**Cold Chain Optimisation Platform Application for September 2016 (only)**

*This application is prepared for countries applying for the Gavi CCE optimisation platform (‘the Platform’) support in September 2016.*

***In filling this application form, countries are expected to consult the following documents and resources:***



Application Guidelines for countries wishing to request HSS support is available here: [http://www.gavi.org/soutien/demandes/](http://www.gavi.org/support/apply/)

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|  | Application Instructions for countries wishing to request CCE optimisation platform support is available here: [www.gavi.org/support/apply](http://www.gavi.org/support/apply) |

Technology guide for equipment selection for counties wishing to request CCE optimisation platform support is available here: <http://www.gavi.org/support/hss/cold-chain-equipment-optimisation-platform/>

**CCE OP Tech Guide**

Extensive technical resources relating to vaccine cold chain equipment management are available on TechNet-21: <http://www.technet-21.org/en/resources/cold-chain-equipment-management>



*Additionally:*

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|  | This signals important information that is provided within this application form |

**1. APPLICANT INFORMATION**

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| Country: | *Democratic Republic of the Congo (DRC)* | |
| **Date:** | *09 September 2016* | |
| **Contact name** | *Dr Guylain KAYA MUTENDA SHERIA, EPI Director* | |
| **Email address** | [*guylainkaya@gmail.com*](mailto:guylainkaya@gmail.com) | |
| **Telephone** | *+243 815678166* | |
| **Total funding requested from CCE optimisation platform (US $)** | *This should correspond exactly to the budget requested in the embedded template.* ***US$ 32,577,428*** | |
| **Does your country have an approved Gavi HSS support on-going?** | Yes X  X | No |
| *Indicate the anticipated* ***final year*** *of the HSS:* ***HSS2 Grant 2019*** | |
| **Proposed CCE optimisation platform support start date:** | *Indicate the month and the year of the proposed starting date of the allocation on the basis of the strategic deployment plan:* ***01 January 2018*** | |
| **Proposed CCE optimisation platform support end date:** | *Indicate the month and the year of the proposed end date of the allocation on the basis of the strategic deployment plan:* ***31 December 2020*** | |
| **Signatures**  *Include signed (and official) CCE optimisation platform application endorsement by:*   1. *Minister of Health and Minister of Finance (or delegated authorities)* 2. *Members of the HSCC/ICC or equivalent committee and signed minutes of meetings where the application was endorsed*   *In case of HSS or CCE optimisation platform requests, minutes must reflect that both were discussed and endorsed.* | *We, the undersigned, certify that the objectives and the activities of the proposal to Gavi are fully aligned with the national strategic health plan (or its equivalent) and that the funds for the implementation of all the activities. including the national funds and any joint investment required, will be included in the annual budget of the Ministry of Health.*  **Minister of Health Minister of Finance**  **(or delegated authority) (or delegated authority)**  Name: Dr. Felix KABANGE NUMBI MUKWAMPA Name: **Henri Yan MULANG**  **MUKWAMPA**  Signature: Signature:  Date: Date: | |

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| *Executive summary* |
| The DRC is one of the largest and most populated countries in Africa with an population estimated at more than 90 million inhabitants. Since 2006, the Country has had a Health System Strategic Strengthening Strategy which is transferred into operation every five years by means of National Health Development Plan (NHDP), in which vaccination activities are identified as a priority. However, the program has experienced some number of weaknesses the most significant of which are related to the irregular supply of vaccines and other supplies at the operational level, insufficient supportive supervision at the intermediate and operational level, not reaching children in hard-to-reach health zones, instability and demotivation of the staff. The organization of the EPI supply chain has three levels: (i) The central level including the Kinshasa Hub whose construction is in progress and three distributed hubs (Kisangani, Lubumbashi and Ilebo whose engineering phase is completed); (ii) The intermediate level made up of 9 coordination warehouses and 49 branch and relay warehouses; (iii) and the peripheral level which includes 516 health zone warehouses and 8830 health centres. The EPI's national program must meet many challenges in order to reach its equity and coverage goals, including strengthening the supply chain.  Currently there are 10 antigens in the DRC EPI routine program. In addition to the traditional vaccines (BCG, OPV, DTP, TT, measles) administered since its creation, the program has progressively introduced the yellow fever vaccine in 2013, DTP-HepB in 2007, DTP-HepB-Hib in 2009, PCV-13 in 2011 and IPV in 2015. The program is considering introduction of rotavirus in 2017, and HPV and measles-rubella vaccines in the coming years with a resulting increase in the storage capacity needs at all levels.  The data from the Cold Chain Equipment inventory done in 2014 and updated in April 2016 show that at the central level the storage capacities which are currently insufficient will be sufficient starting in 2017 with the construction of 4 hubs for which construction started in February 2016. At the branch and coordination depot level, the capacities are sufficient until 2020 to meet the progressive introduction of new vaccines.  At the operational level (Health Areas) it can be seen from the inventory data that the Health Centre cold chain equipment coverage is 51.7% and only 1.2% of the health centres are connected to the national electrical grid. Among the inventoried equipment, 53% operate with solar energy, 42% with kerosene, 5% are electrical equipment. Also, 27% of the available refrigerators of the health centre level are more than 10 years old and 12% have major breakdowns.  Additionally, the results of the Effective Vaccine Management Assessment (EVM) conducted in 2014 show insufficiencies in the criteria related to E2 (temperature: 66% in the HZ and 58% in the HA), E3 (Storage capacity: 68% in the HZ and 48% in the HA), E5 (Maintenance: 49% in the HZ and 21% in the HA), and E9 (MIS, support function: 62% for the HZ and 54% for the HA).  In addition to the insufficient operational level (health areas) coverage with cold chain equipment, the analysis shows significant weaknesses seen as: the dilapidated condition of the available cold chain equipment, the lack of training of the staff on preventative and reparative maintenance, extended and repeated outages of kerosene and replacement parts, extended breakdowns because of lack of qualified technicians, no standardized operating procedures and insufficient cold chain equipment temperature monitoring. Administrative data shows that in 2015 14% of the HZ achieved Penta 3 coverage <80%. According to the supervisory reports these poor performances would be related in part to the poor cold chain equipment coverage in the health centres and also the weakness of the maintenance.  In addition to these weaknesses, many bottlenecks remain which prevents achieving vaccination objectives and which among others are: (i) the DRC has a vaccine supply chain which does not always guarantee the availability of quality vaccines at the end use points (transportation, storage and logistics management); (ii) the low availability at the decentralized level of the health system of quality health services which incorporate vaccination; (iii) the weakness of the institutional capacities and of steering by the health bodies and structures at all levels of the health system; (iv) the low quality of the data which do not allow for a better assessment of the efforts provided by the teams at all levels and which do not allow pertinent decision-making in vaccination matters; (v) the low demand for vaccination services by the community including in the Health Zones where the services are available.  In order to address these main bottlenecks and in connection with end to end supply chain strengthening in order to assure the availability of vaccines and other specific quality supplies at all levels, the DRC receives support from Gavi/HSS2 whose main activities are among others: (i) strengthening the capacity for storage and preservation of vaccines and dry vaccination supplies by construction of a modern Hub in Kinshasa (2200 m^3 of vaccine storage capacity and 10,000 m3 of dry storage capacity) and 3 decentralized Hubs (in Lubumbashi, Kisangani and Ilebo); (ii) the reduction of the cost of transporting vaccines from Kinshasa to the provinces by the acquisition of a refrigerated boat in order to supply the decentralized Hubs; (iii) the conversion to solar power of 23 cold rooms which were using electric generators as the main energy source; (iv) the acquisition and installation of 2522 direct control solar refrigerators (2312 refrigerators for the health centres and 210 in the Health Zones Central Offices); (v) strengthening of cold chain maintenance by establishing maintenance pools at the central level and in the PHD and training of 35 engineers/technicians; (vi) the acquisition of replacement parts; (vii) establishing a continuous temperature monitoring system at various levels. Similarly, the MPH planned training and deployment of 120 logistics experts to the health areas in order to assure the supply and management of stocks among other things. All these investments will contribute to improving coverage and equity. Similarly, a structured equipment maintenance plan was developed in order to overcome the deficiencies observed during the EVM with financing provided by the MPH and its partners.  With the final installation of 2522 solar refrigerators from Gavi/HSS2, the coverage with operational refrigerator equipment will go from 16% to 51.7% ([[1]](#footnote-1); all energy sources combined) at the level of service delivery structures which corresponds to 4562 health centres covered out of a total of 8830,but the requirements to satisfy all the needs still remain large.  In this situation of looking for solutions for meeting significant unmet needs, the Country submitted a first Gavi CCEOP proposal in May 2016 which was approved and which will make it possible to acquire and install 2087 solar refrigerators (TCW40SDD) in the health centres, 209 replacement part kits, 28 long storage time ice chests for vaccine storage and 4583 Fridge-tags. The installation of equipment under CCEOP1 will start in June 2017 and will equip 1687 still unequipped health centres and replace broken down refrigerators in 400 health centres with new direct-control solar refrigerators or with long storage time ice chests and increase the health centre coverage with cold chain equipment from 51.7% to 75%. Despite these significant efforts, the objectives of equipping all the health centres of the country with solar cold chain equipment will not yet be achieved even with the CCEOP1 implementation.  In order to meet all the needs, the Country working together with its partners, in particular the World Bank, decided to submit a second CCEOP proposal in order to purchase and install 4000 TCW40SDD solar refrigerators in the health centres. The urgent need for the country is to provide all the Health Centres with operational cold chain equipment. For this second CCEOP phase, the urgent needs are estimated at 2581 new small capacity refrigerators (B-Médical TCW40SDD) for health centres that are not yet equipped. And, the heightened needs (maintenance phase) for the replacement of broken down equipment and unauthorized equipment are estimated at 1419 small capacity solar refrigerators (TCW40SDD B-Médical) intended for health centres and 53 large capacity refrigerators (B-Médical TCW3043SDD) for health zone central offices and 52 long storage time ice chests (Arktek-YBC-5) for the centres. The cold chain equipment coverage in the health centres can be increased to 99.4% with the implementation of the CCEOP2 project.  The following considerations were included in selecting the equipment type:   * “Cold Chain Equipment Optimization Platform” technology guide from Gavi; * Lessons learned in the areas of acquisition, installation and operation of solar refrigerators in the country; * Technical guidelines covering the choice of eligible equipment by Gavi platform; * Segmentation of the country's health centres; * Guidelines from the Ministry of Public Health for the standardization of the cold chain equipment embedded base; * The possibilities that these refrigerators provide for recycling cold packs.   The country will be able to improve several vaccination service indicators with this project.   * *Availability of quality vaccines at all levels:* Because of this project, 2581 health centres not yet equipped and 1419 health centres whose refrigerators have broken down will be provided with new solar refrigerators or long storage life ice chests. In this way, the Health Centre cold chain equipment coverage can be increased. This way, the structures will be able to have vaccines in sufficient quantity and quality at any time. * *Access to vaccination for all the Country’s population*: because of the availability of cold chain equipment in hard to reach health areas, the country will be able to reach unvaccinated people and organize outreach strategies. * *Increasing the immunisation coverage:* Increasing the cold chain equipment coverage and improving the maintenance system are going to contribute to minimizing missed opportunities by increasing the number of vaccination sessions in fixed and outreach strategy. Recent data from the country already show that a trend of increasing the number of vaccination sessions is observed in the provinces where GAVI/RSS2 refrigerators have already been installed. * *Supply chain strengthening:* With this project, the MPH will be able to strengthen the supply chain, in particular near vaccination services delivery points. In fact the Country receives Gavi support for end to end supply chain strengthening by the construction of modern hubs in Kinshasa and in 3 provinces (Kisangani, Ilebo and Lubumbashi) and the construction of a boat for transportation of vaccines and other supplies. The pooling of logistics means from various specialized programs and Directions will be progressively effective once the structures go into operation in order to make vaccines and other health products available at all levels. * *Equity between all health zones and centres:* The current data show that the coverage rate in cold chain equipment and in particular solar equipment in the health areas varies from one province to another. The cold chain coverage is lowest in the Mongala PHD 30% and highest in the Maniema PHD 90% and the solar cold chain coverage rate is lowest in the Kasai PHD 37% and highest in the Tshuapa PHD 75%. With the equitable CCEOP implementation activities throughout the country, all PHD will have their cold chain coverage significantly increased. Because of the CCEOP2 implementation, the cold chain coverage gaps at the peripheral level will be completely gone. In that way, the vaccination activities will be organized equitably at all levels with the same quality. * *Vaccine safety and quality*: The direct control solar refrigerators (batteryless) selected in connection with this project have technology with which to maintain the required vaccine storage temperatures without any risk of freezing. With the availability of cold chain equipment and good maintenance, health centres will be able to store and administer quality vaccines. Specific emphasis will be placed on management and monitoring of vaccines and temperature. * *Strengthening cold chain maintenance:* By applying the maintenance plan, the maintenance pools installed in the PHD will be made operational. The availability of trained and qualified technicians will make it possible to provide quality maintenance and optimize the operation of equipment in order to guarantee vaccine availability and quality at all levels. Through the project, the EPI will be able to rehabilitate and extend the cold chain equipment and to standardize equipment in order to assure acquisition of replacement parts and proper maintenance. * *Updating the equipment inventory*: A mechanism for periodic updating of the cold chain equipment inventory will make it possible to collect and analyse data on the operation at the turn-up of the ILAMT tool.   The implementation of this project will serve to equip new health centres with solar refrigerators, and replace broken refrigerators and kerosene refrigerators with more reliable, more effective and more robust refrigerators that have almost no operating costs. Because of this project, 99.4% of installed refrigerators meet PQS standards. Target populations in previously hard-to-reach zones will be within reach because of this project. In that way all target populations will be reached because of this project. This will mean that 100% of the target birth cohorts will have access to vaccination through health centres having equipment that is functional and meets PQS standards.  In recent years, in connection with supply chain strengthening, many actions have been taken by the MPH/EPI and its partners (UNICEF, World Bank, the European Union, PROSANI, WHO, IMA, Rotary, USAID, Save the Children) in order to provide solutions to many bottlenecks affecting the cold chain. With the support of its partners, from 2013 to 2016 the MPH/EPI installed 3794 solar refrigerators (3062 refrigerators in the health centres and 732 refrigerators in the health zone central offices) of the these 2522 refrigerators acquired in 2016 (2312 solar refrigerators for the health centres and 210 for the health zone central offices) were Gavi HSS2 acquisitions. In connection with seeking solutions for satisfying the additional needs, the country also submitted a first Gavi CCEOP proposal in May 2016 (for which the country’s matching financing is provided by the Government through the PESS Project, the leftovers from Gavi/HSS1, UNICEF and Save the Children) that was already approved for 2087 solar refrigerators and 28 long storage life ice chests. Next, to satisfy the additional needs, the country again submitted in September 2016 a second Gavi platform proposal for the acquisition of 4000 small capacity solar refrigerators and 52 long storage life ice chests, intended for health centres and 53 large capacity solar refrigerators for health zone central offices. The health centre cold chain equipment coverage therefor went from 16% in 2014 to 51.7% in 2016 with Gavi/HSS2 support and will go to 75% in 2017 with CCEOP1 and 99.4% in 2018 with the implementation of CCEOP2 (see chart below). The total number of solar refrigerators acquired and installed in the country during 2013 to 2018 including the forecasts for CCEOP1 and CCEOP2 will be 9149 solar refrigerators for the health centres and 785 solar refrigerators for the health zone central offices (see following table).     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Funding Sources | 2013 | | 2014 | | 2015 | | 2016 | | 2017 | | 2018 | | 2019 | | 2020 | | Total | | | Refrig. For HC | Refrig. Fo HZCO | Refrig. For HC | Refrig. Fo HZCO | Refrig. For HC | Refrig. Fo HZCO | Refrig. For HC | Refrig. Fo HZCO | Refrig. For HC | Refrig. Fo HZCO | Refrig. For HC | Refrig. Fo HZCO | Refrig. For HC | Refrig. Fo HZCO | Refrig. For HC | Refrig. Fo HZCO | Refrig. For HC | Refrig. Fo HZCO | | Gavi/HSS2 |  |  |  |  |  | 50 | 2312 | 210 |  |  |  |  |  |  |  |  | **2312** | **260** | | CCEOP1 |  |  |  |  |  |  |  |  | 2087 |  |  |  |  |  |  |  | **2087** | **0** | | CCEOP2 |  |  |  |  |  |  |  |  |  |  | 2581 | 0 | 1419 | 53 |  |  | **4000** | **53** | | Other sources of funding | 48 | 204 | 584 | 177 | 118 | 91 |  |  |  |  |  |  |  |  |  |  | **750** | **472** | | **Total** | **48** | **204** | **584** | **177** | **118** | **141** | **2312** | **210** | **2087** | **0** | **2581** | **0** | **1419** | **53** | **0** | **0** | **9149** | **785** |   *From this table, it can be seen that 9149 solar refrigerators will be available in 8830 health areas by 2018. Cold chain coverage in 2018 is estimated at 99.4% because some refrigerators such as the Dulas, Sundazer (old model) and those worn out in this time will be subject to retirement. The 99.4% cold chain coverage will be that which involves functional refrigerators in the vaccinating structures.*  Shown per year, the solar and functional cold chain coverage at the health area level appears as follows:    The CCEOP2 project which supplements the CCEOP1 at an estimated overall cost of US$32,577,428 distributed between Gavi (80%) for US$26,061,942 and country co-financing (20%) for US$6,515,486. The county’s co-financing is provided by the World Bank for an amount of US$6,280,000 and the USAID (PROSANI) project for an amount of $235,500 (30 refrigerators). |

