EPI eLMIS PROJECT BRIEF

1. PROJECT DEFINITION

1.1. Background

The current EPI supply chain system is almost entirely based on data collected through paper-based forms. Data aggregation and forecasting tasks are almost entirely done manually, which is causing long data processing times, information gaps and forecasts inaccuracies. As a result, the CEPI is not getting prompt information on stock figures at the different levels and information on wastage cannot be properly addressed. Information processes need to be consolidated to reduce the number of forms and the development of an automated electronic Logistics Management Information System (eLMIS) is being considered in order to minimize and overcome these issues.

1.2. Objectives

The main objective is the development and implementation of a web-based electronic Logistics Management Information System to support the supply chain processes across the stock keeping facilities across the three supply levels: Central, Sub-depots and Townships (including those Health Facilities such hospitals which also keep and deliver stock at the Township level).

1.3. Desired Outcomes

A fully functional centralized web-based system, accessible online/offline from CEPI, Central Cold Store, Sub-Depots and Townships.

The system should facilitate:

- The automatization of data aggregation processes at central, regional and township level
- The improvement of reporting and dashboard functionalities for better forecasting and waste management

Additionally, it is desirable that the system also facilitates:

- The Service Delivery data integration via a mobile data collection platform.
- The Integration of a Cold Chain Equipment inventory system and the cold chain information management system as well in the future to support functions for temperature alerts to ensure timely response in case of equipment failure.
- HMIS coverage through either integration or interoperability with DHIS2.

1.4. Scope

The eLMIS should electronically support the supply chain processes at all the stock keeping levels: Central Cold Store, Sub-Depots and Townships. The ultimate goal is to also electronically integrate the service delivery processes. However, the service delivery integration presents many challenges from an operational perspective and it might need to co-exist and rely for a period of time on paper-based service delivery data collection. In any case the eLMIS should be designed in order to facilitate the integration with Service Delivery electronic data collection systems whenever feasible in those areas where such systems will be deployed.

The proposed EPI eLMIS is taking into consideration the ongoing initiatives by the Ministry and other partners for strengthening the LMIS and also establishing an eLMIS, aiming at integration at data level with existing and future initiatives, including the HMIS, in order to ease the path towards eventual integration of the different supply chains.

2. OUTLINE BUSSINESS CASE

2.1. Rationale

The system should address the existing problems within the vaccine distribution and stock management at various supply chain levels and help the officers to take informed based decisions regarding forecasting and day-to-day stock management at the respective storage facilities.

