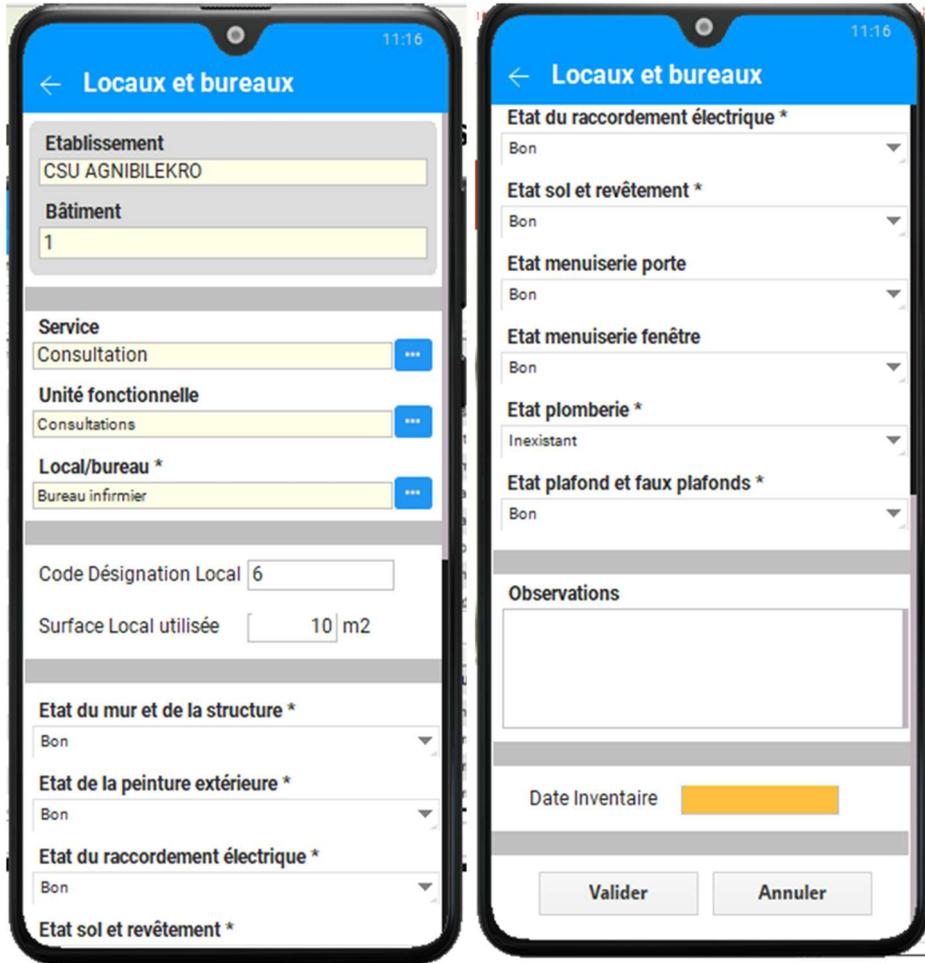
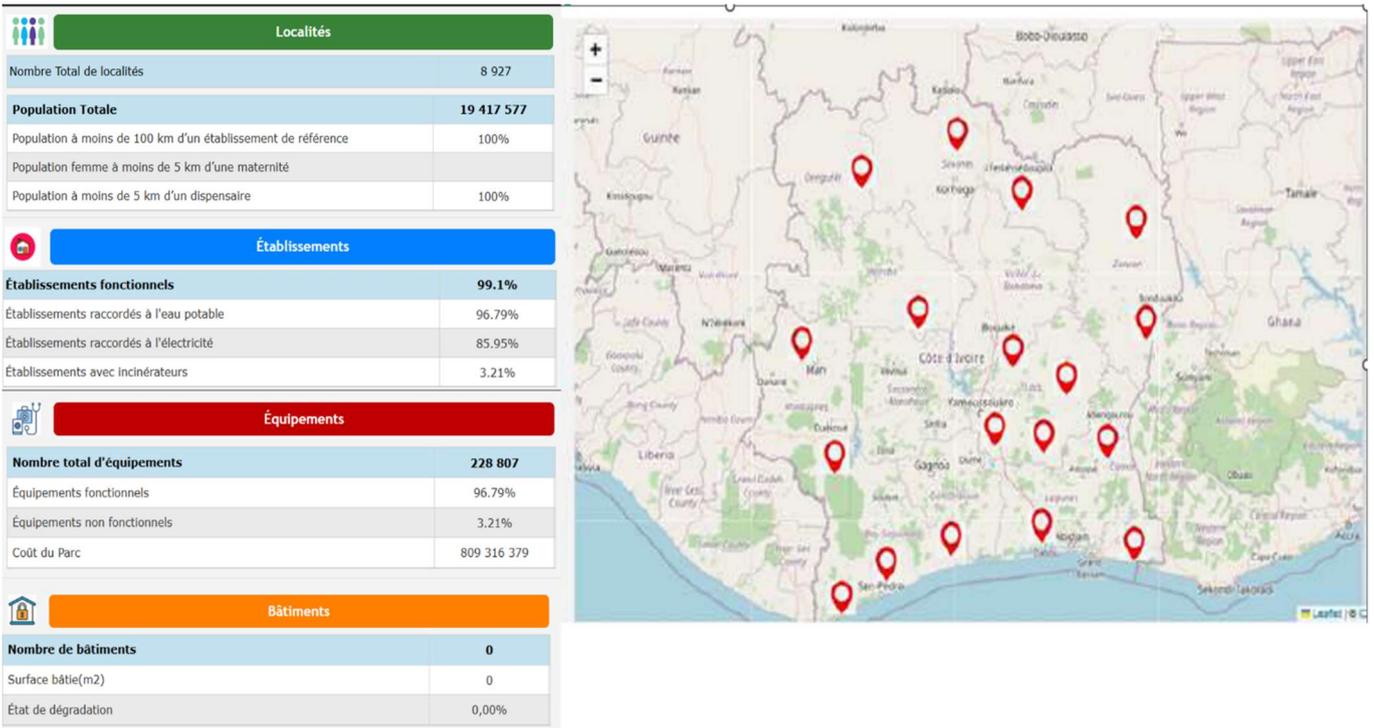