**2. NATIONAL STRATEGIES AND PLANS RELEVANT TO SUPPLY CHAIN AND REQUESTED SUPPORT**

*How do the following national strategies, country plans and documents inform plans to strengthen the country’s supply chain, and how do they inform the request for CCE optimisation platform support. These documents are* ***mandatory****, must be* ***attached*** *to your application, and they must be* ***final*** *and dated.*

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| Num. | Strategy / Plan / Document  *\*All documents are mandatory. Only complete applications will be assessed*. | Attached  Yes/No | Final version (dated) | Term | Comments |
| ***1*** | *Signature sheet for the Minister of Health and Minister of Finance, or their delegates* | *YES* |  |  |  |
| ***2*** | *Signature Sheet for Strategic ICC* | *Yes* |  |  |  |
| **3** | *National Health Sector Development Plan* | *YES* | *March 2016* | *2016 -2020* |  |
| **4** | *cMYP* | *YES* | *Nov 2014* | *2015 -2019* |  |
| ***5*** | *EVM Assessment* | *YES* | *Oct 2014* |  |  |
| ***6*** | *EVM Improvement Plan* | *YES* | *Oct 2014* |  |  |
| ***7*** | *EVM Annual Workplan AND Progress Report on EVM Improvement Plan[[2]](#footnote-2)* | *YES* | *April 2016* |  | *To be updated* |
| ***8*** | *CCE Inventory Report[[3]](#footnote-3) AND*  *Facilities Segmentation Plan* | *YES* | *April 2016* |  | *Inventory updated in April 2016* |
| ***9*** | *Cold Chain Rehabilitation and Expansion Plan, and Equipment Selection and Strategic Deployment Plan* | *YES* | *April 2016* | *2016 -2020* | *Expansion plan revised in 2016* |
| ***10*** | *Maintenance Plan with financing* | *YES* | *2014* |  | *Maintenance plan done in 2014 and revised in April 2016* |
| ***11*** | *Proof of status for CCE tariff exemptions waiver* | *YES* | *2000* |  | *DRC-UNICEF Cooperation Agreement* |
| ***12*** | *OTHER RELEVANT DOCUMENTS* |  |  |  | * Equipment gap analysis CC * Procurement Plan * Equipment deployment plan * Cold Chain Inventory * Health Centre Segmentation * Monitoring plan |
| ***13. How do the above strategies, plans and documents inform the CCE optimisation platform support request (‘initial support’ and ‘scale-up support’)? Countries are encouraged to reference relevant sections of the above documents as much as possible.***  *Provide approximately 1 page* | | | | | | |
| The various plans (cMYP 2015-2019, NHDP 2016-2020) and other national documents (Gavi/HSS2, CTA), show that the most significant challenges to be overcome in the DRC remain full and proper immunization of Congolese children through effective EPI.   * The National Health Development Plan (NHDP), which is a reference document on matters of health development in the country, identifies vaccination activities as a priority. The NHDP is centered on **four strategic directions**: (i) development of Health Zones; (ii) support for development of Health Zones; (iii) strengthening sector leadership and governance; and (iv) strengthening intersector collaboration. For the second strategic direction (support for HC development), **five support strategies** will be implemented: (I) development of human resources for health; (ii) support for the medication sector; (iii) health financing reform; (iv) construction and/or rehabilitation of health infrastructure, **equipment and insertion of new technologies; and (v) improved health information management.** * The Comprehensive multiyear plan for immunization(2015-2019 cMYP) has four objectives: i) increase immunization coverage and reduce vaccine wastage; ii) obtain government financing for vaccination; iii) eradicate, eliminate or control immunization preventable diseases such as polio, measles, yellow fever ,and maternal and neonatal tetanus; and iv) cold chain strengthening. It contributes to the first direction of the NHDP on health zone development in order to “reduce morbidity and mortality do to immunization preventable diseases.” The 2016 operational action plan has the same objectives as the cMYP but sets precis annual objectives. * The main bottlenecks identified in the various plans and documents relate to those from the health system which have a direct relation with immunization services and focus both on the NHDP and cMYP: (i) the DRC has a vaccine supply chain which does not always guarantee the availability of quality vaccines at the points of final use (transportation, storage and logistics management); (ii) the low availability at the decentralized level of the health system of quality health services which incorporate vaccination; (iii) the weakness of the institutional capacities and of steering by the health bodies and structures at all levels of the health system– this weakness is more marked at the provincial level; (iv) the low quality of the data which do not make it possible to have a better assessment of the efforts provided by the teams at all levels and which do not allow pertinent decision-making in vaccination matters (health information); (v) the low demand for vaccination services by the community including in the Health Zones where the services are available. It needs to be also be noted that the coexistence of several parallel systems makes the supply and distribution circuit for medications more complex. The study of the supply chain map conducted in 2009 revealed an extremely complex supply and distribution system with19 supply agencies, 99 distribution circuits mobilizing 52 different partners and 85% of the financial partners using their own supply agencies. * Recently efforts were undertaken at the national level for optimization and sharing of the various supply chains. In that way the modern hubs (in Kinshasa, Kisangani, Lubumbashi and Ilebo) which are being built with Gavi/HSS2 support will be the base for a true integration. In fact these hubs are intended not only for storage, distribution and management of vaccines and vaccination supplies, but also other health products including medications. Similarly, the reconfiguration of the supply chain is underway at all levels of the pyramid in order to handle aspects related to supply system integration. | | | | | | |

