USAID GLOBAL HEALTH SUPPLY CHAIN PROGRAM

Procurement and Supply Management

Technical Report

Supply Chain Information System Assessment Maturity Model (SCISMM) Assessment Report

Ministry of Health (MoH), Burkina Faso

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**TABLE OF CONTENTS**

[1. Executive Summary 1](#_Toc77663658)

[2. overview OF SCISMM 4](#_Toc77663659)

[2.1. Background 4](#_Toc77663660)

[2.2. Structure of SCISMM 4](#_Toc77663661)

[2.3. Maturity Levels 5](#_Toc77663662)

[3. SCIS Assessment methodologies and plan 6](#_Toc77663663)

[3.1. Planning of TA Execution 6](#_Toc77663664)

[4. Task Schedule and plan 8](#_Toc77663665)

[4.1. Review Documents 8](#_Toc77663666)

[4.2. Interview Schedule 8](#_Toc77663667)

[4.3. Information System Identified 9](#_Toc77663668)

[5. Maturity Score and Observations 11](#_Toc77663669)

[5.1. Supply Chain Maturity Score and Maturity Level 11](#_Toc77663670)

[5.2. Score and Maturity Level Analysis 12](#_Toc77663671)

[6. Near Term Actions and next stepS 15](#_Toc77663672)

[6.1. Lack of availability and visibility of national stock data across all levels 15](#_Toc77663673)

[6.2. Lack of centralized and unified national master dataset 15](#_Toc77663674)

[6.3. Next Step 16](#_Toc77663675)

**LIST OF TABLES**

[Table 1: Schedule and Participants of the Assessment 8](#_Toc77663676)

[Table 2: Summary of Information Systems in Country 9](#_Toc77663677)

**LIST OF FIGURES**

No table of figures entries found.

# Executive Summary

The availability of health products is crucial in Burkina Faso's national healthcare provision system. Lack of real time data visibility across all levels of the health system has been a challenge throughout the supply chain operation. Since 2016, the Health Products Supply Chain Management Directorate (DCAPS) of the Ministry of Health (MoH), has initiated a Logistics Management Information System (LMIS) project to reduce workload on paper reporting and avoid the risk of error leading to the demotivation of staff.

Later in 2019 with the support from the World Bank under the SWEDD program (Women's Empowerment and Demographic Dividend in the Sahel region), the IT department, DSIS, of the pharmacy department (DCAPS) rolled out a logistics data reporting system (NetSIGL v1.0), based on DHIS2 platform, to collect stock information at SWEDD supported facilities. The benefits of the project has been acknowledged. However, the scope of data collected is limited to national forecasting and supply planning.

To improve the reporting, processing and logistics data analysis, the Ministry of Health, with financial support from International NGO and technical support from GHSC-PSM, launched a new logistic management system project to collect data nationwide. To support the implementation of the integrated logistics management information, standard reporting templates and standards operations procedures manual (SOPs) have been developed with a harmonized reporting tools on paper for priority health programs (malaria, HIV, TB, RH/FP, Nutrition, essential medicines) and development of a new eLMIS, NetSIGL v2.0, has also been initiated.

The Supply Chain Information System Maturity Model (SCISMM) assessment was planned to evaluate the maturity of the current information systems (IS) and tools implemented in country, and to identify recommendations to address the potential missing features and or capabilities in the design of the NetSIGL v2.0 and current supply chain operation. Refer to section 2 for detailed background description of SCISMM tool.

The SCISMM assessment Short Term Technical Assistance (STTA) was conducted for the duration of July 5th – 16th, 2021 in Ouagadougou, Burkina Faso led by the PSM consultant. Method of the assessment consists of document review, in person interviews with key stakeholders, and system demonstration. Refer to section 3 for the detailed assessment methodologies and plan.

The onsite project stared with a kickoff meeting to provide an overview of the SCISMM tool, objectives, and processes of the SCISMM execution, as well as the next step. Participants are from the DCA, DGAP and CAMEG organizations for interviews at the GHSC-PSM office or at CAMEG office. Refer to Section 4 for the daily schedule and organization visited.

Upon the completion of the questionnaire interviews, two dashboards are generated automatically through the SCISMM tool: the SCISMM score dashboard and maturity level chart of each supply chain functional category.

Chart, radar chart

Description automatically generatedThe SCISMM score dashboard showing on the right illustrates the performed activities of each category based on the answers provided. The score percentage indicates the number of performed activities of all questionnaires across all five (5) maturity levels in each category.

