



**KINGDOM OF BELGIUM**  
Federal Public Service  
**Foreign Affairs,  
Foreign Trade and  
Development Cooperation**

**Directorate-general for Development Cooperation –  
DGD**

**Service D5.1 – Humanitarian Aid**

## **SINGLE FORM FOR THE FUNDING OF HUMANITARIAN ACTION**

(Legal basis: the law of 9/01/2014 modifying the law of 19/03/2013 on Development cooperation - Royal Decree of 19/04/2014, General expenditure budget, basic allocation 14 54 52 35.60.83).

### **1. GENERAL INFORMATION**

1.1 *Name of the humanitarian organisation/date of approval by the Minister for Development Cooperation*

« Croix-Rouge de Belgique, Communauté francophone-Activités internationales »  
Date of approval by the Minister for Development Cooperation: 20<sup>th</sup> of May 2016.

1.2 *Title of the action*

Open source App for Community Based Surveillance by local humanitarian actors: Development, Field test and Preparation for scale up

1.3 *Intervention area (country, region, locations):*

Overall, this project has a global outreach.

Its first outcome has a global impact.

Its second outcome will be implemented in the following regions of Senegal: Kaffrine, Kaolack, Tambacounda, Kédougou, Sédhiou, Ziguinchor and Kolda.

Its third outcome targets the following Sahel countries: Burkina Faso, Cap Vert, Gambie, Guinée Bissau, Guinée, Mali, Mauritanie, Niger, Tchad, Sénégal.

1.4 *Action start date:*

1st of October 2018

1.5 *Duration of the action in months (cf. Art. 17, §2):*

12 months

1.6 *Expenditure eligibility start date:*

1st of October 2018

Signature date granting Ministerial Decree.

1.7 *Proposal and reports (Concerning the specific timeframes, cf. RD of 19/04/2014):*

Initial proposal	<input checked="" type="checkbox"/>	date: 30-04-2018
Revised proposal no.	<input type="checkbox"/>	date dd-mm-yy
Date of the granting Ministerial Decree		date: dd-mm-yy
Unilateral Act date		date: dd-mm-yy
Letter of acceptance date		date: dd-mm-yy
Interim report	<input type="checkbox"/>	date: dd-mm-yy
Final report	<input type="checkbox"/>	date: dd-mm-yy

1.8 *[INT] List the exchanges of letters that took place following the signature of the unilateral act until the interim report stage*

1.9 *[FIN] List the exchanges of letters that took place following the submission of the interim report until the final report stage*

## Executive Summary

This project aims at the development, field testing and preparation for scaling the usage of an open source App for Community Based Surveillance (CBS App<sup>1</sup>). It will be implemented by a consortium formed of the Belgian Red Cross (BRC) and the Norwegian Red Cross (NorCross), hereafter the Consortium.

The CBS App strengthens the capacity of local humanitarian actors to detect, report and respond to humanitarian emergencies. It allows faster and improved detection of humanitarian emergencies. This, in turn, will enable the humanitarian response to trigger earlier and be better tailored to detected needs.

In order to strengthen surveillance capacity of local humanitarian actors, this project includes three interrelated work streams, each of which will reach an outcome.

- the first outcome is the development of the CBS App,
- the second is the field testing of the CBS App in Senegal,
- the third is the preparation for the scaling-up of the CBS App at the global level, with a specific focus on the Sahel.

By the end of this project, the global humanitarian community, especially local actors, will have access to an open source CBS App that is mature, field tested, and ready for scaling up and expanded use, especially in the Sahel.

Within the timeframe of this project, the CBS App will focus solely on health issues. This falls within a global effort by the global humanitarian community, including the Red Cross (RC) Movement, to strengthen CBS in the field of health. This focus on health is based on conclusive data showing that improved CBS systems actually save lives and significantly reduces the humanitarian consequences of outbreaks (See section 2.2 and following).

However, the design of the CBS App will allow for its use in other humanitarian fields, such as Disaster Risk Reduction, Food security, etc. in the future<sup>2</sup>. Moreover, the versatility of the CBS App will allow for specific developments for use in acute emergencies such as large population movements or large scale disasters.

The CBS App is innovative by itself. It is an Open source App that can be used by any humanitarian actor, within or outside the RC Movement, with no strings or costs attached. It is also designed for scaling-up, which means that once field tested, it can be used in as many contexts as needed, with no technical limit.

Community based surveillance strengthens the capacity of local humanitarian actors to detect, report and respond early to any outbreak. Thus, the CBS App puts an innovative tool in the hands of local actors to allow them to play a key role in protecting their communities from hazards.

It is important to highlight that this project falls within a global effort, spearheaded by RC Movement and other humanitarian actors such as WHO, to improve and strengthen the capacity of local humanitarian actors to detect, report and respond to humanitarian emergencies. A key feature of

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<sup>1</sup> For a definition of the CBS App within the framework of this project, please refer to section 2.2, box 1

<sup>2</sup> For more information on how the design of the CBS App will allow future usage, beyond Health, please refer to section 5.2

this project, is that it is a stand-alone project that, at the same time, fits in a wider effort of strengthening local humanitarian actors. Thus, the outcome of this project will be important milestones in a wider effort that will be sustained, after the end of this project.

## 2. NEEDS ASSESSMENT

### 2.1 *Assessment date(s); methodology and information sources used; organisation/person(s) responsible for the assessment*

The design of this project is based on the understanding of needs by the Consortium members. This understanding is the outcome of several years of daily involvement by Consortium members in humanitarian action, both at policy and field levels, in the areas of Health, Community engagement, Digitalisation of Aid, Strengthening local response and years-long presence in the Sahel.

The need to strengthen Community Based Surveillance in Senegal and in the entire Sahel region has been consistently and repeatedly highlighted by the main humanitarian actors (UN system, RC Movement, health clusters, etc.) as well as donors such as DG ECHO and DFID, as reflected in the below references:

#### **HIP ECHO 2018 for Sahel<sup>3</sup>**

The Humanitarian Implementation Plan (HIP) of DG ECHO for 2018 identified epidemic prevention mechanism as one of the most acute humanitarian needs in the Sahel Region. This HIP recommends “*to strengthen the national and local capacities in terms of analysis, preparedness, and response, in particular with functional early warning systems, and shock-responsive services in the domain of health*”.

#### **UN Senegal humanitarian response plan<sup>4</sup>**

In Senegal, the UN humanitarian response plans of the past three years identified epidemics threat as one of the four important risks. With 21.000 people directly in situation of risk, the 2018 response plan for Senegal focuses on the emergency preparedness aspect in strengthening surveillance mechanism and community capacity building in prevention and preparedness.

#### **Evaluation externe conjointe des principales capacités RSI de la République du Sénégal<sup>5</sup> (WHO)**

The joint assessment conducted in 2016 on the implementation of International Health Regulations (IHR) in Senegal sets in its priority recommendations: “*Développer dans le système de surveillance la composante Surveillance Fondée sur les Evènements (SFE) incluant la surveillance à base communautaire*”.

#### **Sahel Plus Group Resolutions and recommendations**

<sup>3</sup> Ref. Ares(2017)5245571 - 26/10/2017 Financing decision ECHO/WWD/ BUD/2018/01000)

<sup>4</sup> Available on <https://www.humanitarianresponse.info/en/operations/west-and-central-africa/document/senegal-plan-de-travail-humanitaire-2018>)

<sup>5</sup> Available on <http://www.who.int/ihr/publications/WHO-WHE-CPI-2017.31/fr/>

The Sahel plus Group is a regional coordination platform and working group of ten Red-Cross/Red-Crescent national societies in the Sahel region<sup>6</sup>. In its last General Assembly<sup>7</sup>, Sahel Plus committed to strengthen Community Based Surveillance, in order to improve early warning mechanisms.

The **Cadre Harmonisé**<sup>8</sup> that monitors risks and vulnerabilities in the Sahel region<sup>9</sup> routinely calls upon improved community-based data collection systems in the Sahel.

At the last Council of Delegates meeting<sup>10</sup>, the **RC Movement**, adopted a Resolution<sup>11</sup> “*Working towards an International Red Cross and Red Crescent Movement approach to epidemics and pandemics*”. It

1. *requests* that Movement components plan and implement a structured, comprehensive, predictable and coordinated approach to epidemic prevention, detection, response and recovery, within countries and across borders, in order to ensure the maximum impact of all investments in epidemic control and response activities;
2. *urges* the Movement components to make every effort to include hard-to-reach and underserved areas and populations in epidemic preparedness and risk management;
4. *encourages* the Movement components to build on innovative approaches to community-centric epidemic prevention and control, promoting the further development of tools, guidance and strategy to support implementation by National Societies;
5. *further encourages* the Movement components to closely cooperate with States and support them in intensifying their efforts to implement the IHR, focusing in particular on building early alert and rapid response capacity in high-risk communities;
6. *requests* all Movement components to promote the ethical and secure management and dissemination of surveillance data and *highlights* the need for anonymous, untraceable, unique, yet revocable, authentication of personal data relating to affected people;
7. *expresses its support and commitment* to strengthening effective community engagement in epidemic/pandemic prevention and response.

