





Application Form for Cold Chain Equipment Optimisation Platform support in 2019

Document Dated: November 2018

	<p>Purpose of this document:</p> <p>This application form must be completed in order to apply for support related to the CCE Optimisation Platform.</p> <p>Applicants are required to read the Application guidelines and How to request new Gavi support documents. Thereafter, applicants should complete this CCE Application Form and submit by email to proposals@gavi.org.</p>
	<p>Resources to support completing this application form:</p> <p>Technology guide for equipment selection for counties wishing to request CCE Optimisation Platform support is available here: www.gavi.org/support/hss/cold-chain-equipment-optimisation-platform/</p>
	<p>Extensive technical resources relating to vaccine cold chain equipment management are available on TechNet-21: www.technet-21.org/en/resources/cold-chain-equipment-management</p>
<p>Weblinks and contact information:</p> <p>All application documents are available on the Gavi Apply for Cold Chain Equipment support webpage: http://www.gavi.org/support/process/apply/cceop/. For any questions regarding the application guidelines please contact countryportal@gavi.org or your Gavi Senior Country Manager (SCM).</p>	
	<p>Countries are informed that based on post IRC recommendations, final approved amounts may be different from what countries have requested.</p> <p>This final approved amount will be dependent on the availability of funding.</p> <p>Gavi will respect countries' equipment selection. However, countries could also receive their 2nd or 3rd preference based on their selection in the budget.</p>

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PART A: APPLICANT INFORMATION

1. Applicant information

Country	Somalia	
Date	12 th May 2020	
Contact name	Mukhtar Abdi Shube	
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Total funding requested from CCE Optimisation Platform (US \$)	<i>Tins should correspond exactly to the budget requested in the enibedded template. US \$2,363,914 (GJI \$1,863,447, CJI \$465,862 and Procurement fee \$34,605)</i>	
Does your country have an approved Gavi HSS support on-aoing?	Yes	No
Proposed CCE Optimisation Platform support start date <i>(please be in formed the actual start date should be at least 8-10 months from application date):</i>	<i>Indicate the anticipated final year of the HSS. 2022 Indicate the mont!) and year of the planned start date of the support, based on the strategic deployment plan: August 2021</i>	
Proposed CCE Optimisation Platform support end date:	<i>Indicate the month and year of the planned end date of the support, based on the strate gic deployment plan: December 2021</i>	
Signatures <i>Include signed (and official) CCE Optimisation Platform application endorsement by:</i>	<i>We the undersigned. affirm the objectives and activities of the Gavi CCE Optimisation Platform proposai are fully aligned with the national health strategic plan (or equivalent) and that the funds for iimplementing all activities. including domestic funds and any needed joint investment will be included in the annual budget of the Ministry of Health:</i>	
a) <i>Minister of Health and Minister of Finance jsg deleQatea authorities)</i>	Minister of Health (or delegated authority) Minister of Finance (or delegated authority). Name	Name
b) <i>Members of the Coordination Forum (HSCC/ICC or equivalent body)</i>	Signature	Signature
	Date	Date

PART B: MANDATORY ATTACHMENTS: NATIONAL STRATEGIES AND PLANS

This section provides a list of national strategies, plans and documents relevant to supply chain and requested support, which must be attached as part of the application.



All documents listed in the table below are **mandatory**, must be **attached** to your application, and they must be **final** and **dated**. Only **complete applications** will be assessed.

2. Mandatory attachments					
No.	Strategy / Plan / Document	Attached Yes/No	Final version (dated)	Duration	Comments
1	Signature sheet for the Minister of Health and Minister of Finance, or their delegates	Yes	July 2020		The signature for Minister of Finance will be shared soon after submission.
2	Minutes of the Coordination Forum meeting (ICC, HSCC or equivalent) endorsing the proposal ¹	Yes	July 2020		
3	National Health Sector Development Plan/ Strategy (or similar)	Yes	Oct 2017	2017-2019	The revision of this document was humped by the covid-19 epidemic, how plans are under way to have it revised.
4	cMYP	Yes		2016-2020	Revision has been delayed due to covid-19
5	EVM Assessment	Yes	March 2017	2017-2020	
6	EVM Improvement Plan	Yes	Jan 2017	2018-2020	
7	EVM Annual Workplan and Progress Report on EVM Improvement Plan ²	Yes	Aug 2020	2017-2021	
8	WHO CCEI Tool/UNICEF IMT/PATH CCEM Tool/CHAI tool ^{3,4}	Yes	Aug 2020		
9	Inventory Report and Facilities segmentation	Yes	Aug 2020		
10	Comprehensive document on CCE needs: Chapter 1: Cold Chain Rehabilitation and Expansion Plan Chapter 2: Projected Coverage and Equity Improvements Chapter 3: Operational Deployment Plan, including deviation plan Chapter 4: Equipment Selection	Yes	June 2020		
11	Maintenance Plan with financing and source(s)	Yes	July 2020	2017-2021	

¹ In the case of HSS and CCE Optimisation Platform requests, minutes must reflect that both were discussed and endorsed.

² The EVM IP and annual work plan progress report must have been updated within three (3) months before applying for Platform support.

³ The CCE Inventory must have been updated within no more than one (1) year of applying for Platform support.
⁴ Tool should allow reviewers to understand targeting of equipment to locations relative to contribution towards improving coverage and equity of immunisation.

2. Mandatory attachments					
No.	Strategy / Plan / Document	Attached Yes/No	Final version (dated)	Duration	Comments
12	Proof of status for CCE tariff exemptions waiver				UNICEF CO to facilitate the importation of these supplies as it was for CCEOP-1. Hence UNICEF will be the consignee
13	Other relevant documents				
14	HSS2 Application	Yes	8 Oct 2016	2017-2022	
15	Somalia's NLWG ToRs	Yes	2020		
16	Strategic review of the Somali health sector - challenges and prioritized actions 2015, WHO	Yes	11-17 September 2015		
17	Partners_ Engagement Framework and Alliance Accountability Framework, Board Meeting, 22-23 June 2016, Geneva	Yes	22-23 June 2016		
18	Somalia CCEOP-Budget	Yes	2020		
19	Somalia's CCEOP ODP May 2020	Yes	2020		
20	ICC Terms of Reference	Yes	2020		
21	FGS HSSP II FINAL	Yes	Oct 2017	2017-2021	

3. How do the above strategies, plans and documents inform the CCE Optimisation Platform support request (initial support and scale-up support)? (Maximum 1 page)

Countries are encouraged to reference relevant sections of the above documents as much as possible.

Somalia is in the Horn of Africa with an estimated population of 15,140,608 as per the Population Estimation Survey (PESS), of whom 575,343 are surviving infants aged less than 1 year. The country is emerging from years of conflict and continues to suffer from the effects of climate change, resulting in Somali children suffer from multiple deprivations, including access to vaccination services. This denies them the opportunity to reach their full developmental potential.

From the administrative data, the country has made great strides in improving the vaccination coverage. For example, 73% of the target children were reached with pentavalent 3 vaccine in 2020 as compared to 45% in 2015, measles vaccination coverage improved from 43% in 2015 to 71% in 2020, and the IPV coverage improved from 41% in 2015 to 67%, respectively. However, the WUENIC estimates the pentavalent 3 coverage to have stagnated at 42% over the last 6 years. In absolute terms, this shows approximately 195,000 children under one year are under-vaccinated in Somalia, with most of them living in the central-southern regions of the country.

The country is currently implementing the Health Sector Strategic Plan (2017 – 2021) that recognizes the fact that routine immunization coverage in Somalia is sub-optimal and one of the key strategies in the HSSP is to implement the multi-year EPI plans to boost the vaccination coverage (page 15 and 27 of the Health Sector Strategic Plan 2017-2021).

Health service delivery in Somalia is structured around the framework of an Essential Package of Health Services (EPHS), developed in 2009. It has five levels of service provision; community level, primary health units (PHUs), health centres (HCs), referral health centres (RHCs), and hospitals. There are six core programmes including immunisation, four additional programmes and six management components (page 16 of the HSSP). There are 1500 health facilities in the country as per DHIS 2 and only 732 are providing routine immunization services which represents 49%.

The country set ambitious targets in the Comprehensive Multi-Year Plans (cMYP 2016 – 2020) to improve pentavalent 3 coverage from 38% to 84%, measles-1 coverage from 45% to 83% and IPV coverage from 37% to 84%, between 2014 and 2020, respectively (cMYP 2016 – 2020, page 44). Additionally, with support from Gavi HSS 2, the country plans to increase the vaccination coverage by reaching more children through outreach and mobile vaccination strategy that mainly target nomads that constitutes approximately 25% of the population.

