Application Form for
Cold Chain Equipment Optimisation Platform
Support in 2018

Document Dated: November 2017

CCE Application Form	**Purpose of this document:** This application form must be completed in order to apply for support related to the CCE Optimisation Platform. 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.
CCE TG 	**Resources to support completing this application form:** **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/ **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
Weblinks and contact information: 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).	

	Countries are informed that based on post IRC recommendations, **final approved amounts may be different** from what countries have requested. **This final approved amount will be dependent on the availability of funding.** **Gavi will respect countries' equipment selection. However, countries could also receive their 2nd or 3rd preference based on their selection in the budget.**

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PART A: APPLICANT INFORMATION

1. Applicant information	
Country	Mozambique
Date	1st May 2018
Contact name	Rosa Marlene Manjate Cuco, National Director, Public Health
Email address	rosa.marlene@gmail.com
Phone number	+258843012198
Total funding requested from CCE Optimisation Platform **(US $)**	US$ 6,854,971. From this amount, US$ 1,370,994 (20%) is expected to be contributed by Mozambique Ministry of Health while Gavi will provide the sum of US$ 5,483,977 which represents 80%. An additional sum of US$328,845 will be paid by the country as 8.5% UNICEF procurement fees and International Freight from supplier to port of entry in Mozambique."
Does your country have an approved Gavi HSS support on-going?	**Yes** ☑ ☐
	*Indicate the anticipated **final year** of the HSS:2019*
Proposed CCE Optimisation Platform **support start date** *(please be informed the actual start date should be at least 8-10 months from application date):*	*Indicate the month and year of the planned start date of the support, based on the strategic deployment plan:* ***February, 2019***
Proposed CCE Optimisation Platform support end date:	*Indicate the month and year of the planned end date of the support, based on the strategic deployment plan:* ***February, 2021***
Signatures *Include signed (and official) CCE Optimisation Platform application endorsement by:* *a) Minister of Health and Minister of Finance (or delegated authorities)* *b) Members of the Coordination Forum (HSCC/ICC or equivalent body)*	*We the undersigned, affirm the objectives and activities of the Gavi CCE Optimisation Platform proposal are fully aligned with the national health strategic plan (or equivalent) and that the funds for implementing all activities, including domestic funds and any needed joint investment, will be included in the annual budget of the Ministry of Health:* **Minister of Health** — **Minister of Finance** **Name:** Nazira Vali Abdula — **Name**: Adriano Maleiane **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				
2	Minutes of the Coordination Forum meeting (ICC, HSCC or equivalent) endorsing the proposal[1]	Yes	27th April-2018		Last one year minutes also attached
3	National Health Sector Development Plan/ Strategy (or similar)	Yes	2014	2014 - 2019	
4	cMYP	Yes	May 2013	2015 - 2019	
5	EVM Assessment	Yes	June 2015	2015-2018	
6	EVM Improvement Plan	Yes	Oct 2016	2016 - 2020	
7	EVM Annual Work plan **and** Progress Report on EVM Improvement Plan[2]	Yes	April 2018		
8	WHO CCEI Tool/UNICEF IMT/PATH CCEM Tool/CHAI tool[3,4]	Yes	March 2018		
9	Inventory Report and Facilities segmentation	Yes	Nov 2017 & March 2018		CC inventory in 2017 and validated March, 2018
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	March 2018	2019 -2021	
11	Maintenance Plan with financing and	Yes	April 2018	2018	

[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**
	source(s)				
12	Proof of status for CCE tariff exemptions waiver	No			Request submitted, still waiting approval.
13	Other relevant documents				
13.1	HSS plan	Yes	Oct. 2013	2013 - 2018	Actual start date was 2014 up to 2019

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)*

Mozambique Expanded Program on Immunization was launched in 1979 under the Primary Health Care Program, with the main objective of reducing mortality and morbidity from vaccine preventable diseases among women and children. To achieve this objective, health facilities throughout the country provide immunization services in fixed, outreach and mobile sessions.

Cold chain and logistics play an important role in ensuring that potent vaccines are delivered and stored in all facilities that provide immunization services. It is in the light of this that all strategic documents and plans in the country's health sector include improvement of cold chain and logistics for immunization as one of our cardinal objectives.

Cold Chain Equipment Optimization Platform (CCE OP) is an opportunity for countries to acquire support to improve their cold chain system through complimentary efforts that strengthen supply chain strategic fundamentals and improvement of coverage and reduction of equity gaps for the immunization service. In Mozambique strategies and activities such as Health Sector Strategic Development Plan (HSSDP), cMYP, EVM assessment, HSS plan, and CCE inventory assessment all have improvement of cold chain as one of their objectives which makes CCEOP a complementing partner to them.

HSSDP: This plan exists in Mozambique with a span from 2014 to 2019. The document identifies seven major goals two of which are meant to "improve quality of services provided" (goal no. 2) and to "reduce geographical inequalities between population groups and increase access to and utilization of health care services" (goal no. 3)-***See pages 42 and 43 of the HSSDP, attachment #3***

The above goals of improving and expanding access to health services include improvement of immunization service and CCE OP will go a long way in supporting the achievement of these goals since its major objective is to provide better performing cold chain equipment for storage of vaccines for the immunization service. In this regard, achievement of the HSSDP goals 2 and 3 will be facilitated if CCE OP support is provided to Mozambique.

Mozambique **cMYP** is operational from 2014 to 2018. Its EPI mission is "to enhance the lives of the people of Mozambique by protecting them from and striving to eliminate the suffering caused by vaccine preventable diseases". To achieve this, the document has one of its goals as "to protect all mothers and their children less than five years of age from vaccine preventable diseases". The plan further sets one of its key activities is to focus on strengthening the immunization service. ***Reference: Attachment #4, Mozambique cMYP 2014 to 2018, page 9.*** The cMYP is therefore in line with the platform's objective; hence CCE OP support will facilitate the successful achievement of the cMYP objectives in Mozambique.

EVM Assessment: The second EVM assessment was conducted in June 2015. Major findings of the assessment include inadequate storage capacity at district and health facility levels – ***2015 EVMA report page 41 (attachment #5)***. The assessment went further to recommend the expansion of storage capacity at the district stores and health facilities identified to have such gaps through a comprehensive improvement plan (attachment #6). Therefore, CCE OP support will facilitate implementation of the recommendations of the EVM assessment, through provision of better performing equipment to these levels which in turn will facilitate uninterrupted availability of potent vaccines for immunization service delivery.