**3. APPLICATION DETAILS**

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| **Please review *Section 6* of the Platform *Application Instructions* for complete information on phased support and application requirements.** |

**3.1 Application requirements overview**

Aligning with the Gavi HSS support, the CCE optimisation platform will provide phased support (for a maximum duration of 5 years) which includes: ‘initial support’ (Approximately years 1-2) to address country’s most urgent CCE needs; and ‘scale-up support’ (Approximately years 3) to address additional CCE needs as part of transforming the supply chain to support sustainable achievements of coverage and equity targets.

* **Countries must make a single application to the CCE optimisation platform, requesting support for both the ‘initial’ and ‘scale-up’ phases.**
* Sufficient, well-functioning cold chain equipment is one “fundamental” prerequisite for an effective immunisation supply chain, complementing the other “fundamentals” comprised of: supply chain managers; data for management; optimised & efficient design of the distribution system; and a continuous improvement process over time. **Support from the CCE optimisation platform should be demonstrated to complement investments from other sources in these fundamentals**
* **Countries should also demonstrate, in their application, how the Platform support will contribute to sustainable improvements in immunisation coverage and equity, consistent with country targets.**

**4. APPLICATION REQUEST**

*This section gives an overview of the types of information the IRC will anticipate from countries in their application for CCE optimisation platform support.*

**4.1. Situation analysis and requested support**

*This section must be filled with appropriate reference to the country documents listed in Section 2. Countries are required to provide a narrative in response to the following questions.*