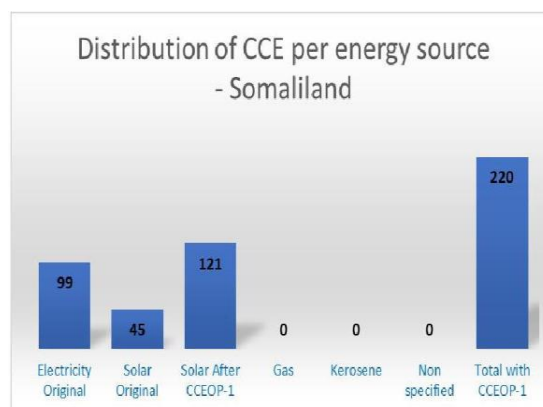
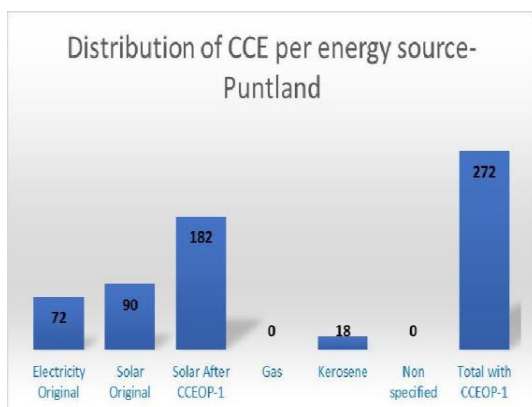
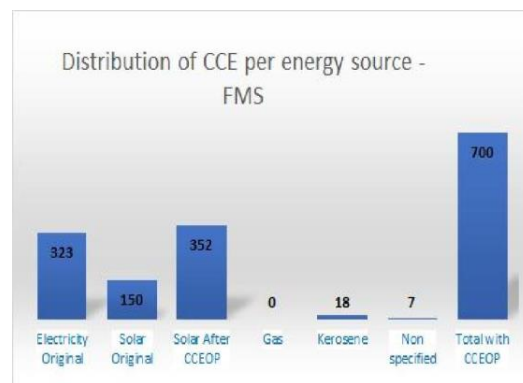
Availability of adequate cold chain is one of the determinants of high immunization performance. Somalia does not have reliable electricity grid supply, and most of the cold chain operational costs are managed by donor funds. The cost for maintaining a health facility with an electric cold chain equipment is high as you must pay for generator service, fuel, HR to maintain the cold chain store and generator compared to running a solar equipment. As a result, vaccination services are often interrupted. With CCEOP support, the priority is to extend service reach, including reaching nomadic populations, as well as replace on-grid units with SDDs to improve access to immunization services.

In order to cut down the cold chain operational costs, the country needs to invest in solar direct drive system and ensure the all-electric cold chain equipment is eliminated at the Regional, District and HF level. Furthermore, the country needs to invest in establishment of District vaccine stores in districts that currently do not have. This will reduce vaccine stock-outs as supplies will be brought closer to the service delivery points.

The country successfully applied for CCEOP-1 in 2017 amounting to \$3.2 million. One of the main priorities was to equip 176 new health facilities, expansion of 17 existing facilities and replacement of 136 obsolete CCE. However, the country was able to procure only 296 SDD units. The CCEOP-1 is currently being implemented, with 176 units going into operationalization of new facilities, 109 replacing obsolete equipment and 11 expanding existing facilities. The balance of equipment that was not procured during CCEOP-1 due to budget constraints, is currently under procurement using Gavi fragile addition funds. Hence the country is expecting an additional 78 CCE before end of 2020 and this will fully account for the numbers planned under CCEOP-1. Upon completion of CCEOP-1 installations, the number of on grid units in the country's cold chain system will be significantly reduced to only 25% (159 units) in FMS, 29% (56 units) in Somaliland and 12% (28 units) in Puntland

Despite the great improvements, the country continues to incur huge operational costs to provide fuel to run refrigerators at all levels of the supply chain. On the other hand, vaccination coverage is on the rise, following implementation of outreach and mobile services and enhanced community awareness. The population is also growing and there are plans to introduce new vaccines like MCV2 and IPV second dose in the coming years. Consequently, more cold storage capacity is required. Additionally, as the security situation in the central and southern regions of the Federal Member States keeps on gradually improving and new districts are liberated, expansion of the cold chain system will play a key role in reaching underserved communities with potent vaccines, thus reducing the chances of vaccine-preventable disease outbreaks. Therefore, the SDD equipment proposed in the rehabilitation and expansion plan in the CCEOP-2 will go a long way in providing affordable, sustainable and environmentally friendly cold chain system for vaccine storage in the country.

These graphs clearly show a significant shift in the CCE inventory from absorption and electric fridges to solar-direct driven CCE after completion of CCOP-1. This will greatly reduce on the CCE operational costs. With CCEOP-2 the country anticipates to replace all absorption and electric equipment at the district and lower levels hence bringing great relief on the cold chain operation budget as running the cold chain has been one of the biggest EPI challenges in the Country.



An EVM Assessment conducted in 2017 showed improvements in the various criteria scores by supply chain level compared to the 2013 EVMA (page 12 of EVMA report 2017). Furthermore, the country continues to implement the 2017 EVM Improvement Plan. The activities that have been implemented are detailed in part 5c (#7 attached) of this application, titled “interventions to address the weaknesses of the vaccine supply chain system”. CCEOP-2 offers an opportunity to supplement these efforts.

The country is applying for the CCEOP-2 support with a budget of \$ 2,363,914. Gavi have a joint investment of \$ 1,863,447, the country’s joint investment of \$ 465,862 and procurement fee of \$ 34,605. The country’s joint investment will be financed using HSS-2 grant year three funds. Through this, the country plans to procure 245 CCE that will be deployed to 29 District Vaccine Stores, 65 Health Centres, 5 regional vaccine stores, 116 HF’s without- dated CCE and 11 nomadic sites will be equipped with long term passive containers.

4. Describe how supply chain stakeholders (including Coordination Forum (ICC/HSCC or equivalent), government, NLWG, NITAG, key donors, partners, CSOs and key implementers) have been involved in the application development including if the quorum at the endorsing meeting was met

Does the country have a permanent and functioning National Logistics Working Group (NLWG)? If No, does the country plan to establish one and when?

Gavi and its Alliance partners encourage the establishment of such group that coordinates Government and non-Government partners 'activities and investments related to the health supply chain including immunization.

Were any of Gavi's requirements to ensure basic functionality of Coordination Forums not met? Then please describe the reasons and the approach to address this (refer to section 5.2 of the General Guidelines for the requirements) (Maximum 1 page)

The country does not have a fully-fledged NLWG, but the process is on to establish the National Logistics Working Group (NLWG) through an "NLWG establishment workshop" which was planned to take place in Q2 2020. However, this was postponed due to the COVID-19 pandemic. The establishment delays were caused due to new emerging states and political situation in the country. Currently, members to the NLWG have been selected and are awaiting formal nomination by the Ministry of Health. Members proposed to sit in the NLWG includes the EPI manager, National cold chain officer, data manager, one staff from WHO and one staff from UNICEF from the relevant States. The terms of reference have been developed # doc 15.

In absence of the NLWG, the country depends on the EPI technical working group which sits on a quarterly basis and reviews issues related to immunization including cold chain. It is worthy to note that the proposed NLWG members also sit in the TWG and have been involved in the development of this proposal. In turn, the EPI working group reports to the Inter-Agency Coordination Committee whose membership is drawn from the following;

Federal Ministry of Health – 3 persons

State Ministries of Health – 5 persons

Other Government Ministries – 1 person

Civil Society – 7 persons representing different organisations

Developmental partners (UNICEF & WHO) – 4 entities

The ICC have their terms of reference (Doc # 20 attached) and meets on a quarterly basis, or on a need basis. It is chaired by the Minister of Health, or the delegated person.

During the proposal development, the EPI technical working group was a great pillar especially in identifying new health facilities to be equipped based on equity analysis. Virtual meetings were also held with the Health Authorities in Mogadishu and Hargeisa in the development of the proposal. Due to the Covid-19 pandemic there was delay in ICC approval due to Government's priority to respond to Covid-19, however ICC meeting was later held in July 2020 and the CCEOP-2 application endorsed (Minutes attached #2) and agreed to be submitted to Gavi before July 17th 2020.

PART C: SITUATION ANALYSIS AND REQUESTED SUPPORT

This section gives an overview of the types of information the IRC will anticipate from countries in their application for CCE Optimisation Platform support. This section must be filled with appropriate reference to the country documents listed in Part B. Countries are required to provide a narrative in response to the following questions.

5. Situation analysis of country's supply chain and CCE (number, distribution, functionalities etc.) *(Maximum 3 pages) Please respond to all questions*

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

- a) How is the country's immunisation supply chain administered?*
- b) What weaknesses have been identified in the country's supply chain?*
- c) Through what interventions are these weaknesses currently being addressed?*
- d) Describe challenges that are hindering the implementation of these interventions.*
- e) Describe lessons learnt from recent supply chain related support that inform the current request for CCE Optimisation Platform support.*
- f) What percentage of facilities have reliable access to grid electricity for up to or more than 8 hours per day?*
- g) Please give the quantity and percent of current CCE that is: a) functional; b) PQS-approved; c) non-PQS-approved; and/or d) obsolete?*
- h) What percent of the birth cohort is served by effectively functioning, PQS-approved CCE currently?*
- i) What are the bottlenecks that CCE can address in the current supply chain set-up (for example, capacity and technology constraints)?*
- j) Describe any other supply chain challenges that CCE Optimisation Platform support will assist in mitigating?*
- k) What are the overall CCE needs?*
- l) Is the country policy to use cool water packs or conditioned ice packs?*

a) How is the country's immunisation supply chain administered?