GAVI HSS plan is one of the strategies for improving health system in Mozambique. The country has this plan that covers the period from 2013 to 2018. The document has 5 objectives. Objectives 1 and 2 respectively aim to "*achieve equitable access to routine immunisation service and increase the availability and efficiency of immunisation service through improvement of immunisation supply and logistic system"*–***See page 3 of attachment #15.1***, ***HSS Plan***. Achievement of these objectives will be facilitated with CCE OP support to the country since it will provide an opportunity to replace inefficient CCE with better performing ones that will facilitate availability of potent vaccines at all levels including geographically disadvantaged sites.

Cold chain inventory assessment was conducted in September 2017 and further validated in March 2018. A total of 1,700 sites were visited and assessed which comprise 1 national store, 10 provincial stores 161 district stores (lowest distribution level) and 1,528 service delivery health facilities.

832 (48.9%) of the facilities have electricity supplies, among them are the central vaccines store, all the 10 provincial stores, the 161 district stores and 660 service level health facilities.

Major findings of the inventory show that most of the CCE in the country comprise of absorption refrigerators that are operated on gas as fuel. In terms of standard, only 36% of the CCE are of PQS standard. The inventory data also shows that 28% of cold chain equipment is not working while 65.6% is either 10 or more years old (obsolete).

There are 484 units of solar refrigerators captured in the inventory 250 of which are solar battery type while 234 are SDD. ***Reference:*** attachment #8 Cold chain inventory validation report March 2018, pages 3 & 8.

It is clear from the assessment findings that the country requires support to replace obsolete and non-standard equipment as well as scale up the storage capacity. With CCE OP support these gaps can be optimally reduced which will improve the quality and efficiency of the cold chain system.

Overview of the Immunisation Supply Chain:

There are four levels of immunization supply chain in the country namely national, provincial, district and service delivery levels.

Immunization programme is headed by a national EPI Manager who reports to the Deputy Director Public Health at the MoH. The program manager is supported by a logistics manager, cold chain and maintenance officers as well as a national warehouse manager.

At the provincial level, there is an EPI manager who is supported by provincial cold chain officer, logistics officer, and maintenance officer. The provincial EPI managers have double reporting line to the provincial chief of public health and to the national EPI program manager. There is also an EPI manager at the district level who oversees all EPI matters and reports to province. District EPI logistics officers are also found in quite a large number of districts and there is plan to expand them to all the districts. At the health facility level, there is an EPI focal person who reports EPI matters to the district. More details have been provided in the section below.

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

EPI programme in Mozambique has a functioning Interagency Coordinating Committee (ICC). This group includes senior officials from the ministry of health and representatives from different local and international partners. The committee plays technical and advocacy role in support of the program. It also holds regular meetings to review and endorse key activities of the programme with all proceedings approved through formally written minutes.

The program also maintains partnerships with different line ministries, seeking their engagement in their specialized areas such as social mobilization for vaccination campaigns, budgeting etc. There is also a functional NLWG.

The NLWG after identifying the need for the country to submit CCE OP application agreed to participate in the development of the application. Prior to the application, a nationwide cold chain inventory was conducted by VillageReach and UNICEF in order to have an up to date record of CCE in the country. UNICEF hired a consultant that led the process of developing the application which was developed with input from members of NLWG. A 4-day workshop on CCE OP application development was organised (supported by UNICEF) which had participation of all members of the NLWG at Hotel Avenida from 13th to 16th March 2018. Members of NLWG also met from time to time to review the progress of the exercise. ICC was also briefed prior to the commencement of the application development and the committee endorsed application as evidenced in attachment #2.

Does the country have a permanent and functioning National Logistics Working Group (NWLG)? 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.

There is a functional NLWG in Mozambique operating since 2014.The group meets monthly and on adhoc basis whenever the need arises. The group records its proceedings in form of minutes and shares with all stake holders. Membership of the group is drawn from UNICEF, Village Reach, CHAI, WHO, Central Medical Stores (CMAM), academia and other relevant partners. The group is chaired by the EPI National logistics manager from the ministry of health.

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)*

No. All Gavi requirements for basic functionality of ICC have been met. The committee has TORs **Ref to Attachment #16** and meet every quarter and when need arises. All proceedings are recorded in formal minutes and decisions are approved by at least two-third of the members. Please find attached in **attachments number 16.1 to 16.4 minutes of the ICC** for the last one year beginning March, 2018 up to April, 2018

In the ICC meeting held on 27th April, 2018 **Ref attachment number 16.4** Key stakeholder for the Immunisation programme and Immunisation Supply Chain were all present during the presentation by the EPI Logistics Officer on the CCEOP application developed jointly by the National Logistics working group in a workshop organised by UNICEF through a recruited International Cold Consultant. Among the key players present were the National Director for Health, EPI Manager, Cold Chain Maintenance Manager, UNICEF Chief of Health, UNICEF Supply and Logistics Officer, WHO EPI Technical Manager, VillageReach Programme Manager and other leading to a total of 14 participants. This was adequate quorum to endorse the application refer to **attachment #2.1**

PART C: SITUATION ANALYSIS AND REQUESTED SUPPORT

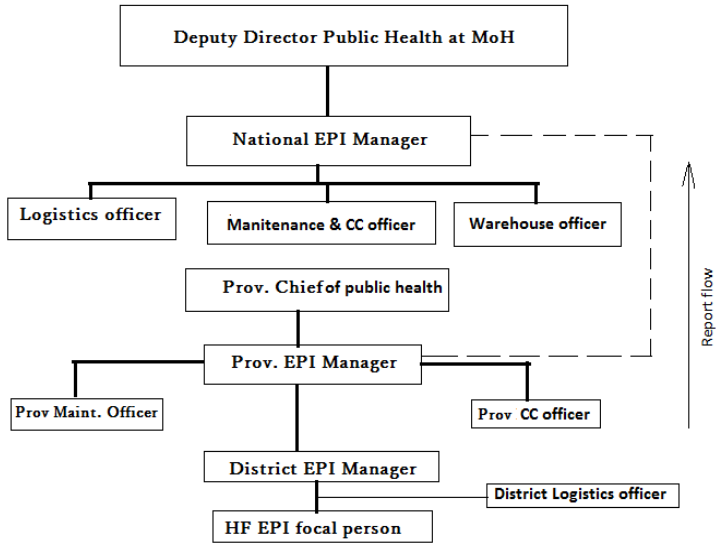
This section gives an overview of the types of information the IRC will anticipate from countries in their application for CCE Optimisation Platform support. This section must be filled with appropriate reference to the country documents listed in Part B. Countries are required to provide a narrative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

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

There are four levels of immunization supply chain in the country namely national, provincial, district and service delivery levels.