Figure 21: Operational monitoring indicators



4. ⁴Periodic evaluation

Every 3 to 5 years, depending on the frequency set by the country, an external or internal evaluation may be conducted. During this evaluation, in addition to structured interviews with stakeholders involved in asset management and maintenance, observations of the stakeholders' working environment, inspections of implemented resources, and a document review, the available inventory is processed and analyzed to determine indicators that will allow progress to be measured and the achievement of expected objectives.

As an illustration, this document presents some results of the processing of inventory data from a fictitious country called **RD Groukoro** whose characteristics are presented below. The evaluation will be based solely on the two strategic indicators, which are:

- **Access to healthcare** (% Women of childbearing age with access to a maternity ward within x km, % Population with access to primary healthcare within y km, % Population with access to referral care within z km, etc.)
- **Condition of equipment and investments** (obsolescence, functionality, depreciation rate of investments, etc.)

Figure 22: Geographical location of the Groukoro Democratic Republic



Country characteristics

Physical inventory period Equipment	May 12, 2024	February 1
Physical inventory period of the establishment	November 24, 2024	February 1
Physical inventory period, locality	November 24, 2024	February 2
Total population	44 738 494	
Woman of childbearing age	21 961 083	
Child 0-11 months	1 190 795	
Number of available administrative localities	8 935	
Number of establishments available	3 400	
Number of primary healthcare facilities	2 968	
Number of primary schools with maternity wards	1 555	
Number of available equipment	246 039	
%Location that has been the subject of an inventory of fixtures	99,98%	
%Establishment that has undergone an inventory	99,97%	
%Equipment that was physically inventoried	100,00%	

⁴ The country and data used are fictitious and serve for illustrative purposes only.

4.1. Access to healthcare

Overall situation

% of localities with a primary care facility within 5 km	2.61
% of localities with a maternity ward within 5 km	2.53
% of localities with access to referral care within 100 km	49.71
%Population with access to referral care within 100 km	23.04
% Women of childbearing age with access to a maternity ward within 5 km	2.50
%Population with access to primary healthcare within 5 km	1.01
%Locations with access to the GSM network	32.34
% Localities with a modern access road for their service	19.87

Figure 23% Localities with a primary care facility

Figure 24: % of localities with a maternity ward within 5 km

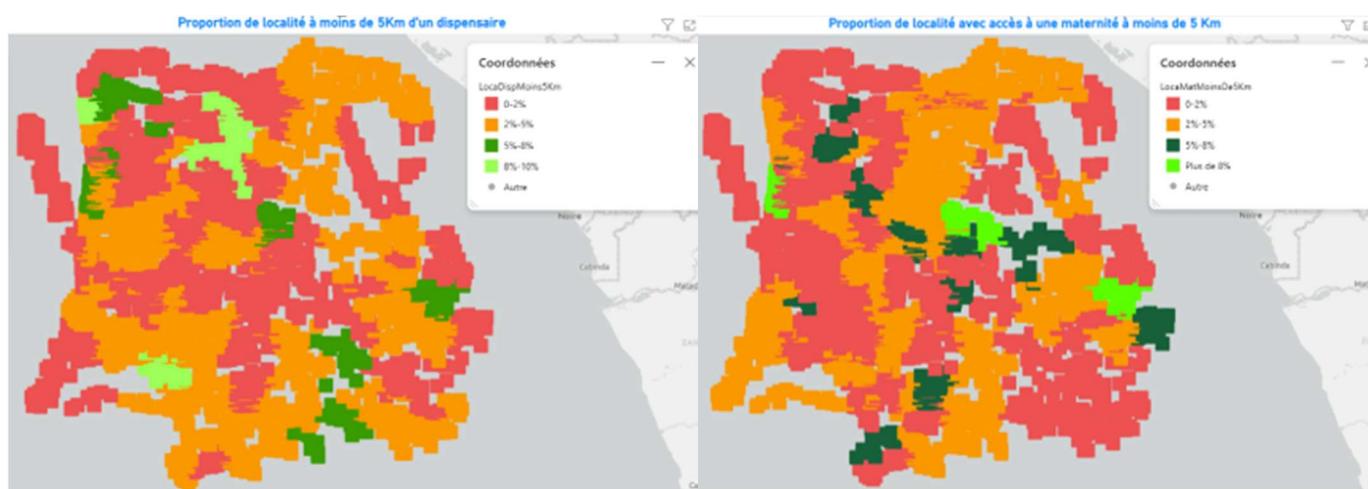
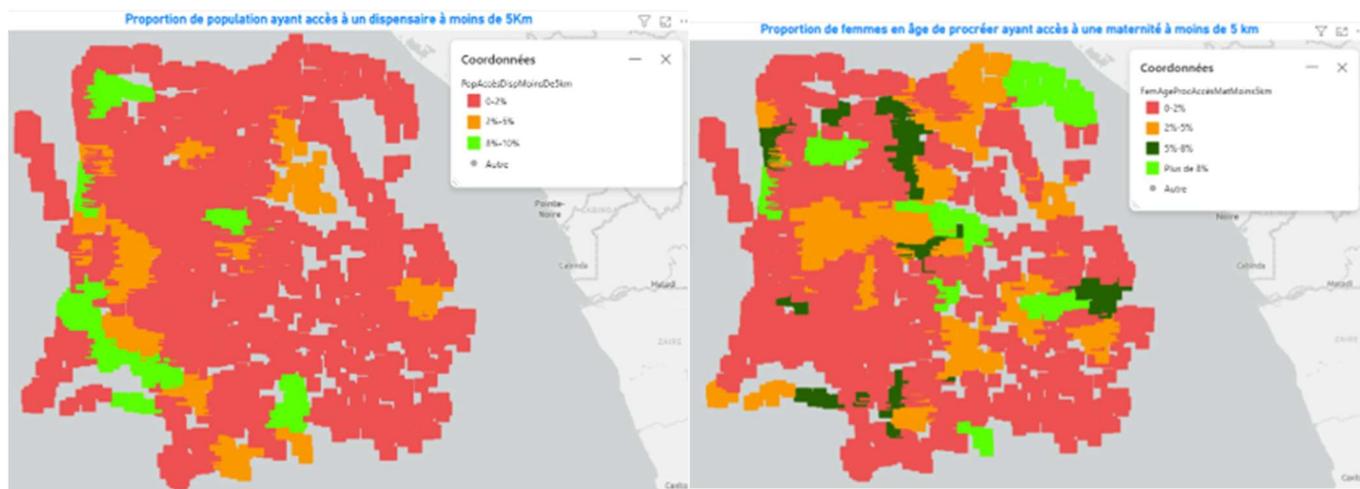