The country has different governance capacities and the socio-political & security situation in each of the States is different from the other. The administration of the immunisation supply chain in the country is structured along these main governance structures. The States are developing capacity to manage aspects of cold chain & vaccine management with the support of UNICEF. Similarly, there are sub-national cold chain stores (hubs) in Hargeisa in Somaliland, Garowe in Puntland and Federal Member States (Mogadishu, Baidoa and Dhusamareb) in addition to regional and district stores that are managed by the respective Health Authorities with financial support from Gavi and UNICEF.

The Federal Member States are largely dependent on UNICEF and NGO partners for cold chain & vaccine management in addition to service delivery in the health facilities funded by various programmes like the Essential Package of Health Services (EPHS).

The National Vaccine Store (NVS) was sub-contracted to Kuehne & Nagel, a private entity which is responsible for day-to-day supply chain management and UNICEF's role is to oversee and give technical guidance. All vaccines are delivered to the three sub-national stores by air on a quarterly basis, then by land to all regional vaccine stores in Somaliland and Puntland while in South Central Somalia, all regional stores are supplied with a mixture of air (both charter and commercial flights) and land transport on quarterly basis as well.

The health service delivery structure is organised on the basis of EPHS developed in 2009 comprising of four levels of service provision and ten health programs. The four levels are Primary Health Unit (health posts and PHC Centres), Health Centres (MCH Centres), District hospitals and Regional Hospitals. Health Posts are primarily used during SIAs and emergency responses (Doc 3b. - page 16).

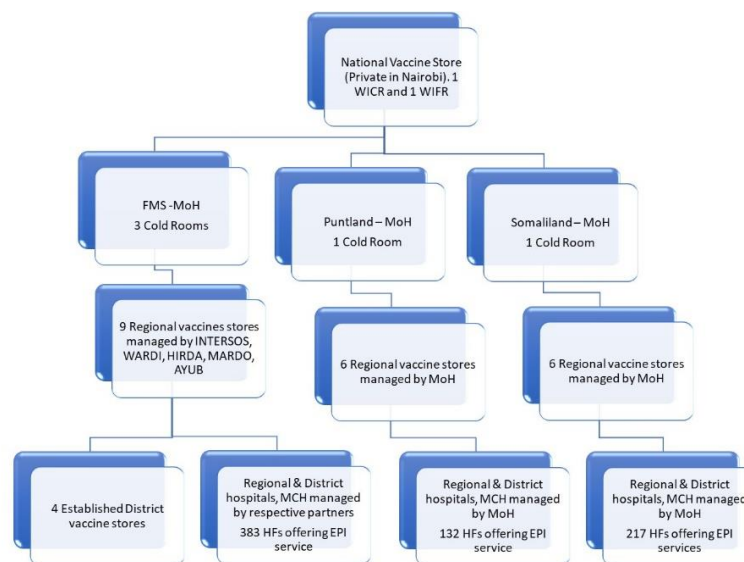


Diagram showing the cold chain structure in the country

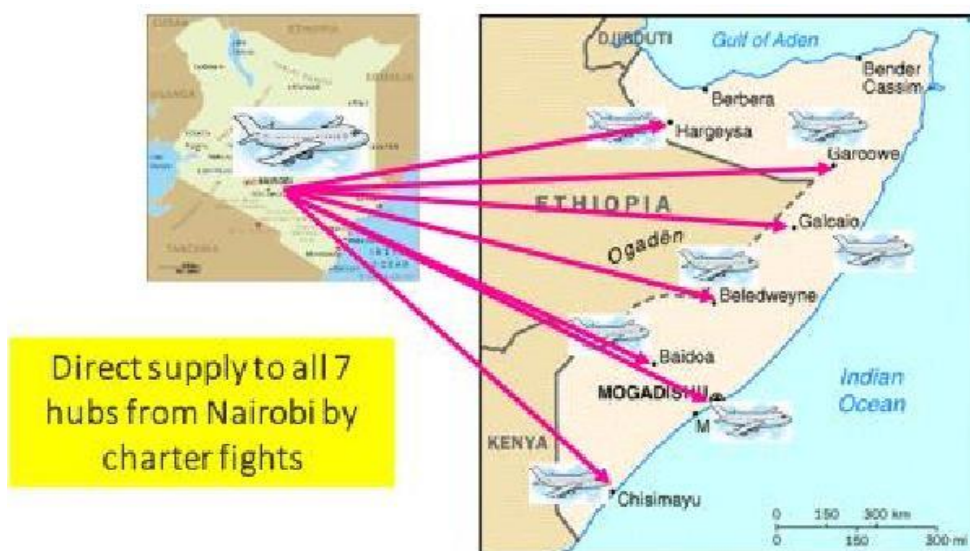


Diagram showing how vaccine are distributed in Somalia. All the seven hubs receive vaccines from Nairobi Kenya by use of a chartered flight on a quarterly basis.

b) What weaknesses have been identified in the country's supply chain?

The capacity of the immunisation system and vaccination coverage in the country is low. In addition, the immunisation supply chain also suffers from a number of weaknesses, such as;

- 1) Inadequacy of skilled personnel to run the supply and cold chain equipment management systems,
- 2) weak information system and lack of reliable data in the system for informing decisions,
- 3) security challenges,
- 4) lack of financial resource for the system to operate effectively and efficiently,
- 5) weak transport logistics due to lack of access in some areas as a result of security issues,
- 6) sustained risk equipment vandalism and destruction,
- 7) inadequate cold chain infrastructure as reported in the 2017 EVMA report (Doc #5).

Other challenges of the system include:

- a) Security issues that caused destruction of cold chain equipment in conflict areas and has hindered access for service delivery,
- b) high logistic and operational costs of delivering of vaccines and supplies to hard-to- reach areas due to lack of access by road which necessitates use of chartered flights,
- c) lack of fully established district vaccine stores,
- d) high cost of fuel (diesel, gas kerosene etc.) and logistics for its distribution to locations where cold chain equipment are located,
- e) the supply chain system is mainly reliant on donor funding,
- f) high cost of transportation and other services for organising vaccine management related activities including trainings and supervisions.
- g) A low vaccination coverage especially in rural and remote areas, partly attributable to inequity in distribution of cold chain equipment.

The above listed challenges make CCEs performance below optimum due to inability of the system to monitor them and their management. Similarly, deployment of technicians for repairs and maintenance of CCEs is adversely affected.

c) Through what interventions are these weaknesses currently being addressed?

1) Capacity issues of cold chain staff; Capacity building sessions have been conducted to cold chain staff on repair and maintenance of CCE. The last training was conducted in Q4/2019 and Q1/2020 to build the capacity of the staff to maintain and repair the CCE, including the new SDD that have new technology. In total, 21 cold chain technicians were trained. Cold chain staff and health workers delivering vaccination services in the health facilities have also been trained on effective vaccine management. The last training was conducted in 2019 where 11 staff benefited from the training.

2) Weak information system and lack of reliable data; This remains one of the main challenges of the EPI programme, as well as the overall health system at large. Data collection tools such as vaccine control books, temperature monitoring books were revised, validated, printed and distributed to all health facilities and cold chain stores. Additionally, cold chain and health workers delivering vaccination services were trained on the use of these data tools. Supervisors from the District and Regional Health Management Teams have also been conducting on-the-job training during the quarterly supportive supervisory visits. UNICEF staff based in the Country and Field Offices have also been conducting the on-the-job support during the joint supervisory visits with the central Ministry of Health staff. This has led to an improvement in the quality of data generated, but challenges persist. Gavi support through the Data Quality Improvement Plan (DQIP) also offers the country a unique opportunity to improve the quality of EPI data through capacity building and provision of relevant data tools. Data emanating from cold chain does not figure in the DHIS2 platform, and the EPI team will advocate for changes during the review of the DHIS2 that was initially planned to take place in mid-2020.

4) Lack of financial support: The vaccine supply system in Somalia is wholly dependent on external donor funding and there is no/little budgetary support that is allocated in the Government Budget. Advocacy is on-

going, but in view of the myriad needs that the Government faces, budgetary support may not be forthcoming soon. Fortunately, the country has secured financial support from Gavi through the HSS2 grant and UNICEF has covered gaps in funding.

5) *Transport challenges*; This has mainly been an issue in the security-compromised districts of the Federal Member States, thus necessitating distribution of EPI supplies through commercial and charter planes.

7) *Inadequate District Stores*; The absence of District Stores necessitates the distribution of vaccines on a monthly basis to the health facilities from the Regional Stores. It is hoped that Gavi will approve the CCEOP-2 application that among others, plans to establish additional District Stores to cover this gap and reduce the operational costs related to monthly transportation of vaccines.