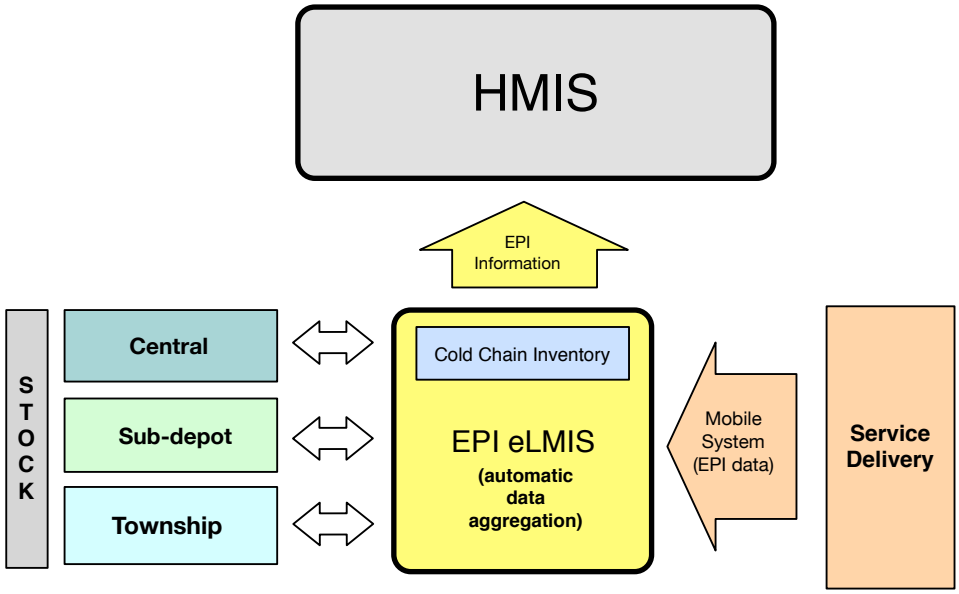
2.2. Expected Benefits

- Improve vaccine stock management by providing better control of wastage and buffer stocks, and by enabling vaccine supply to be more closely matched with demand.
- Decrease the chances of overstock/understock situations at the facilities.
- Help ensure timely and equal access to immunization by all children.
- Generate accurate and useful data that can be used to improve the management of the vaccination program.
- Reduce the administrative burden of health workers by automating time-consuming tasks.
- Eventual transition from Pull to Informed Push Supply Chain with integration of Service Delivery.

3. PROJECT DESCRIPTION

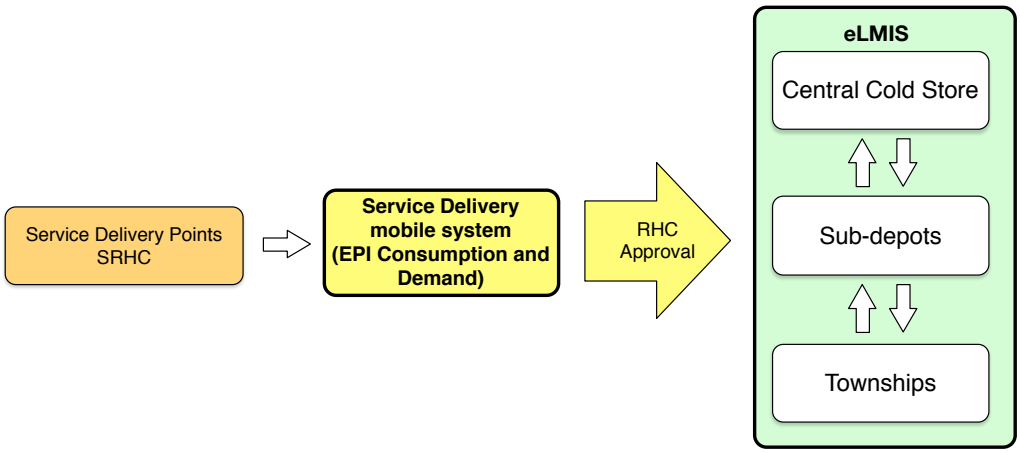
3.1. System overview

The platform main functionality is to support the supply chain logistics processes at the stock keeping facilities. It should be designed so it can eventually integrate with existing systems providing EPI service delivery data and facilitate the incorporation of aggregated coverage data towards the HMIS.



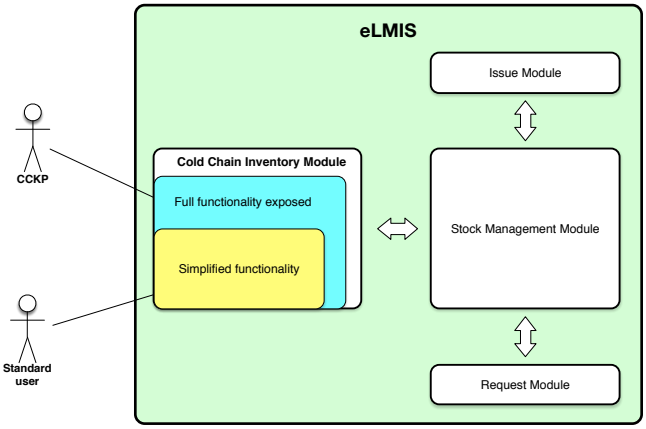
3.2. Service Delivery data integration

Service Delivery data access might be accomplished by integrating with a mobile based application. EPI data collected at service delivery points is fed to the mobile platform and appropriate data mapping should allow the eLMIS to access this information in order to incorporate it into the logistics database. SRHC data incorporated into the system would need to be reviewed by the corresponding RHCs prior to final availability within the system.