Figure 25: %Population with access to primary healthcare within 5 km

Figure 26: % Women of childbearing age with access to a maternity ward within 5 km



In red are the areas with deficiencies to be filled in the theme, in light green are the areas with the best quality in relation to the theme, but may not have reached the expected objective.

4.2. State of equipment and investments

4.2.1. Healthcare facilities

Overall situation

%Establishments with access to drinking water	19.94%
%Establishments with access to electricity	86.24%
% Functional establishments open with activity	99.15%
%Establishments with an incinerator	33.68%
%Establishments with a fence in good condition	25.53%
Number of primary healthcare facilities per locality	0.33
Number of primary healthcare facilities per 10,000 inhabitants	0.66
Number of primary schools with maternity wards per locality	0.17
Number of maternity facilities per 10,000 women of childbearing age	0.71

Figure 27: Number of primary healthcare facilities per locality

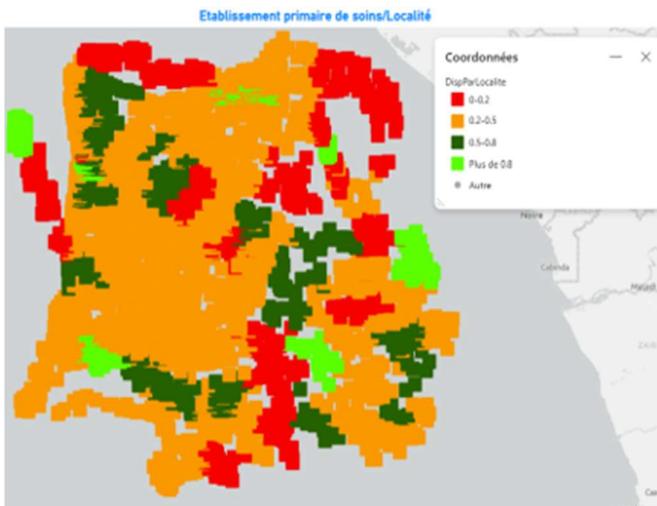


Figure 28: Number of primary/maternity facilities per locality

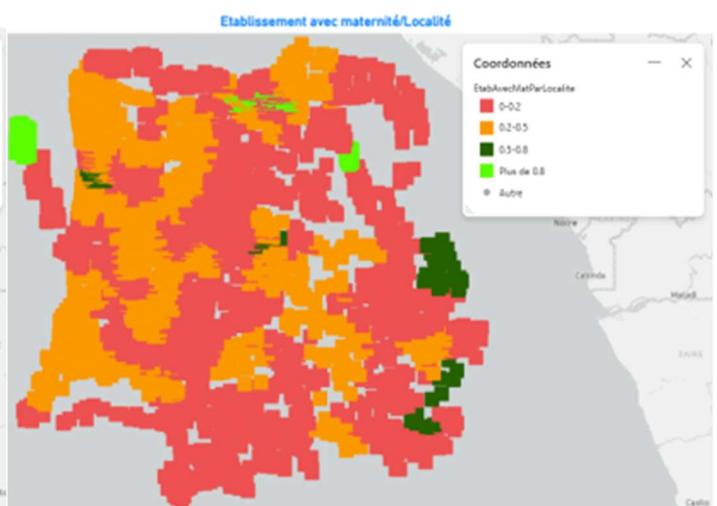


Figure 29: Number of primary healthcare facilities per 10,000 inhabitants

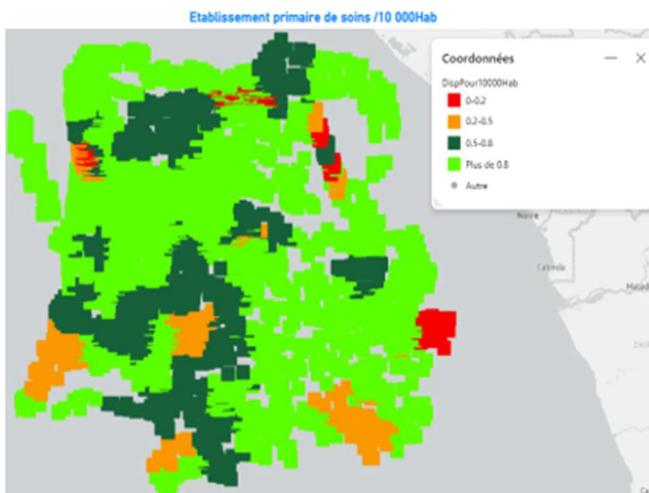
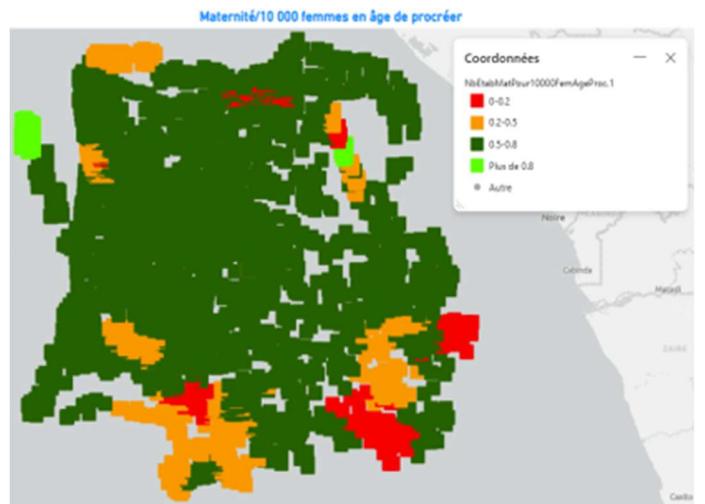


Figure 30: Number of maternity wards per 10,000 women of childbearing age



4.2.2. Condition of equipment

Overall situation

% Functional equipment	96.84
%Equipment requiring repairs	3.23
%Equipment to be refurbished	2.83
%Equipment less than 5 years old	52.54
%Equipment between 5 and 10 years old	33.39
%Equipment older than 10 years	14.06
Positive storage capacity coverage	70
Negative storage capacity coverage	67
Hospital equipment rates according to norms and standards	2.2
%Solar equipment	0.48
%Electrical equipment	7.76
%Equipment Petrol	1.87
%Gas oil equipment	0.30
%Equipment not using energy	89.58
%Equipment using other energy sources	0.01
%PQS Approved Equipment	51.25
%PIS-approved equipment	1.45
%WIFR approved equipment (Negative Cold Room)	0.00
%ULTF (Ultra Cold) Approved Equipment	0.01
%WICF approved equipment (Positive/Negative cold room)	0.00
%WICR-approved equipment (Positive cold room)	0.01
% Equipment without certification	47.28