Lastly, the country is implementing the recommendations of the 2017 EVMA through the costed implementation plan that was spelt in the EVMA. Some of the notable activities that have been implemented include;

1. Data for Management
 - Utilisation of stock management books in health facilities
 - Training of health workers on the use of the revised stock management tools
 - Use of the SMT tool by the Central Vaccine Store in Nairobi as well as the UNICEF VIVA online tool
 - Use of the electronic SMT by the Zonal and Regional Stores
2. Temperature monitoring
 - Securing of funds through the additional Gavi HSS2 funds and finalisation of the ToR to conduct a temperature mapping study
 - During supervision of health facilities, monitoring the completeness and accuracy of temperature monitoring tools as well as archiving of the records
3. Distribution
 - With support from Gavi and UNICEF, the country has managed to distribute routine and SIA vaccines on time hence no stock-out was reported at the national, sub-national and regional stores.
4. Cold Chain Equipment and Management
 - Training of cold chain technicians on repair and maintenance of new CCE (mainly SDDs) procured through Gavi support.
 - Terms of reference have also been finalised to support the country to develop guidelines for the decommissioning of obsolete CCE and the management of waste generated from EPI activities, and medical waste in general.
5. Store management and distribution
 - Putting in place contracts with 5 NGOs (implementing partners) that are managing cold chain & logistics in the Federal Member States. The contractors/service providers are paid upon completion of stipulated deliverables in the contracts.
6. Expansion of cold chain storage capacity and replacement of obsolete CCE through CCEOP-1.

d) Describe challenges that are hindering the implementation of these interventions

- Despite the investments done to improve the capacity of the Ministry of Health staff, there are still weaknesses in coordination, management, monitoring and supervision of vaccination activities and the associated iSCL. The absence of the NLWG has also been a challenge to support in the coordination of cold chain activities.
- Furthermore, the vaccination programme is heavily reliant on external funding and there is little or no budgetary support from the Government

e) Describe lessons learnt from recent supply chain related support that inform the current request for CCE Optimisation Platform support.

Valuable lessons were learnt from the on-going dialogue and real time interventions made to sustain the immunisation supply chain.

1. Continued fragility of the context within which the immunisation supply chain is run requires cautious planning and vigilance during operation. This, at the same time, should not serve as pretext for compromise in running the system. The decision to use the United Nations Humanitarian Air Services (UNHAS) for vaccines and related supplies distribution despite the high cost and complexity of the system is a good lesson.
2. Maintaining strong communication link and fostering collaboration with implementing partners at all levels of the ISC system remains critical.
- 3- The use of independent/private service providers (as has been seen for installation of CCEs) should be appraised and utilised; mechanisms appropriate for knowledge transfer will be devised. Approximately 25% of the population in Somalia is nomadic and this population is vulnerable to outbreaks of vaccine preventable diseases due to low vaccination coverage amongst them. In addition, this population is mobile across international borders to Ethiopia, Djibouti and Kenya.

Reaching these vulnerable communities has been challenging due to lack of specific cold chain equipment that can store vaccines for a considerable period of time without changing the icepacks.

4. From previous experience (during CCEOP-1), It was cheaper to procure, distribute and install all CCE at once rather than the scale up support due to high service bundled cost, hence thought wise to do the same for CCEOP-2
5. After full implementation of CCEOP-1, the cold chain operation cost will drop from \$1.5million to \$1million annual cost in Central South Somalia where the operational cost has been the highest.
6. With the trainings conducted under CCEOP-1, this has helped enhanced skills of health workers and technicians

As a mitigation measure, there are health facilities located in security-compromised areas where regular distribution of vaccines and other supplies is challenging, hence requiring additional storage capacity and reliable cold chain equipment to mitigate against stock-outs or frequent break-down of equipment. With support from CCEOP-2, new district vaccine stores will be established which will further reduce the stock-outs at facility level.

f) What percentage of facilities have reliable access to grid electricity for up to or more than 8 hours per day?

The country does not have reliable grid power. Most of the facilities with electrical CCE are powered by generators that are costly to run and environmentally unfriendly.

g) Please give the quantity and percent of current CCE that is:

a. Functional

As per 2020 cold chain inventory desk review, the country has 1,192 CCE of which 754 (63.3%) is working well, 374 (31.4%) not yet installed (both in country and in pipeline), 40 (3.4%) CCE not yet commissioned and 25 (3.4%) CCE not working.

b. PQS and Non- PQS CCE

92.8 % of the CCE is PQS approved as per cold chain inventory desk review

c. Obsolete

42 CCE is above 10 years representing 3.5% of total equipment and 43 CCE are absorption representing 3.6%. Therefore, the country has 7.2% obsolete CCE.

h) What percent of the birth cohort is served by effectively functioning, PQS-approved CCE currently?

- 84% of the birth cohort

I) What are the bottlenecks that CCE can address in the current supply chain set-up (for example, capacity and technology constraints)?

- a. The new CCE will replace outdated (absorption) equipment that presently account for 3.6% of the cold chain inventory in the country.
- b. Filling volume capacity gaps for newly established 65 health facilities.
- c. Establishment of a layer in the supply chain level (29 district vaccine stores) to reduce stock outs at the lower levels by providing ease of replenishment

- d. Reducing the costly cold chain operational cost by eliminating electric refrigerators that are run by generator at the health facility and regional supply chain levels which constitute 51% of the current CC inventory. These shall all be replaced by SDDs hence 100% HF's will be using solar CCE
- e. The use of a local service provider will ensure timely and proper installation of CCE due to existing HR capacity gaps.
- f. Bridging technology constraints to reach nomadic populations with potent vaccines that are stored in CCE that can hold vaccines for 30 days without changing icepacks.
- g. Bundled temperature monitoring systems will improve vaccine management practices and inform CCE maintenance plans

J- Describe any other supply chain challenges that CCE Optimisation Platform support will assist in mitigating?

Since the country has limited skilled technical personal, the service bundle is an added advantage as CCE will be installed in time, efficiently & effectively and the equipment warranty will help in mitigating some of the breakdowns that may occur during the usage over the warrant period. With newer advanced CCE in the field, and training of the cold chain technicians as was done during CCEOP-1, this will cut down vaccine systemic wastage and eventual stock-outs.

During the CCEOP-1, the country took advantage of the one-day CCEOP training to retain its regional technician for extra days and attend a maintenance training. The country negotiated with the local service provider to ride on their skills and further train the MoH technicians in maintenance. This was done at no additional cost as UNICEF paid for the venue and upkeep of the participants.

k- What are the overall CCE needs?

- a. Ensuring that 65 new additional health facilities (MCH, district and regional hospitals) have 65 CCE in order for them carry out the full package of routine immunisation services
- b. Establishing a new level in the supply chain (Establishment of 29 district vaccine stores with 29 SDD CCE)
- c. Replacing 116 obsolete & 24 electric CCE (in some supply chain levels) to cut down on the operational costs (Capacity expansion and up-grade)
- d. Procuring of CCE (11 arktek vaccine carriers) that can be used for tracking nomadic

The Operational deployment plan (ODP) showing the distribution of these 245 equipment Doc # 19 is attached. From experience, it is expected that the ODP quantities will change during procurement stage due to differences in actual price from budget prices, brands or other unforeseen factors. These factors will impact the final quantities, and hence the final ODP. As such, the country cannot have a 100% accurate ODP at this stage

l- Is the country policy to use cool water packs or conditioned ice packs?

As per EPI policy, the Country uses conditioned ice packs during vaccine transportation and at service delivery levels.

6. Expected immunisation coverage, equity and sustainability results (Maximum 2 pages)

Please respond to all questions

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

- a) *How will the requested Platform support concretely contribute to addressing identified geographic and socio-economic inequities and gender barriers to sustainable improvements in coverage and equity of immunisation? Examples may include (not exhaustive):*
 - o *Geographically remote districts or those with low coverage*

- *Poorer communities (e.g. in the poorest 10% of the population)*
- *Communities where gender barriers are significant and/or where low levels of female education is common (as this is often associated with lower coverage)*
- b) *What analyses have been made, or what plans are underway, to optimise the design of the supply chain distribution system in order to improve the efficiency of the supply chain and contribute to achieving coverage and equity goals?*
- c) *How have these system design considerations impacted the choice of CCE to be supported by the Platform?*
- d) *Concretely, how will Platform support help improve the sustainability of the supply chain system?*

a) How will the requested Platform support concretely contribute to addressing identified geographic and socio-economic inequities and gender barriers to sustainable improvements in coverage and equity of immunisation?

The equipment models selected are to be used for equipping new health facilities and district stores, replace other models that are obsolete & non-standard and some electric refrigerators especially at the lower levels as identified by the inventory desk review assessment. Here the priority emphasizes on equipping health facilities in districts that are geographically far-to-reach and with scattered populations. These facilities will be equipped with high performing SDD refrigerators (as applicable) that have adequate storage capacity and a freezing compartment to enable them to store vaccines and produce icepacks (since the country's policy is to use conditioned icepacks) needed for continuous immunisation services at static and their distant outreach centres which will enhance reaching more communities, increasing immunisation coverage and reducing drop-outs, and addressing inequities in immunisation. Furthermore, the country has a large number of nomadic populations hence the ARKTEK long duration passive vaccine storage devices will be used for immunization in the nomadic populations hence having that group covered.

b) What analyses have been made, or what plans are underway, to optimise the design of the supply chain distribution system in order to improve the efficiency of the supply chain and contribute to achieving coverage and equity goals?

The cold chain logistics service for Somalia aims to ensure that all immunisation points have high quality, well-functioning and reliable cold chain equipment to safeguard the potency of vaccines. CCEOP-1 equipment choice (already in-country) plus the CCE that is under procurement process as part of CCEOP-1, will play a critical role in reaching new target populations such as nomads, Internally displaced people (IDPs) and marginalised communities. Furthermore, the country has been experiencing sporadic vaccine stock-outs especially at service delivery levels caused by irregular vaccine distribution due to challenges in flights to deliver these vaccines.