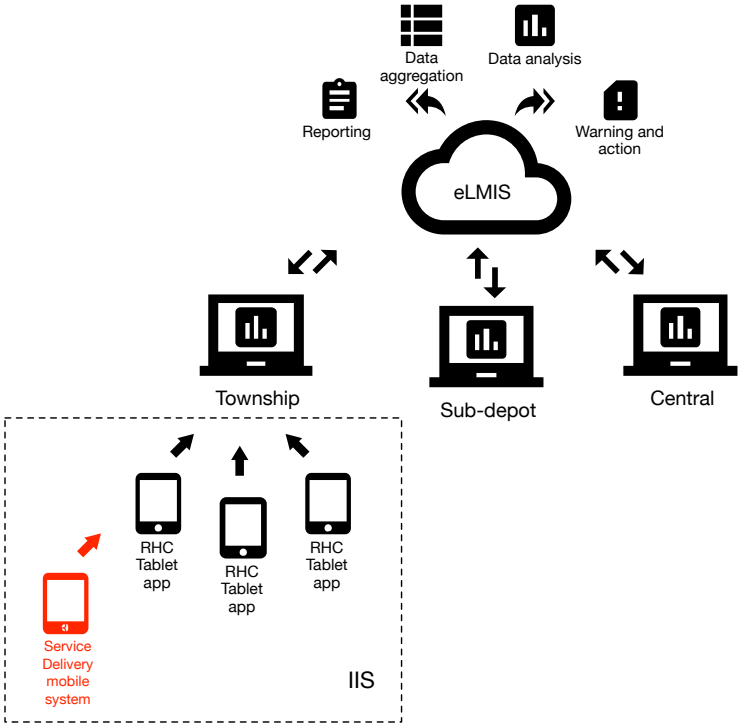
3.3. Cold Chain Equipment Inventory data integration

The Cold Chain Equipment inventory data can be integrated as a module within the system. The Cold Chain Key Persons (CCKP) will have full functionality access in order to create and update the equipment entries. Users from the stock keeping facilities will have a limited and simplified access so they can update the functioning/nonfunctioning status of the current equipment.



4. PROJECT APPROACH

The eLMIS should aim towards a deployment across all the stock keeping levels (Central, Sub-Depots and Townships) and efforts should be put in integrating the ongoing initiatives for electronic data collection at Service Delivery in order to avoid creation of additional systems at this level which might overburden staff (midwives). Existing paper-based data collection forms should be optimized and simplified prior to implementation.

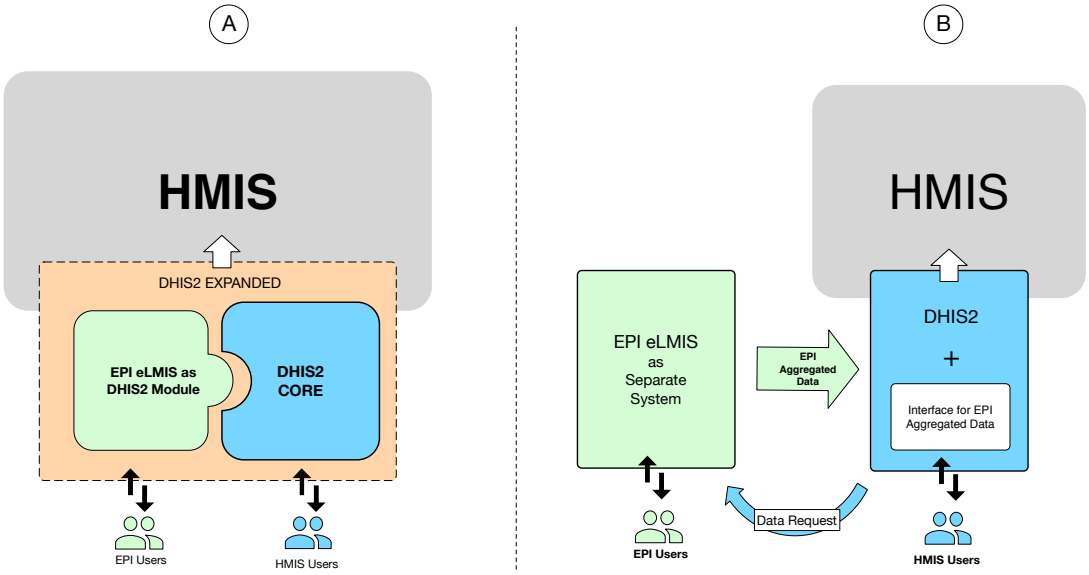


Supply chain data should be stored in a central databased accessible through the web. Offline functionality should be provided specially at Township and Sub-depot levels in order to overcome connectivity issues. Additional layer of limited access might be provided to the RHC via the use of handheld devices (tablets or smartphones). Service Delivery staff will make use of existing mobile based system to collect the data later used by the eLMIS.