Figure 31: % Functional equipment

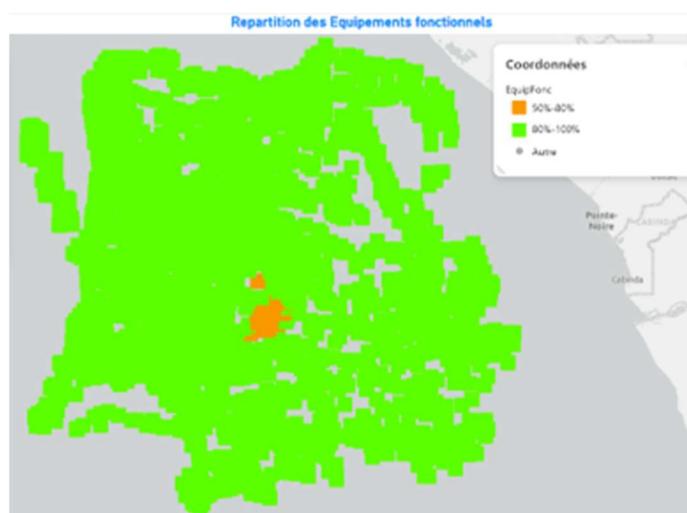


Figure 32: %Equipment less than 5 years old

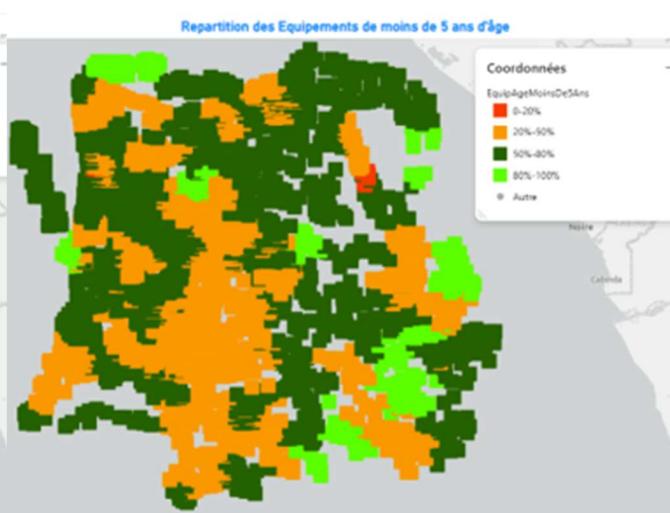


Figure 33: Distribution of equipment according to age

Figure 34: Equipment distribution according to the standard