Hence CCE that will be procured under CCEOP-2 will help the country open up a new levels in the supply chain (District vaccine stores) which will help enhance vaccine availability at lower levels and moving from electric & kerosene CCE to more energy efficient SDDs fridges that will help to cut down service interruption as well cold chain operational costs.

c) How have these system design considerations impacted the choice of CCE to be supported by the Platform?

As described above and taking into consideration of the Country's context, the country has opted for solar direct drive (SDD) CCE a more sustainable solution. Secondly, most of the vaccine stock-outs reported are at the service delivery levels and the country was lacking a supply chain level (district vaccine stores) hence the reason to fully establish DVSs which will be equipped with combined SDD refrigerators that will help in storing and producing icepacks as the country's policy is to use conditioned icepacks during distribution. Lastly, having stated that the country has a large number of nomadic populations, the country opted for

CCE that can be used for a long time without replenishment of ice packs in order to follow and immunize this venerable groups

The low maintenance demand of the platform equipment such as SDD refrigerators is an asset, especially for remote areas where deployment of technicians is difficult.

The country having 25% nomadic population, after analysis of cold chain needs, we are considering procuring some long-term passive vaccine carriers (ARKTEK) that do not require frequent change of icepacks to serve this population and very peripheral communities. The country plans to establish and strengthen ice freezing capacity at designated point so that replenishment of ice packs to the long-term passive vaccine carriers can be made on a monthly basis. It is projected that such investment will support the Somalia immunisation programme to reach more children and improve coverage.

d) Concretely, how will the Platform support help improve the sustainability of the supply chain system?

The platform support will enhance the efficiency and quality of vaccine supply through ensuring uninterrupted supply to all levels of the supply chain including geographically disadvantaged areas. Since equipment provided by the platform is better performing in terms of technology and quality, long warranty, less maintenance issues are expected to arise, which in turn will reduce the maintenance. Furthermore, establishment of district vaccine stores will cut down the distribution cost as the frequency of distribution from the higher levels will reduce from monthly to bi-monthly or even to quarterly basis.

In addition to this, replacement of electric with solar CCE will significantly reduce running costs and release funds to support other aspects of the chain e.g. supervision. Thus, on the overall, it is envisaged that the running costs of the supply chain system will be more affordable and sustainable, while increasing vaccine availability for services.

7. Maintenance plan (and its source of funding) and equipment disposal (Maximum 2 pages)

Please respond to all questions

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

- a) *How will the country ensure that aspects of maintaining the cold chain are addressed (e.g. preventive and corrective maintenance, monitoring functionality, technicians, financing for maintenance, etc.)?*
 - o *What is the frequency of preventative and corrective maintenance that the country commits to (supported by partners)?*
 - o *What technical support is anticipated for maintenance?*
- b) *How will the country monitor the completion of preventive and corrective maintenance?*
 - o *Which source(s) of funding will be used for maintenance, and to what extent are they assured?*
- c) *How will the country dispose of obsolete and irreparable equipment replaced by CCE Optimisation Platform equipment?*

a) How will the country ensure that aspects of maintaining the cold chain are addressed (e.g. preventive and corrective maintenance, monitoring functionality, technicians, financing for maintenance, etc.)?

Preventive and corrective maintenance of installed CCE in Somalia is provided by the Ministries of Health with support from UNICEF and is based on the existing vaccine supply chain levels with dedicated focal persons at central and regional levels. There is one cold chain technician who is in charge of each central vaccine store, and 21 technicians in the regional vaccine stores, where each technician manages CCE under their area of jurisdiction (Doc 11a pg 6). They monitor equipment, conduct routine maintenance, update and

maintain cold chain inventory, attend to corrective maintenance issues as well as conducting cold chain supportive supervision to lower levels.

Building on CCEOP-1, the programme has put in place measures to ensure CCE is managed and maintained at all levels. Under HSS2, funds have been allocated for maintenance and capacity building till 2021

- **Clear budget for spares parts and maintenance:** This will minimise delays in repairs as spare parts will be readily available, hence fulfilling maintenance requests and minimising disruption in immunisation services.
- **Capacity building:** Strengthening human resource capacity through user-based and technical training will enable maintenance tasks to be resolved in a timely and cost-effective manner at district and facility levels.
- **Visibility into maintenance needs:** With introduction of a central continuous temperature monitoring system with B' Medical products (currently under installation), this will enable health workers to monitor performance of cold chain equipment, and it will help technicians centrally take corrective action immediately.

○ **What is the frequency of preventive and corrective maintenance that the country commits to (supported by partners)?**

With the CCEOP-1 CCE received, the country's choice of preference was B. Medical products and under the Country's conditions, this product has demonstrated reliable performance. Data from B. Medical RTMD will be leveraged to monitor equipment performance and prioritize visits for preventive maintenance at all supply chain levels where this equipment has been installed. However, for the remaining equipment, the country plans to carry out preventative maintenance and these funds are already secured under the Gavi HSS2 additional funds and other funds will come from the polio programme. A maintenance plan (#11b) clearly shows activities that will be performed at the different intervals throughout the year by different key players.

○ **What technical support is anticipated for maintenance?**

The country's technicians have undergone training under the CCEOP-1 implementation which has enhanced their technical skills and capacity in the management of new technology. Further, the country plans to deploy/ team-up their technicians with the local service provider during CCEOP installation, to ensure skills transfer. With the B' Medical CCE currently being installed and having remote temperature data loggers, the country plan to create a centralized dashboard that will help in maintenance decision making. Furthermore, additional training for technicians has been planned under the current Gavi HSS 2 additional funds. These will ensure the country has adequate capacity to conduct maintenance activities with the required skill. The equipment chosen include 10-year warranty hence the technical support of the supplier will supplement these efforts

b) **How will the country monitor the completion of preventive and corrective maintenance?**

Most of the weekly and monthly preventive maintenance will be carried out by the equipment users, that is the health workers, whereas the cold chain technicians will carry out quarterly preventive and corrective maintenance. On completion of maintenance, the job card will be filled (for both preventive and corrective maintenance) which is shared with the relevant Health Authorities. On top of the quarterly cold chain reports submitted from the field level, the country plans to use the WHO surveillance weekly reports as well as the third-party monitor's reports to confirm that repairs and maintenance was completed on time. This will inform the updating of the CCE inventory on a quarterly basis using the WHO inventory tool.

In addition to routine monitoring of performance of CCE especially where maintenance has been concluded to reduce equipment down time through use of RTMDs in B' Medical system CCE.

o Which source(s) of funding will be used for maintenance, and to what extent are they assured?

Funding for maintenance has been secured through the on-going HSS2 funding as well as the additional HSS2 funding for the target districts. A total of \$1.2m has been allocated for maintenance of CCE in the country and this will further be supplemented by the polio programme as they have a budget line for maintenance during the several SIAs planned. The Government and partners will bridge the gap for non-HSS2 supported districts. This was fully discussed, agreed and documented during the development of the core/on-going HSS2 proposal by senior Government officials from the Ministries of Health.

c) How will the country dispose of obsolete and irreparable equipment replaced by CCE Optimisation Platform equipment?

The Government does not have clear stipulated disposal guidelines for the management of obsolete equipment. To cover this gap, terms of reference have been developed for a consultant who will support the country to develop guidelines for the management of obsolete equipment as well the management of medical waste (including that which is generated from the EPI programme). The process of hiring the consultant is on-going and was anticipated that he/she would be on-board in Q3/2020, but this will be delayed due to the on-going Covid-19 pandemic. The current CCEOP-1 obsolete CCE will be kept at the facility levels and will only be disposed after new guidelines are done by the consultant.

8. Other implementation details (Maximum 1 page) Please respond to all questions
Countries are encouraged to cross reference (document title, page number)
attached mandatory documents.

Information is required to cover the following areas:

- a) How will the country facilitate the manufacturer's or representative's role in equipment purchase, distribution and installation?
- b) What is the source of the joint investment and how much from each donor? Is the country's joint investment secured? Please complete the table below
- c) If the country joint investment is coming from HSS, is this leading to a reallocation of the HSS budget? If yes, please inform which HSS activities are being replaced by this joint investment?
- d) Has the country secured import tariff exemptions for CCE? If yes, attach proof.

a) How will the country facilitate the manufacturer's or representative's role in equipment a purchase, distribution and installation?

From the previous experience of CCEOP-1, UNICEF supported the country throughout the procurement process, timely custom's clearance, as well as supporting the manufacturer's representative in distribution planning and in the revision and validation of the ODPs. The same will be done for CCEOP-2. The Ministries will facilitate the representatives with introduction letters to the sites where CCE will be installed as well as confirming site readiness, coming up with final ODPs and approval of the installation tools.

b) Source of the joint investment

Sources of funding		Amount in US\$
Total country joint investment (same amount as cell T34)		
Government budget		\$ 465,862
Gavi resources⁵		
Current Gavi HSS		\$ 465,862
Future Gavi HSS		
Gavi PBF		
Total Gavi resources		\$ 465,862
Other donor funding (mention the name of donor/s)		
Donor 1:		
Donor 2:		
Donor 3:		
Total other donor/s funding		
Other funding (clarify the source)		
Other 1:		
Other 2:		
Other 3:		
Total other sources of funding		

The country is informed that Gavi will disburse directly to UNICEF SD the country's joint investment from HSS and/or PBF grants(s) that are not yet disbursed based on the information provided as a response to question 8b and **\$ 34,605** being the procurement fee

The Country has informed in its CCEOP proposal that has been endorsed by the ICC and signed by both Ministers of Health and Finance that its joint investment will come from Gavi HSS2.

c) What is the source of the joint investment? Is the country's joint investment secured?