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| ***Section*** | ***Required information*** |
| **Situation analysis of country’s supply chain and CCE** (number, distribution, functionalities etc.)  ***Provide 3 pages*** | 1. *How is the country’s immunisation supply chain administered?*   The organization of the EPI supply chain in the DRC has three levels: (i) The central level includes 4 modern hubs (one at the central level in Kinshasa and 3 in the provinces), which are under construction; (ii) The intermediate level made up of 9 coordination warehouses and 49 branch and relay warehouses; (iii) and the peripheral level which includes 516 health zone warehouses and 8830 health centres. The EPI's national program must meet many challenges in order to reach its equity and coverage goals, including strengthening the supply chain.  Currently there are 10 antigens in the DRC EPI routine program. In addition to the traditional vaccines (BCG, OPV, DTP, TT, measles) administered since its creation, the program has progressively introduced the yellow fever vaccine in 2013, DTP-HepB in 2007, DTP-HepB-Hib in 2009, PCV-13 in 2011 and IPV in 2015. The country is considering the progressive introduction of rotavirus (in 2017), HPV and measles-rubella vaccines in the coming years with a resulting increase in the storage capacity needs at all levels.     1. *What weaknesses have been identified in the country’s supply chain?*   The EVM assessment from 2014 showed insufficiencies in the criteria relating to: E2 (temperature: 66% in the HZ and 58% in the HA), E3 (Storage capacity: 68% in the HZ and 48% in the HA), E5 (Maintenance: 49% in the HZ and 21% in the HA), and E9 (MIS, support function: 62% for the HZ and 54% for the HA). Additionally, the EVM evaluation and supervisory reports from the field have shown the worn out condition of the cold chain equipment, the lack of training of the personnel on preventive maintenance, prolonged and repeated shortages of petrol and replacement parts, and prolonged failures because of the lack of qualified technicians. It also needs to be indicated that the absence of standardized operating procedures and shortcomings in monitoring of the temperature of cold chain equipment constitute significant weaknesses which were identified and an Improvement Plan was prepared in order to address these weaknesses and it is being implemented.   1. *Through what interventions are these weaknesses currently being addressed?*   In order to resolve the main weaknesses, in connection with end to end supply chain strengthening in order to assure the availability of vaccines and other specific quality supplies at all levels, the country receives support from Gavi/HSS2 whose main activities are among others: (i) strengthening the capacity for storage and preservation of vaccines and dry vaccination supplies by construction of a modern Hub in Kinshasa (2200 m3 of vaccine storage capacity and 10,000 m3 for dry supplies storage)and 3 decentralized Hubs (in Lubumbashi, Kisangani and Ilebo); (ii) the reduction of the cost of transporting vaccines from Kinshasa to the provinces by the acquisition of a refrigerated boat in order to supply the decentralized Hubs; (iii) the conversion to solar power of 23 cold rooms which were using electric generators as the main energy source; (iv) the acquisition and installation of 2522 direct control solar refrigerators (2312 in the health centres and 210 in the Health Zones Central Offices); (v) strengthening of cold chain maintenance by establishing maintenance pools and training of 35 engineers/technicians at the central level and in the PHD; (vi) the acquisition of replacement parts; (vii) establishing a continuous temperature monitoring system at various levels. Supply chain improvement will continue at the peripheral level by increasing the health zone (HZ) and health centre (HC) storage capacity and switching from a fossil fuel cold chain to a solar cold chain. By equipping the Provincial Health Divisions (PHD), Health Zone Central Offices (HCZO) and the HC with appropriate means of transportation (e.g. vehicles, motorcycles, bicycles and outboards), extending some regional medication distribution centres and establishing a coordination platform for supplies, the HZ can be supplied regularly with vaccines, medications and other supplies. These means will also make travel easier for supervision and outreach strategies in order to be more equitable towards targets far away from HC. The country has benefited from Gavi support for the acquisition of 40 4 x 4 vehicles for transporting vaccines, medications and other supplies for the PHD to the HZ and the acquisition of 160 motorcycles, 75 outboards and 75 pirogues for outreach strategy. In connection with supply chain reorganization and reconfiguration, 14 trucks (seven refrigerated trucks and seven ordinary trucks) are on order for the hubs in Kinshasa, Kisangani, Lubumbashi and Ilebo. Similarly, it is important to note that actions are underway for sharing and integrating supply systems from various health programs in order to reduce distribution costs. Implementing an online integrated management system for vaccines and other health products is also planned in 2017. For this reason, the EPI intends to organize a visit during October to Tanzania for exchanging experience and seeing a similar system which is already functional in that country.  It should be recalled concerning cold chain strengthening that in May 2016 the country submitted a first Gavi CCEOP proposal, which was approved, for the acquisition of 2087 small capacity solar refrigerators, 209 replacement part kits, 28 long storage life ice chests for vaccine storage and 4583 fridge-tag,. Training and deployment of 120 logistics experts in the health zones was planned by the EPI in its plan to assure the management of vaccine stocks, supply, supervision and the like. All these investments will contribute to improving coverage and equity. Similarly, a structured cold chain equipment maintenance plan was prepared in order to maintain the cold chain equipment in very good condition; plan financing will be provided by the MPH and its partners.  Despite these various actions, efforts still need to be made and significant needs still remain in order to reach complete coverage of the health centres with functional cold chain equipment. To achieve this objective of fully covering health centres with cold chain equipment, the Country decided in consultation with its main partners, in particular the World Bank, to again submit a second proposal (CCEOP2) to the Gavi platform for acquisition and installation of 4000 small capacity solar refrigerators, 52 long storage life ice chests in the health centres and 53 large capacity refrigerators in the health zone central offices in order to satisfy the unmet needs and to supplement the CCEOP1.   1. *Describe challenges that are hindering the implementation of these interventions.*   The main obstacles blocking good performance of the various actions called for in connection with supply chain strengthening are, among others: (I) the immensity of the territory and the difficulties for accessing some zones which slows the deployment and installation of equipment in the field with very high transportation costs and delivery delays; (ii) insufficient good quality road network, with the consequence of routine use of airfreight over most of the main routes for forwarding and distributing equipment making the transportation cost very large; (iii) the existence of several players in the supply domain which makes coordination, integration and pooling of efforts more complex.   1. *Describe lessons learnt from recent supply chain related support that inform the current request for CCE optimisation platform support.*   Under Gavi/HSS2, the country received significant funding for supply chain strengthening through the construction of modern Hubs (in Kinshasa, Lubumbashi, Kisangani, Ilebo etc.), acquisition and installation of solar refrigerators (B-Médical) for the health centres and health zone central offices, and provision of 4x4 vehicles for the health zones for distribution of vaccines and supplies among other things. The coordination of the implementation of this project is provided by a monitoring committee bringing together the MPH, UNICEF, WHO and the other partners. The ordering and purchasing of cold chain equipment and vehicles, and the construction of the hubs are being done by UNICEF. Recall that in the DRC, the EPI has always benefited from the support of UNICEF for purchasing the large majority of the cold chain equipment. The installation of the refrigerators purchased in connection with this project is performed by the manufacturer, B-Médical, through their local representative in the DRC, SODETAP.Through their representative, SODETAP, the manufacture B-Médical, has already installed over 2000 solar refrigerators in the DRC in under eight months. It needs to be indicated that SODETAP has already installed hundreds of solar refrigerators (Domestic) in the country before the major Gavi/HSS2 project and has significant experience, technical knowledge and many qualified technicians. Considering the immense size of the country and in order to reduce the delivery intervals and the internal transport costs, the refrigerators were received through the 5 usual entry ports (Matadi/Kinshasa, Lubumbashi, Goma, Bukavu and Bunia) and were then routed in the provinces according to the preestablished deployment plan.  Transportation of the equipment from the five entry ports to the installation sites is done by the manufacturer. The equipment is routed to the installation sites at least one week before the arrival of the installation teams. All kinds of means of transportation (e.g. road, boat, airplane) are used for the deployment. For the installation of refrigerators and the health centres, the manufacturer has trained more than 80 engineers/technicians among whom around 10 were trained in the B-Médical factory in Luxembourg. These already hardened technicians will be able to perform the installation and maintenance of future acquisitions. All those involved including transporters of the equipment have acquired significant experience in this process.  It needs to be noted that during Gavi/HSS2 implementation some difficulties were reported related in particular to the delay in the delivery and installation of equipment in some provinces and delocalization of the refrigerators for some sites.  The support for the optimization platform for the cold chain equipment, CCE, can be better planned and coordinated because of the lessons learned from the implementation of Gavi HSS2 activities. For the first reason, performing an evaluation of the impact on EPI performance from the solar refrigerators installed in connection with Gavi/HSS2 is planned. Gavi has already launched a limited request for information for the selection of a consultant or specialized structure. The results of this evaluation which will be available during the first quarter of 2017 will allow better capitalizing on the lessons learned, the strengths, weaknesses and improvements to be made. Just the same, the upcoming phases will be better organized because of the strengths and weaknesses identified in the ordering, receiving, customs clearance, forwarding and installation in the field of the equipment.   1. *What percentage of facilities have reliable access to grid electricity for up to or more than 8 hours per day?*   The electrification rate in the DRC is very low (about 5%). Analysis of the inventory data show that only 1.2% of the health centres are connected to the national electrical grid (SNEL), which is unstable and unreliable. Electricity is only available in major urban centres. Even in major urban centres connected to the electricity grid, there are frequent power outages. There is rarely electricity for more than four hours per day, especially in outlying neighbourhoods, and is discontinuous. Electricity availability is very random. The vast majority of the DRC population does not have access to electricity. Therefore, the MPH and its partners have decided to consider that in reality, no health centres have electricity to power the cold chain. And no electric devices should be chosen by EPI for vaccine storage in health centres.   1. *Please give the quantity and percent of current CCE that is: a) functional; b) PQS-approved; c) non-PQS-approved; and/or d) obsolete?*   The analysis of the data from the cold chain equipment inventory done in 2014 and updated in April 2016 brought out the situation at the operational level which is presented in the following charts:  *At the health zone level:*    *At the health area level:*              The main causes of frequent breakdowns of equipment affecting the vaccination service offering are: poor coverage of health centres with cold chain equipment (51.7%); the worn-out condition of cold chain equipment (27% of the health centre refrigerators are more than 10 years old); nonworking equipment in some health centres due to major failures (12%); the continuous unavailability of quality kerosene; shortages of spare parts and lack of qualified technicians for maintenance. This analysis has served to define the urgent cold chain equipment needs which are, among others: providing not yet equipped health centres with equipment in order to increase the coverage and the heightened needs which involve among other things the replacement of failed equipment, unapproved equipment and equipment that is worn out.  The following chart shows the overall status of the health centre cold chain equipment after implementation of CCEOP1 which is already approved and for which the installation of refrigerators will start in March 2017.     1. *What percent of the birth cohort is served by effectively functioning, PQS-approved CCE currently?*   The implementation of this project will serve to equip new health centres with solar refrigerators, and replace broken refrigerators and kerosene refrigerators with more reliable, more effective and more robust refrigerators that have almost no operating costs. Because of this project, 99.4% of installed refrigerators meet PQS standards. Target populations in previously hard-to-reach zones will be within reach because of this project. In that way all target populations will be reached because of this project. This will mean that 100% of the target birth cohorts will have access to vaccination through health centres having equipment that is functional and meets PQS standards.   1. *What are the bottlenecks that CCE can address in the current supply chain set-up (for example, capacity and technology constraints)?*   The following are among the many bottlenecks hindering vaccination: (i) a vaccine supply chain which does not always guarantee the availability of quality vaccines at the points of final use (transportation, storage and logistics management); (ii) the low availability at the decentralized level of the health system of quality health services which incorporate vaccination; (iii) the weakness of the institutional capacities and of steering by the health bodies and structures at all levels of the health system; (iv) the low quality of the data which do not make it possible to have a better assessment of the efforts provided by the teams at all levels and which do not allow pertinent decision-making in vaccination matters; (v) the low demand for vaccination services by the community including in the Health Zones where the services are available.  The 2014 EVM evaluation data show that only two of nine criteria recorded scores over 80%: vaccine management (82%) and training (85%). And at the health area level, only the criteria related to vaccine management received a score of 80%. The main weaknesses identified by the 2014 EVM included: (i) Insufficient temperature and alarm readings, insufficient archiving and analysis of readings; (ii) Insufficient dry storage and cold chain capacity;  (iii) no continuous temperature recorders and alarm systems in the vast majority of structures; (iv) very incomplete maintenance of buildings, cold chain equipment and vehicles; (v) inventory management and delivery tracking tools do not have all the information and are badly used; (vi) deficiencies in data recording, archiving and securing of management tools (stock registers, delivery tickets, etc.); (vii) lack of supervision on good practices, good use of management tools and quality of recordings; (viii) Knowledge acquired by the managers not necessarily put into practice by the warehouse workers; (ix) absence of Standardized Operating Procedures. All these weaknesses denote the many difficulties related to the supply chain and program management. The cold chain equipment that will be purchased in connection with this project will contribute to resolving the main bottlenecks which were identified. Because this project, the health centres will be equipped with reliable, effective and robust cold chain equipment. The problem of cold chain outage because of lack of kerosene will not come up again. During installation, the staff will be trained on preventive maintenance. The maintenance system will be reorganized for implementing maintenance pools at the central level and in each province. Standardized operating procedures will be distributed. Cold chain equipment temperatures will be monitored systematically.   1. *Describe any other supply chain challenges that CCE optimisation platform support will assist in mitigating?