For the EPI eLMIS system to provide valuable information to the HMIS, there are two possible options:

a) **EPI eLMIS integrated as a sub-system in DHIS2**: In this case, development effort should aim towards the development of the EPI eLMIS as a subsystem under the same underlying software frameworks as DHIS2, by expanding the latter. This option, though it initially implies a high level of expertise in the specific technology, would enforce data consistency and quality across the HMIS and avoid interoperability issues among the systems.

b) **EPI eLMIS as a separate system from DHIS2:** The EPI eLMIS as a separate system from DHIS2. This might imply less initial development effort as the EPI eLMIS would not need to be tied to a specific technology, but on the other hand Interoperability and interconnectivity between systems can be difficult to handle, and data consistency and quality could be affected



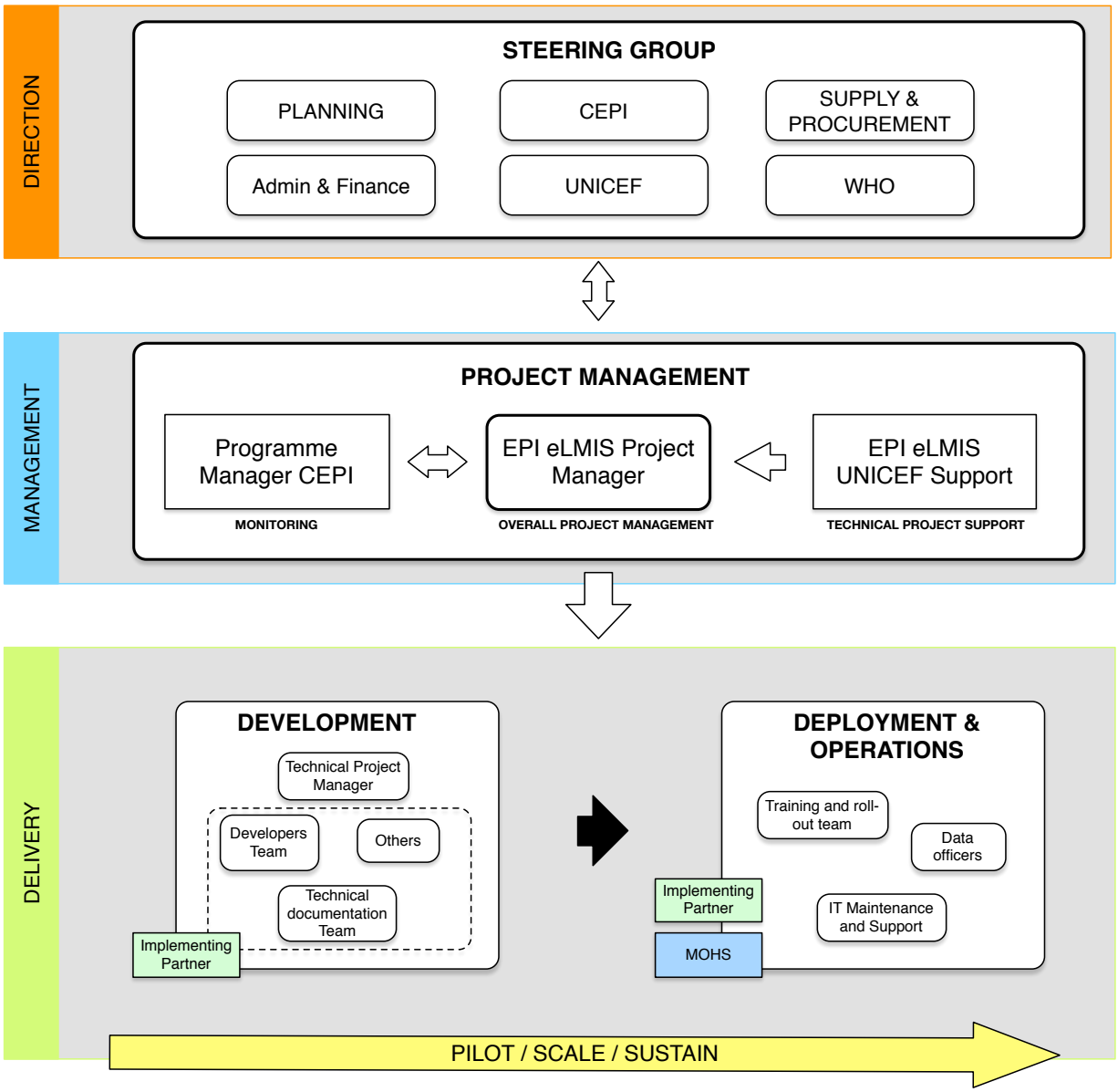
Option A is preferred, as it presents several advantages to be considered in the long term; such the absence of interconnectivity issues and the need for a duplicated infrastructure at server level, it also enforces data consistency across HMIS and improves overall data quality; a it could support the eventual rollout and knowledge transfer for the whole DHIS2; and it could be supported by a common HR maintenance team (both EPI and DHIS2 itself).