20% contribution will be made from the Gavi HSS2 year three, and the process for reprogramming is on. The same process will be followed as for CCEOP-1 and currently the country is in touch with Gavi to revisit some activities in HSS 2 year three in order to do the reprogramming.

d) Has the country secured import tariff exemptions for CCE? If yes, attach proof.

Yes. As with CCEOP-1 and the importation of all EPI vaccines as well as other EPI consumables, UNICEF facilitates the importation of these supplies' duty and custom free (tax exempted) across Country hence the same protocol will be followed for CCEOP-2 to avoid any delays and challenges. Once the CCE has been cleared by UNICEF, it will be handed over to the local service provider for onward storage, distribution and installation. For this case UNICEF will be the consignee since it's tax exempted.

PART D: INITIAL SUPPORT PHASE⁶

This **initial support phase** (through years 1 and 2) is designed to address urgent CCE needs contributing to improvements in coverage and equity, to protect vaccine stocks, complement investments in other supply chain 'fundamentals' and contribute to full scale-up of optimised, sustainable supply chains.

	Budgets are not inclusive of operational cost. Operational costs must be financed by Ministry of Health or other partners.
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	Further information on CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements is provided in Application guidelines Section 5, available at http://www.gavi.org/support/process/apply/cceop/
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9. Prioritised (Urgent) CCE needs (Maximum 3 pages)

Provide information on 2 to 4 prioritised (urgent) CCE needs as identified in the 'CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements'.

For each prioritised (urgent) CCE need, please provide the following information:

- 1. The need:** Type of activity (e.g. replace obsolete CCE, extend CCE to unequipped facilities, etc.); specific CCE site (facility); type of equipment required; quantity of equipment items.
- 2. Justification:** Reasons for urgent need (e.g. low CCE and/or immunisation (Penta3) coverage area, gender barriers, mobile population, etc.); current CCE and immunisation (Penta3) coverage in the population area.
- 3. Expected outcome:** Anticipated increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country Performance framework).
- 4. Total CCE budget:** includes Gavi and country joint investment share

Prioritised (Urgent) CCE Need #1

The need	Due to population growth and its subsequent effect on demand for immunisation services and the need for equitable access to immunization for the population of the Somalia, the country is opening new health centres across the length and breadth of the country. 65 health facilities are expected to be equipped with 65 combined ref/freezer (30 - <60L) SDD CCE and 65 electronic temperature monitoring devices
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° Countries are kindly advised to apply for their full needs regardless of the Gavi CCEOP joint investment ceiling and the funding availability. It is important to inform however how CCEOP will be contributing towards fulfilling the needs identified.

19 Prioritised (Urgent) CCE Need #3	
The need	Replacement of absorption and obsolete CCE.
Justification	The country has 3.6% (43 CCE) absorption equipment type and 3.5% (42 CCE) outdated CCE. The absorption equipment is difficult to manage due to lack of fuel (kerosene/gas) and spare parts while the outdated equipment maintenance cost is high due to frequency equipment failure. Additionally, the cost of their spare parts, fuel (where available) and their logistics are increasing and becoming unsustainable. Hence due to other competing demands, there is immense pressure on the national budget and the contribution from partners. Cold chain optimization platform will be an excellent window of opportunity for the country to utilize and address the pressing need of the immunization supply chain system in the country.
Expected outcome	With elimination of the absorption & obsolete CCE, the country will have a robust cold chain system in place, cut down maintenance costs hence reducing on vaccine wastage, which is caused by frequency equipment break downs especially at service delivery points (HFs).
Total CCE budget	\$ 1,056,535 for 81 CCE (30 - <60L comb ref/ freezer SDD), 35 CCE (60 - 90L comb ref/ freezer SDD) & 116 electronic temperature monitoring devices
Prioritised (Urgent) CCE Need #4	
The need	Introduction of 11 long-term passive devices.
Justification	25% of the Somalia population is nomadic and can only be reached through outreaches and mobile services. Introduction of long-term passive devices for selected 11 sites where outreaches are challenged by longer duration to reach remote communities with limited access to services. This activity was planned for during CCEOP-1, however due to CCEOP-1 budget constraint as the country's equipment choice of preference budget was higher than the Gavi approved budget, the country opted for procurement of less CCE hence these devices were not procured. Therefore, during CCEOP-2, the country proposes & plans to equip 11 fixed sites having to provide outreach services for nomadic populations where the service may take days. All 11 sites will also be provided with SDD CCE with freezer compartment to provide the required icepack freezing capacity as the country's policy is to use conditioned icepacks in vaccine carriers.
Expected outcome	Increased vaccination coverage for nomadic populations that account for 25% of the total population in Somalia.
Total CCE budget	\$ 50,619 for 11 long term passive devices and 11 electronic temperature monitoring devices
GRAND TOTAL CCE BUDGET: Initial support (Years 1 and 2)	The total cost for CCE equipment procurement is \$2,169,873 however with 6% buffer, 8% procurement fee and flight cost the overall budget is \$ 2,336,815 .

10. Summary of INITIAL SUPPORT PHASE replacement/rehabilitation, expansion and extension plan

All countries must fill this section to highlight the number of equipment and corresponding number of sites these equipment will serve to meet their replacement/rehabilitation, expansion and extension targets. The values entered below must align with those in Section 9 above and in other parts of the application form.

Replacement/Rehabilitation	Expansion	Extension
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Existing sites with (non)functional and/or obsolete non-PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Existing sites with (non)functional and/or obsolete PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Equipping existing sites with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population		Equipping previously unequipped sites (providing immunisation services or not, including existing sites without active devices) and add new service sites	
<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>
		116	116	35	20	94	94
Total	Total	Total=116	Total=116	Total= 35	Total=29	Total= 94	Total=94

11. Ongoing or planned activities around other supply chain fundamentals in the initial support phase

In this section, linkages must be drawn between requested CCE Optimisation Platform support, ongoing Gavi investments (especially through the Health Systems Strengthening support) and other partner supply chain support.

Describe planned or ongoing activities related to other supply chain fundamentals during the initial support phase, including their sources of funding. Responses to this section should be linked to the EVM Improvement Plan.

Supply chain managers

Describe all planned or ongoing activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.

The country has enhanced skills and knowledge of the supply chain managers through various training and workshops. Three National MoH cold chain managers attended the UNICEF ESARO regional Immunization Supply Chain Management workshop in Kigali in 2017, which was followed by a cold chain training in India at IIMR university were UNICEF supported three cold chain managers from Federal Member States, Puntland and Somaliland respectively in 2018. Under the Gavi HSS2 funds, an MLM training was conducted in 2019 followed by cascaded trainings where all regional supply chain managers attended/ participated and these trainings were facilitated and monitored by WHO. Gavi approved the country's HSS2 additional funds to a tune of \$12m for two years 2020-2021 and under these funds, the country has planned to training supply chain managers on vaccine and cold chain management. This training will be cascaded till the district level. Furthermore, in order to retain the supply chain managers, there incentives have been budgeted and will be paid under the secured Gavi HSS2 funds.

Data for supply chain management

Describe all planned or ongoing activities related to data for management, their sources of funding, and partner support. In particular, provide information explaining how improvements to the functionality of logistics management systems will improve the visibility of up-to-date and accurate vaccine stock records at each level of the vaccine supply chain.

DHIS2 supervision and monitoring throughout the health system are conducted by designated health information managers from the supervision team. Each health information manager is responsible for ensuring that data are captured properly, that summary forms are accurate, and that validity checks are clean.