At the scientific level, the below reference documents for Community Based Surveillance and Early Warning and Response in Health sector, constitute the academic and strategic anchorage of this project, within the wider framework of CBS developed by the RC Movement:

- International Health Regulations (2005)<sup>12</sup>
- WHO. Early detection, assessment and response to acute public health events: Implementation of early warning and response with a focus on event-based surveillance (interim version). Lyon, France: WHO, 2014
- WHO. Outbreak surveillance and response in humanitarian emergencies: WHO guidelines for EWARN implementation, 2012

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<sup>6</sup> For more information on Sahel Plus, please refer to section 4.3.2.3. O3A5: Regional coordination and integration with existing mechanisms and initiatives in the Sahel

<sup>7</sup> Praia Meeting, February 2018

<sup>8</sup> For more information on Cadre Harmonisé, please refer to <http://www.agrhymet.net/>

<sup>9</sup> As an example, their last regional analysis and projections ins available on <https://chanalysis.wixsite.com/ch-analysis-nov17>

<sup>10</sup> Antalya, Turkey, November 2017

<sup>11</sup> Resolution CD/17/R8

<sup>12</sup> Available on: <http://www.who.int/ihr/publications/9789241580496/en/>

- Curry D BFCEAP. Reaching beyond the health post: Community-based surveillance for polio eradication. *Development in Practice* 2013; 23(1): 69-78
- IFRC. Community-based surveillance: guiding principles. Geneva, Switzerland: International Federation of the Red Cross and Red Crescent Societies, 2017 (See Annex 1)
- Africa; WROF. Community-based surveillance (CBS): Training manual. Brazzaville, Republic of Congo: WHO Regional Office for Africa; 2017
- Ratnayake R, Crowe SJ, Jasperse J, et al. Assessment of Community Event-Based Surveillance for Ebola Virus Disease, Sierra Leone, 2015. *Emerging Infectious Disease* 2016; 22(8): 1431-7
- Kongelf A, A; McClelland, A.L.; Jean, M.C.; Dalziel, B.D. Community-based cholera surveillance by volunteers with mobile phones: A case study from Western Area, Haiti. International Meeting on Emerging Diseases and Surveillance. Vienna, Austria: International Society for Infectious Diseases; 2016
- Stone E, Miller L, Jasperse J, et al. Community Event-Based Surveillance for Ebola Virus Disease in Sierra Leone: Implementation of a National-Level System During a Crisis. *Plos Current* 2016
- Crowe S, Hertz D, Maenner M, et al. A plan for community event-based surveillance to reduce Ebola transmission - Sierra Leone, 2014-2015. *Morbidity and mortality weekly report* 2015; 64(3): 70-3
- Larsen, TM, Red Cross volunteers' experience with a mobile community event- based surveillance (CEBS) system in Sierra Leone during-and after the Ebola outbreak- A qualitative study
- Ratnayake R. Assessment of community event-based surveillance for Ebola Virus Disease, Sierra Leone, 2015 *Emerging Infectious Diseases* 22: 8.2016
- Global health security agenda (GHSA); Action package 2&3: Real time surveillance<sup>13</sup>

**2.2 Please summarise the results of the assessment (if necessary, append a comprehensive report) by establishing a link to the action**

There is a consensus across the board, amongst all stakeholders, on the need to strengthen the early warning and early action systems in order to detect, report, and respond to emergencies as early as possible, thus mitigating its humanitarian impact.

This need is even greater in emergency situations where population often moves into areas where there is no existing health early warning system, such as in a newly created refugee camp.

In several countries, including in the Sahel, there are significant gaps in surveillance. These gaps hamper the timely detection and thus reporting and response to outbreaks. Within this context, community based surveillance (CBS) systems are identified as an effective way to bridge the surveillance gaps. CBS can help countries to fill gaps in surveillance systems and trigger early warnings of epidemics, particularly in areas where much of the population does not have access to health facilities or where health-seeking behaviour is not extensive.

**For a quick overview of CBS, please watch this 90 seconds video by the IFRC and NorCross on: <https://www.youtube.com/watch?v=pXkXyb6xTdE>**

<sup>13</sup> Available on: <https://www.ghsagenda.org/packages/d2-3-real-time-surveillance>

## What is CBS?

### CBS IFRC definition:

“Community-based surveillance (CBS) is a whole of society, all-hazard surveillance approach that improves the capacity of a country to rapidly detect, report and respond to infectious diseases. It addresses public health challenges of detecting outbreaks of disease in remote locations that may be beyond the reach of traditional surveillance systems, and engages the community in responding to infectious disease threats. CBS acts as an adjunct to existing surveillance systems rather than replacing such systems, and helps countries to meet their core public health capacities required under the International Health Regulations (2005).”

CBS is a simple, adaptable and low-cost public health initiative that is managed by local communities to protect local communities. CBS is a simplified way of using available mobile technology to monitor ‘unusual events’ at the community level, and acts as a proxy for formal community health surveillance<sup>14</sup>.

CBS is the **organized and rapid capture of information from the community** about events that are a potential risk to public health. CBS has been identified as a surveillance tool that has potential to improve early case detection of infectious diseases such as plague, diarrheal diseases and malaria, and reduce transmission in the community by enabling early response efforts.

CBS is a supplementary system that aims to bridge gaps in formal surveillance systems. It acts as an adjunct to these systems and does not replace them.

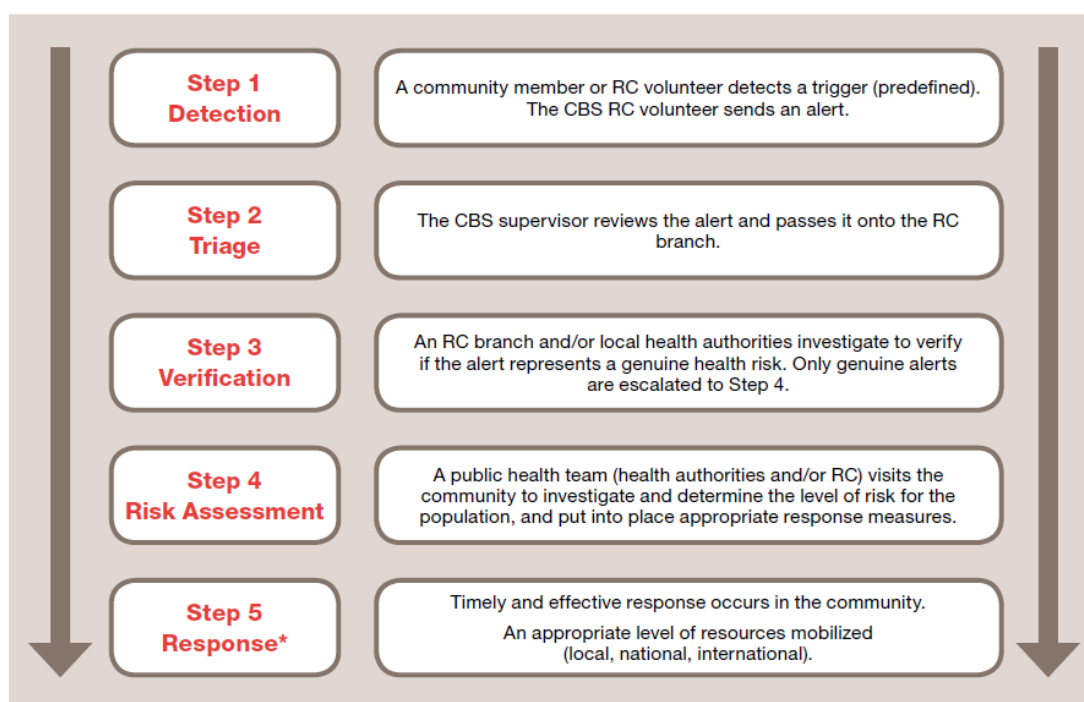
CBS is the early detection arm of the response system for health emergencies. By providing **real-time community based monitoring and reporting**, CBS can detect the first suggestion of a looming health emergency, or provide active, real-time disease monitoring during public health emergencies. It widens the surveillance net to reach communities, or provides a surveillance system where none previously existed. This captures health events that are not collected by health facilities. Real-time reporting generates a more rapid investigation and response than is feasible using traditional surveillance methods. Many outbreaks begin with a cluster of unwell people, or sudden deaths in a community, that is not detected early enough by traditional surveillance systems. Often the community is aware of the health threat but the people who can mobilize response resources receive this information too late to limit the spread of a disease and save as many lives as possible.