Immunization programme is headed by a national EPI Manager who reports to the Deputy Director Public Health at the MoH. The program manager is supported by a logistics manager, cold chain and maintenance officers as well as a national warehouse manager.



At the provincial level, there is an EPI manager who is supported by provincial cold chain officer, logistics officer, and maintenance officer. The provincial EPI managers have double reporting line to the provincial chief of public health and to the national EPI program manager. There is also an EPI manager at the district level who oversees all EPI matters and reports to province. District EPI

logistics officers are also found in quite a large number of districts and there is plan to expand them to all the districts. At the health facility level, there is an EPI focal person who reports EPI matters to the district.

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

Major weaknesses of the iSC system in Mozambique are inadequacy of finance for maintenance and fuelling of vehicles for vaccine distribution as well as for payment of per diem for personnel. There is also inadequate storage capacity in many facilities due to the large number of obsolete and absorption refrigerators in the system. Stock out of vaccines sometimes occurs as a result of delay in release of funds at various stages. The system also suffers inadequacy of skilled technicians for maintenance of cold chain equipment. Please refer to the **EVM Assessment Report June 2015 attachment #5.**

From the result of cold chain inventory exercise conducted in November 2017, most of the CCE in the country comprise absorption refrigerators that are operated on gas as fuel. Furthermore, only 36% of the CCE are of PQS standard with the rest being PIS. The inventory data also shows that 28% of cold chain equipment is not working while 65.6% is either 10 or more years old (obsolete). ***(Reference: CC inventory validation report - #9.1)***

There are 250 solar battery refrigerators which frequently break down alongside absorption refrigerators. This contributes immensely towards overwhelming the capacity of available technicians. The country procured and installed SDD refrigerators in 2015 which are currently operating with less maintenance issues compared to the solar battery type. Scarcity of spare parts for repairs of absorption and solar battery refrigerators also form part of the challenges of ISC in the country.

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

To address these challenges, GAVI has supported the country with additional vehicles and motorcycles as well as funds for fuelling of the vehicles for distribution of vaccines. Furthermore, VillageReach is implementing a Direct Logistics System (DLS), where vaccines are distributed from provincial vaccine stores direct to the health facilities to compliment the efforts of districts and to relieve storage capacity at the district level. Refer to **attachment number 7 Progress Report on EVM Implementation Plan Narrative April, 2018.**

UNICEF country office procured and installed 162 various refrigerators of various types and sizes to address issues of storage capacity gap. With GAVI funding, UNICEF also signed a Partnership Cooperative Agreement (PCA) with CHAI for the installation and maintenance of 9 new cold rooms at the national and provincial stores. GAVI HSS plan through activity 2.1.2.a4 under objective 2 made provision for funds for payment of per diem for technicians and drivers and for fuelling of vehicles for maintenance trips.

To further address the issues of non-functional, obsolete and absorption type CCE, the country mobilized all partners to enable it to develop and submit the application for support through the CCE OP window in May 2018.

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

Delays on disbursement of the funds for vaccines distribution as well as insufficiency of the funds due to fluctuations of prices are some of the challenges to implementation of the intervention. The current ongoing economic downtown in the country has also affected government ability to provide adequate support for some of the necessary interventions. Implementation of the DLS also suffer setbacks due to inadequacy of transport vehicles which are sometimes committed to other activities other than EPI

related. Refer to **attachment number 7 Progress Report on EVM Implementation Plan Narrative April, 2018 and attachment #6 Mozambique Final Report EVM cIP, October, 2016.**

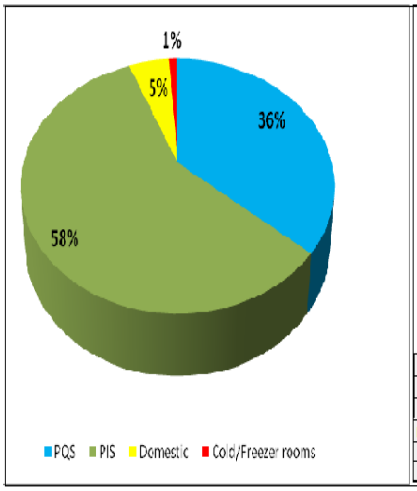
e) Describe lessons learnt from recent supply chain related support that inform the current request for CCE Optimisation Platform support.

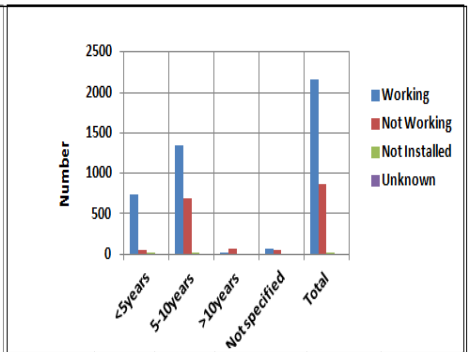
UNICEF and government of Mozambique between 2014 and 2016 procured and installed about 500 CCE comprising of ILRs, freezers and SDD refrigerators that were used to replace some of the solar battery and absorption refrigerators as well as obsolete ILRs. The new equipment after installation operates with fewer maintenance issues and with low energy consumption. They also have longer hold over time which is a good advantage in the event of power cuts. There was a problem of a thermostat that was encountered with the VLS 054 SDD refrigerators but the problem was resolved by the manufacturer and all of the 249 units are currently working properly. Timely response by the manufacturer is an important lesson that strengthens the confidence of the country to further deal with the standard manufacturers identified by the platform.

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

There are 1700 sites with CCE in Mozambique and 832 (48.9%) of them have electricity supplies and the supply is available for up to 8 hours and above. Among them are the central vaccine store, 10 provincial stores, 161 district stores and 660 health facilities. **Ref Figure 7: Facility segmentation at district level - LD stores Page 14, attachment # 9.1**

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?