*   The country will be able to improve several vaccination service indicators with this project.   * *Availability of quality vaccines at all levels:* With this new CCEOP2 proposal, the problems of vaccine availability in the health centres can be resolved by the purchase and installation of 4000 small capacity solar refrigerators in 4000 health centres (2581 health centres not yet equipped and 1449 health centres whose refrigerators are broken and those with refrigerators that do not meet the PQS standards) and 52 long storage life ice chests and 53 large capacity refrigerators for the health zone central offices. The project will serve to increase the health centre cold chain equipment coverage from 75% to 99.4%. In this way, the structures will be able to have good quantity and quality vaccines. * *Access to vaccination for all the Country’s population*: because of the availability of cold chain equipment in hard to reach health areas, the country will be able to reach unvaccinated people and organize outreach strategies. * *Increasing the immunisation coverage:* Increasing the health centre cold chain coverage, strengthening the supply system, the availability of effective, reliable equipment operating on green energy, improving the maintenance system are going to contribute to minimizing missed opportunities by increasing the number of vaccination sessions in fixed and outreach strategy. Recent data from the country already show that a trend of increasing the number of vaccination sessions is observed in the provinces where GAVI/RSS2 refrigerators have been installed. * *Supply chain strengthening:* The country is in the process of reconfiguring the supply chain at all levels. The modern hubs (Kinshasa, Kisangani, Ilebo and Lubumbashi) are being built and will be used not only for vaccines but also for other health products. The integration and pooling of the logistics means of various specialized programs and Directions will be progressively effective once the structures go into operation in order to make vaccines and other health products available at all levels. This project will serve to equip all levels with reliable and effective equipment and will contribute to strengthening the supply chain, in particular at the vaccination service delivery points. * *Equity between all health zones and centres:* This submission will make it possibly to equitably extend the cold chain equipment in the HA over the entire country. The CCEOP2 will serve to maintain the equity and increase the coverage with equipment, which will reach 99.4%, and also the solar equipment rate. Because of this project, the gaps in terms of cold chain equipment at the peripheral level will be considerably reduced. In that way, the vaccination activities will be organized equitably at all levels with the same quality. * *Vaccine safety and quality*: The project also targets the acquisition and installation of direct control solar refrigerators (without batteries) and long storage time ice chests, having technology with which to maintain the required storage temperatures of the vaccines, will be selected. With the availability of reliable, effective and low maintenance cold chain materials, health centres will be able to store and administer quality vaccines. Particular emphasis will be placed on managing and monitoring vaccines and temperatures through fridge-tags which will be purchased as part of this project. * *Strengthening cold chain maintenance*: Through the implementation of the maintenance plan, the maintenance pools established at the central level and in each PHD will be made operational. The availability of trained and qualified technicians will make it possible to provide quality maintenance and optimize the operation of equipment in order to guarantee vaccine availability and quality at all levels. Through the project, the EPI will be able to rehabilitate and extend the cold chain equipment and to standardize equipment in order to assure acquisition of replacement parts and proper maintenance. * *Updating the equipment inventory*: A mechanism for periodic updating of the cold chain equipment inventory will make it possible to collect and analyse data on the operation at the turn-up of the ILAMT tool.  1. *What are the overall CCE needs?*   In the April 2016 revision of its rehabilitation and expansion plan, the country identified the overall needs for refrigerators (new and replacement) in the health areas and health zone central offices until 2020; the needs are summarized in the following table:   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Types of equipment | No. of equipment | | | | | Total | | **2016** | **2017** | **2018** | **2019** | **2020** | | **Health areas**: Small-capacity solar refrigerators (TCW40SDD) | 2,087 | 2,000 | 2,000 | 690 |  | 6777 | | **Health zones**: Large-capacity solar refrigerators (TCW3043SDD) |  |  | 532 |  |  | **532** |   As estimated in the rehabilitation plan, the country’s global needs until 2020 for operational level (health areas and health zone central offices) cold chain equipment is 6777 refrigerators (including 4268 refrigerators for centres without cold chain equipment and 2509 replacement refrigerators) intended for health centres and 532 refrigerators for health zone central offices.  The first CCEOP1 proposal submitted in May 2016, which was approved, covers 2087 refrigerators (1687 for the unequipped health centres and 400 replacements) that were initially planned for 2016 and will be installed in 2017.  This proposal (CCEOP2) which will be implemented starting in 2018 is going to cover the needs for 4000 solar refrigerators (2581 new, unequipped centres and 1419 replacements), 52 long storage life ice chests (Arktek-YBC-5) for health centres and 53 large capacity refrigerators (B-Médical) intended for health zone central offices. With this new equipment through CCEOP2, the maximum of health centres (99.4% cold chain coverage) can be provided with energy-efficient, authorized, reliable and robust equipment.  The following table summarizes the various acquisitions (Gavi/HSS2, CCEOP1 and CCEOP2):   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Sources: | 2016 | | 2017 | | 2018 | | 2019 | | 2020 | | Total | | | | Refrig. CS | Refrig. HZCO | Refrig. CS | Refrig. HZCO | Refrig. CS | Refrig. HZCO | Refrig. CS | Refrig. HZCO | Refrig. CS | Refrig. HZCO | Refrig. CS | Refrig. HZCO | | Gavi/HSS2 | 2312 | 210 |  |  |  |  |  |  |  |  | 2312 | 210 | | CCEOP1 |  |  | 2087 |  |  |  |  |  |  |  | 2087 | 0 | | CCEOP2 |  |  |  |  | 2581 | 0 | 1419 | 53 |  |  | 4000 | 53 | | **Total** | **2312** | **210** | **2087** | **0** | **2581** | **0** | **1419** | **53** |  |  | **8399** | **263** |   The coverage level of 99.4% after CCEOP2 implementation is satisfying. All the same, the Country is going to continue to mobilize local resources (government and partners) for meeting the remaining needs in order to arrive at full satisfaction in the area of solar cold chain coverage in the health areas and to replace all absorption equipment whether worn out or irreparable. |
| **Country’s urgent and scale-up CCE needs**  (number, distribution, functionalities etc.)  ***Provide 1 page*** | 1. *Which of the CCE needs identified in the situation analysis are urgent, and why, and therefore should be addressed in the urgent scale-up phase? (E.g. type of equipment, model, capacity, number etc.)?*   In the rehabilitation plan, based on the analysis of the inventory data and the segmentation data, the country developed priorities with four well defined criteria for equipping new health centres with refrigerators and replacing broken, worn out and nonstandard equipment; among others the criteria are: (i) Priority 1: Health centres not yet equipped with refrigerators; (ii) Priority 2: Health centres with broken-down refrigerators (PQS and non-PQS); (iii) Priority 3: Health centres with refrigerators more than 10 years old; (iv) Priority 4: Health centres with non-PQS refrigerators less than 10 years old.  The urgent need for the country is to provide all the Health Centres with operational solar cold chain equipment. For this second CCEOP phase, the urgent needs are estimated at 2581 new small capacity (36 L) refrigerators (B-Médical TCW40SDD) for health centres that are not yet equipped.  The following considerations were included in selecting the equipment type: (i) Guidelines for the Minister of Public Health for the standardization of the embedded base of cold chain equipment in the country; (ii) CCEOP Application Instructions-Fr; (iii) Cold Chain Equipment Optimisation Platform; (iv) Lessons learned about acquisition, installation and operation[[4]](#footnote-4) of solar refrigerators in the Country; (v) Technical guidelines on the selection of eligible equipment by platform; (vi) The possibilities which these refrigerators provide for recycling ice packs. Meeting the chilled water pack production capacity needs at the level of health centres organizing outreach strategies is an absolute necessity for the country.  The segmentation of the health centres revealed that 91% of them had a storage capacity need between 5 and 36 L. Thus, among the cold chain equipment for health areas prequalified in the PQS, the one selected by the DRC EPI (B-Médical TCW40SDD) best meets the country’s needs and the Gavi platform eligibility criteria.  The cold chain equipment coverage in the health centres can be raised from 75% to 99.4% by 2020 with the acquisition and installation of these 2581 refrigerators in connection with this project.  With this project, the country will be able to acquire effective equipment for assuring vaccination service continuity, standardizing the equipment types which will make maintenance easier and progressively eliminating inventories of unapproved equipment. The hard-to-reach health areas will be provided with cold chain equipment in order to reduce the long distances for supplying them with vaccines and the cost of transportation of the supplies and also to make outreach vaccination easier.   1. *What percent of the birth cohort will be served by effectively functioning CCE when the Platform equipment is deployed?*   The implementation of this project will serve to equip new health centres with solar refrigerators, and replace broken refrigerators and kerosene refrigerators with more reliable, more effective and more robust refrigerators that have almost no operating costs. Because of this project, 99.4% of installed refrigerators meet PQS standards. Target populations in previously hard-to-reach zones will be within reach because of this project. In that way all target populations will be reached because of this project. This will mean that 100% of the target birth cohorts will have access to vaccination through health centres having equipment that is functional and meets PQS standards.   1. *Explain how these urgent needs relate to the current bottlenecks (as outlined in the preceding section)?*   The supply with quality vaccines and strengthening of the cold chain are crucial questions confronting the EIP in the Democratic Republic of the Congo. Because of this, the EPI with the support of its main partners is implementing measures to strengthen the supply chain management structures and more specifically the management of vaccines and the cold chain at all levels (e.g. central, intermediate and peripheral). This project serves to address the main bottlenecks, among which are: (i) a poor quality vaccine supply chain which does not always guarantee the availability of quality vaccines at the points of final use (transportation, storage and logistics management); (ii) the low availability of quality health services which incorporate vaccination at the decentralized level of the health system; (iii) the poor coverage rate of health centres with cold chain equipment; (iv) the low storage capacity; (v) the availability of cold chain equipment in the health centres; (vi) strengthening of operational level storage capacity; (vii) cold chain reliability; (viii) compliance of the devices at all levels with PQS standards; (ix) improvement of the supply chain organization especially the logistics for vaccine and supply distribution; (x) strengthening of the temperature control and monitoring system.  The 2015 vaccination coverage data show that about 14% of the health zones have a Penta3 vaccination coverage below 80%. This poor performance is mostly related to difficulties supplying vaccines and petrol and to the availability of the functional cold chain especially in hard-to-reach areas. The implementation of this project will serve to resolve the problems of reliable, robust, and solar energy powered cold chain in the country’s health centres. |
| **Expected immunisation coverage, equity and sustainability results**  ***Provide 2 pages*** | 1. *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):*    1. *Geographically remote districts or those with low coverage*   From data in the EPI 2015 Annual Report, it can be seen that of 516 health zones in the country, only 3.3% of the health zones have achieved coverage of at least 80% for all EPI antigens (GVAP standards). Additionally, 71 (14%) recorded Penta 3 immunization coverage below 80%. Among others, the following are the main reasons raised for this poor performance: difficulties related to reaching target populations because of the irregularity of organizing vaccination sessions because of vaccine stock outages frequently resulting from, among other things: insufficient cold chain equipment; inoperable cold chain in many centres due mainly to frequent breakdowns of kerosene refrigerators; lack of spare parts; worn-out equipment; and insufficient cold chain maintenance. To alleviate this situation, many actions (e.g. Gavi/HSS2, CCEOP1, CCEOP2, etc.) are being taken by the country with support from its partners in order to equip all health centres and raise the cold chain coverage with an eye on equity. The cold chain coverage of the HC, which varies from one PHD to another, will be completely leveled with the implementation of the CCEOP.  From national data (2015) it can be seen that the persistence of a large number of unvaccinated or insufficiently vaccinated children (211,363 children from 0 to 11 months old) because, among other things, of the irregularity of holding vaccination sessions due among other things to an insufficient cold chain.   * 1. *Poorer communities (e.g. in the poorest 10% of the population)*   With this project, 99.4% of the health centres can be equipped with high performance cold chain equipment. Because of this, health centres will be able to make quality vaccines available for all the populations of the DRC without distinction as to whether they are rich or poor. Actually, 69.6% of the total population of the country live in a rural environment and 30.4% in an urban environment. After this project, health institutions will be able to organize outreach strategy activities in all very hard-to-reach zones in order to reach all these marginalized populations.   * 1. *Communities where gender barriers are significant and/or where low levels of female education is common (as this is often associated with lower coverage)*   The DRC is a very large country (2,345,409 km²) with a geographic diversity marked by forests and waterways which combine with the wide cultural and linguistic diversity to accentuate the geographic dispersion and pocketing of different groups. Significant efforts are being made to bring vaccination services to all the populations without gender distinction. The country has established national policies for satisfying the base social needs of the populations, in this case health needs. Reaching populations dispersed over vast regions and especially in very hard-to-reach areas is a priority. The equipment of the health centres located in these access areas constitutes a priority in the context of this project.   1. *What analyses[[5]](#footnote-5) have been made, or what plans are underway, to optimise the design of the supply chain distribution system[[6]](#footnote-6) in order to improve the efficiency of the supply chain and contribute to achieving coverage and equity goals?*   The country’s supply chain is being reorganized with the construction of modern hubs (Kinshasa, Lubumbashi, Kisangani and Ilebo) through HSS2. This reorganization is going to lead to establishing a new logistics mechanism from the central level to the Provinces with a major impact on the operational level of availability of vaccines and the reduction of transportation costs. When the hubs become operational in 2017, the supply chain distribution systems for vaccines and some health products can be integrated and shared. Like the modern Hub in Kinshasa, the decentralized tubs (in Lubumbashi and Kisangani) will be able to receive vaccines and other products coming directly from the international level. In that way the delays in receiving and distributing will be considerably reduced.  The establishment of this new logistics mechanism will also consist in the reduction of the vaccine storage level: the "coordination" level will be eliminated and the decentralized warehouses will be served directly by international suppliers. The goals in matters of equity are covered because the country is going to extend the reach of its vaccination supply chain to the HC which did not previously have cold chain equipment.  