Summarizes below is the score of each functional category:

* Forecasting and Planning: 40%
* Supplier & Contract Management: 55%
* Procurement System: 56%
* Order Management: 42%
* Warehouse Management: 67%
* Transportation Management: 43%
* Track & Trace: 39%
* Data Management & Exchange: 27%

The maturity level chart below depicts the percentage of performed activities of each maturity level.

Chart, bar chart

Description automatically generated

Outcome of the assessment indicates that the SCIS maturity of Burkina Faso is at Level 2 (transactional level), out of 5 maturity levels defined, as various Excel spreadsheets are used to support operation. The spreadsheets provide electronic approach for data management, but lack of capability for real time data exchange and sharing to reduce workload and manual operation for data collection and analysis. Refer to section 5 for the detailed analysis.

Three (3) observations were identified for near term actions to support the successfully rollout of the NetSIGL v2.0 and promote timely warehouse operation to increase efficiency.

1. **Lack of availability and visibility of national stock data across all levels** is the main challenge as it hiders the forecasting, supply planning and procurement operation that contributes to the unbalanced stock and unreliable commodities availability.
2. **Lack of centralized and unified master dataset** (e.g. products, facilities and suppliers, etc ) and maintenance methods to promote data accuracy and consistency.
3. **Inaccessible information system at warehouse for timely operation.** Sage ERP system is installed at the administrative building and operated by administrative staff using data captured on paper-forms, due to the rime delay and error-prone method which prevents the accurate stock information to be used for order process.

Refer to section 6 for the details.

# overview OF SCISMM

## Background

USAID supply chain technical assistance programs heavily invested in information systems as a means of achieving contraceptive security. In FY18, GHSC-PSM developed with USAID the Supply Chain Information System Maturity Model (SCISMM) to meet the needs of countries and technical assistance providers in assessing and implementing standards-based information systems that reflect best practices.

SCIS Functionalities have been organized based on the Supply Chain Operations Reference (SCOR) model and the American Productivity & Quality Center (APQC) Process Classification Framework. The tool details information system capabilities in public health supply chains based on the SCOR model and provides a framework for adopting a progressive implementation for supply chain information systems.

SCISMM was intended to be used as an assessment tool to evaluate the maturity status of information systems (IS) implemented in country for the supply chain operation. Outcome of the assessment will

1. Provide maturity analysis of the As-Is ISs implemented
2. Outline the strength, weakness and opportunities for improvement
3. Propose MIS improvement roadmap and prioritize activities
4. Define performance indicator for continuous improvement

## Structure of SCISMM

The SCISMM questionnaires are organized based on eight (8) key function categories of supply chain operation. The structure of the SCISMM questionnaire consists of function category 🡪subfunction 🡪 activity. The function categories and associated subfunctions are as follows:

1. Forecasting & Planning System
   1. Demand/Consumption Planning
   2. Supply Planning
2. Procurement System
   1. Procurement Processing
   2. Fulfillment Visibility
3. Supplier & Contract Management System
   1. Sourcing
   2. Tender Management
   3. Supplier Information Management
4. Order Management
   1. Requisitioning
   2. Requisition Approval
   3. Inventory Visibility
   4. Requisition Fulfillment
   5. Order Visibility
5. Warehouse Management System
   1. Inbound Processing
   2. Inventory Management
   3. Outbound Processing
6. Transportation Management System
   1. Route Management
   2. Transportation Execution
   3. Freight Audit and Payment
7. Track and Trace
8. Commodity Tracking
9. Commodity Tracing
10. Authentication / Verification
11. Data Exchange and Management
    1. Data Exchange
    2. Product Master Data Management
    3. Facility Master Data Management
    4. Supplier Master Data Management

## Maturity Levels

Five (5) maturity levels are defined for each SCIS function category including:

* **Level 1: Reporting Based**

Manually driven processes using paper based or stand-alone reporting based tools

* **Level 2: Transactional**

Basic automation of processes through transactional systems

* **Level 3: Advanced Digitization**

Advanced digitization of majority of processes Integrated workflows across critical supply chain functions

* **Level 4: End to End Visibility** (Integration & Data Exchange)

Visibility across all supply chain functions enabled by automated data exchange across all supply chain systems

* **Level 5: Digital Ecosystem** (Collaboration)

Collaborative processes across various Ecosystems

Diagram below summary the definition and scope of each maturity level.