CBS is also very appropriate in large scale emergencies such as large population movement or large scale disasters. In some situations, established surveillance systems do not exist, as it is currently the case in Cox Bazar camps in Bangladesh. In other situations, existing surveillance systems are disabled by the disaster as it was the case in Haiti earthquake in 2010.

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<sup>14</sup> Within the framework of this project, CBS will focus solely on Health issues. However, at a later stage, the Consortium with other RC Movement partners will seek to expand CBS to other humanitarian fields such as Food Security, Disaster Risk Reduction, etc.



**Figure 2: The five key CBS steps**

Community led response is effective in controlling disease threats if **communities are involved in the planning, implementation and evaluation of public health programmes**. Ensuring communities are health literate, have effective communication channels to health authorities, and are empowered to take action when a threat is detected, ensures rapid and localised response, often before a significant scale of outbreak has occurred. The use of technology to support communities in establishing surveillance networks provides opportunities to engage them in the early detection, investigation and response to public health threats.

### Why is CBS important, at all?

First, in an emergency context, whether sudden onset or protracted crisis, people's vulnerabilities to health risks are increased. Management of these risks, including early identification and action (prevention, preparedness, mitigation and response), is fundamental to reduce the impact of the emergency, and prevent excess morbidity and mortality. CBS offers an effective way to manage these risks by enabling local actors to detect, report and respond.

Second, in complex crisis, national surveillance systems are often severely tested, especially in low-resources, remote communities. The outcome is delayed information, which in turn hinders the response, thus compounding the humanitarian consequences.

CBS is of crucial value in both the above situations as it can temporarily replace a non-functioning surveillance system, or it can strengthen an existing national disease surveillance system to ensure **early detection** and **early response**.

CBS empowers local communities to voice their concerns and local actors to respond.

### Why is the Red Cross interested by CBS?

The International Red Cross and Red Crescent Movement (RC Movement) is the largest volunteer organisation in the world with **17 million active volunteers**. Each of these volunteers is embedded in his/her community, and thus ideally positioned to detect, report and respond, if provided with the appropriate tools and skills. The reach and coverage of RC National Societies and their volunteers



mean that early detection of health threats can occur where existing traditional facility-based systems may not be able to reach, or which may not be sensitive enough to detect small changes. 109 RC National Societies (NS) have already implemented community-based health and first aid programmes in their countries relying on their volunteers' network, to support emerging or recurring public health threats (such as epidemics) among their target populations. CBS builds on RC Movement expertise with Rapid Mobile Phone (RAMP) based activities<sup>15</sup> and complements many existing programmes, such as the Community Early Warning Systems (CEWS)<sup>16</sup>, Community-Based Health and First Aid (CBHFA)<sup>17</sup> and Epidemic Control for Volunteers (ECV)<sup>18</sup>. CBS makes it possible for RC volunteers to bolster surveillance within their communities in coordination with local and national health services.

### **How does CBS work in the field?**

RC volunteers are trained to identify 'trigger events' which could include unusual high rates of sickness or an unusual death in the community. Alternatively, the volunteers can be trained in identifying specific traits of an epidemic disease that is of risk in a given area.

These 'trigger events' are tailored to different environments depending on what health risks (e.g. acute watery diarrhea) are being monitored. Once a trigger is identified, the volunteer will immediately send a text with predefined numeric codes to a central database. The numeric codes are related to specific 'event triggers'. The software program will translate and structure the input from volunteers and present the data on a dashboard that can be accessible for relevant stakeholders and key decision-makers. This happens in real time ensuring that a swift response can be initiated to the health threat.

CBS empowers trained RC volunteers to report events in the community where they live using a mobile phone or other form of communication. CBS simply provides a structure to help organise the information communities already have and ensure this information is communicated to the RC and relevant authorities in real-time, thus, triggering an appropriate and swift response.

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<sup>15</sup> For more on RAMP, please refer to: <http://www.ifrc.org/ramp>

<sup>16</sup> For more on CEWS, please refer to: <http://www.ifrc.org/PageFiles/103323/1227800-IFRC-CEWS-Guiding-Principles-EN.pdf>

<sup>17</sup> For more on CBHFA, please refer to: <http://www.ifrc.org/what-we-do/health/cbhfa/toolkit/>

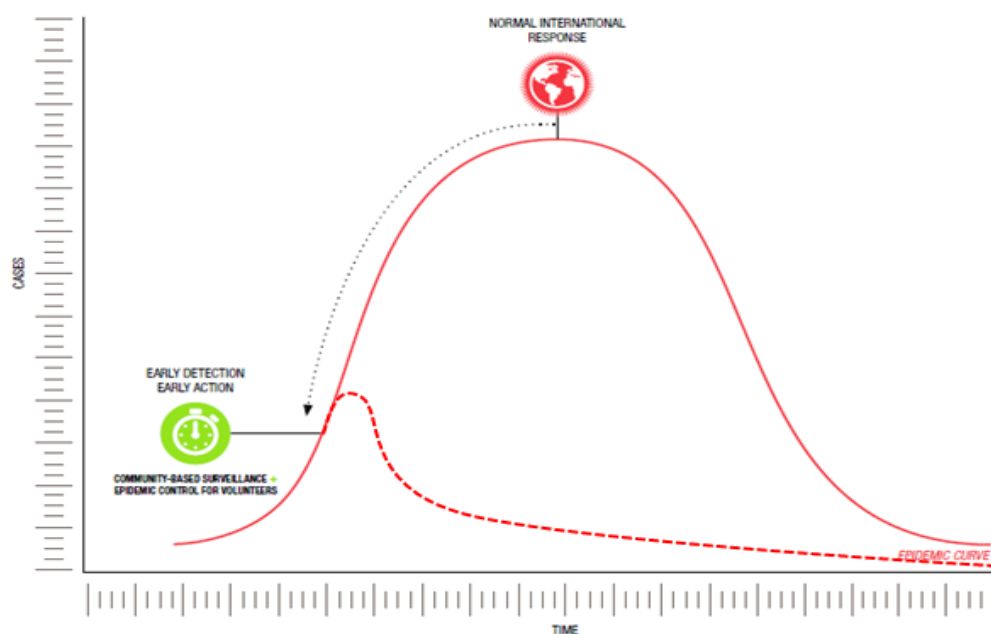
<sup>18</sup> For more on ECV, please refer to: <http://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2017/10/ECV-CP3-1-pager.pdf>

The figure below illustrates the impact of a real-time early warning and early response system in case of an epidemic outbreak.

Figure 1: Impact of early warning, early response systems on outbreak of epidemic diseases

Community-based Surveillance (CBS)

### Localized response early in outbreak



### Do we have field examples of this?

The RC Movement has been developing, piloting and prototyping CBS for five years<sup>19</sup>. Here are the main milestones of this ongoing journey of progress:

#### **July 2012: Cholera outbreak in Sierra Leone**

Sierra Leone experienced its worst cholera outbreak in 15 years, with more than 22 000 people infected. Cholera is an acute diarrhoeal disease that could kill within hours if left untreated. The RC Movement scramble to respond.

#### **August 2012: RC sets-up 400 cholera first aid points**

Sierra Leone Red Cross established 400 cholera first aid posts in rural communities, treating 95% of people with diarrhoea in their communities. Phone calls between RC volunteers and HQ ensured the daily data flow needed for the epidemic response. An idea was born: we need community based surveillance to inform operations and response.

#### **October 2013: The Haiti Cholera outbreak persists**

The Haiti Cholera outbreak that had increased in December 2012 due to Hurricane Sandy persists. The ongoing response is clearly not enough. The Red Cross continues its cholera prevention and response in rural and urban communities, and starts planning for the first pilot of community based surveillance in hard-to-reach communities.

<sup>19</sup> For more details, see Annex 2 - History of Red Cross CBS Project

### **March 2014, Haiti, the first CBS pilot**

The first CBS pilot<sup>20</sup> in Petit Goave and Grand Goave, Haiti: Community based volunteers are trained to provide first aid (rehydration) to people with acute watery diarrhea, and equipped with basic mobile phones to detect and report acute watery diarrhea cases by SMS. Several cholera outbreaks were detected and responded to throughout the project period, thus strengthening our belief in the CBS methodology: we had a proof of concept.

### **March, 15 2014: Ebola outbreak hits West Africa**

When the Ebola outbreak hit West Africa in 2014, it became even more evident that a functional surveillance system that extended beyond health clinics, and that engaged communities to be part of the solution to stop the spread of disease was crucial. Since disease outbreaks start and stop in communities, the most acute need was to identify, isolate and treat sick people as early as possible.