The country’s populations will equitably benefit from the vaccines. Because of this project, very isolated rural zones and marginalized urban zones will have, which will make it possible to provide the health centres with refrigerators capable of recycling cold packs for the regular organization of vaccination sessions in strategies. Vaccines and vaccination services will be brought closer to parents, especially mothers of children, who previously had to walk more than 5 km to reach the closest vaccination sites.  It will allow the country to proceed with a progressive replacement of worn-out equipment and equipment not meeting the PQS standards and to standardize the deployed base.   1. *How have these system design considerations impacted the choice of CCE to be supported by the Platform?*   In this second phase of the CCEOP project, the vision is to bring the coverage rate from 75% to 99.4%. All the PHD and health zones will be affected. The distribution will be done equitably in order to have the same cold chain equipment coverage in all the PHD. The project will give priority to the extension of the cold chain to the HC which are still not equipped (65% of the equipment from the proposal), the replacement of unrepairable broken-down equipment, the replacement of unapproved refrigerators, storage capacity strengthening, and improvement of cold chain quality and reliability. The HC which previously depended on other centres equipped with refrigerators will now be autonomous and will no longer need to go tens of kilometres to get vaccines from the storage sites.   1. *Concretely, how will Platform support help improve the sustainability of the supply chain system?*   The supply with quality vaccines and strengthening of the cold chain are crucial questions confronting the EPI in the Democratic Republic of the Congo. The DRC is actually a very large country with limited resources and a very underdeveloped road network. The supply of vaccines and supplies from the central level to the provinces is for the most part done by air. Because of this, the EPI with the support of its main partners is implementing measures to strengthen the supply chain management structures and more specifically the management of vaccines and the cold chain at all levels (e.g. central, intermediate and peripheral). In that way, in connection with end-to-end supply chain strengthening in order to assure availability of quality vaccines and other specific supplies at all levels, the country received Gavi/HSS2 support for: (i) strengthening the capacity for storage and preservation of vaccines and supplies by construction of 4 modern Hubs (Kinshasa, Lubumbashi, Kisangani and Ilebo); (ii) the reduction of the cost of transporting vaccines from Kinshasa to the provinces by the acquisition of a refrigerated boat in order to supply the decentralized Hubs; (iii) the conversion to solar power of 23 cold rooms which were using electric generators as the main energy source; (iv) the acquisition and installation of 2522 solar refrigerators in the health centres and Health Zones Central Offices; (v) strengthening of cold chain maintenance by establishing maintenance pools and training of 35 engineers/technicians at the central level and in the PHD; (vi) the acquisition of replacement parts; (vii) establishing a continuous temperature monitoring system at various levels. In addition to Gavi, the EPI will receive support from other partners (Save the Children, Koica, USAID/PROSANI) for Solar Refrigerator Acquisition and Installation in the Country. Similarly, the MPH planned training and deployment of 120 logistics experts to the health areas in order to assure the supply and management of stocks among other things. All these investments will contribute to improving coverage and equity. Similarly, a structured equipment maintenance plan was developed in order to overcome the deficiencies observed during the EVM with financing provided by the MPH and its partners.  The country is reorganizing and optimizing the supply chain for improving the effectiveness of the vaccine and supply distribution system which has no impact on the choice of cold chain equipment. In fact with the construction of decentralized hubs in Lubumbashi and Kisangani, which have international airports, vaccines and supplies arriving internationally will be directly received and stored in these hubs without going through the central Hub in Kinshasa. This is going to considerably reduce the distribution cost and time and bring vaccines and supplies even closer to the populations. These hubs will be structures incorporating the management of other health products which will allow pooling of efforts. The country is heavily engaged in a progressive process of conversion of the cold chain equipment to solar energy at the intermediate level (solar energy for cold rooms) and operational level (supplying health centres and health zones with SDD solar refrigerators). All the equipment selected in connection with the CCEOP project will meet the country's needs and come under the guideline fixed by the country. The selection of SDD solar refrigerators is not only motivated by the unreliable national electrical grid, program needs and experience but also by the recommended standardization of the base of equipment in order to make maintenance easier.  It is important to note that currently about 42% of the CCE used in the health centres operate on kerosene which would cost the country about US$427,838 per month or $5,134,056 per year (45 L of petrol per refrigerator per month equivalent at US$90) which is about the purchase cost of 650 TCW40SDD solar refrigerators. The absence of secured funds for the purchase and supply of petrol and replacement parts and the poor quality of the maintenance often leads to cold chain outages and vaccine wastage. |
|  | 1. *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.)?* 2. *What is the frequency of preventative and corrective maintenance that the country commits to (supported by partners)?*   The maintenance plan which was prepared to address the recommendations of the EVM assessment was reviewed following comments from the Gavi Independent Review Committee (IRC), during CCEOP phase 1 submission. The data from the EVM assessment conducted in 2014 show that the scores obtained by criterion E5 (Maintenance: 49% in the HZ and 21% in the HA) were low out of an expected minimum of 80%. This indicates the absence or poor quality of the established maintenance system. Consequently, the EPI developed a cold chain equipment maintenance plan in order to keep the cold chain equipment in good operating condition and increase the lifespan and on top of that guarantee the quality of the vaccines stored in it. The preparation and implementation of a cold chain equipment maintenance plan figures among the priority activities of the EIP Improvement Plan and additionally falls under the guidelines of Gavi/HSS2 goal one “Strengthen the end-to-end supply chain in order to assure the availability of quality vaccines at all levels.”  To put the maintenance plan into operation, the following strategies are planned:   * Implementing maintenance pools at the central level and in the 26 PHD; Recruiting 35 engineers; They will be trained and deployed to the field. * Contracting with cold chain equipment suppliers and other local suppliers; * Strengthening capacities of staff and structures in the maintenance of cold chain and transportation equipment at all levels of the health system; * Developing management tools for equipment inventory and maintenance;  1. *What technical support is anticipated for maintenance?*   In connection with Gavi/HSS2, the establishment of maintenance pools (35 engineers trained) in each PHD is planned. This will make it possible to closely monitor the installed equipment. The users will be trained in preventive maintenance during the installation of each refrigerator.  The ministry of health and its partners will provide the financing for the maintenance plan. The Strategic ICC will establish a mechanism with which to mobilize the funds previously dedicated to purchasing kerosene and direct it to maintenance of the equipment.  Similarly Standardized Operating Procedures (SOP) prepared and displayed at each warehouse will guide the user on what to do in case of an abnormal status of the cold chain, and a schedule for updating is prepared.  Maintenance management tools will be implemented for proper tracking of the equipment.  Close supervisions from the central level to the provinces and from the provinces to the health zones will be done for proper tracking of the equipment. By decentralizing the management of replacement parts, technicians from the PHD Pools will be able to act quickly in order to limit the unavailability time of the equipment.  Major work exceeding the provincial level will be done either by the central level technician or in partnership with the private sector.   1. *How will the country monitor the completion of preventive and corrective maintenance?* 2. *Which source(s) of funding will be used for maintenance? To what extent are they assured*   For the tracking of the activities related to implementation of this supply chain strengthening project and more specifically the tracking of cold chain equipment installed in health centres and health zone central offices, the program prepared a national monitoring plan which serves to periodically update the progress of the project and the state of the functional and nonfunctional devices. In fact, establishing a monitoring system for this project, which will serve to resolve the main bottlenecks, is an absolute necessity.  According to the HSS2 Monitoring and Evaluation Plan, the major indicators which are monitored and analysed by the EIP are:   * Number of vaccine warehouses having functional vaccine storage equipment conforming to the vaccination schedule and which are without vaccine stock outages during each last 3 months * % of Health Zones having functional cold chain equipment (including the temperature monitoring system) with required capacity and without any vaccine stock outage during each previous 3 months. * % of Health Centres having functional cold chain equipment (including the temperature monitoring system) with required capacity and not having had any vaccine stock outage during each previous 3 months. * % of Health Centres newly equipped with cold chain with required capacity corresponding to intended use.   Therefore, other tools will be developed for monthly collection and analysis of data on the project implementation; the main indicators are:   * The number of meetings of the logistics commission held/planned by level. * The number of health centres equipped with refrigerators; * The proportion of refrigerators meeting the PQS standards in the embedded base relative to the beginning * Number of vaccine warehouses having recorded high or low temperature alarms; * Number of preventative and corrective maintenance actions done per month and per level.   The MSP and its partners will implement this project through the logistics commission under the leadership of the Strategic ICC. In order for the players to have the same level of information, a monthly reporting system will be instituted which will make it possible to monitor the progression of activities in the field. The EPI through the logistics commission will take care of preparing various status reports.  The monitoring reports on the technical aspects of the project will be prepared and shared with all parties involved on a monthly basis. These reports will be first presented and discussed in logistics commission meetings before their approval by the Strategic ICC.   1. *How will the country dispose of obsolete and irreparable equipment replaced by CCE optimisation platform equipment?*   The cold chain equipment inventory gives the details of the out-of-service equipment. The progressive replacement of all absorption refrigerators with batteryless solar refrigerators is intended by this CCEOP project. The scrap equipment (e.g. refrigerators, freezers, ice chests, vaccine carriers, etc.) which can be recovered will be sold at auction by the EPI/MPH. Obsolete equipment which cannot be recovered (e.g. refrigerators, freezers, ice chests, vaccine carriers, etc.) will be handled according to the standards required for environmental protection. |
| **Other implementation details**  ***Provide 1 page*** | 1. *How will the country facilitate the manufacturer’s or representative’s role in equipment purchase, distribution and installation?*   The logistics commission–composed of technicians from the MPH and those from the main EPI partners (e.g. UNICEF, WHO, World Bank, Save the Children, BMG, USAID, etc.) under the responsibility of the strategic ICC – will provide coordination in the implementation of this project.  A detailed purchasing plan was prepared for the ordering and purchasing of equipment. During execution, this plan will be examined regularly on the basis of a forecast plan established by the logistics commission. In the DRC, the EPI has always benefited from the support of UNICEF for purchasing the large majority of the cold chain equipment. Therefore, on the basis of prior experience, the MPH decided to entrust UNICEF with the acquisition process from equipment ordering (in order to benefit from both a better purchase price and also duty-free) to installation by the supplier (after sale warranty). Considering the immense size of the country and in order to reduce the delivery intervals and the internal transport costs, the equipment will be received through the 5 usual entry ports (Matadi/Kinshasa, Lubumbashi, Goma, Bukavu and Bunia) and then will be routed in the provinces according to the preestablished deployment plan.  A detailed plan and timeline for the planning of the purchase, maritime shipping, receiving, distribution inside the country and installation of the equipment in the field was prepared for the project implementation. The equipment will be acquired through UNICEF which will handle the process of negotiating and contracting with the manufacturer. It will also handle ordering, facilitating transport, clearing customs and temporary warehousing in the five ports of entry, and insurance. Additionally, UNICEF will provide its technical input on monitoring and coordinating activities.  The manufacturer, which has extensive experience and in-depth knowledge of the country, will be responsible for equipment installation in order to benefit from the after sale warranty and the training of users and MPH technicians. The manufacturer is going to benefit from the existence of qualified human resources in the country for the installation of the solar refrigerators. The manufacturer will be involved in the field through its contractor (SODETAP), which is a private company specialized in the cold chain and has significant experience in the DRC and in other African countries. It could be selected by the manufacturer to perform the installation and training in the field. It needs to be emphasized that the manufacturer through its contractor, SODETAP, is installing 2522 solar refrigerators acquired in connection with Gavi/HSS2. Also, 80 technicians were trained by the manufacturer and about 20 of them were trained in the B-Médical factory. SODETAP is going to simultaneously deploy more than 100 experienced teams to the field for the installation of the refrigerators.  Transportation of the equipment from the 5 entry ports to the installation sites will be done by the manufacturer who will be responsible for all installation activities. Installation will be done on the basis of the deployment plan prepared by the MPH. The deployment and installation of the equipment will also be done according to the calendar by port of entry. In addition to the installation technicians, central supervisors from the MPH, UNICEF, WHO and other partners will be deployed in the field in order to supervise the installation work whose handling will be done by the MPH and its partners.   1. *What is the source of the joint investment? Is the country’s joint investment secured?*   The overall project cost is estimated at US$32,577,428 broken down between Gavi (80%) for US$26,061,942 and country co-financing (20%) for US$6,515,486. The country co-financing for acquisition and installation of the cold chain equipment that will be acquired in connection with the second CCEOP phase will be provided by the MPH and its partners. The proposal was presented and approved at the strategic ICC meeting on September 2, 2016 in the presence of all the EPI partners. The World Bank stated it would support the country in the payment of the country share up to US$6,280,000 and USAID (PROSANI) for an amount of US$235,500 (30 refrigerators). The amount of co-financing raised locally comes to US$6,515,500.   |  |  |  | | --- | --- | --- | | # | Funding Source | Amount in USD | | 1 | World Bank | 6,280,000 | | 2 | USAID (PROSANI) | 235,500 | | **Total** | | **6,515,500** |   Relative to the unit cost estimate of the refrigerator (estimated at $7850 by UNICEF), the country referred to the actual execution costs during the purchasing, transport, installation and user training during recent refrigerator acquisitions with Gavi funds via UNICEF.   1. *Has the country secured import tariff exemptions for CCE? If yes, attach proof.*   All the material and equipment acquired by the government or its partners with external funding are exempt from duties and taxes. In the context of this project, the equipment will be acquired through UNICEF which is a United Nations agency receiving customs waivers for importing equipment and materials into the DRC. |