5. PROJECT GOVERNANCE STRUCTURE

Central to the governance structure is the EPI eLMIS Project Manager (PM). The PM is responsible for the day-to-day supervision of the implementation and will ensure the project is carried out under the expected requirements and scope. This person is recommended to be from CEPI, as he/she must have a deep understanding of the EPI needs and eLMIS requirements.

The PM reports directly and periodically to the project Steering Group on the implementation status, highlights and major issues that might affect the implementation course, and works closely with the CEPI Programme Manager.

The PM counts with a UNICEF support person and supervises the internal MOHS team in charge of training and roll-out activities. Finally, the PM directly works with the implementing partner Technical Project Manager to ensure the EPI eLMIS requirements are being met by the systems as it is being developed and implemented. The UNICEF technical assistant will provide both technical and administrative guidance on the day-to-day project management tasks, and facilitate the communication across the governance structure.

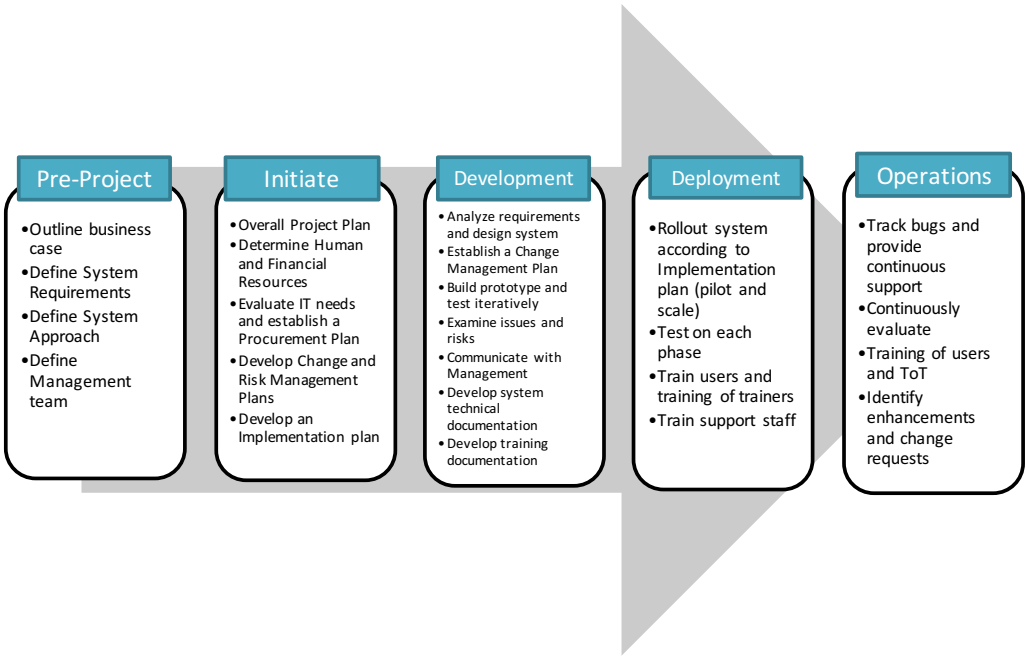