### **January 5, 2015: Sierra Leone: Setting up an integrated CBS project in 3 districts**

Sierra Leone Red Cross and the IFRC set up an integrated CBS project in 3 districts, aiming at early detection of suspected Ebola, Measles, and Cholera, in addition to floods and wildfire. Integrated programs may have bigger positive impact than only addressing one stand-alone risk. More than 2200 volunteers contributed to the CBS system<sup>21</sup>- demonstrating the scale-up potential of the CBS system and the suitability of the method in addressing various community risks.

### **May, 2016: Detecting and stopping spread of Plague in Madagascar**

Malagasy Red Cross volunteers address risks related to poor hygiene and sanitation, as well as plague outbreaks. They work with communities to report suspected plague cases by SMS, which includes warning signs of animal die-offs and community deaths. The ongoing work on CBS in Madagascar has demonstrated the need to leverage technology for streamlining data management processes and enable decision making based on real-time data.

## **Why do we need further development of the CBS App?**

### **Box 1: CBS App**

The CBS App (Application) refers to the technological software components that make up the CBS system. The CBS system consists of the technological and methodological components that enable an early warning, early response approach to monitoring potential epidemic disease outbreaks. The CBS App is not a mobile app you download on your smartphone. It is a combination of several software programs that allow to send, receive and process large number of SMS. For more information on the CBS App, see section 2.3.1, CBS System.

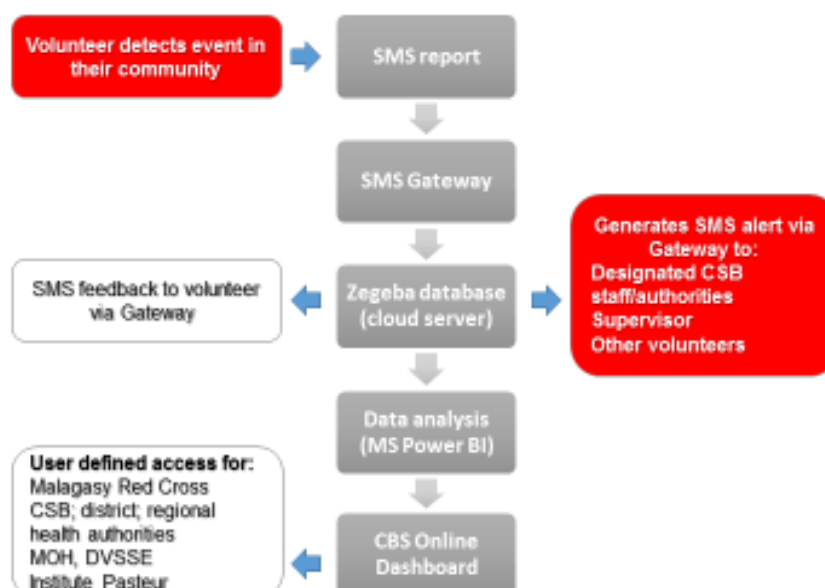
<sup>20</sup> For more on this first CBS pilot by the Red cross, please refer to: [https://www.ijidonline.com/article/S1201-9712\(16\)31507-7/fulltext](https://www.ijidonline.com/article/S1201-9712(16)31507-7/fulltext)

<sup>21</sup> For more information on this first integrated CBS project, please refer to: [https://www.ijidonline.com/article/S1201-9712\(16\)31508-9/fulltext?code=ijid-site](https://www.ijidonline.com/article/S1201-9712(16)31508-9/fulltext?code=ijid-site)

## CBS version 1.0

As shown above, the CBS pilots in Haiti and Sierra allowed the Version 1.0 of the CBS to reach the proof of concept threshold. As the number of users increased, more components of the system needed to be automated. CBS can work with volunteers texting in incidents of possible disease outbreaks to a centralized body who manually records each incident. But this model collapses when the volume of data collectors and reports of incidents increase. Thus, in Madagascar, Zegeba, a mobile data collection platform, was utilized by volunteers to report on possible disease outbreaks and Microsoft Power BI was used as a business intelligence tool to analyse and map the reports to make actionable and operational data for decision-makers and responders. This was CBS version 1.0.

Figure 2: Simplified CBS data flow and structure of CBS version 1.0 that was piloted in Madagascar



## The need for a CBS version 2.0

Based on Haiti and Sierra Leone experience, the proof of concept, demonstrated the indisputable humanitarian added value of a technological tool for community-based early warning and early response system. However, the Madagascar experience allowed for an additional and crucial learning: In Madagascar, the Red Cross relied on commercially available digital tools<sup>22</sup>. This is the so-called “off the shelf”<sup>23</sup> solutions. This model proved very challenging in terms of licensing, user rights, costs and scalability<sup>24</sup>. Essentially, the off the shelf model as used in Madagascar made

<sup>22</sup> In Madagascar, Zegeba, a mobile data collection platform, was used by volunteers to report and Microsoft Power BI was used as a business intelligence tool to analyze and map the reports.

<sup>23</sup> For more details on off the shelf and open source, please refer to Box 2

<sup>24</sup> For more details on the technical and financial challenges, see Annex 3

scaling impossible or at least unsustainably expensive, due to licensing, user rights and other issues. In addition, data protection issues were looming in the horizon. Scaling is where innovation meets impact. Innovation without scalability remains of limited impact. In very practical terms a CBS App that is not scalable will be of very little use in large humanitarian contexts. Thus, it was, and remains, critical that the CBS App is built for scalability, if we want it to have a significant humanitarian impact.

### Box 2: 'Off the shelf' and Open source

'**Off the shelf**' solutions refer to technology solutions that are readily available to utilize, meaning they do not require any further software development. They can be open-source meaning the user could copy or download the code-base for free. **Open source** means that the creator of the code has licensed it so that other users can utilize it free of charge. There are different types of open-source licenses which detail the terms and conditions of re-using the code. Open source solutions do however demand that the user themselves hosts and maintains the code which makes up the software solution. Alternatively, the user could hire a professional vendor to host and maintain it for them. If the 'off-the-shelf' solution is **proprietary**, it means a company owns the solution and the user must purchase a license to use it.

Following the Madagascar lessons learned exercise, we have identified four guiding principles for the CBS App to meet the scalability requirements as well as the functional and non-functional requirements of its users<sup>25</sup>.

- **Scalability:** there can be no limit on the number of countries and number of users using CBS at the same time.
- **User friendliness and interactivity:** CBS must be easy to set up and easy to use by all users and enable easy communication and relevant feedback among and to all users.
- **Global access:** use of CBS cannot be limited by licensing or cost. It must be made available to all 190 Red Cross National Societies. In addition, any humanitarian actor outside RC Movement should be able to take the source code, build and deploy the App, freely.
- **Real time:** CBS is built for real time data collection, decision-making and early response.

After defining the CBS App guiding principles, we engaged in extensive research and engagement with tech organisation to identify the solution that would allow to meet the guiding principles and thus build CBS App, version 2.0. Software solutions that were reviewed can be found in section 2.3.3. None of the 'off the shelf' solutions we identified met the functional requirements of the system users or the non-functional requirements in terms of scalability and global access. Therefore, the RC decided to build an open source CBS App that would cater for the guiding principles and the identified requirements, including the key issue of scalability.

### The current project: Develop, Test and Prepare for Scaling an Open source CBS App

CBS version 2.0 is built using a lean software development model which aims to test the core and most essential features of the software solution as quickly as possible. To do this, a minimum viable product (MVP) is the first milestone in the development of the CBS App version 2.0. The MVP will be tested locally in the field to assess the system architecture's compatibility with the guiding principles, and functional and non-functional requirements. As detailed in section 2.3.2, the CBS App is currently approaching the first milestone, an MVP, which will be field tested in May 2018.

<sup>25</sup> For more details, see Annex 3 - Functional Requirements for more details on the systems functional and non-functional requirements.

**Although the Red Cross has made good progress in developing the CBS App version 2.0, there still remains a lot of work to be done both in the development phase and implementation and maintenance phase. This is scope of the present project.**

To date, the CBS App has developed a prototype of three of the five key functionalities (technically called ‘bounded contexts’) it will require to meet all the functional needs of its users (please see *Annex 3 - Functional Requirements for for detailed information*). The three functionalities that have been developed is what composes the MVP, and is what will be tested during the first pilot in May 2018. A key outcome of this project will be to **build the remaining functionalities and integrate them with the MVP, conduct ongoing testing in the field, and have a CBS App that can meet the humanitarian health needs related to epidemic disease outbreaks ready and implemented in Senegal**. The continued testing and adding of new functionalities will prepare the CBS App for scaling both within health but also for other use cases such as monitoring of food security or disaster risk reduction (see *section 2.3.1 for more information on how the CBS App is built for scaling*). However, the present project focuses specifically on developing, testing and preparing for scaling of the CBS App in the field of Health early warning, early response of potential epidemic disease outbreaks.