**4.2 Initial support phase**

*This initial support is designed to address urgent CCE needs through years 1 and 2.*

Provide maximum 3 pages, comprising:

* ***2 to 4 prioritised URGENT CCE needs*** *as identified in the ‘CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements’ (see Annex 3 of the* Application Instructions*),*
* ***Description*** *of planned or ongoing activities related to other supply chain “fundamentals”.*

**4.2.1 Prioritised URGENT CCE needs**

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| --- | --- | --- |
| **Budgets not inclusive of operational cost**  ***(Operational costs to be financed by Ministry of Health or other partners)*** | | |
| *Prioritised (URGENT) CCE need 1:*  *(Required information)* | ***1. The need***  *Please include: 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.*  The detailed analysis of the status of the cold chain equipment was done. On the basis of the analysis of the inventory and segmentation data, the country surfaced the needs in priority order with well defined criteria. Priority 1, which constitutes the most urgent needs, is providing latest generation solar refrigerators to the health centres that are not yet equipped. The country’s objective is to be able to equip all health centres with solar refrigerators meeting the PQS standards. In this context, the country’s first priority is to equip all centres with functioning and effective cold chain equipment.  Thus, the additional priority and urgent needs connected with the project for achieving a satisfactory coverage level is 2581 new solar refrigerators and 52 long storage life ice chests for the health centres for storage. It is a matter of acquiring small capacity solar refrigerators (B-Médical TCW40SDD) and ARKTEK ice chests. The selected refrigerators have a double compartment capable of recycling ice packs for outreach strategy activities and also for transporting samples. And the long storage life ice chests will be used for the storage of vaccines for about one month in health centres not organizing forward strategies. In this phase, purchasing 130 replacement part kits and 5000 fridge-tags for temperature monitoring in the refrigerators is also planned.  The CCEOP2 implementation process will be done as follows:   * + - Ordering equipment in January 2018;     - Receiving the first equipment in March 2018;     - Dispatching between April and May 2018;     - Starting installation of the first batches of refrigerators in June 2019.   ***2. Explanation***  *Please include: 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.*  One of the main bottlenecks is reliable coverage of health centres with cold chain equipment. Therefore, the first priority of the country is the extension of the coverage of health centres with cold chain equipment. Additionally, according to 2015 national data, the persistence of a large number of unvaccinated or insufficiently vaccinated children (211,363 children from birth to 11 months old) is due in part to the irregularity in holding outreach strategy vaccination sessions because, among other things, of cold chain insufficiencies.  Therefore, the 2581 refrigerators installed in the new centres will serve to bring the coverage with functional and energy-efficient cold chain equipment from 75% to 99.4%.  ***3. Expected outcome***  *Please include: Anticipated increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country Performance framework).*   * + - Acquiring and installing 2581 refrigerators in the health centres not yet equipped;     - Increasing cold chain equipment coverage from 75% to 99.4% and consequently increasing the number of vaccination sessions;     - Increasing immunisation sessions for outreach strategy;     - Increasing the pentavalent coverage rate from 91% in 2015 to 93% in 2019. | |
| **Total CCE Budget:** | *‘Total budget’ includes Gavi and country joint investment share:* ***US$ 20,647,762*** | |
| *Prioritised (URGENT) CCE need 2:* | ***The need; Justification; Expected outcome***  *(See guidance as per prioritised need 1, above)*  ***1. The need***  ***2. Explanation***  ***3. Expected outcome***  *Please include: Anticipated increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country Performance framework).*  . | |
| **Total CCE Budget:** | *$(XX)* | |
| *Prioritised (URGENT) CCE need 3:* | ***The need; Justification; Expected outcome***  *(See guidance as per prioritised need 1, above)* | |
| **Total CCE Budget:** | *$(XX)* | |
| *Prioritised (URGENT) CCE need 4:* | ***The need; Justification; Expected outcome***  *(See guidance as per prioritised need 1, above)* | |
| **Total CCE Budget:** | *$(XX)* | |
| **GRAND TOTAL CCE BUDGET: ‘Initial support’ (Years 1 and 2 )** | | **$(XX)**  *Includes Gavi and joint investment share.*  ***US$ 20,647,762*** |

**4.2.2 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.**

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| *Describe planned or ongoing activities related to other supply chain “fundamentals” (see section 3 of the* Application Instructions*) 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**  *Provide description of all planned or ongoing activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.*  In connection with implementing the EVM improvement plan, the country has undertaken some number of activities for improving the availability and performance of supply chain managers. Among others, these activities are all:   * Recruit and train 35 engineers/technicians for the central level and PHD maintenance pools; * Train 125 integrated health logistics coordinators (professional Bachelor degree level) for the 26 target PHDs and Health Zones, including xxx already trained and fully active at the MPH; * Organize a workshop for EVI and PHD managers on strengthening logistics capabilities; * Organize CCL-DVDMT-SMT training sessions in the branches; * Organizing CCL and DVD-MT sessions(intermediate level) and EPI technical management (operational level) in the PHDs (North Kivu, Equator, Bas Congo);   These activities are financed by Gavi HSSS, WHO, UNICEF and USAID. |
| **Data for supply chain management**  *Provide description of all planned or ongoing activities related to data for management, their sources of funding, and partner support. In particular, please 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.*  Among others, the following are the activities being done involving supply chain management:   * Preparing terms of reference for performing a feasibility study on an option of using barcodes for stock management between the national level, the three decentralized warehouses and the PHD; * Providing a networked computer system for real-time stock management with bar code systems; * Study trip planned to Tanzania for seeing that country’s experience with implementing management and integration tools for some health products; * Establishing a central and provincial level continuous temperature monitoring system; * Establishing a preliminary study team on the management of the hubs and pooling logistics means; * Reinforcing the management structure of the Pubs which will lead to the preparation with technical input from the AMP of the integrated supply chain management business plan.   The financing for these activities and others which are planned will be provided by Gavi, UNICEF, WHO, PATH and other partners. |
| **Optimised, efficient design of distribution system**  *Provide description of all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.*  In connection with supply chain optimization, the Country received Gavi/HSS2 financing for the construction of four modern hubs – one in Kinshasa and three decentralized hubs (Lubumbashi, Kisangani and Ilebo) – for the storage of vaccines and other drive vaccination supplies and also a refrigerated boat for the transport of vaccines. The Kinshasa hub is being built The engineering phases for the three provincial hubs are complete. 23 cold rooms which use electric generators as the main energy source are being converted to solar energy. The 2312 SDD solar refrigerators are being installed in the health centres and in the health zone central offices (210). |
| **Continuous improvement process**  *Provide description of all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*  In connection with supply chain strengthening and optimization, the MPH with input from some partners in particular is in a study process for integration and pooling of logistics means from various specialized programs and Divisions once the modern hubs which are being built are put into operation. The team is already in place for the framework proposal for management of the Hubs in a context of integrated management of vaccines and other health products.   * Purchase of eight refrigerated vehicles and eight regular trucks for transportation of vaccines and dry supplies from the central warehouse and the distributed warehouses to the PHD. * Purchase of 40 4x4 vehicles intended for health zones to transport vaccines, medications and other supplies from the PHDs to the Health Zones. * Purchase of motorcycles, fiberglass 4 x 4 shells, and outboards for vaccination activities; * Purchase continuous temperature logging equipment for the cold rooms for vaccines in the PHD and central and decentralised warehouses. |