The country has received funds from Gavi for Data Quality Improvement Plan (DQIP) that will run till Dec 2021. These funds will support the printing and distribution of vaccine management tools (manual vaccine control books, temperature monitoring booklets, electronic vaccine stock management tool, and vaccine utilization forms etc.) for all supply chain levels. This will be

	<p>followed by user training and determining the flow of information from downstream. With support from the data managers from various States, they will help in comparing vaccine data with actual DHIS2 figures in order to have harmonized data which will lead to a clear action plan.</p> <p>The integration of data from outreach and mobile activities will be specifically addressed. Synthesized monitoring reports (on indicators related to immunization) will be provided and communicated once a year for EPI progress reviews</p>
<p>Optimised, efficient design of distribution system <i>Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.</i></p>	<p>Vaccine distribution is based on target population, planned coverage and generic wastage rates. States submit vaccine requisitions which are verified by UNICEF technical staff before processing for distribution. A quarterly routine vaccines and EPI logistics distribution plan implemented with campaign vaccines are distributed via chartered/commercial flights or as and when campaign dates have been confirmed by WHO. Due to the lack of capacity, both the Push and pull mechanisms are being used for vaccine supply. However, capacity of the staff at regional and State level is being built. Currently</p> <p>If CCEOP-2 is approved, one of the main activities is to establish a new level in the supply chain system (district vaccine stores). Once this level is fully established, it will cut down the distributional cost as the distributional frequency will reduce from Monthly to either bi-</p> <p>Monthly or even quarterly.</p>
<p>Continuous improvement process <i>Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.</i></p>	<p>Ref. to the mandatory doc. efforts to implement most of the 2017 EVM cIP among which are</p>

	- Improving temperature monitoring thru procurement of 5 Central Temperature Monitoring devices for the 5 cold rooms in Mogadishu, Dhusamareb, Baidoa, Garowe and Hargeisa and fridge tag 2 for all ice lined refrigerators (ILRs)
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	<ul style="list-style-type: none"> - Maintenance was improved through procurement of assorted spare parts using Gavi HSS2 funds and UNICEF - Standardizing, printing and distribution of vaccine stock management tools. - Under CCEOP-1, the country was able to procure 296 SDDs which increased vaccine storage capacity as well as replacement of some of the obsolete equipment, this will further help to reduce vaccine closed vial vaccine wastage as well as improving vaccine quality. - As mentioned in the main proposal, supply chain manager skills and knowledge were improved through various trainings and workshops supported by both UNICEF ESARO & CO, Gavi HSS2, WHO and further trainings are expected to take place with funds already secured under the Gavi HSS2 additional funds - ToRs for a consultant who will conduct the temperature mapping study are complete, however the recruitment process is taking a while due to the covid-19 pandemic <p>Currently, the 2017 EVMA improvement plan is 53.6% implemented, 39.3% on going activities and 7.2% still pending (# Doc7), however funds (Gavi HSS2 additional and UNICEF) have been secured to have all activities implemented.</p>
<p>Temperature monitoring <i>Describe the temperature monitoring devices that are currently available in the country? E.g. central level (CTMS), sub-national, lowest distribution and service delivery levels (30 DTRs and RTM devices), and during transportation (freeze tags).</i> <i>Furthermore, describe which measures are in place to</i> a) <i>obtain temperature data from the various devices;</i> <i>maintenance);</i> b) <i>in case of RTM devices, please elaborate on for each responder in the temperature monitoring system; and</i>) <i>countries wishing to purchase such devices are required to demonstrate how the recurrent costs, such as HR, data transmission, analysis etc., will be covered in this section.</i></p>	<p>In the past years, the Ministry of Health made various efforts to improve the vaccine supply chain by investing in newer technologies. UNICEF procured temperature monitoring devices for all States, regions and health facilities with a total of 1 beyond wireless central temperature monitoring system for the national vaccine store in Nairobi Kenya, 5 central temperature monitoring devices (multi loggers) for all the 5 cold rooms inside the country, 480 fridge tags 2 (for regional and MCH), 2,200 freezer indicators for use during distribution.</p> <ul style="list-style-type: none"> - Under CCEOP-1, the country obtained extra 296 fridge Tag-2 that will be installed together with the new CCE.

- All data related to temperature monitoring will be harmonized at the regional levels then shared with the national level on a monthly basis for facilities using fridge tag 2's. However, having targeted for the equipment with prepaid data logger (ten years warrant) under CCEOP-1, this will enable the country to have central data location and analysis can be easily done.
- Since the fridge tag 2 have a life span of 2 years, the country has secured funding (Gavi HSS2 additional funds) to procure extra 1,029 devices that should arrive in 2021
- SOPs are already available in terms of temperature exclusions at the different supply chain levels and in case of any temperature exclusion, necessary action has to be taken by the cold chain manager guided by the SOPs.

PART E: SCALE-UP SUPPORT PHASE⁷

This second phase of Gavi CCE Optimisation Platform support (provided from approximately year 3 onwards) is designed to address additional CCE needs as part of optimising design and increasing the sustainability of the supply chain.



Budgets are **not inclusive** of operational cost.
Operational costs must be financed by Ministry of Health or other partners.

12. Prioritised (Additional) CCE needs (Maximum 3 pages)

Provide information on **2 to 4 prioritised (additional) CCE needs** as identified in the 'CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements'. For each prioritised (additional) CCE need, please provide the following information:

- 1. The need:** Type of activity (e.g. replace obsolete CCE, extend CCE to unequipped facilities, etc.); specific CCE site (facility); type of equipment required; quantity of equipment items.
- 2. Justification:** Reasons for urgent need (e.g. low CCE and/or immunisation (Penta3) coverage area, gender barriers, mobile population, etc.); current CCE and immunisation (Penta3) coverage in the population area.
- 3. Expected outcome:** Anticipated increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country Performance framework).
- 4. Total CCE budget:** includes Gavi and country joint investment share

Prioritised (Additional) CCE Need #1

The need	
Justification	
Expected outcome	
Total CCE budget	

Prioritised (Additional) CCE Need #2

The need	
Justification	
Expected outcome	
Total CCE budget	

⁷ Countries are kindly advised to apply for their full needs regardless of the Gavi CCEOP joint investment ceiling and the funding availability. It is important to inform however how CCEOP will be contributing towards fulfilling the needs identified.

Prioritised (Additional) CCE Need #3	
The need	
Justification	
Expected outcome	
Total CCE budget	
Prioritised (Additional) CCE Need #4	
The need	
Justification	
Expected outcome	
Total CCE budget	
GRAND TOTAL CCE BUDGET: "Scale-up support" (Years 3, 4 & 5)	

13. Summary of SCALE-UP SUPPORT PHASE replacement/rehabilitation, expansion and extension plan

All countries must fill this section to highlight the number of equipment and corresponding number of sites these equipment will serve to meet their replacement/rehabilitation, expansion and extension targets. The values entered below must align with those in Section 9 above and in other parts of the application form.

Replacement/Rehabilitation				Expansion		Extension			
Existing sites with (non)functional and/or obsolete non-PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)				Existing sites with (non)functional and/or obsolete PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Equipping existing sites with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population		Equipping previously unequipped sites (providing immunisation services or not, including existing sites without active devices) and add new service sites	
<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>		
Total	Total	Total	Total	Total	Total	Total	Total	Total	Total

14. Ongoing or planned activities around other <u>supply support phase</u> chain fundamentals in the scale-up	
<p><i>In this section, linkages must be drawn between requested CCE Optimisation Platform support, ongoing Gavi investments (especially through the Health Systems Strengthening support) and other partner supply chain support.</i></p> <p><i>Describe planned or ongoing activities related to other supply chain fundamentals during the scale-up support phase, including their sources of funding. Responses to this section should be linked to the EVM Improvement Plan.</i></p>	
<p>Supply chain managers</p> <p><i>Describe all planned or ongoing activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.</i></p>	
<p>Data for supply chain management</p> <p><i>Describe all planned or ongoing activities related to data for management, their sources of funding, and partner support. In particular, provide information explaining how improvements to the functionality of logistics management systems will improve the visibility of up-to-date and accurate vaccine stock records at each level of the vaccine supply chain.</i></p>	
<p>Optimised, efficient design of distribution system</p> <p><i>Describe all planned or ongoing activities related to distribution system design optimisation, their</i></p>	
<p>Continuous improvement process</p> <p><i>Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.</i></p>	
<p>Temperature monitoring</p> <p><i>Describe how the temperature monitoring system will evolve? Which devices will be used? Furthermore, describe which measures are in place to</i></p>	
<p><i>a) obtain temperature data from the various devices;</i></p> <p><i>f) act following temperature alarms (curative maintenance);</i></p> <p><i>b) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system; and</i></p> <p><i>c) countries wishing to purchase such devices are required to demonstrate how the recurrent costs, such as HR, data transmission, analysis etc., will be covered in this section.</i></p>	

PART F: BUDGET TEMPLATES

This section details the number of requested equipment items and equivalent budget. A maximum investment amount (and indicative number of equipment items) corresponding to the phased support request will be considered for recommendation of approval by the IRC and subsequent decision by Gavi.

However, in consultation with the Secretariat and in-country partners, the number of equipment items may be modified when the detailed operational plan is developed subsequent to the Platform proposal and the support may vary within the limit of the approved maximum amount.

Budgets must be completed in the attached budget template, and with reference to the **CCE Optimisation Platform Guidelines, Gavi CCE Optimisation Platform Technology Guide and CCE planning prices and Total Cost of Ownership (TCO) analysis tool**.

15. CCE Optimisation Platform - Budget Template

To be filled by ALL countries after selection of equipment that best suit their CCE needs (e.g. specific model and make).

Countries will plan with indicative PQS prices and corresponding service bundle estimates (depending on equipment being on/off-grid and estimated costs of service bundle).

Planning price ranges are provided in this template.

How to fill the attached budget template: Countries should:

- *Select appropriate 'Equipment Model' against the listed equipment types*
- *Fill out the 'Estimated service bundle cost' and 'Number of equipment' requested*
- *(In the last 'Total CCE OP Request' table), fill out second and third preference for each model selected. The second and third preference should be comparable products in the same capacity segment. **Countries are informed that Gavi, and its Alliance partners principally UNICEF, will try as much as possible to respond to countries' first preference, but manufacturers' lead time could also lead to countries receiving cost estimates for either their second or third preference.***

Completed budget template should be sent as an attachment along with application form.