	<5years	5-10years	>10years	Not specified	Total
Working	736	1345	15	63	2159
Not Working	56	693	57	51	857
Not Installed	16	5	0	0	21
Unknown	0	0	0	0	0
Total	808	2043	72	114	3037

Inventory data shows that most of the CCE in the country comprise absorption refrigerators that are operated on gas as fuel. In terms of standard only 36% of the CCE are of PQS standard. The inventory data also shows that 28% of cold chain equipment is not working while 65.6% is either 10 or more years old (obsolete). Proportion of non-working CCE increases with age of equipment which means proportion of non-functional equipment is higher in older equipment that are 10 years and above. **- See attachment #9.1 page 3.**

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

Currently less than 50% of birth cohort is served by standard CCE. This is because only 36% of CCE meet PQS standard and 28% of total CCE are not working.

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

Frequent breakdown from obsolete and absorption refrigerators occur which overwhelm the technicians. This is due to age and technology of the CCE as well as scarcity of spare parts. High cost of the spare parts due to old technology use also poses another bottleneck in the system.

New CCE will address storage capacity issues and minimize the down time of CCE thereby ensuring steady cold chain. New technology of the new CCE will also facilitate availability of spare parts.

Please refer to **attachment # 10.1 Mozambique Cold Chain Gap Analysis 2020-2028** which has considered all the parameters from the current status of the Cold Chain Equipment in the country and the population growth until 2028 and **attachment #10 Mozambique_CC rehabilitation and expansion plan_deployment plan and equipment selection**

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

Service bundle training package will improve preventive maintenance skills of the health workers in the country which in turn will minimize frequency of breakdown. Furthermore, provision of voltage regulators for both new and old CCE will eliminate CCE failure due to power surge. Lower energy consumption of the on grid CCE will also translate to reduction in energy bills to the programme. More spare sparts will also be available since the platform provides means of procuring spare parts for both old and new sets of equipment.

k) What are the overall CCE needs?

The purpose of this application is to get the needed equipment for replacements of absorption and obsolete refrigerators with better performing SDD and ILRs to scale up storage capacity in areas with such gaps. CCE were selected using the guide provided by TCO looking at operating cost, storage capacity and total cost of ownership. The summary of the needed equipment suitable for the country is given in the tables below. ***– See page 16 of attachment #10 cold chain rehabilitation and expansion plan.***

Type of equipment	Equipment model	Capacity segment (L)	Number of equipment			Total number of equipment
			2019	2020	2021	
On grid ILR_without freezer comp.	VLS 200A	60 - <90L	237	147	_	384
On grid ILR_without freezer comp.	VLS 400A	>120L	124	59	_	183
Off grid SDD refrigerators without freezer comp.	VLS 054 SDD	30 - <60L	128	69	_	197
Off grid SDD refrigerators with freezer comp.	VLS 026 RF SDD	30 - <60L	220	43	_	263
Off grid SDD refrigerators with freezer comp.	VLS 056 RF SDD	30 - <60L	131	20	_	151
Off grid SDD refrigerators with freezer comp.	VC 60 SDD	30 - <60L	39	5	_	44

On grid freezers	MF 314	>120L	118	73	_	191
Total (Refrigerators & Freezers)			**997**	**416**	**_**	**1,413**
Beyond wireless RTM	ICE BC 140	_	_	_	12	12
ColdTrace 5 RTM	E006/039	_	_	_	600	600
Spare parts (sets)	SET	_	100	152	_	252

The 252 spares will cover for the new equipment in the ration of 10:1. The spare parts for the current equipment that is less than 5 years are being bought through GAVI HSS 2018. Beyond wireless RTMD is being requested to cover for current cold rooms of which the current RTMD will expire in the next few years. Cold Trace will be cover all equipment in health facilities since one device caters for 5 refrigerators. The MF314 Freezer is mainly to be used for making Ice Packs at district level to use for transportation of vaccines to health facilities. Health workers have been trained and know already how to used ice packs to transport vaccines in order to avoid freezing of vaccines. Some of the icepacks will also be used in vaccines carriers used for outreach vaccination services.

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):

- ***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)***

Despite the considerable achievements in poverty reduction in the past years, in 2002/03, 54% of the population continued living below the poverty line, with limited access to health and education (PRSP, 2005-2009). The Gini Index remained about 0.40 between 1997 and 2003 (Republic of Mozambique: Millennium Development Goals Report 2005), showing high inequalities between the population and where urban areas presented the worse ratios.

Between 2000 and 2006, the macroeconomic framework remained relatively stable with a positive trend. The average inflation rate was about 12%. Despite the increase in the Gross Domestic Product (GDP), the public expenditure remained at about 15% of the GDP and the public finance presented a budget deficit of above 10% before grants (PRSP 2005-2009). **–Reference attachment #4 page 1-2, (cMYP 2014 – 2018).**

DHS 2011 shows that, while no difference is found in utilization of immunization services among male and female children (76.2 and 76.1 DTP3 coverage), there are differences with regards to place of residence and the degree of literacy. For instance, children living in rural areas have 72.3% DPT3 coverage as compared to their mates in urban areas (86.3%). Meanwhile, DPT3 among children for mothers with secondary level education was (85.6%), primary level (76.9%) and no education (71.5%). This might reflect some gaps in the EPI communication strategy targeting people with low education level or no school education at all. **- Reference attachment #4 page 14, (cMYP 2014 – 2018).**

The CCE will support scale up of storage capacity in geographically remote provinces and those with low coverage which are also those with poorest communities and with highest number of unvaccinated children. As it can be seen above, DPT3 coverage is lower in children living in rural areas compared to their counterpart in urban settlements as well as between those with uneducated and educated mothers. Priority will be placed to Nampula and Zambezia, Tete, Manica and Sofala provinces.

SDD with freezer compartments will be deployed in the more remote areas with no electricity to help make icepacks for use in outreach services hence improving coverage and also reaching communities in the remote areas which makes equitable delivery of the service.

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 country is implementing DLS (direct delivery from province to health facility) through Village Reach in which vaccines are distributed from national level to province level and then direct delivery from the provincial level to health facilities including districts. The country is the process of changing to be in line with the PELF (Plano Estrategico da Logistica e Farmacia) where distribution of vaccines will be integrated with other medical supplies. Under this arrangement intermediary warehouses will be established which will make some districts to be merged into one catchment area under the intermediary warehouses. The intermediary warehouses if fully operational will distribute vaccines direct to health facilities.

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

The planned direct delivery system is to supply vaccines to health facilities every two months. Therefore, all health facilities in the country will be equipped with CCE that can store vaccines for two months up to the equipment life span. At the moment, there is no reduction in the storage capacity of two months at the district level because of transport constraints and geographical nature of the country. In addition, districts are used to resupply health facilities that run out of stock in cases of overconsumption.