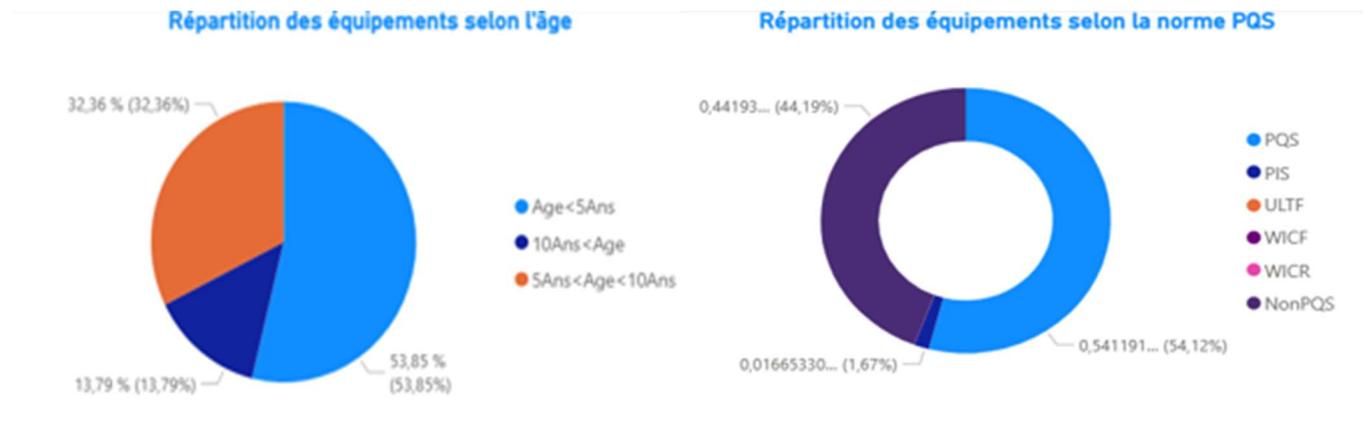


Figure 35: Equipment coverage according to the MPA in 2025

Figure 36: 2028 projection of equipment coverage

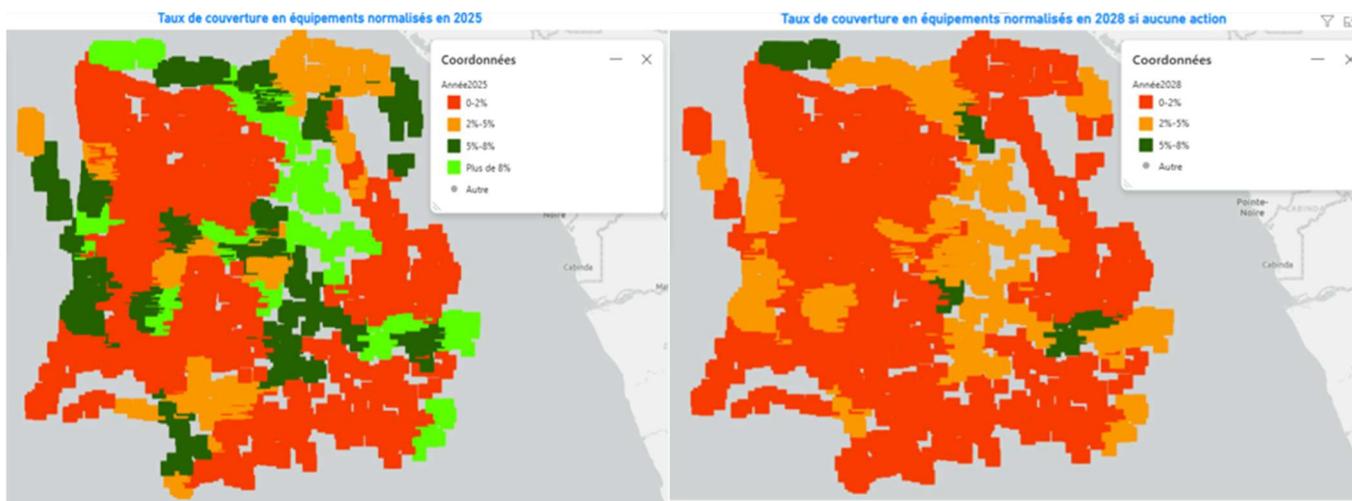


Figure 37: Positive storage capacity coverage 2025

Figure 38: Projection 2028 positive storage capacity coverage