The implementing partner Technical Project Manager is the one who directs the actual work from the external software development team and translates the EPI eLMIS requirements into actual system functionalities.
The overall project steering should rely on a governance Steering Group composed of the relevant MOHS units (CEPI, eHealth / Planning Division, Procurement & Supply, Admin & Finance), UNICEF, WHO, and other relevant stakeholders.

The responsibilities of this group are the overall high level direction of the project, to ensure the provision of funding and to take decisions on project key issues, phase approval and eventual major changes in the scope and/or functionality.

6. PROJECT LIFECYCLE

The following stages will conform the project cycle and several products and activities are recommended for each stage. This project cycle should be taken as a guide and could be tailored in order to adapt it to the particular context and will be more specifically detailed in the Project Charter:



7. HHRR ROLE DESCRIPTIONS

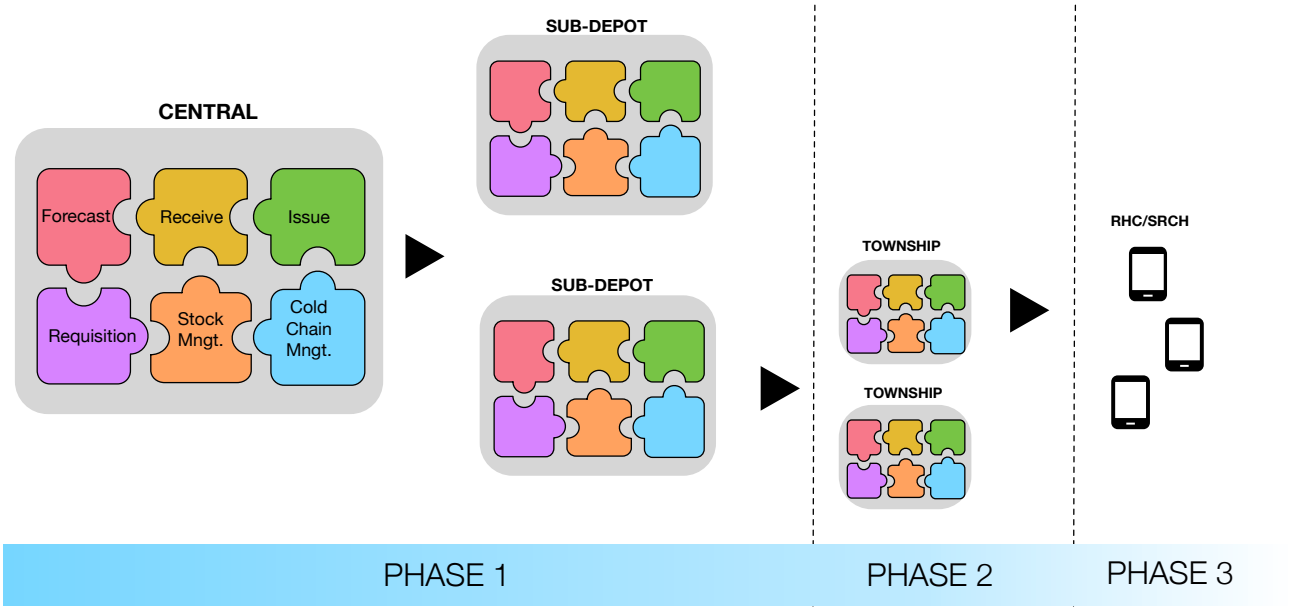
In order to ensure the project viability and long-term sustainability, several needed roles have been identified within the different phases of the project implementation.