### **Box 3: Total Cost of Ownership (TCO)**

TCO refers to costs related to developing and maintaining a software solution. The initial development costs where the solution is conceptualized, prototyped and piloted is a major cost. For the CBS App these costs will be covered by the present project.

In addition to these initial costs, TCO includes ongoing costs related to maintenance, hosting and contextualizing the system to new environments (both technical and geographical). In an off the shelf solution these costs are paid for through licensing agreements.

Developing an open source CBS App requires us to secure the necessary resources to cover these maintenance costs, particularly for the first sets of launches, where problems with the system will most likely occur and debugging and refinement of the system will be needed. The Consortium will explore revenue models that can sustainably accommodate these hosting and maintenance costs (*see section 5.1 for more information on how the CBS project is working to establish sustainable revenue models*).

### **Why is the test focused on Senegal and the preparation for scaling on the Sahel?**

Regular field testing and parallel development and implementation is the methodology adopted to improve the CBS App. A first field test will be organised in 2018 in Somaliland<sup>26</sup>. Within the framework of this project, the Consortium selected Senegal<sup>27</sup> as a second country for testing the CBS App, within the framework of Outcome 2.

Senegal has been selected by the Consortium for the following reasons:

<sup>26</sup> The field test in Somaliland is not funded within the framework of this project. While financially and operationally separated from this project, the testing in Somaliland will be totally integrated in the learning process of this project. All lessons learned in Somaliland will feed into this project.

<sup>27</sup> Please refer to *section 4.1. Exact location of the action* for more details



- The humanitarian need in Senegal for a CBS App in the field of health is recognised by all major humanitarian actors<sup>28</sup> and confirmed by the BRC, through its ongoing and continuous presence in-country.
- The Senegal Red Cross as well as other stakeholders such as the Ministry of Health have expressed a commitment to embark on CBS in the country.
- At a regional level, the testing of the CBS App in Senegal will lay the groundwork for the scale-up of the CBS App in the Sahel region.
- The preparation for the scale-up in the Sahel region is the third outcome of this project. By selecting Senegal as the country for testing, the Consortium has strengthened the operational coherence of the project by regionally and linguistically linking Outcome 2 (testing) and Outcome 3 (Preparation for scaling up in the Sahel).
- In addition, Senegal is the natural location for most region-wide Sahel initiatives.

The Consortium has selected the Sahel region for Outcome 3 (Preparation for scaling up) for the following reasons:

- The chronically acute humanitarian needs in the area beyond dispute, recognised by all humanitarian stakeholders<sup>29</sup> and confirmed by the Consortium ongoing and long-standing presence in this region.
- In addition to severe humanitarian needs, there is a specific need to strengthen early warning, early response systems in the field of Health. For example, in its 2018 Sahel HIP, DG ECHO recommends *“to strengthen the national and local capacities in terms of analysis, preparedness, and response, in particular with functional early warning systems, and shock-responsive services in the domains of health”*.
- The Group Sahel Plus<sup>30</sup> has repeatedly expressed its commitment to strengthen Community Based Surveillance, in order to improve early warning mechanisms<sup>31</sup>.
- Finally, the Consortium has a long-standing presence in the Sahel region that will be maintained for the foreseeable future. The Consortium is committed to support the scaling-up of the CBS App in the Sahel beyond the scope of this project.

### **The budget impact: Not a cost increase but a different budget structure**

As outlined above, the Red Cross decided after thorough consultation to develop an open source CBS App that will be available to all humanitarian actors, and not to purchase an off-the-shelf App. This choice has a budgetary impact not so much on the budget levels but more on the budget structure. Overall, the cost for developing an open source App is close to the one needed for purchasing an off the shelf App, if we factor in recurrent licensing fees and the need to renew purchase, for each and every operation or country. So the point is not about additional costs. It is the structure of the required budget to build an Open source CBS App that is unusual for humanitarian donors. Indeed, **developing an Open source CBS App requires important budget allocation to human resources**, in several locations across the globe. Obviously, to develop an App, we need to mobilise a community of volunteer developers to build it and test it. This project is labour intensive and this is reflected in its budget.

<sup>28</sup> Including, inter alia, HIP ECHO 2018 for Sahel, UN Senegal humanitarian response plan, WHO Evaluation externe conjointe des principales capacités RSI de la République du Sénégal. For a more complete list and references, please refer to section 2.1

<sup>29</sup> For an overview of humanitarian needs in the Sahel, please refer to: <https://www.unocha.org/legacy/sahel>

<sup>30</sup> For more information on Sahel Plus, please refer to section 4.3.2.3. O3A5- Regional coordination and integration with existing mechanisms and initiatives in the Sahel

<sup>31</sup> As outlined in Annex 4A and 4B



Human resources costs are often frowned upon by humanitarian donors. For this project, other donors, such as the Norwegian MFA, showed understanding regarding its budget structure. The DGD has a strong commitment to humanitarian innovation, as shown in this call for proposal. The BRC has gratefully benefited from this commitment, notably, through the funding of another innovative initiative, the Forecast Based Financing in the Sahel. We trust and believe that the DGD will see the value of this project, beyond its budget structure.

### 2.3 *Please provide a contextual analysis of the innovative technologies, tools or processes targeted in this project*

#### 2.3.1. The main humanitarian gap your project is trying to fill, the challenge or opportunity it addresses.

The CBS App will address the need for a field tested CBS App that offers the following requirements<sup>32</sup>:

- **Scalability:** there can be no limit on the number of countries and number of users using CBS at the same time.
- **User friendliness and interactivity:** CBS must be easy to set up and easy to use by all users and enable easy communication and relevant feedback among and to all users.
- **Global access:** use of CBS cannot be limited by licensing or cost. It must be made available to all 190 Red Cross National Societies. In addition, any humanitarian actor outside RC Movement should be able to take the source code, build and deploy the App, with no costs or strings attached.
- **Real time:** CBS is built for real time data collection, decision-making and early response.

Such a CBS App does not exist. Thus, this project will develop it, test it in Senegal and prepare for its scaling up in the Sahel. As seen in Haiti, Sierra Leone and Madagascar<sup>33</sup>, a CBS App allows the RC Movement, as well as other humanitarian actors<sup>34</sup>, to unleash the capacity of local actors in the field of early warning and early response.

The CBS App is essentially a localisation enabler. It strengthens the capacity of local actors, within or outside the RC Movement, to detect, report and respond to outbreaks.

#### What does the CBS System achieve?

The CBS App enables interaction with stakeholders and a robust data collection strategy that lays the foundation for analysis, usage and reporting of the ingested data. More specifically, the CBS system supports the following requirements:

- Enable better decision making by providing **situational intelligence** of all ongoing activities, trends and events in areas of interest.
- Quality assure CBS projects through **standardisation and integrated quality assurance** of content
- Engage and **keep stakeholders informed** through a number of event-triggered, scheduled and manually triggered feedback loops by SMS.

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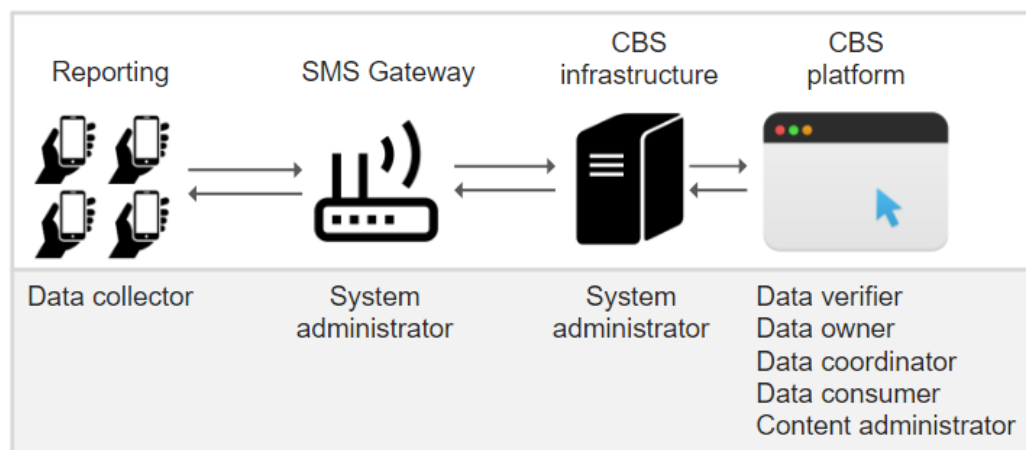
<sup>32</sup> These requirements were set according to a comprehensive combination of field experience and policy discussions. For more on this process, For more on how these requirements were identified, please refer to Section 2.2

<sup>33</sup> See Section 2.2

<sup>34</sup> The CBS App is Open source and thus, available for use by all humanitarian actors. For more information on open source, see *section 2.2, Box 2: 'Off the shelf' and Open source.*

- **Streamline response and data collection** with system supported workflows in the event of alerts.
- **Report historic and ongoing events** and trends shareable with health authorities and other relevant third parties.
- Provide **modernized and user-friendly interfaces** for data collection and configuration.
- Develop an **extensible and future-proof platform**.