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

Service bundle training to be given to operators of the CCE will contribute immensely in minimizing maintenance issues. This is because service providers will be equipped with basic skills for preventive maintenance. Spare parts coming with the platform equipment and the opportunity to procure for existing ones provided by the platform will make spare parts more readily available for repair and maintenance. Furthermore, provision of voltage regulators for new and existing equipment by the platform will ensure protection of the equipment from power surge. With trained service providers, more spare parts, voltage regulators and TMDs, the sustainability of system will be facilitated.

With the new equipment, there will be less maintenance requirements for the new CCE, which will help in operational and financial sustainability to the Ministry of Health.

Commented [AM1]: Will mention.

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.)?

Mozambique cold chain system is maintained using two strategies namely, preventive and corrective maintenance. While preventive maintenance focuses on periodic (daily, weekly, monthly etc) tasks carried out by trained service providers using the CCE to prevent break down, corrective maintenance is carried out by skilled technicians from government team and also private agencies to which the tasks are outsourced.

There is one technician at national level that has skills for repair and maintenance of cold rooms. He attends to some maintenance jobs at national and provincial levels. However, cold rooms installed recently are covered with two-year warranty service by the supplier until the end of 2019 and there is a plan to outsource the maintenance after expiration of the warranty. The Ministry of Health through CMAM has a Cold Chain Equipment maintenance plan that covers cold rooms. However, plans are underway to discuss that this contracts covers generators and other cold chain equipment in the country in collaboration with CHAI.

At provinces, there is one cold chain equipment technician who attends to all matters of repair and maintenance at districts. The technicians also provide refresher training to equipment operators on periodic preventive maintenance tasks.

National EPI Manager is responsible for effectiveness and quality of Cold Chain system at country level. The National System maintenance responsibility is delegated to EPI Cold Chain Technician at National level and EPI Cold Chain Technicians at Province level. In each district, that is Medical chief who is responsible for Cold Chain effectiveness and quality and maintenance system is assumed by health facility providers.

Non-governmental Actors: UNICEF and CHAI have a PCAs for repair and maintenance activities in the country. The PCAs cover maintenance for the cold rooms at the national and provincial levels, as well as, repair training for technicians to care for cold rooms. Other partners such as VillageReach will contribute to technical assistance as needed by MISAU regarding the supply chain.

Private Actors: A Preventative Maintenance contract that covers cold rooms and generators will be signed in June, 2018 between CHAI and Liquid Logic to cover all National and Provincial equipment and funds are ensured until mid-2019. Please refer to attachment **#11 Maintenance Plan and Schedule for Mozambique 7th June-2018**

NLWG is building a case for outsourcing cold room maintenance at provincial and central level and recruitment of technicians at district level.

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

  Preventive maintenance tasks are carried out as frequent as recommended by equipment manufacturers ranging from daily, weekly, monthly depending on the type of equipment while on the other hand corrective maintenance are done after receipt of job request from facilities where CCE are down. Depending on the extent of the maintenance tasks and the skills required, the tasks are assigned to either government technicians or private agencies. There is a quarterly supportive supervision on maintenance done by provincial cold chain technician maintenance to all the districts.

  There is a quarterly supportive supervision on maintenance done by provincial cold chain

technician maintenance to all the districts. SELV system for LMIS and Cold Trace provides monthly monitoring reports on functionality of cold chain equipment. Cold Trace provides a dashboard on Cold Chain equipment functionality as well as SELV.

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

  In addition to what government of Mozambique is doing, activity 2.1.2.a4 under objective 2 of the HSS plan, it provided funds for per diem of technicians and drivers and for fuelling of vehicle for maintenance trips. UNICEF and CHAI also have a PCA for repair and maintenance activities in the country.

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

There are monthly meetings on maintenance, logistics and EPI issues with all officers in these areas organised by the EPI Managers. During these meetings, maintenance issues are discussed and captured in the minutes which serve as official reports taken to the national level.

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

  Government and partners jointly will provide funding for maintenance. Government officers supported by GAVI and UNICEF will be deployed to areas requesting for maintenance support. GAVI HSS plan provides funds for spare parts in activity 2.1.2.a3 UNICEF has PCA with CHAI on installation and maintenance of cold rooms.

  In 2018, GAVI has approved funding for Cold Chain maintenance for the Ministry of health amounting to **$269,311.70.** Please refer to **attachment#** Out of this 8% is co-financed by MoH. CHAI has a PCA with UNICEF which ends in June, 2018 out of which some money will be allocated for Cold Chain maintenance for Cold Rooms for the next 1 year.

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

In Mozambique, there is a State Property Department under the Ministry of Finance which handles all matters relating to obsolete and expired government properties. The ministry of health will notify the agency of and hand over all the CCE to be disposed. The agency will determine the appropriate way to dispose them using government set criteria. The ministry of health will liaise with all districts and provinces to ensure successful handing over of the equipment to state property department.

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?

Yearly forecast of CCE requirement by their specifications and quantities have been made and facilities to deploy them have been identified in the cold chain replacement plan. A comprehensive operational deployment plan is also developed. If the application is approved the plan will be reviewed to ensure readiness of the facilities where CCE will be deployed. The revised plan will be shared with UNICEF Supply Division and the supplier. Project management team will be available and participate fully in facilitating the distribution and installation of the CCE. The team will also provide immediate response to any deviation from the plan identified in the course of the exercise.

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

GAVI – performance based financing

The country joint investment is coming from Gavi PBF. The sum of $1,009 620 has been budgeted to support the country to finance the CCE OP joint investment in 2019 secured under PBF from GAVI. This 86% of the total need for the first-year joint investment which starts in 2019. The plan for all the remaining and for all the subsequent years will be made in HSS plan and other sources.

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

The country has made a written commitment to pay for custom duty for the equipment. **attachment # 12.**

PART D: INITIAL SUPPORT PHASE

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.