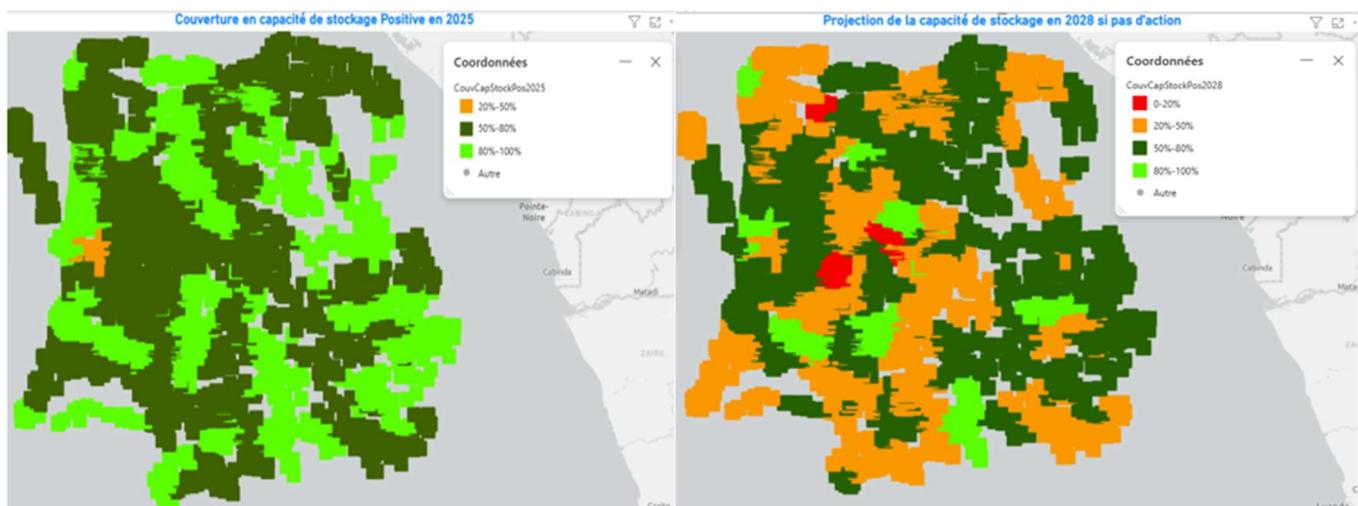


Figure 39: Positive storage capacity coverage by CC level and by year

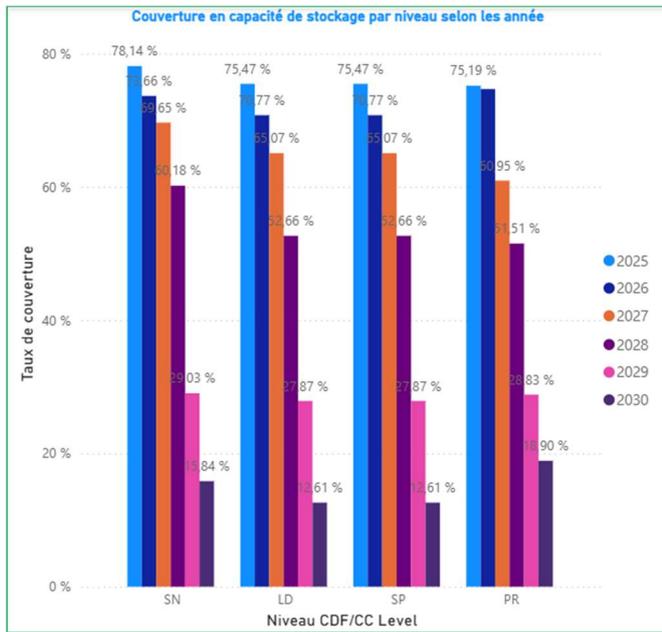
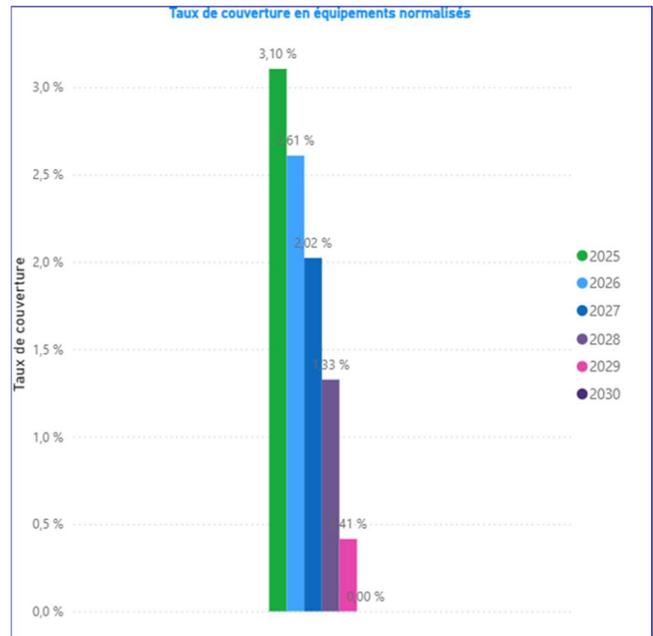


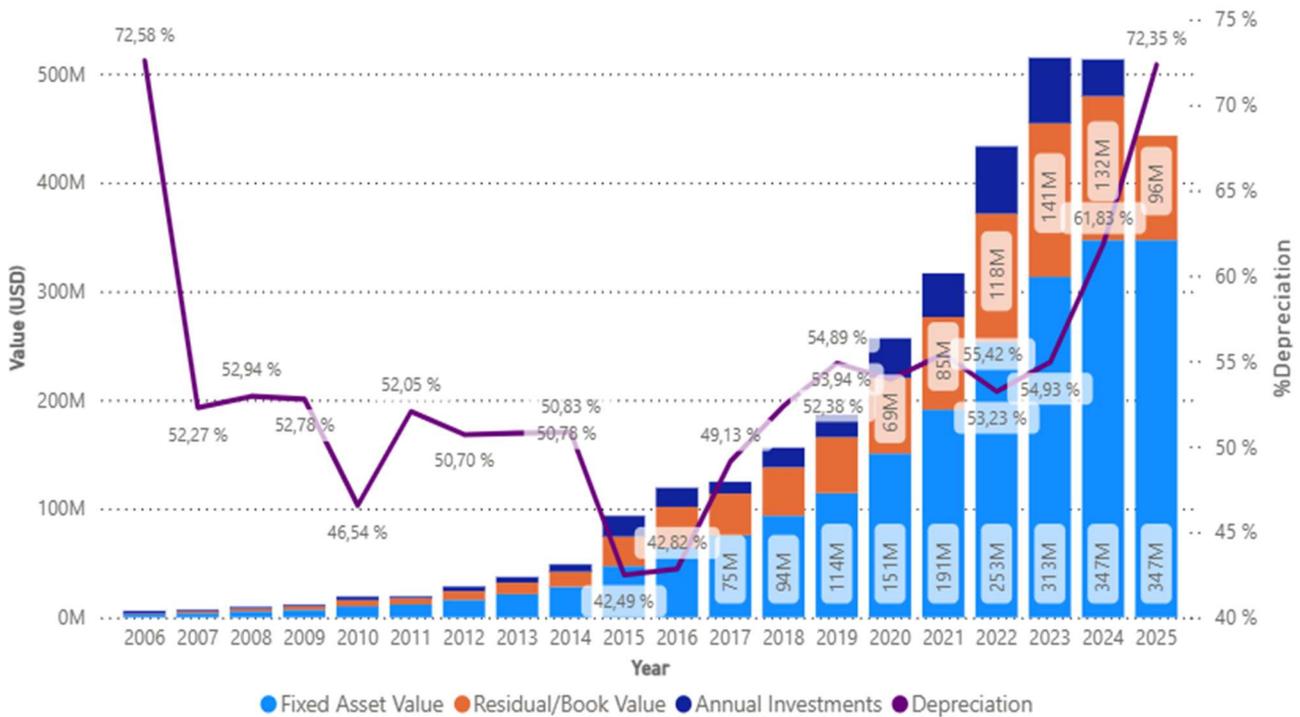
Figure 40: Equipment coverage rate according to the MPA