# SCIS Assessment methodologies and plan

The SCISMM assessment was conducted for the duration of July 5th – 16th, 2021 in Ouagadougou, Burkina Faso. The interview sessions were held at the GHSC-PSM office and the office of CAMEG.

## Planning of TA Execution

Planning of the assessment includes of three key phases considered for planning the SCISMM assessment execution: pre-trip, on-site and post-trip. Activities and related sequence are summaries below.

### Pre-Trip process and activity



The activities of the pre-assessment plan shall include, but are not limited to:

1. Identify document for pre-reading such as the National MIS Strategy and/or National Supply Chain Operation Strategy, etc.
2. Confirm the scope of assessment: primary focus is the National level SCIS operation.
3. Identify and confirm interviewee candidate(s) from MoH and/or GHSC-PSM or other Implementing Partners (IPs) if applicable.
4. Propose interview schedule for confirmation in terms of activities, schedule (date/time), location, interviewees and observation of system operation.
5. Confirm schedule for observing system operation.
6. Plan for in-brief and out-brief if applicable

### On-Site process and activity



The physical on-site activities were conducted at client sites or via calls remotely.

1. The onsite task execution starts with the in-brief presentation with the Mission and MoH. During the in-brief, reconfirm of the assessment plan is needed to ensure the availability of the interviewees and location. Should a change be required, TA provider shall rearrange the activities to optimize task execution while in country.
2. Due to the language difference, translation of documentation and or conversation may need to be arranged in advance.
3. During the assessment period, ambiguous questions shall be highlighted for later review. The highlighted subjects will be reviewed by the SCISMM team for further action.
4. Purpose of the observation of system operation is to confirm the interview answer is consistent with the actual system operation as it can provide the insights for possible system functionality enhancement (e.g. via configuration or development) and/or strengthening of standard operating procedures (SOPs) to be aligned with the systems.
5. De-brief with the USAID Mission, MoH and GHSC-PSM field office (FO) is strongly encouraged. However, an out-brief to the Country Director of the GHSC-PSM is required.

### Post-Trip process and activity



1. Main purpose of the post-trip activity is to develop the assessment technical report.
2. Upon the submission of final assessment technical report, a de-brief to USAID backstop in Washington DC would be optional. PMU would have the final decision.

# Task Schedule and plan

The methodology for executing the assessment includes:

1. Review documents
2. Interview candidates for roles, responsibilities and scope of operation
3. Question and answers to SCIS questionnaire
4. Observe system operation if applicable

## Review Documents

Listed below are documents reviewed to understand the national objectives, strategy, and plan for the in-country health operation in preparation for the assessment interview.

1. NETSGIL v2.0 project plan and requirements
2. NETSIGL v2.0 requirements document

## Interview Schedule

Table below summarizes the interview schedule of the assessment in terms of date, activity, organization and participant(s).

Table 1: Schedule and Participants of the Assessment

| **Date** | **Activity** | **Organization** | **Participant(s)** |
| --- | --- | --- | --- |
| 5 July AM | Meet and Greet at MoH | DGAP/DCAPS | Dr SANOU Pascaline |
| 6 July AM | Kickoff | DCAPS; PNLP & PSM | * Dr MAIGA Masséta (DCAPS) * Dr ZONGO Lassané (DCAPS) * Dr OUATTARA Abibata (DCAPS) * Mr ZANGRE N. Rigobert (DCAPS) * Dr DIANDA Frédéric (PNLP) * Mr BAKO Bali (PSM) |
| 6 July PM | Interview on Forecasting and Planning | DCAPS; PNLP & PSM | * Dr MAIGA Masséta (DCAPS) * Dr DIANDA Frédéric (PNLP) * Mr BAKO Bali (PSM) |
| 7 July AM | Interview on procurement and Order operation | DCAPS & PSM | * Dr MAIGA Masséta (DCAPS) * Dr DIANDA Frédéric (PNLP) * Mr BAKO Bali (PSM) |
| 7 July PM | Interview Track and Trace; Data Management and Exchange | DCAPS | Mr ZANGRE N. Rigobert (DCAPS) |
| 8 July PM | Interview warehouse and Transportation | CAMEG & DCAPS | * Dr OUEDRAOGO Haoua (CAMEG) * Dr OUEDRAOGO Inès (CAMEG) * Dr OUATTRA Abibata (DCAPS) |
| 9 July PM | Interview Procurement, Supplier & Contract, Order Management | CAMEG & DCAPS | * Dr OUEDRAOGO Haoua (CAMEG) * Dr OUEDRAOGO Inès (CAMEG) * Dr OUATTRA Abibata (DCAPS) |
| 12 July AM | Meet and Greet CAMEG DG | CAMEG | Dr K’HABORE Anne Maryse |
| 12 July AM | Visit CAMEG warehouse | CAMEG | Dr OUEDRAOGO Haoua |
| 13 July AM | Interview Trace and Trace, Data Management and Exchange | CAMEG | Mr SOUBEIGA Abraham |
| 14 July PM | GFPVAN operation | PSM-FTO | Madam TOURE/ZOHOUN Alimatou Bio |
| 16 July PM | Assessment Debrief | Mission  DGAP/DCAPS CAMEG  PSM | * Dr Pascaline SANOU (DCAPS) * Dr Abibata OUATTARA (DCAPS) * Dr Lassané ZONGO (DCAPS) * Dr Irène NGENDAKUMANA (USAID/PMI) * Parfait EDAH (GHSC-PSM BFA) * Gnawbôrou Rachid KONFE (GHSC-PSM) |