Role	Description of role	Area
MOHS Technical Working Group (CEPI, Planning, Supply & Procurement)	Ensure alignment of project with the national Public Health strategy and compliance with policies. They get periodic reporting from the Project Manager	Governance
MOH Project manager	Ensure that all the project outputs are constructed according to the specified requirements, level of quality and without exceeding the budget of cost and time required. Communicate issues and progress to the Steering Board.	Management

Project monitoring (Supporting Agency)	Represents the donor organization or technical agency that supports the project, provides advice to the MOH project manager and oversees the implementing partner.	Management
System Analyst/Technical Project Manager (Implementing Partner)	To interact between the system developers (technical team) and the customer (reporting to the MOHS project manager and Support Agency project monitoring) during development and testing of the system, ensure the business goals and requirements are met technically, supervise the data entry process and be familiar with the logistics and software database	Management
System and software development team	To manage the development test, and maintenance of the software. Due to the lack of in-house software developers at MOHS, it is recommended a combination of external vendors and local IT support staff.	Development
IT Services Support and Maintenance	- To ensure system operations and maintain server equipment, network and hosting services - To support System Development Team in any software updates or major changes	Deployment and Operations
Trainers and Training of Trainers (ToT)	Train users and ToT during deployment and periodically to train new users	Deployment and Operations
Data entry officers	To enter background data and routine reporting data into the system	Operations
IT Helpdesk	To support the LMIS users in their daily use and escalate needs (equipment repair, etc.)	Operations

8. IMPLEMENTATION APPROACH

The EPI eLMIS will consist of two distinct components. First, a component that takes care the logistics and distribution across all the stock keeping levels, and a second component intended for the service delivery. The first component will contain a set of distinct functional software modules, each one covering one of the main processes identified within the supply chain management.



It is intended for these modules to be put to work as soon as they are developed following what it is known as Agile approach in software development, so the system can start providing value without having to wait for it to be fully developed. As the processes are mostly identical across the different stock keeping levels, once the modules are being developed and tested for the Central level, it is relatively easy to replicate and adapt them to the lower supply chain levels.

This initial heavy development is represented in Phase 1, where the system is implemented to the Sub-depot level. Phase 2 will roll out the system up to the Township level. In Phase 2, more effort will be put in reaching the higher number of facilities, while most of the functional capabilities will have been designed from Phase 1.

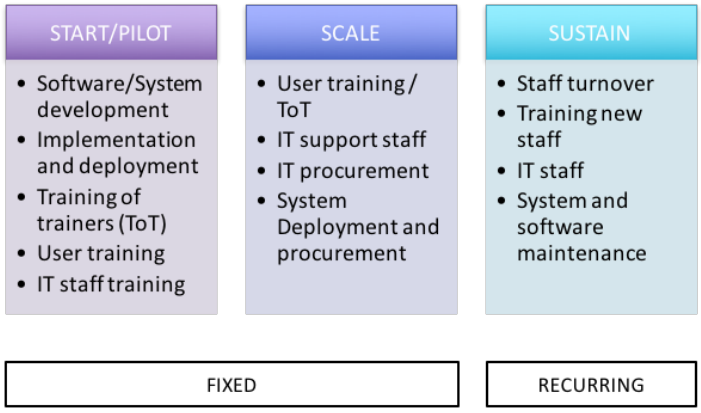
Phase 3 involves the mobile component at the RHC/SRHC levels. Phase 3 does not need to be started right after Phase 2. The first component can work independently being fed by the data collected at Service Delivery through traditional means. Phase 3 involves the development of a specific mobile application and involves a great effort in order to escalate it up to the final 11,000 users delivering the vaccine products to the population.

9. TOTAL COST DRIVERS

The total cost of the project will be spread among the following areas across the lifecycle:

- Infrastructure provision
- User and technical staff training
- Maintenance and operations

Human resources (with a special focus on training) are a key driver which might represent from 60% up to 70% of the budget, with the remaining going to actual procurement, to support ongoing operations and other aspects of the project. This total cost has a fixed component mainly during the initial phases of the project (start and piloting) and during escalation, which can be achieved with support from agencies and donors. However, for a transition to a full project ownership by the MOHS, it will be required a compromise from the MOHS to allocate budget and resources during operations in order to ensure the long-term sustainability of the system.