4.2.3. Statement of Fixed Assets

Estimated budget for PEV cold chain upgrade over the period	12,789,103 USD
Average budget for upgrading technical platforms over the period	423 605 927 USD
Average gross value of fixed assets in 2025	347 014 374 USD
Residual or book value of fixed assets 2025	95,964,681 USD
Fixed asset depreciation rate 2025	72.34%

Figure 41: Condition of fixed assets 20 years prior



4.3. Improvement plan

The improvement plan will propose budgeted and scheduled actions over a period of 3 to 5 years, in accordance with national policy, to address the system's weaknesses. It will be based on two main pillars:

1. A detailed report of the deficiencies identified during structured interviews, observations of the work environment, resource inspections and document review, accompanied by the corresponding mitigation measures and their financial translation for actions requiring a budget, all presented according to an implementation schedule of 3 to 5 years adapted to each country.
2. A plan for upgrading technical platforms, established from the analysis of inventories and compared to national standards for technical platforms by type of establishment (PMA), specifying the material, priority and budgetary needs for compliance.

Figure 42: Capital expenditure and budget for upgrading technical platforms: perspectives

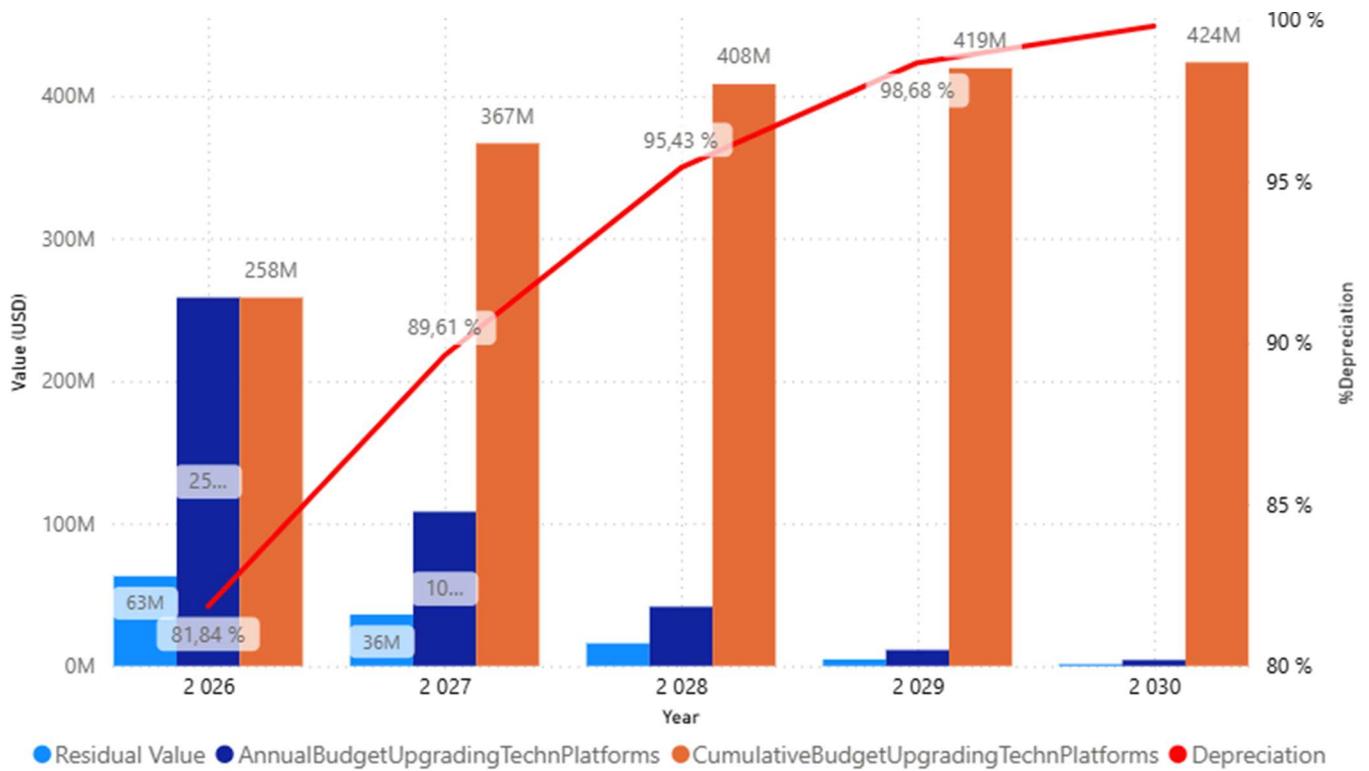


Figure 43: Detailed budgeted plan for upgrading the cold chain in the case of establishments in a district