Figure 1: High level data flow and roles



### Why do we need CBS in Senegal?

In Senegal, the piloting of the CBS App serves two purposes. The first is to contribute to the CBS App development (Outcome 1) and the second is to strengthen the local capacity of Senegalese Red Cross to detect, report and respond to outbreaks. The first purpose falls with the CBS App development and will not be detailed here.

As for the second outcome, it is to be noted that following the 2014 Ebola outbreak, the health surveillance systems were strengthened in Senegal and the entire Sahel. Despite these efforts, Senegal public health system still faces significant challenges, including gaps in the information systems and management of epidemics.

In 2016, the Senegal Ministry of Health and Social Action (MOH), decided that strengthening the national health information system was one of its eleven strategic orientations. In 2016, WHO<sup>35</sup> recommended to “**develop the event-based surveillance at the community level**”, to integrate community focal points and strengthen community surveillance capacities, with a particular focus on the One health approach, linking human and animal health issues.

In line with WHO recommendations, the Senegal MoH started in August 2016 implementing a pilot District Health Information system (DHIS 2), in partnership with the IT Department of the University of Oslo, Norway. DHIS is an open source software platform that enables to collect, manage and analyse health data. DHIS users are health structures at district level.

CBS will complement and strengthen the current efforts to improve health surveillance in Senegal. The wide distribution and deep penetration of Senegal Red Cross will allow surveillance data from sub-districts level to be fed into the system. In addition, the CBS App will allow to bridge possible gaps or disruption in DHIS. The CBS App will allow local actors and community members to detect,

<sup>35</sup>WHO, Evaluation externe conjointe des principales capacités RSI de la République du Sénégal. Available on: <http://www.who.int/ihr/publications/WHO-WHE-CPI-2017.31/fr/>

report and respond to outbreaks, thus strengthening the early warning and early response capacity of the entire Senegal health surveillance system. The Consortium and the Senegal Red Cross will work diligently with Senegal MoH to ensure meaningful integration of the CBS App in existing surveillance mechanisms.

### 2.3.2. The innovative nature of the project. Explain how your project supports the creation and development of new solutions in response to the problems identified above.

NorCross approached its corporate partner Microsoft Norway in early 2017 for a brainstorming session on what solution and strategy could be applied to meet the functional and non-functional requirements of the CBS App<sup>36</sup>. Members of the technical system architect team in Microsoft came with two key recommendations

- The system must be **open source** to ensure global access and enable multipartner collaboration.
- The Red Cross with its vast and prolonged experience in engaging **volunteers** should leverage this capacity in building the system.

Against this backdrop, in collaboration with Microsoft, NorCross pitched the concept at technology conference in Oslo, and the response from the tech community in Norway was very positive. After the conference, NorCross and a few key system architects from Microsoft started laying the groundwork for **building an open source CBS App using volunteer developers**. The CBS project has several highly innovative aspects; several innovations are technical and can be found in Annex 3. In addition, this projects is designed around two major innovations: the first is the **system architecture of the CBS App**, and the second is the **use of volunteer developers** for a global technology project.

#### **The open source CBS App is built for scaling**

Using an **open-source licensing model** to build the CBS App ensures that the wider humanitarian community can freely take the code and deploy it to relevant contexts and needs.

In addition, the system architecture of the CBS App using open source bounded contexts makes **scaling an intrinsic feature and opportunity**. A bounded context can be thought of as a lego piece that together with other lego pieces (bounded contexts) can create an app. The fact that each lego piece (bounded context) is independent of each other and works autonomously, enables organizations, being the Red Cross or other humanitarian actors, to tailor software solutions for different information and communication needs by adding, removing or combining the pieces together to meet the specific needs and requirements of the system. If built on the same foundation (infrastructure), the different apps (health-based CBS being one of them) could effectively inform each other which opens opportunities to seize the added value of big data and artificial intelligence. For ethical and data protection concerns, *see section 5.4*.

#### **Use of Volunteer Developers**

The new and innovative nature of the system architecture is reflected in the motivation of the volunteer developers to contribute their time and expertise to the project. When researching the motivation that drives the volunteers, it was evident that the use of event-driven microservices fascinate the volunteers and enable personal learning and technical growth.

Using volunteer developers requires a different management approach, resource capacity and timeframe compared to contracting a professional provider. Following the first rounds of development by volunteers, we found that the main drive for Digital volunteers were in addition to the innovative nature of the system architecture, two key motivational factors:

- Being a RC digital volunteer, one is part of the world's largest humanitarian organization with 190 National Societies and 17 million volunteers.

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<sup>36</sup> See section 2.2 for more details on these requirements.

- Being a RC digital volunteer, one gets a chance to help build an early warning, early response system that communicates critical information on disease outbreaks. This is a unique opportunity for developers to use their technical knowledge and skills to create systems that, ultimately, help save lives.

To rely entirely on digital volunteers to develop a humanitarian App of global ambition is unique. It is our conviction that the Red Cross is well positioned to face this challenge, thanks to its long-established capacity to harness the potential of volunteers. The work initiated by NorCross on the first stages of developing the CBS App is very promising in this field. The Consortium is very excited about the prospects of building these volunteer developers' communities and opening them to the Sahel, within the framework of this project. These communities of digital volunteers have a tremendous capacity to channel technology, creativity and energy towards seemingly insurmountable challenges in the humanitarian field.

The organisation of coding events or Codeathon is key in bringing digital volunteers on board in a very efficient manner.

#### Box 4: Codeathon

**A Codeathon** is a form of hackathon where computer programmers and others with key software development skills, including system architects, graphic designers, interface designers, project managers and more, collaborate intensively over a set period of time to work on solving a problem through creating a software solution.

NorCross organized a 48 hour intensive Codeathon<sup>37</sup> (a marathon for coding) in September 2017 to kick off the development of the CBS App. The Codeathon in September proved a great success. The event gathered over 50 developers, system architects, user interface, user experience, graphic designers and more. A second Codeathon<sup>38</sup> and five code evenings have since been organized, which in addition to individual efforts outside the code events has over the last six months produced the MVP that will be piloted in May 2018. The experience gained in organizing these code events is well documented and will help guide the scaling of the community of volunteer developers to new countries and regions. Within the framework of this project, 3 codeathons will be organised in Oslo, Brussels and Dakar.

### 2.3.3. How this project takes into account existing initiatives in the field.

#### Existing Technology Initiatives

As referenced in section 2.3.2, the CBS project arrived at an open-source software solution by doing thorough research and testing of existing 'off the shelf' solutions. From a bird's eye perspective, to test the hypothesis underlying the CBS App, two key functionalities are needed: 1) Data collection, and 2) Data analysis and visualization. A range of software solutions, both open source and proprietary, were researched and/or tested for both of the high level functionalities. For the data collection tools, this included Zegeba, Open Data Kit (ODK), Muzima, formhub, CommCareHQ, IQCare, Open MRS, OpenClinica, dhis2, MagPi, and Openrosa. For the business intelligence tools, this included QlikQ, tableau, Power BI, and salesforce. However none of these tools were able to meet the functional and non-functional requirements of the system. This included data security and privacy, cloud server location, local deployment capacity, real time, reliable and easily deployable SMS gateway, licensing costs, user needs, intellectual property, user rights, and more. In addition, extensive interviews were conducted with relevant technology experts and in lack of identifying a system that could holistically meet the needs of the users, both short term and long term, the development of the open source version 2.0 of the CBS App was initiated.

<sup>37</sup> See video here: <https://www.youtube.com/watch?v=JOeQPtFGQMw>

<sup>38</sup> See video here: <https://www.youtube.com/watch?v=HQDn8f3bDhw&t=8s>

### In Senegal

In Senegal, the use of short message service (SMS) reporting is not new. Several early warning systems use this protocol, e.g. pastoral surveillance system implemented by Action Against Hunger in the Northern Region of the country, or weather forecast and market information system for farmers, supported by USAID.