CCE	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/

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	A total of 997 pieces of equipment will be required. This comprises 361 energy efficient on-grid ILRs, 118 on-grid freezers, 128 SDD refrigerators without freezer compartment and 390 SDD, with freezer compartment, 100 spare parts to cater for this new equipment only. All this equipment is expected in 2019.
Justification	Availability of better performing equipment that have less maintenance issues will facilitate increased availability of potent vaccines for service delivery. It will also enable all health facilities in the province to store vaccines without stock out which will improve service delivery. Availability of vaccines will further facilitate conduct of outreach service which in turn results in reaching more children.
Expected outcome	Energy efficient on-grid ILRs, SDD refrigerators and freezers will replace inefficient ones. Maintenance issues will reduce accordingly since SDD do not have the battery and charge controller that are main source of worry for solar refrigerators. It is expected that new equipment will work more efficiently due to their age and improved technology which reduce risks that compromise vaccine potency.
Total CCE budget	**Total Budget (Incl. 6% Additional Buffer) US$** — **4,660,858** **Total Country Budget (Incl. 6% Additional Buffer) US $** — **932,172** **Total Gavi Budget (Incl. 6% Additional Buffer) US $** — **3,728,686** **Total Country Budget (Incl. 6% Additional Buffer and 8.5% UNICEF procurement handling fees and International Freight) US $** — **1,160,956**

<table>
<tr><td></td><td></td></tr>
<tr><td colspan="2">Prioritised (Urgent) CCE Need #2</td></tr>
<tr><td>The need</td><td>416 CCE altogether. 69 SDD refrigerators without freezer compartment, 68 SDD with freezer compartment, 206 ILRs and 73 on-grid freezers planned for 2020.</td></tr>
<tr><td>Justification</td><td>This set of equipment will be deployed to provinces with low number of unimmunized children. Since number of unimmunized children is the bases for prioritization, these provinces will be equipped after those with high number as urgent need #2.</td></tr>
<tr><td>Expected outcome</td><td>New equipment is expected to boost storage capacity, replace old and failed equipment and reduce frequency of equipment down time. With more efficient equipment there will be higher probability of uninterrupted supply of vaccines at the facilities.</td></tr>
<tr><td>Total CCE budget</td><td>
<table>
<tr><td>Total Budget (Incl. 6% Additional Buffer) US $</td><td>1,506,470</td></tr>
<tr><td>Total Country Budget (Incl. 6% Additional Buffer) US $</td><td>301,294</td></tr>
<tr><td>Total Gavi Budget (Incl. 6% Additional Buffer) US $</td><td>1,205,176</td></tr>
<tr><td>Total Country Budget (Incl. 6% Additional Buffer and 8.5% UNICEF procurement handling fees and International Freight) US $</td><td>389,304</td></tr>
</table>
Total CCE Budget for 2021
<table>
<tr><td>Total Budget (Incl. 6% Additional Buffer) US $</td><td>687,643</td></tr>
<tr><td>Total Country Budget (Incl. 6% Additional Buffer) US $</td><td>137,529</td></tr>
<tr><td>Total Gavi Budget (Incl. 6% Additional Buffer) US $</td><td>550,115</td></tr>
<tr><td>Total Country Budget (Incl. 6% Additional Buffer and 8.5% UNICEF procurement handling fees) US $</td><td>149,219</td></tr>
</table>
Please note that in 2021 only RTMDs will be procured, Beyond Wireless 12 Units and and Cold Trace 600 units.
</td></tr>
<tr><td>GRAND TOTAL CCE BUDGET: Initial support (Years 1 and 2)</td><td>Total budget for prioritized urgent needs #1 and #2 respectively for 2019 and 2020:
<table>
<tr><th></th><th>2019</th><th>2020</th><th>2021</th><th>Total</th></tr>
<tr><td>Total Budget (Incl. 6% Additional Buffer)</td><td>4,660,858</td><td>1,506,470</td><td>687,643</td><td>6,854,971</td></tr>
<tr><td>Total Country Budget (Incl. 6% Additional Buffer)</td><td>932,172</td><td>301,294</td><td>137,529</td><td>1,370,995</td></tr>
<tr><td>Total Gavi Budget (Incl. 6% Additional Buffer)</td><td>3,728,686</td><td>1,205,176</td><td>550,115</td><td>5,483,977</td></tr>
<tr><td>Total Country Budget (Incl. 6% Additional Buffer and 8.5% UNICEF procurement handling fees)</td><td>1,160,956</td><td>389,304</td><td>149,219</td><td>1,699,479</td></tr>
</table>
</td></tr>
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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**	
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	
No of Equipment	*No of sites*	*No of Equipment*	*No of sites*	*No of Equipment*	*No of sites*	*No of Equipment*	*No of sites*
768	768	229	103	0	167	0	0
Total	***Total***	***Total***	***Total***	***Total***	***Total***	***Total***	***Total***

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, on-going 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.*	Various trainings were conducted in vaccine management. Specifically, Village Reach is carrying out training on OpenLMIS called SELV (Sistema Electornico de Logistica de Vaccina OpenLMIS) and VAN for provincial EPI staff. There was also refresher training on vaccine management and vaccine distribution systems at provincial level. The country is planning to take the VAN and LMIS training down to district level. The country has planned to conduct the following trainings in 2018 a. Cold chain maintenance training in Zambezia province targeting 25 technicians. b. Logistics regional training – north, south and centre. c. Program management EPI and DQS Funds for the above planned trainings have been provided in HSS plan under objective 3 (sustain quality and accountability of workforce), activity 3.1.1 There is also plan to conduct refresher training on the new VIVA when the revised tool is released in April-May, 2018.
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.*	To ensure data visibility UNICEF organized and supported VIVA and SMT trainings in the country. DVD MT training was also supported by WHO while Village Reach continues with SELV and VAN trainings
Optimised, efficient design of distribution system *Describe all planned or ongoing activities related to distribution system design optimisation, their sources*	To optimize the distribution system, Village Reach is supporting Direct Delivery System for vaccines where vaccines are delivered directly from province to health facilities.