Budgeting for Buffer and Procurement fees

- **Buffer fees:** *A 7% buffer on **total equipment cost** is built into country yearly budgets. This will cover currency variations, demurrage and associated costs and will be returned to country, if unused.*
- **Procurement fees:** *Countries will also need to **pay UNICEF's procurement costs for the country joint investment portion**, estimated to be up to 8.5%. Please obtain actual amounts from the UNICEF country office.*

PART G: PERFORMANCE FRAMEWORK

Countries must include **CCE Optimisation Platform indicators** in the application. The indicators need to be included in the Performance Framework for the current and/or proposed Gavi HSS support, after Platform proposal approval.

According to their specific context, countries are required to consider the most appropriate data sources to report on programme implementation and progress against the targets set. This should be discussed with partners (which may provide technical assistance) and the Gavi Secretariat. Programmatic reporting updates, as well as targets and indicator updates, will be made as part of the Gavi performance framework and annual Joint Appraisal process. Countries are expected to consider relevant smart indicators to be monitored and reported against, in terms of intermediate results or outcomes/impact.

16. Indicator monitoring and reporting requirements

As a *minimum*, countries need to monitor and report on:

- **5 MANDATORY intermediate results indicators;**
- **1 MANDATORY intermediate result indicators if countries are procuring User independent freeze protected cold boxes and vaccine carriers; and**
- **1 to 3 ADDITIONAL intermediate results indicator(s).**

- 1) CCE Replacement/Rehabilitation in existing equipped sites:** Percentage of existing sites with (non)functional and/or obsolete non-PQS and PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)
- 2) CCE Expansion in existing sites:** Percentage of existing sites being equipped with **ADDITIONAL** pieces of equipment for new vaccine introduction and/or to serve an increasing population;
- 3. CCE Extension in unequipped existing and in new sites:** Percentage of previously unequipped sites (providing immunisation services or not, including existing sites without active devices) and new service sites being equipped with Platform eligible equipment.
- 4. CCE maintenance :** Well-defined indicator proposed by country to reflect appropriate maintenance of equipment; for example percentage of equipped facilities with functioning cold chain,⁸ such as demonstrated by remote temperature monitoring; **and**

⁸ **Indicator definition:** % CCE functioning = (# functioning CCE devices) / (total # of CCE devices designated for use). CCE devices considered for this indicator include all refrigerators, fixed passive storage devices, walk-in cold rooms and freezers designated for string vaccines. Both the numerator and denominator should be collected from the

3) 5. Freeze-free to non-freeze-free carrier ratio: Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country?

USE THE TABLE BELOW TO COMPLETE MANDATORY INDICATORS (please note that indicators should be cumulative, where appropriate)

Indicator (Provide name of the mandatory indicator as shown above)	Definition (Provide definition if not already specified)	Data Source (Identify data source)	Reporting frequency (annual, semi-annual, quarterly etc.)	Baseline (Year) (Provide numerator and denominator for calculating percentage)	Target Year 1 (Provide numerator and denominator for calculating percentage)	Target Year 2 (Provide numerator and denominator for calculating percentage)	Target Year 3 (if applicable) (Provide numerator and denominator for calculating percentage)
1. CCE Replacement / rehabilitation in existing Equipped sites	Percentage of existing sites with (non)functional and/or obsolete non-PQS and PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)	National Cold Chain Inventory	Annual	Numerator = 136 Denominator or= 1192 Percentage= 11.4%	Numerator = 116 Denominator or= 1192 Percentage= 9.7% 100% of sites will have PQS and functional CCE by year end	Numerator = Denominator= Percentage=	Numerator = Denominator= Percentage=
2. CCE expansion in existing equipped sites:	Percentage of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population;	National Cold Chain Inventory	semi-annual	Numerator = 25 Denominator or= 1192 Percentage= 2.1%	Numerator = 20 Denominator=1192 Percentage=1.67% 100% of sites will be equipped with additional CCE	Numerator = Denominator= Percentage=	Numerator = Denominator= Percentage=

same geographical area / period in time and should not include decommissioned equipment. Functionality of CCE is broadly defined to mean that the device is operable at a particular point in time for storing vaccine.

Indicator (Provide name of the mandatory indicator as shown above)	Definition (Provide definition if not already specified)	Data Source (Identify data source)	Reporting frequency (annual, semi-annual, quarterly)	Baseline (Year) (Provide numerator and denominator for calculating percentage)	Target Year 1 (Provide numerator and denominator for calculating percentage)	Target Year 2 (Provide numerator and denominator for calculating percentage)	Target Year 3 (if applicable) (Provide numerator and denominator for calculating percentage)
3. CCE extension in unequipped existing and/or new sites:	Percentage of previously unequipped sites (providing immunisation services or not, including existing sites without active devices) and new service sites being equipped with Platform eligible equipment.	National Cold Chain Inventory	semi-annual	Numerator r = 176 Denominator= 1192 Percentage=14.7%	Numerator = 94 Denominator= 1192 Percentage= 7.9% 100% of sites will be equipped by end of year		
4. CCE maintenance							
5. Freeze-free to non-freeze-free carrier ratio	Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country						

ADDITIONAL intermediate results indicator(s): Countries are required to suggest 1 to 3 intermediate results indicators to track performance of rehabilitation, expansion, maintenance and/or other supply chain fundamentals (include baseline, data source, targets and frequency of reporting).

Examples of additional intermediate results indicators options are:

1. **Functional status of cold chain equipment:** Ratio of functional CCE and ratio of districts with at least 90% functional equipment;
2. **Closed vial wastage:** Rate at a national, district and facility level;
3. **Forecasted demand ratio:** Ratio of actual usage compared to forecast (vaccines);
4. **Full stock availability:** Ratio of facilities/districts without any stock out;
 - a. Stocked according to plan: Percentage of facilities/stores/districts that have stocks levels between set minimum and maximum stock levels;

5. **Temperature alarms:** Frequency and magnitude of heat and cold alarms per monitoring period (i.e., temperature excursion) and number of CCE devices with more than a certain level of temperature excursion;
6. Rate of health facilities dashboard use, timely analysis and use for decision making;
7. **On-time and in-full (OTIF) delivery:** Ratio of order completely delivered on time; **or**
8. Number of health managers trained and dispatched for supply chain oversight function and rate of reported monitoring activities.

USE THE TABLE BELOW TO COMPLETE ADDITIONAL INDICATORS

Indicator (Provide name of the additional indicators as shown above)	Definition (Provide definition if not already specified)	Data Source (Identify data source)	Reporting frequency (annual, semi-annual, quarterly etc.)	Baseline (Year) (Provide numerator and denominator for calculating percentage)	Target Year 1 (Provide numerator and denominator for calculating percentage)	Target Year 2 (Provide numerator and denominator for calculating percentage)	Target Year 3 (If applicable) (Provide numerator and denominator for calculating percentage)
1. Temperature alarm	Percentage of districts reporting temperature alarm (heat and/or freezing)	Temperature review report	Semi-annual	Numerator = 19 Denominator= 110 Percentage=17.3 %	Numerator = 39 Denominator= 110 Percentage= 35.6%	Numerator = 69 Denominator=110 Percentage= 62.7%	Numerator = 90 Denominator= 110 Percentage= 81.8 %
2. Number of health managers trained and dispatched	Number of health managers trained and dispatched for supply chain oversight function and rate of reported monitoring activities.	MoH report	Semi-annual	Numerator = 3 Denominator = 25 Percentage = 12%	Numerator = 25 Denominator= 25 Percentage = 100%	Numerator = 25 Denominator=25 Percentage = 100%	Numerator = 25 Denominator= 25 Percentage = 100%

PART H: PROJECT MANAGEMENT

The effective and successful implementation of the CCEOP relies heavily on the in-country project management team (PMT) which needs someone to manage the PMT. This project manager, designated by the MoH, will have to:

- Establish the Project Management Team (refer to UNICEF's Project Management Support Package for ToRs)
- Coordinate the planning, rollout and monitoring of the CCE OP
- Mobilise the required resources for the project
- Provide status updates to the NLWG
- Coordinate with all stakeholders including the vendor and UNICEF
- Report on deviations
- Managing risks

17. Project Management

The country is asked to please provide the following information:

- a) Name and contact details of the dedicated project manager designated by the MoH*
- b) Describe how the project manager will be empowered and supported to ensure the smooth implementation of CCE OP*

a) Project Manager details are presented below:

- i. First and last Name: Mukhtar Abdi Shube
- ii. Title: EPI Manager Federal Government of Somalia
- iii. Department/Direction: EPI/ Health
- iv. E-mail: epi@moh.gov.so
- v. Cell phone: +252-615541871

b) Describe how the project manager will be empowered and supported to ensure the smooth implementation of CCEOP.

The project manager is the EPI National manager and has the mandate to monitor all EPI programme and performance within the country. To ensure continuity and timely implementation, he will appoint a designate to chair meetings in his absence. The team will comprise of UNICEF (secretary to the Team) and other pertinent partners who will support the project manager with the necessary technical and administrative tasks, with clear roles and responsibilities defined for each member. Weekly installation reports will be shared in order to monitor the implementation as well as addressing the challenges. The project manager will call bi-weekly meeting to address any deviations and challenges and later this will be reported to the EPI working group/ NLWG (if established by then), these meetings will be facilitated by MoH with support from UNICEF and WHO.