## Information System Identified

Table below lists the information systems identified that have been deployed in each relevant organization for its operation. The summary outlines the name, brief description and the ownership of the information systems.

Table 2: Summary of Information Systems in Country

| **No** | **Name of IS** | **Brief Description** | **Ownership** |
| --- | --- | --- | --- |
| 1 | NETSIGL v1.0 | Stock data reporting system for program product funded by SWEDD project. | MoH |
| 2 | Sage 1000 | ERP system for finance and warehouse management | CAMEG |
| 3 | GeoTrack | Product distribution tool to track vehicle location during distribution | CAMEG |
| 4 | Pipeline | Supply planning tool used by all programs, will be retired by the QAT (Quantification Analytics Tool) | MoH |
| 5 | QuantiMed | Forecasting tool used by FP program only. | MoH |
| 6 | Excel Spreadsheets | Primary tool for majority supply chain operation | All |
|  | ARTMIS | Procurement system leveraged by the GHSC-PSM for USAID funded program products | GHSC-PSM |
|  | WAMBO | Procurement system leveraged by the Global Fund for its program products | GF |
|  | GFPVAN | Control tower tool that centralized the procurement, shipment and order information from suppliers, donors and MoH for the family planning program | GHSC-PSM |

# Maturity Score and Observations

## Supply Chain Maturity Score and Maturity Level

Two dashboards are generated via the SCISMM interview: the SCISMM score dashboard and maturity level chart of each supply chain functional category.

### SCISMM score dashboard

Chart, radar chart

Description automatically generatedThe SCISMM score dashboard on the right illustrates the performed activities of each category based on the answers provided. For each category, the score is calculated as the percentage of all activities within the five (5) maturity levels that are actually performed.

* Forecasting and Planning: 40%
* Procurement System: 56%
* Supplier & Contract Management: 55%
* Order Management: 42%
* Warehouse Management: 67%
* Transportation Management: 43%
* Track & Trace: 39%
* Data Management & Exchange: 27%

### SCISMM Maturity Level Chart

The maturity level chart below summaries the percentage of performed activities of each maturity level.

Chart, bar chart

Description automatically generated

## Score and Maturity Level Analysis

Summarized below is the findings and observations of each function category per feedbacks and recommended received through the interviews.

### Forecasting and Supply Planning

The Forecasting and Supply Planning category scored an overall of 40% and it’s within the transactional level (Level 2). Findings and observations include:

* Key data of demand/consumption/supply planning are captured electronically using the Excel spreadsheets.
* Excel spreadsheets with some advanced criteria (based on experience and lessons learned) are used to facilitate the forecasting, supply planning exercise on a quarter, semi-annual and annual basis.
* Historical files are maintained for reference.
* Manual operation is required for data consolidation, which consumes additional resources.
* Standalone data source, with no mechanism for data sharing.

### Supplier and Contract Management

The supplier and contract management category scored an overall of 55% and it’s within the advanced digitalization level (Leve 3). The evaluation was based on the procurement operation at CAMEG for essential medicines and MoH sponsored products. Donors leverage their own procurement ERP system to manage supplier and contract detail – which is out of scope of the assessment. Findings and observations include:

* Majority Key data of supplier and contract are captured electronically using the Words, Excel spreadsheets and or pdf files.
* Contracting operation are performed manually without information system. The signed contract and key data elements are entered to the Sage ERP system to create the Purchase Order to trigger upcoming receiving operation.
* Excel spreadsheets with some advanced criteria (based on experience and lessons learned) are used to track supplier information, performance, and contract status.
* Historical files are maintained within CAMEG internal network for records and future audit.
* Manual operation is required for data consolidation, additional resource is required.
* Standalone data source, without mechanism for data sharing.