of funding, and partner support.	The facilities are provided with two months requirement. This is expected to be made fully operational when distribution of vaccines will be integrated with other medical supplies between CMAM and PAV with PELF supply chain strategic plan being implemented by CMAM. Intermediary warehouses are expected to be created then. A workshop on Supply Chain Optimisation will be organised by UNICEF country office, UNICEF Supply Division and Village in mid-June, 2018 focusing on system design and supply chain integration between CMAM and PAV with PELF supply chain strategic plan being implemented by CMAM.
Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	In conjunction with development partners, MoH in Mozambique is making efforts to improve the immunisation supply chain (iSC) system in the country. Resources to address deficiencies of the iSC system have been made available to Mozambique EPI programme through bilateral and multilateral assistance channels. Most recently, in 2015 the GAVI HSS support window became available explicitly to address systems bottlenecks to immunisation service delivery. Two refrigerated trucks with a capacity of about 30M^3 each were bought through HSS and added to distribution fleet. Plan is also under way to provide 2 number 4X4 trucks to Nampula and Zambezia provinces due to their hard to reach areas. In second quarter 2018, Mozambique will hold a workshop on System Design and Supply Chain Integration organised by UNICEF, VillageReach, MoH and CMAM. It is expected that, strategic discussions on both system design and integration approach for Mozambique will be developed. UNICEF and Village Reach supported a nationwide cold chain inventory assessment in 2017 which is used as bedrock for CC replacement plan for the CCE OP application. WHO Stock Management Tool is used at the National Level for Stock Management. UNICEF VIVA tool was installed in 2017 and is being used to monitor shipments coming from UNICEF at the national vaccine store. SELV is being implemented as a monthly web based online stock management and

	distribution tool for vaccine for all health facilities and district stores. WHO has been conducting trainings in DVDMT at the district level. CHAI conducted Cold Room mapping on 9 newly installed cold rooms and is extending to the old ones.
Temperature monitoring *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).* *Furthermore, describe which measures are in place to* *a) obtain temperature data from the various devices;* *b) act following temperature alarms (curative maintenance);* *c) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system; and* *d) 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.*	Standard TMDs are in use at all levels of the iSC in the country. All cold rooms and freezer rooms at national and provincial stores are equipped with beyond wireless RTMD. In Gaza, Tete and Niassa provinces, 225 health facilities are connected with ColdTrace RTMDs in addition to FT 2 30DTRs. Data from the RTMs is assessable online at facilities and elsewhere. Temperature alarms are also shared via SMS. Order of alerts for corrective actions to be taken in case of temperature incursions from RTDs start from health worker through district officers, provincial and national officers. It also involves maintenance service agencies in the case of cold rooms. There are SOPs for ColdTrace and Beyond wireless. USAID supported the country to purchase 906 additional ColdTrace RMDs which are expected to arrive country end of April 2018. VillageReach is currently funding the service fee for the existing ColdTrace devices and there is funding up to end of 2018. On the other hand, USAID has also made funds available for installation of the 906 ColdTrace devices coming into the country and their service fee for twelve months. Government will make plan to take over the payment of the service fee through national MoH and Gavi HSS plans. MoH will also approach USAID and VillageReach for possible support to extend to other facilities and additional funding for recurrent cost. CHAI conducted mapping on all newly installed cold rooms and is planning to cover the old ones.

PART E: SCALE-UP SUPPORT PHASE

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	Having equipped all health facilities in the urgent need between 2019 and 2020, the country will scale up the system with RTMDs. 12 units of beyond wireless and 600 ColdTrace RTMDs will be procured in 2021 to scale up temperature monitoring activities. It is expected that all district stores and service health facilities will be connected with ColdTrace devices while provinces and national stores where cold rooms are used will be provided with beyond wireless device.
Justification	With more efficient CCE and probably more vaccine at facilities, temperature monitoring should as well be scaled up to ensure adequate visibility of temperature data that give insight on quality of vaccines in the country.
Expected outcome	More visibility of temperature monitoring data will provide information on quality (potency) of vaccines in the immunization system
Total CCE budget	**Total Budget (Incl. 6% Additional Buffer)** **687,643** **Total Country Budget (Incl. 6% Additional Buffer)** **137,529** **Total Gavi Budget (Incl. 6% Additional Buffer)** **550,115** **Total Country Budget (Incl. 6% Additional Buffer and 8.5% UNICEF procurement handling fees and International Freight)** **149,219**

GRAND TOTAL CCE BUDGET: "Scale-up support" (Year 3)	

Total Budget (Incl. 6% Additional Buffer)	**687,643**
Total Country Budget (Incl. 6% Additional Buffer)	**137,529**
Total Gavi Budget (Incl. 6% Additional Buffer)	**550,115**
Total Country Budget (Incl. 6% Additional Buffer and 8.5% UNICEF procurement handling fees)	**149,219**

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	
No of Equipment	*No of sites*	*No of Equipment*	*No of sites*	*No of Equipment*	*No of sites*	*No of Equipment*	*No of sites*
Total	***Total***	***Total***	***Total***	***Total***	***Total***	***Total***	***Total***

14. Ongoing or planned activities around other supply chain fundamentals in the scale-up support phase	
In this section, linkages must be drawn between requested CCE Optimisation Platform support, on-going 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 scale-up 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.*	Warehouse Officer and Logistics Officer attend Regional Immunisation Supply Chain workshop organised by UNICEF, WHO to learn and share country status. GAVI HSS and this is expected to continue. Logistics Officer attended TechNet conference to improve knowledge on iSC management. GAVI HSS supported MoH officers to participate in VAN analysis training in Beira UNICEF will conduct refresher training on VIVA
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.*	VAN and SELV training expected to continue in 2018 SMT being used at national level VIVA second edition training will be done in 2018 after Webinar on revised tool.
Optimised, efficient design of distribution system *Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.*	As a follow up to the workshop on Supply Chain Optimisation organised by UNICEF country office, UNICEF Supply Division and VillageReach, attention will be place on system design and supply chain integration between CMAM and PAV with PELF supply chain strategic plan being implemented by CMAM.
Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	EVM Self-Assessment at the National Vaccine. Store and develop improvement plan in August, 2018 supported by UNICEF. On-going data analysis on stock out rates at health facility by VAN advisor and VillageReach and development of strategies to improve on timely and efficient delivery of vaccines and associated supplies from provinces to health facilities.
Temperature monitoring *Describe how the temperature monitoring system will evolve? Which devices will be used?* *Furthermore, describe which measures are in place to* *a) obtain temperature data from the various devices;* *b) act following temperature alarms (curative*	The country will extend installation of ColdTrace RTMDs to all service health facilities and district stores. DFID, VillageReach, CHAI and UNICEF are expected to extend their support to achieve this. Furthermore, provision for service cost will be made in HSS plan. Data from these devices that are currently in

maintenance); *c) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system; and* *d) 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.*	used is accessible online at facilities and elsewhere by registered persons. Temperature alarms are also shared via SMS. Order of alerts for corrective actions to be taken in case of temperature incursions from RTMDs starts from health worker through district officers, provincial and national officers. It also involved maintenance service agencies in case of cold room. There are SOPs for ColdTrace and Beyond wireless.