In 2018, the SRC will launch a Connectik<sup>39</sup> App. This App purpose is to communicate and mobilise volunteers, staff members and fundraising. It does not provide any support for community based surveillance. The present project will seek synergies and complementarities with Connectik. It is already agreed that resources will be pooled within SRC.

In the field of Health, the CBS App will build upon RC and health authorities existing efforts such as Community Based Health and First Aid (CBHFA) and Epidemic Control for Volunteers (ECV), two RC Movement flagship programmes in the fields of Health and Community based interventions.

- 2.4 [INT] *If changes have taken place in the needs assessment at the interim report stage, please provide information*
- 2.5 [FIN] *If changes have taken place in the needs assessment following the interim report, please provide information*

## 3. HUMANITARIAN ORGANISATION IN THE INTERVENTION AREA

- 3.1 *Presence of the humanitarian organisation in the intervention area: brief overview of the strategy and current or recent activities in the country*

**In the Sahel region, the Belgian Red Cross already works in partnership with 4 Red Cross National Societies:** Burkina Faso RC since 1998, Mali RC since 1996, Niger RC since 2012, and Senegal RC since 2017. Thanks to these solid partnerships, the BRC is **well implemented in the national and regional networks of the Sahel region**. The BRC supports 5 years community-based resilience programs implemented by these 4 partners. The BRC also implements a 2 years DRR program in Burkina Faso, Mali and Niger, building the capacities of Red Cross National Societies in Cash (Burkina Faso, Mali, Niger), Forecast Based Financing (Mali, Niger) and Early Warning Systems (Niger). During the length of this project, assessments will be conducted in these 3 countries to evaluate the needs and feasibility to extend community based health surveillance to them. In parallel, once the App will be fully operational and field tested, the BRC will encourage and promote the extension of the CBS from Health to Food security and DRR sectors.

The BRC supports the Senegalese RC since 2017, it has a permanent presence in Dakar through its Country Representative. The 5 years resilience program in Thiés and Tivaouane districts, funded by the DGD, is a community based project built on a strong volunteers' network and focusing on health and disaster risk reduction activities. **BRC presence in Dakar reinforces BRC presence in the regional coordination platforms**. One of them will specifically be empowered through this project: the Sahel Plus Group.

In 2017 after a workshop on disaster risk reduction and epidemics issues, the **Sahel Plus Group** undertook to develop a community based early warning system. Regarding limited capacity and resources issues, the RC Movement chose to focus on the community level to contribute to risk reduction. The Sahel Plus Group strategy is built on a strong commitment to integrate volunteers'

<sup>39</sup> For more information, please refer to: <https://www.connectik.com/en/>



network in surveillance mechanism to facilitate early response at a very local scale. Several members of Sahel Plus are already involved in CBS. The Guinean Red Cross has implemented a volunteer network trained to report health early warning. The Malian Red Cross is committed into the CP3 program supported by the IFRC, to strengthen community capacities to actively contribute to epidemic and pandemic preparedness.

#### Box 5: Sahel Plus Group

The Sahel plus Group is a regional coordination platform of 10 RC National Societies of the Sahel region<sup>40</sup>. These national societies decided to work together and share their experiences, lessons learned and tools and approaches on humanitarian issues. Being constant threats to the well-being of communities in the Sahel region, epidemics and food crises are the main topics discussed through this group. Strongly involved on Resilience thematic, Sahel plus Group also works on understanding the countries' resilience priorities (within the framework of the AGIR<sup>41</sup> process) and identifying the points of convergence and divergence with the axes of each National Society Strategic Plan in order to align better. (See *Annexes 4A and 4B for more details*).

As part of this project, a **consortium between the BRC and the Norwegian Red Cross** will be established and formalized in a partnership convention; the consortium will be responsible for the implementation of the project, in close collaboration with the Senegalese Red Cross (SRC) and in coordination with existing coordination platforms in the Sahel region.

The Belgian Red Cross (BRC) will partner with the Norwegian Red Cross (NorCross) to join and reinforce the ongoing project lead by the NorCross. Benefiting from the large experience and expertise of the NorCross, the BRC will contribute in **enlarging the volunteer developers' community** to Belgium and Senegal, **enhance the visibility** of the project and raise the interest for it in the capital of European Union, **bridge the ongoing project to the French speaking humanitarian community and French speaking South countries** (in particular countries from the Sahel region).

The Norwegian Red Cross is a reference organization which operates since 1865 both in Norway and overseas. **Leader in the development of CBS since the beginning**, the NorCross cumulates seven years of experience in working intensively on addressing the humanitarian needs in community based health surveillance. As such, they are the key actor to partner with for establishing a community based health surveillance system in the Sahel region. Ensuring basic needs are met and improve the health of the most vulnerable people affected by conflict and protracted crisis is a fundamental humanitarian objective of the Norwegian Red Cross, and community based surveillance is seen a core strategic innovation that will improve the RC Movement and wider humanitarian sector's ability to deliver on this humanitarian objective.

NorCross has been working in **collaboration with the Norwegian Institute of Public Health (NIPH)** on development of CBS methodology for assessment, implementation and capacity building, and benefits from the institute's expertise in field epidemiology. NIPH is the national agency responsible for IHR implementation in Norway, and thus also supporting the Global Health Security Agenda, with a specific interest in Real time surveillance. Norway is supporting Georgia in the lead of the real time surveillance action package, and where NorCross involvement in CBS development has been highlighted as an example. NIPH field epidemiologists are both part of NorCross emergency response roster, and supporting NorCross technically in CBS project assessments, implementation and evaluations. As well, NorCross with IFRC and NIPH developed

<sup>40</sup> Burkina Faso, Cap Vert, Gambie, Guinée Bissau, Guinée, Mali, Mauritanie, Niger, Tchad, Sénégal

<sup>41</sup> the Global Alliance for Resilience and the National Resilience Priorities (NRP-AGIR)

a 6 day CBS training, which is co-facilitated by NIPH epidemiologists in charge of the European Field Epidemiology Training (EPIET) to support the epidemiological capacity in the RC Movement. NorCross has a strong presence in the Africa region, where the regional office in Nairobi has dedicated CBS expertise in the team to support RC National Societies in the horn of Africa in their design and implementation of CBS. NorCross is also co-leading efforts to strengthen coordination and sharing and lessons learnt through the shared leadership group on CBS for Africa region.

### 3.2 *Ongoing actions and requests for funding submitted to other donors, in the same intervention area – please state how overlaps and double funding would be avoided*

#### **CBS additional funding through NorCross**

Community Based Surveillance is receiving funding from the Norwegian Ministry of Foreign Affairs (MFA), and Innovation Norway - an auxiliary to the Norwegian government tasked with incubating innovation in the private, public and humanitarian sector.

#### **Innovation Norway**

Funding from Innovation Norway will end in May 2018 and was primarily focused on the early stages of CBS' innovation process. This included initial activities related to developing the minimal viable product (MVP) and field testing it in selected locations. The funding covered human resources related to engaging and supporting the community of volunteer developers. A 50% position was established for this, which the project has learned is insufficient to manage a large community of volunteer developers. CBS has to date engaged over 100 different contributors. More so, especially as the use of volunteer developers is an approach the Norwegian Red Cross (NorCross) lacked experience, structures and effective support mechanisms to facilitate, a lot of resources are still needed to formalize recruitment, onboarding and retention procedures. Although the RC Movement has extensive experience in engaging volunteers, adapting existing volunteer engagement models to the needs of CBS is important. Funding from Innovation Norway also included financing coding events such as Codeathons and code-evenings, in addition to consultancies with expertise on designing the system architecture.

#### **Norwegian Ministry of Foreign Affairs**

The funding from Norwegian MFA to CBS is part of NorCross' framework agreement with the MFA (2018-2020). NorCross has positioned CBS as one of its core innovation projects that is being prepared for scale, meaning resources will be dedicated to implement and scale the project over a number of years (see 5.1 Sustainability for more information on funding model after end of framework agreement). The funding will primarily finance human resources, specifically a project management position in Norway, a global CBS coordinator based in Geneva (IFRC), a data protection advisor based in Geneva (IFRC), and training in and implementation of CBS in relevant National Societies. By nature of using volunteer developers, the funding is not concentrated on the development of the software application itself, but rather in support of the volunteers developing it, enhancement of the CBS methodology and implementation at scale. The funding does not cover implementation in francophone countries, which have several key country contexts where CBS can be of great added value and support to community based health programs.

The funding from Innovation Norway and the Norwegian Ministry of Foreign Affairs does not appear in the budget. The Norway MFA funding will fund positions that are not funded by the present project, as shown in section 10.1.