### Procurement System

The procurement system category scored an overall of 56% and it’s within the advanced digitalization level (Leve 3). The evaluation was based on the procurement operation at CAMEG for essential medicines and MoH sponsored products. Donors leverage their own procurement ERP system to manage supplier and contract detail – which is out of scope of the assessment. Findings and observations include:

* Donor leverages its own IT solution for procurement, while CAMEG procurement process is completely manual operation; GHSC-PSM (ARTMIS); GF (WAMBO) and CAMEG (Excel and Words) for RO, RFQ, contracts, etc.
* Procurement operation is well performed for all programs regardless of methodologies.
* Majority Key data of supplier and contract are captured electronically using the Words, Excel spreadsheets and or pdf files.
* Tendering and procurement process are performed manually in accordance with its standard operating procedure but without an automation tool. The vendor proposals are received via email and manually distributed for review. Proposal decision and contract award are also manually without an automate information system. email is the primary method for communication.
* Contract details is not captured in the Sage ERP for communication and records and preparation for the product receiving.
* Special order manager of CAMEG is in charge for the procure non-catalog items.
* Standard format of the Word file and Excel spreadsheets is available for customization and to be compliant with organizational rules.
* Signed hardcopy document and pdf files are maintained within CAMEG internal network for records and future audit.
* Manual operation required for data consolidation, which consumes additional resource.
* Standalone data source without mechanism for data sharing.

### Order Management

The order management category scored an overall of 42% and it’s within the transactional level (Level 2). The evaluation was based on the order operation at CAMEG for program products and essential medicines. Findings and observations include:

* Pre-printed standard order paper form is used for ordering request from customer to CAMEG. Elements of the order form are pre-defined.
* Received orders are entered to the Sage ERP at warehouse for process.
* Distribution note is generated for fulfillment. Per CAMEG’s policy, all orders will be delivered within 10 working days.
* No electronic solution implemented to support the order submission from customers (HFs, hospitals, etc,) and integration to the Sage ERP at CAMEG.

### Warehouse Management

The warehouse management category scored an overall of 67% and it’s within the advanced digitalization level (Leve 3). CAMEG is the designated organization for warehousing and distributing of all health products in country including program products and essential medicines. It received the ISO 9001-2015 certification in July 2021. Findings and observations include:

* Standard operating procedures are defined and available to support operation.
* Sage tool provides the information of the orders and warehouse inventory. It is installed at the administrative building, not at the central warehouse.
* Paper printout is used for warehouse operation at central warehouse. No real time data entry and verification is available with the current setting.
* CAMEG central distributes products to its regional warehouses. The regional warehouses distribute products to districts and customers.
* Standard product code and bin location are used for operation. Global standard information has not been introduced to the organization.
* Sage warehouse module provides basic warehouse features (e.g stock counts), but lack of capability for comprehensive warehouse operation (e.g. multiple steps to move location, and can’t track status after picklist is issued, etc..).
* Warehouse receives the advanced shipment notification (ASN) and enter to Sage for receiving and close out the procurement process.

### Transportation Management

Diagram, timeline

Description automatically generatedThe transportation management category scored an overall of 43% and it’s within the transactional level (Level 2). Diagram on the right illustrates the distribution system of CAMEG. Findings and observations include:

* Excel and personal experience are primary criteria for route planning and management.
* CAMEG owns a fleet of vehicles for distribution to customers, no 3rd party companies are engaged.
* Paper forms are used to plan and manage the transportation execution including progress, status of products (shipped, in-transit, delivered, etc.)
* A paper-based Proof of Delivery (PoD) document is used for order confirmation. A signature from the receiving customers is required to conclude the order fulfillment. PoD is not uploaded to Sage ERP system for record.
* GeoTrack tool is installed on the delivery vehicles to monitor and track the movement of the vehicles.