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..*

Summary of funds requirement to implement the cold chain expansion replacement plan for the country is summarized in the table below

	2019	2020	2021	TOTAL

Total Equipment Budget	4,397,036	1,421,198	648,720	6,466,954
Country Equipment Budget	879,407	284,240	129,744	1,293,391
Gavi Equipment Budget	3,517,628	1,136,958	518,976	5,173,563
Total Budget (Incl. 6% Additional Buffer)	4,660,858	1,506,470	687,643	6,854,971
Total Country Budget (Incl. 6% Additional Buffer)	932,172	301,294	137,529	1,370,994
Total Gavi Budget (Incl. 6% Additional Buffer)	3,728,686	1,205,176	550,115	5,483,977
Total Country Budget (Incl. 6% Additional Buffer and 8.5% UNICEF procurement handling fees)	1,160,956	389,304	149,219	1,699,479

Detail budget using platform's template can be accessed through the icon below:

#0.2 Mozambique_2018 CC

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 <u>if countries are procuring User independent freeze protected cold boxes and vaccine carriers;</u> 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,[5] such as demonstrated by remote temperature monitoring; **and***

[5] **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 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.

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

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 (2018)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 1 (2019)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 2 (2020)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 3 Not 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)*	*Inventory Management Tool (IMT)*	*Semiannual*	***Numerator*** *= # of sites replacing nonfunctional, obsolete and non PQS CCE =* ***0*** ***Denominator*** *= Total # of sites planned to replace nonfunctional, obsolete and non PQS CCE =****1,062*** ***Percentage= 0%***	***Numerator*** *= Cumulative # of sites replacing nonfunctional, obsolete and non PQS CCE =****768*** ***Denominator****= Total # of sites planned to replace nonfunctional, obsolete and non PQS CCE =****1,062*** ***Percentage****= 72.2%*	***Numerator*** *= Cumulative # of sites replacing nonfunctional, obsolete and non PQS CCE =****1,062*** ***Denominator*** *= Total # of sites planned to replace nonfunctional, obsolete and non PQS CCE =****1,062*** ***Percentage= 100%***	
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;*	*Inventory Management Tool (IMT)*	*Semiannual*	***Numerator*** *= # of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine and/or increasing population* ***= 0*** ***Denominator*** *= Total # of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine and/or increasing population =* ***167*** ***Percentage=0%***	***Numerator*** *= Cumulative # of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine and/or increasing population =* ***103*** ***Denominator*** *= Total # of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine and/or increasing population =****167*** ***Percentage= 61.7%***	***Numerator*** *= Cumulative # of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine and/or increasing population =****167*** ***Denominator =*** *Total # of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine and/or increasing population =****167*** ***Percentage= 100%***	

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.*	NA	NA	NA	NA	NA	
*4. **CCE maintenance***	*Percentage of CCE maintenance requests timely responded to at the National Vaccine Store.*	*Maintenance reports data from Hotline on National Vaccine Store Cold Chain Equipment.*	*Semiannual*	***Numerator** = # of maintenance request responded to within two weeks of notice.* ***Denominator** = Total # of maintenance request received* ***Percentage = Data not available.***	***Numerator =** # of maintenance request responded to within two weeks of notice* ***Denominator** = Total # of maintenance request received* ***Percentage = 90%***	***Numerator** = # of maintenance request responded to within two week of notice* ***Denominator =** Total # of maintenance request received* ***Percentage= 95%***	***Numerator** = # of maintenance request responded to within two week of notice* ***Denominator =** Total # of maintenance request received* ***Percentage= 100%***
*. **Freeze-free to non-freeze-free carrier ratio***	*Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country*	NA	NA	NA	NA	NA	

***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 despatched 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 (2018)*** *(Provide numerator and denominator for calculating percentage)*	***Target 2019 (15%)*** *(Provide numerator and denominator for calculating percentage)*	***Target 2020 (10%)*** *(Provide numerator and denominator for calculating percentage)*	***Target 2021 (5%)*** *(Provide numerator and denominator for calculating percentage)*
1.Close Vial Wastage	*% of HFs that report close vial wastage.*	*Monthly data collected from HFs through SELV (LMIS for vaccine)*	*Semiannual*	***Numerator:*** *# of Health facilities reporting close vial wastage* ***Denominator:*** *Total # of sites handling g vaccines (1700)* ***Percentage =***	***Numerator:*** *# of Health facilities reporting close vial wastage* ***Denominator:*** *Total # of sites handling g vaccines (1700)* ***Percentage =*** *15%*	***Numerator:*** *# of Health facilities reporting close vial wastage* ***Denominator:*** *Total # of sites handling g vaccines (1700)* ***Percentage =*** *10%*	***Numerator:*** *# of Health facilities reporting close vial wastage* ***Denominator:*** *Total # of sites handling g vaccines (1700)* ***Percentage =*** *5%*
2.Forecasted demand ratio	*% of doses of vaccines utilized*	*Annual forecasting*	*Semiannual*	***Numerator:*** *# of doses of*	***Numerator:*** *# of doses of*	***Numerator:*** *# of doses of*	***Numerator:*** *# of doses of*

	compared to quantity forecasted	*tool and SMT*		*vaccines utilized in the country* ***Denominator:*** *Total # of doses forecasted* ***Percentage =***	*vaccines utilized in the country* ***Denominator:*** *Total # of doses forecasted* ***Percentage =*** *90%*	*vaccines utilized in the country* ***Denominator:*** *Total # of doses forecasted* ***Percentage =*** *95%*	*vaccines utilized in the country* ***Denominator:*** *Total # of doses forecasted* ***Percentage =*** *99%*
3 Full stock availability	*% of HFs with stock out of vaccines*	*SELV*	*Semiannual*	***Numerator:*** *# of HFs with stock out of vaccine* ***Denominator:*** *Total # of HFs (1700)* ***Percentage =****27%*	***Numerator:*** *# of HFs with stock out of vaccine* ***Denominator:*** *Total # of HFs (1700)* ***Percentage =****20%*	***Numerator:*** *# of HFs with stock out of vaccine* ***Denominator:*** *Total # of HFs (1700)* ***Percentage =****10%*	***Numerator:*** *# of HFs with stock out of vaccine* ***Denominator:*** *Total # of HFs (1700)* ***Percentage =****5%*
Add more indicators HERE if needed.							