**4.3 Reviewing implementation of initial support activities**

*Support for approximately years 3 onwards will be contingent on reporting and performance of activities implemented during the initial support phase.*

**4.4 Scale-up support phase**

*This second phase of Gavi CCE optimisation platform support will be provided for approximately year 3 onwards.*

Provide maximum 3 pages, comprising:

* ***2 to 4 prioritised ADDITIONAL CCE needs*** *as identified in the ‘CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements’ (see Annex 3 of the* Application Instructions*),*
* ***Description*** *of planned activities related to other supply chain “fundamentals”.*

**4.4.1 Prioritised ADDITIONAL CCE needs**

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| **Budgets not inclusive of operational cost**  ***(Operational costs to be financed by Ministry of Health or other partners)*** | | |
| *Prioritised (ADDITIONAL) CCE need 1:*  *(Required information)* | ***1. The need***  *Please include: 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.*  In the rehabilitation plan, based on the analysis of the inventory and segmentation data, the country uncovered the needs in priority order.  The scale up phase in this project covers needs for: (I) Priority 2: Health centres with broken-down refrigerators (PQS and non-PQS); (ii) Priority 3: Health centres with refrigerators more than 10 years old; (iv) Priority 4: Health centres with non-PQS refrigerators less than 10 years old.  The two main objectives of this scale up phase (support phase) are:   * (i) The replacement of all out-of-service refrigerators, all absorption refrigerators and refrigerators not meeting the PQS standards and health centres and health zone central offices with new generation solar refrigerators that are more reliable and more effective; * (ii) Strengthening the health zone central office level storage capacity; In fact, inventory data analysis shows that about 23% of the equipment installed in the central offices is operational. Additionally, the introduction of new vaccines (e.g. Rotavirus, HPV, MenA, etc.) called for in the 2015-2019 cMYP and the organization of various vaccination campaigns results in additional storage capacity needs.   The cold chain equipment needs in this support phase are estimated at 1419 small capacity solar refrigerators (B-Médical TCW40SDD) intended for health centres and 53 large capacity refrigerators (B-Médical TCW3043SDD). Purchasing 74 replacement part kits and 9990 fridge-tags for temperature monitoring in the refrigerators is also planned.  ***2. Explanation***  *Please include: Reasons for additional CCE 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.*  One of the priority directions of the 2015-2019 cMYP is supply chain strengthening through availability of effective and reliable equipment at all levels, management and maintenance system improvement which will contribute to minimizing lost opportunities by increasing the fixed, and outreach strategy vaccination sessions and increasing the vaccination coverage. Because of this, the replacement of broken refrigerators and non-PQS refrigerators is an absolute necessity. In fact, the inventory results show the 12% of the refrigerators in health centres have major failures, 42% of the refrigerators are absorption refrigerators which use kerosene as an energy source, 27% of refrigerators are worn out with over 10 years in service. In the context of supply chain strengthening with the main objective the availability of vaccines at all levels of the pyramid in sufficient quantity and quality.  ***3. Expected outcome***  *Please include: Anticipated increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country Performance framework).*   * + - Acquiring and installing in the health centres 1419 small capacity refrigerators (TCW40SDD);     - Acquiring and installing in the health zone central offices 53 large capacity refrigerators (TCW3043SDD);     - Quality vaccines continuously available;     - Increasing immunisation teams for outreach strategy;   Increasing the pentavalent coverage rate from 91% in 2015 to 93% in 2019. | |
| **Total CCE Budget***[[7]](#footnote-7)***:** | *‘Total budget’ includes Gavi and country joint investment share: $(XX)*  **US$ 11,929,666** | |
| *Prioritised (ADDITIONAL) CCE need 2:* | ***The need; Justification; Expected outcome***  *(See guidance as per prioritised need 1, above)* | |
| **Total CCE Budget:** | *$(XX)* | |
| *Prioritised (ADDITIONAL) CCE need 3:* | ***The need; Justification; Expected outcome***  *(See guidance as per prioritised need 1, above)* | |
| **Total CCE Budget:** | *$(XX)* | |
| *Prioritised (ADDITIONAL) CCE need 4:* | ***The need; Justification; Expected outcome***  *(See guidance as per prioritised need 1, above)* | |
| **Total CCE Budget:** | *$(XX)* | |
| **GRAND TOTAL CCE BUDGET: ‘Scale-up support’ (Year 3, 4, 5 )** | | **$(XX)**  *Includes Gavi and joint investment share.*  **US$ 11,929,666** |

**4.4.2 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.**

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| *Describe planned activities related to other supply chain “fundamentals” (see section 3 of the* Application Instructions) *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**  *Provide description of all planned activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.*  In connection with implementing the EVM improvement plan, the country has undertaken some number of activities for improving the availability and performance of supply chain managers. Among others, these activities are all:   * Organize a workshop for EVI and PHD managers on strengthening logistics capabilities; * Organizing CCL and DVD-MT sessions(intermediate level) and EPI technical management (operational level) in the PHDs (North Kivu, Equator, Bas Congo);   These activities are financed by Gavi HSSS, WHO, UNICEF and USAID. |
| **Data for supply chain management**  *Provide description of all planned activities related to data for management, their sources of funding, and partner support. In particular, please 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.*  Among others, the following are the scheduled activities involving supply chain management:   * Making the Kinshasa, Kisangani and Lubumbashi hubs operational; * Turning up the system for management of vaccines and other vaccination supplies integrated with other health products; * Using barcodes for stock management between the national level and the three decentralized warehouses; * Providing a networked computer system for real-time stock management with bar code systems * Establishing a central and provincial level continuous temperature monitoring system;   The financing for these activities and others which are planned will be provided by Gavi, UNICEF, WHO, PATH and other partners. |
| **Optimised, efficient design of distribution system**  *Provide description of all planned activities related to distribution system design optimisation, their sources of funding, and partner support.*  In connection with supply chain optimization, the Country received Gavi/HSS2 financing for the construction of four modern hubs – one in Kinshasa and three decentralized hubs (Lubumbashi, Kisangani and Ilebo) – for the storage of vaccines and other drive vaccination supplies and also a refrigerated boat for the transport of vaccines. The Kinshasa hub is being built The engineering phases for the three provincial hubs are complete. 23 cold rooms which use electric generators as the main energy source are being converted to solar energy. The 2312 SDD solar refrigerators are being installed in the health centres and in the health zone central offices (210). |
| **Continuous improvement process**  *Provide description of all planned activities related to continuous improvement processes, their sources of funding, and partner support.*  In connection with supply chain strengthening and optimization, the MPH with input from some partners in particular is in a study process for integration and pooling of logistics means from various specialized programs and Divisions once the modern homes which are being built are put into operation. The team is already in place for the framework proposal for management of the Hubs in a context of integrated management of vaccines and other health products. |

1. **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 embedded budget template, and with reference to the *CCE optimisation platform Application Instructions, Gavi CCE optimisation platform Technology Guide and CCE planning prices and TCO analysis tool.*

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| --- |
| **Important information: selection of budget template** |
| * ***Countries can fill one of two CCE optimisation platform Budget Templates:***   + ***Either*** *budget template number* ***01;***   + ***Or*** *budget template number 02* |

|  |  |
| --- | --- |
| *CCE optimisation platform -Budget Template 01* (strongly encouraged) | |
| *To be filled by countries that have selected generic equipment categories that best suit their CCE needs (e.g. ‘ILR 90L’ i.e. Not specific model or make).*  *Planning price ranges are provided in this template.* |  |
| ***CCE optimisation platform -Budget Template 02*** | |
| *To be filled by countries that have selected specific 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.* |  |

1. **Performance Framework**

**Countries must include CCE Optimisation Platform indicators into 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.

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| Data sources    The following data sources are examples that countries may want to choose from when establishing performance framework indicators and targets: |
| * DHIS2 * DVD-MT * HMIS * WHO/UNICEF joint reporting form (JRF) * Health facility assessments that include cold chain * Vaccine stock ledgers * Wastage reporting tools * Cold chain equipment inventories * On-site assessments of equipment functioning * Routine monitoring with continuous temperature monitoring devices |
|  |
| **Indicator monitoring and reporting requirements**  *As a* ***minimum****, countries need to monitor and report on:*   * + ***3******MANDATORY intermediate results indicators;*** *and*   + ***1 to 3******ADDITIONAL intermediate results indicator(s)*** |
| **MANDATORY intermediate results indicators** (must include baseline, data source, targets and frequency of reporting): |
| 1. Number of equipped facilities replacing CCE with (any) platform-eligible ILR, SDD or long-term passive devices, and irrespective of their funding source; 2. Number of facilities previously without equipment, newly equipped with platform-eligible equipment (i.e. ILRs, SDDs or long-term passive devices); and 3. Well-defined indicator proposed by country to reflect appropriate maintenance of equipment; for example percentage of equipped facilities with functioning cold chain[[8]](#footnote-8), such as demonstrated by remote temperature monitoring.   In alignment with its monitoring plan, the country decided to take to take the first two mandatory indicators +1 mandatory indicator which is connected with maintenance and is the following:  Number of preventative and corrective maintenance actions done per month and per level. |
|  |
| **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. The operating condition of the cold chain equipment: proportion of functional CCE and proportion of health zones having at least 90% working equipment; 2. Loss of closed vials: proportion at national level, health zones and health centres; 3. Proportion of planned demand: Ratio of actual usage compared to forecast (vaccines); 4. Full availability of stocks: proportion of facilities/health zones without any stock outage;    1. 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. 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.   In alignment with its monitoring plan, the country decided to make the first three integrators mandatory. |

1. This includes the new HSS acquisitions (refrigerators installed and in the pipeline). [↑](#footnote-ref-1)
2. The EVM implementation plan and annual work plan progress report must have been updated within three (3) months of applying for Platform support. [↑](#footnote-ref-2)
3. The CCE Inventory must have been updated within no more than one (1) year of applying for Platform support. [↑](#footnote-ref-3)
4. [↑](#footnote-ref-4)
5. These plans can vary from desk reviews to complex modelling of the country’s supply chain system and distribution that identify ways to increase supply chain efficiencies, to deliver potent vaccines. [↑](#footnote-ref-5)
6. NOTE: Activities to optimise the design of supply chain distribution systems are NOT funded by Platform-support. [↑](#footnote-ref-6)
7. Budget not inclusive of operational cost to be financed by Ministry of Health and other partners [↑](#footnote-ref-7)
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 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. [↑](#footnote-ref-8)