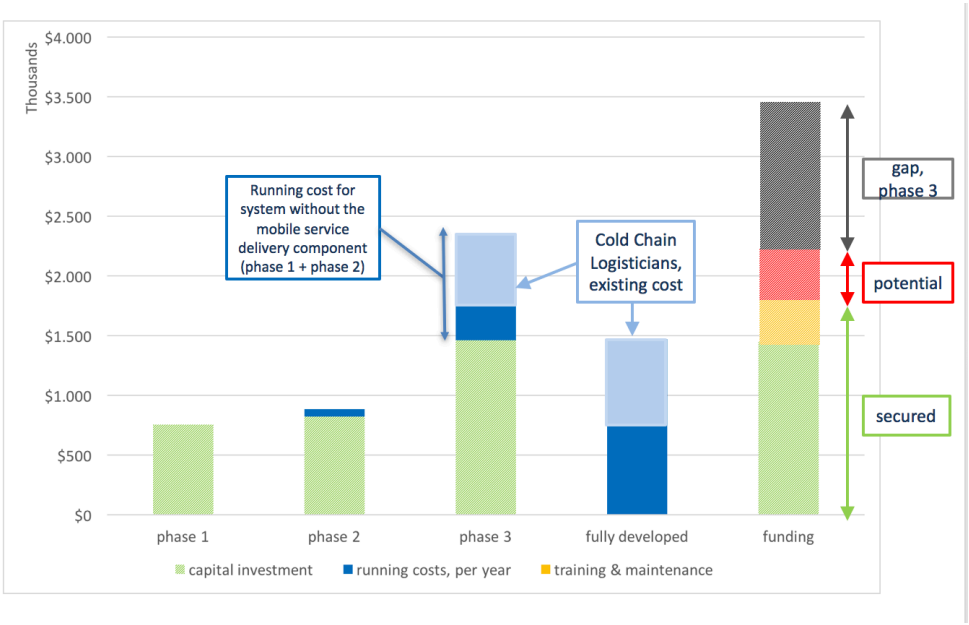


I think it will be important if you can conclude by short para indicating that this initiative is aiming at contributing to MOHS efforts in establishing an integrated LMIS. The lessons learned from this EPI eLMIS will inform the ongoing initiative by MOHS to strengthen overall stock management and LMIS and the system will be designed taking in to consideration in can easily be integrated in to the overall system of the MOHS. Therefore, it is anticipated that there will be no overlap or duplication rather contributing in to generating evidence for future improvements.

10. COST ESTIMATION SUMMARY

This estimation summary shows an evolution of the cost across the implementation phases, both as capital investment and running costs per year. The Funding column displays the possible sources of initial funding and their current availability.

During Phase 1 and Phase 2, most of the cost will be directed towards system development and should come from fixed capital investment. Running cost starts to be relevant during Phase 2, as it will need to cover the cost of the Phase 1 facilities where the system has been rolled-out.



Phase 3 (the mobile component) involves a strong capital investment, mostly due to the high number of facilities and final users (11,000). Concurrently, the running cost increases as it covers both the running costs incurred by Phase 1 and Phase 2 (24 sub-depots plus 330 townships). It should be noted that the first component of the system on the stock keeping levels (Phase 1 and Phase 1) could be operational regardless of Phase 3, which could be developed on a later stage once funds are ready.

After Phase 3 is completed, almost all the costs will relate to the running cost associated in maintaining and sustaining the system and related human resources.

Fixed cost for both Phase 1 and Phase 2 could be covered by the Gavi HSS (Health System Strengthening) – displayed in green and secured. Potentially, funding from Gavi PEF TCA 2017 (Target Country Assistance) can be used – displayed in yellow and re-programmable, and the future Gave PEF TCA 2018/19 – displayed in red as it is not yet secured. The funding gap (represented by the grey bar) would need to be obtained from sources to be determined. As the system implementation is designed to follow an Agile approach, results and benefits from Phase 1 and Phase 2 would already be obtained across the process before full implementation and could be used to support the fundraising initiatives.

This cost analysis at the moment does not take into account the needed training cost of existing and new staff, and related operational expenditures. A more detailed breakdown can be consulted in the System Design document.