96 002 USD											
Healthcare facility	41 263 USD					12 588 USD		9 032 USD	24 086 USD	9 032 USD	
	Year 2026					Year 2027		Year 2028	Year 2029	Year 2030	
	3 347 USD	3 556 USD	284 USD	3 968 USD	30 108 USD	3 556 USD	9 032 USD	9 032 USD	24 086 USD	9 032 USD	
	Congélateur, PEV B Medical Systems Sarl TFW 3000 AC	Congélateur, PEV B Medical Systems Sarl TVW4000AC	Congélateur, PEV Vestfrost MF114	Réfrigérateur, PEV B Medical Systems Sarl TCW 4000 AC	Réfrigérateur/ Congélateur, PEV B Medical Systems Sarl TCW 2000 AC	Congélateur, PEV B Medical Systems Sarl TVW4000AC	Réfrigérateur/ Congélateur, PEV B Medical Systems Sarl TCW 2000 AC	Réfrigérateur/ Congélateur, PEV B Medical Systems Sarl TCW 2000 AC	Réfrigérateur/ Congélateur, PEV B Medical Systems Sarl TCW 2000 AC	Réfrigérateur/ Congélateur, PEV B Medical Systems Sarl TCW 2000 AC	Réfrigérateur/ Congélateur, PEV B Medical Systems Sarl TCW 2000 AC
3 347 USD	3 556 USD	284 USD	3 968 USD	3 011 USD	3 556 USD	3 011 USD	3 011 USD	3 011 USD	3 011 USD	3 011 USD	
CSU DAGOUDJE 8							1				
CSU DAGOUDJE 9			1	1							
HG DAGOUDJE 10					1						
DRS DAGOUDJE 11											
CSR DAGOUDJE 12											
CSU DAGOUDJE 13											
CSR DAGOUDJE 14							1				
CSR DAGOUDJE 15											
CSU DAGOUDJE 16									1		
Dis DAGOUDJE 17					1						
CSR DAGOUDJE 18											
HG DAGOUDJE 19							1				
CSR DAGOUDJE 20										1	
CSU DAGOUDJE 21									1		
DIS DAGOUDJE 22										1	
CSR DAGOUDJE 23					1						
CSR DAGOUDJE 24											
CSR DAGOUDJE 25					1						
CSR DAGOUDJE 26								1			
CSU DAGOUDJE 27	1				1						
Dep DAGOUDJE 28		1				1					
CSR DAGOUDJE 29					1						
CSR DAGOUDJE 30					1						
CSR DAGOUDJE 31										1	

Figure 44: Detailed budgeted plan for upgrading hospital technical platforms in the case of establishments in a district

Healthcare facility	Equipment Designation	Quantitative needs					Annual budget for upgrading technical platforms (USD)				
							17 327 230 USD				
		2026	2027	2028	2029	2030	2026	2027	2028	2029	2030
						10 037 848 USD	4 720 144 USD	1 875 174 USD	397 896 USD	296 169 USD	
CSU DAGOUDJE 8	Oxygen therapy device	2	1	1							
CSU DAGOUDJE 8	0.6 litre cold pack	12	8	3	1		15	10	4	1	
CSU DAGOUDJE 8	Dental amalgamator	1									
CSU DAGOUDJE 8	Instrument cabinet	2	1			1 087	544				
CSU DAGOUDJE 8	Storage cabinet	12	7	3	1	6 539	3 815	1 635	545		
CSU DAGOUDJE 9	Wardrobe	1	1								
CSU DAGOUDJE 9	Mucositis aspirator	2	1	1		1 482	741	741			
CSU DAGOUDJE 9	Moist heat sterilizer (Autoclave)	1				4 073					
CSU DAGOUDJE 9	Decontamination/Disinfection Tr	1				111					
CSU DAGOUDJE 9	Bench	9	5	2	1	1 788		397	199		
CSU DAGOUDJE 9	Bedpan	29	19	8	2	1 656	1 085	457	114		
CSU DAGOUDJE 9	Birth box	1	1			412	412				
CSU DAGOUDJE 9	General surgery box	1				670					
CSU DAGOUDJE 9	Bandage box	1	1		1	198	198		198		
CSU DAGOUDJE 9	Suture box	1	1			281	281				
CSU DAGOUDJE 9	Gynecological examination kit	2	1			956	478				
CSU DAGOUDJE 9	Dental extraction box	1									
CSU DAGOUDJE 9	Nurse's kit	3	2	1		602	401	201			
CSU DAGOUDJE 9	Folding stretcher	1				208					
CSU DAGOUDJE 9	Desk with 1 drawer	7	4	2		4 074	2 328	1 164			
CSU DAGOUDJE 9	Desk with 2 drawers	2	1			1 427	714				
CSU DAGOUDJE 9	Secretarial office	1				429					
CSU DAGOUDJE 9	Cash register	1									
CSU DAGOUDJE 9	Meeting chair	10	7	2	1	463	324	93	46		
CSU DAGOUDJE 9	Visitor chair	18	14	5	2	2 146	1 669	596	238		
CSU DAGOUDJE 9	Medical trolley	1									
HG DAGOUDJE 10	Trolley, dressing/care	3	1	1		1 446	482	482			
HG DAGOUDJE 10	Cart, instruments	5	3	2		1 930	1 158	772			
HG DAGOUDJE 10	Hanging file drawer filing cabinet	3	1	1		648	216	216			
HG DAGOUDJE 10	Security safe or safe	1									
HG DAGOUDJE 10	Medical air compressor	1									