### Track and Trace

The track and trace category scored an overall of 39% and it’s within the transactional level (Level 2). CAMEG establishes a unique product id/code for all products stored at its warehouses. Products can be tracked and traced starting from receiving products. Findings and observations include:

* The unique product id/code of CAMEG could track the information of supplier and trace the products to the District where the deliver ends.
* Sage ERP system can be used to query product information using CAMEG product id. Other than that, there is no method for track and trace, as no standard product information has been maintained centrally.
* Product information of CAMEG can be exported to the Excel spreadsheet for data sharing manually and as needed basis. This has been determined as the method for NETSIGL v2.0 rollout.

### Data Management and Exchange

The data management and exchange category scores an overall of 27% and it’s within the transactional level (Level 2). Findings and observations include:

* Export data to Excel spreadsheets for data exchange is the primary method today
* No standard national product, facility and supplier master dataset is established, and no systematic mechanism defined for managing and maintaining master datasets to ensure consistency across all systems.
* Standalone data source in hardcopy documents. Organizations enter data to their systems manually based on the published hardcopy document.
* GFPVAN, Global Family Planning Visibility and Analytics Network, a control tower platform, captures data from multiple sources to assess supply needs, prioritize them, and act when supply imbalances loom and to transform how supply chain decisions making.
* Burkina Faso is transitioning to Premium membership.

# Near Term Actions and next stepS

The SCIS maturity of Burkina Faso is at level 2 (transactional level) per interview data as various Excel spreadsheets are used in supporting its operation. The spreadsheets provide electronic approach for data management but lack of capability to enforce data accuracy and quality, to provide real time data exchange and sharing, and to reduce workload and manual operation.

Three (3) observations were identified for near term actions to support the successfully rollout of the NetSIGL v2.0 and promote timely warehouse operation to increase efficiency.

1. **Lack of availability and visibility of national stock data across all levels** is the main challenge as it hiders the forecasting, supply planning and procurement operation that contributes to the unbalanced stock and unreliable commodities availability.
2. **Lack of centralized and unified master dataset** (e.g. products, facilities and suppliers, etc ) and maintenance methods to promote data accuracy and consistency.
3. **Unavailable of the information system at warehouse for timely operation.** Sage ERP system is installed at the administrative building and operated by administrative staff using data captured on paper-forms, due to the time delay and error-prone method which prevents the accurate stock information to be used for order process.

## Lack of availability and visibility of national stock data across all levels

Successfully rollout the NetSIGL v2.0 for national logistic management and operation would be the critical priority to improve stock data availability, accuracy and quality. There are few suggestions for planning and managing the development and implementation of the project.

* Monitor and manage the development progress thoroughly leveraging system engineering framework such as approved requirements (system and functionalities) and project plan with activity and schedule allocated and reviewed.
* Develop detailed plans to enforce data accuracy and quality including training, rollout, helpdesk operation and supervision visits after rollout. User support and system maintenance should be thoroughly planned prior to the rollout
* Plan for collaborative resource effort from all stakeholders to promote data accuracy and quality. Overlap activities for promoting the data accuracy and usage between NetSIGL v2.0 system rollout and Monitoring & Evaluation (M&E) can be strategized to reduce duplication.

## Lack of centralized and unified national master dataset

The national master datasets include but are not limited to products, facilities and supplier information. The master datasets are key indicators to integrate transactional data throughout the supply chain operation. The designated regulatory agencies should be appointed to be responsible for managing and maintaining the national master dataset and provide a systematic approach to ensure all information systems implemented in country received a timely update when needed.

* The Sector Statistics Department (Direction des Statistiques Sectorielles, DSS) is responsible for the national facilities list
* The National Pharmaceutical Regulatory Agency (Agence Nationale de Regulation Pharmaceutique, ANRP) is responsible for the national products list.

### Inaccessible information system at warehouse for timely operation.

Sage ERP system is installed at the administrative building and operated by administrative staff using data captured on paper-forms, due to the time delay and error-prone method which prevents the accurate stock information to be used for order process.

Promoting real time system usage and strengthening warehouse operation at CAMEG could increase efficiency of business operation and improve performance of warehouse operation. Recommended operational improvements includes:

* Enhance Sage features to support automate warehouse workflow and processes.
* Install Sage system at all warehouses for real time actions.
* Eliminate manual activities, streamline operations, and enforce best practices in warehouses.

## Next Step

The SCISMM document provides recommendations for continuous improvement by establishing the activities and key performance indicator (KPI). The questionnaire could be leveraged as a continuous assessment tool to evaluate progress of defined KPI objective on the self-defined time-period. Attached is the final version of the SCISMM questionnaire, dated July 16 2021, with responses and comments from all interviewees.