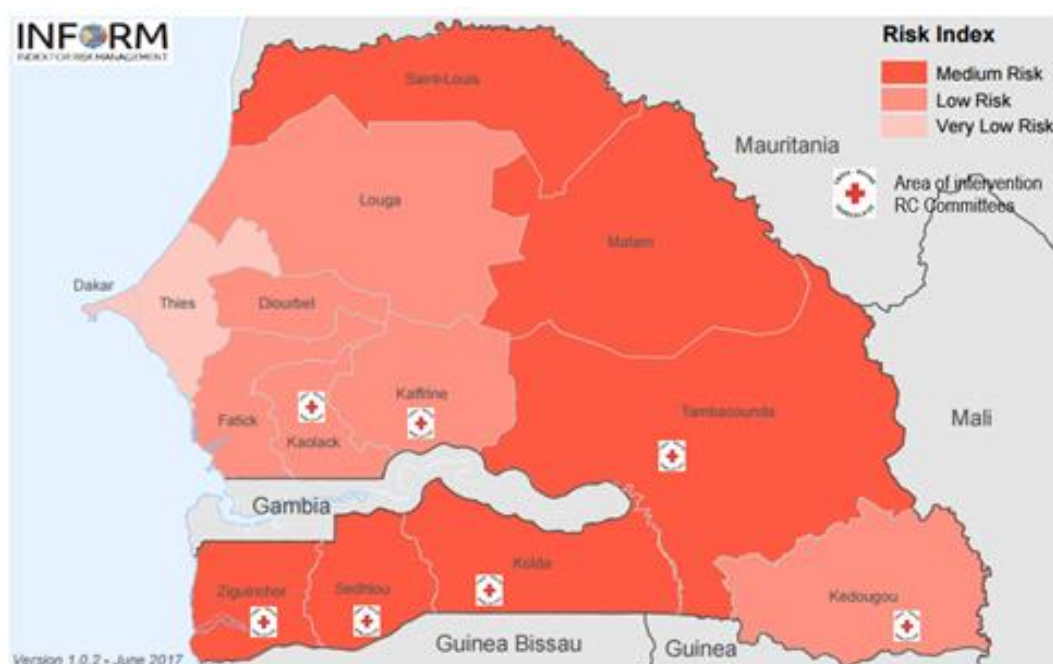


3.3 [FIN] List the other operations performed by the humanitarian organisation or its implementation partners during the same period in this intervention area and describe how the risks of double funding were avoided

#### 4. OPERATIONAL FRAMEWORK

4.1 Precise location of the action (please include a map making it possible to locate the project)

The pilot phase will be implemented in Senegal and will focus on seven regions: Kaffrine, Kaolack, Tambacounda, Kédougou, Sédhiou, Ziguinchor and Kolda Regions. These regions have been selected because they lack of a functional surveillance system and monitoring process facilities. This choice cross-checked INFORM index risk assessment<sup>42</sup> map which provides a comprehensive risk analysis including health, nutrition and disaster indicators.



The SRC chose 2 monitoring axes: Kaolack-Kaffrine-Tambacounda-Kédougou and Ziguinchor-Sédhiou-Kolda. With around 1000 km of roads to reach the most distant area in Kédougou region, the SRC needs an additional vehicle. This will facilitate the follow-up of CBS App deployment, the monitoring of trainings, the coordination between decentralised MoH regional structures, Red Cross committees, local authorities and communities, and will be useful for the assessment in remote areas. More specifically, the Kedougou region has been selected for the epidemics issues with Guinean border: this remote region is very sensitive to population mobility, with 3 borders (Mali, Guinea, Guinea Bissau) and epidemics threats linked to this particular geographical position. It has been one of the most affected region by Ebola outbreak.

SRC has ongoing community health projects and a strong experience in area of intervention. Specific epidemics preventing actions have been implemented during the Ebola crisis in partnership with the IFRC. The local RC committees are therefore experimented and reliable committees, which will facilitate this pilot phase. Moreover, volunteers of Ziguinchor, Sedhiou, Kolda and Tambacounda have been trained to disaster response protocols and first aids. SRC capacity in this

<sup>42</sup> <http://www.inform-index.org/InDepth/Methodology>

localities will facilitate the deployment of CBS App with existing connection with local health structures, authorities and their knowledge of community habits and vulnerabilities.

The Senegal location will facilitate the sharing of experiences and the communication on results of the pilot phase. The humanitarian community presence through UN regional desks and bilateral cooperation agencies acts as incubator for innovation projects. WHO and UNICEF are strongly involved in the strengthening of health system such as AFD or USAID which already fund national surveillance mechanism.

Senegal is one of the priority country of Belgian international cooperation. D4D, one of the Belgian cooperation strategic orientation, is well known by Senegalese partners; the country is also known to host a dynamic community of developers and hackers strongly committed in open source approach.

We chose to focus on Sahel region because of the huge humanitarian needs in this area. Regional provisions and response mechanism as well as national health systems are challenged by structural weakness and cyclic crisis. There are still gaps to be covered. DG ECHO and DFID have a common analysis on this gap, considering the strengthening of early warning system and rapid response as priorities to break chronic crisis.

Belgian Red Cross has solid partnerships with 4 Red Cross National Societies in the region (in Mali, Burkina, Senegal and Niger) since more than a decade. Focusing on resilience, community health activities and nutrition issues, the region is a priority for BRC.

## 4.2 *Beneficiaries*

### 4.2.1 Total number of direct beneficiaries:

Once finalized and field tested in the frame of this project, the **CBS App will benefit to the whole humanitarian community**, as it is an open source app, available for everyone who needs it. Thanks to the translation of the whole key documentation and the extension of the project to the Sahel region, the current project will specifically benefit to the French speaking humanitarian sector and to French speaking Africa.

In Senegal/Sahel:

The Senegalese Red Cross will be a direct beneficiary of the project, and specifically 25 RC local committees (district level) of 7 regions (totalising 350 RC volunteers). The deployment of the CBS App will also directly benefit to the whole Senegalese Health Information System.

### 4.2.2 Specificities of the direct beneficiaries (please specify, if possible, by referring to the groups as appropriate, e.g.: unaccompanied minors, people with disabilities, children, former combatants, etc.)

In Senegal/Sahel:

SRC will start the deployment of the CBS mechanism in areas with limited access to health information and with surveillance gaps as well as areas known for their vulnerability to epidemics threat. The direct beneficiaries of this pilot phase will be people particularly exposed to epidemics threat and/or people not being in the scope of national surveillance system.

### 4.2.3 Mechanisms and criteria for the identification of the direct beneficiaries

Not applicable

#### 4.2.4 Describe the scope of and the arrangements for the involvement of the direct beneficiaries in the development of the action

The Senegalese RC has been fully involved in the design of the project. It expressed its interest, selected the targeted zones and designed the proposed activities in Senegal. During the project, operational procedures will be defined and integrated to SRC structuration. Volunteers will play a strong role in the SOPs definition to ensure local ownership of the mechanism.

#### 4.2.5 Other potential beneficiaries (indirect, catchment, etc.)

The total population covered by this pilot phase in Senegal is 4 million people.

#### 4.2.6 Direct beneficiaries by sector (refer to “ECHO’s guidelines, Annex I”, pages 26-29: [http://ec.europa.eu/echo/about/actors/fpa\\_fr.htm](http://ec.europa.eu/echo/about/actors/fpa_fr.htm))

Not applicable

Sector: ...	Number of beneficiaries

#### 4.2.7 [INT] In the event of a change, please provide information

#### 4.2.8 [FIN] In the event of a change, please provide information

#### 4.2.9 [FIN] Estimate by type of beneficiary

Women:	... %,	Men:	(women + men total = 100 %)
Infants (aged < 5):	... %,	Children (aged < 18):	... %
		Elderly:	... %

## 4.3 Objectives, outcomes and activities

## 4.3.1 Operational overview of the action: logical framework (3 pages maximum)

Title of the action	Open source App for Community Based Surveillance by local humanitarian actors: Development, Field test and preparation for scale up			
Main objective	The local humanitarian response is faster and better tailored to needs, based on an innovative open source Community Based Surveillance system			
	Intervention logic	Objectively verifiable indicators	Verification sources	Risks and assumptions
Specific objective	Enable and improve early warning, early response for local humanitarian actors based on a global digital community based surveillance system.	<p>The information received by humanitarian actors is more relevant and efficient</p> <p>An outbreak in a Senegalese village is reported to appropriate actors and initiates an appropriate response according to SOPs.</p>	<p>Interviews and case studies on the use of data from CBS App by local responders</p> <p>Field simulation report</p> <p>Reports from CBS App accessed by verified administrators through a web portal.</p>	
Outcome 1	At the end of the project, the CBS App is developed and ready for use, free of charge, by local community-based humanitarian actors.	<p>CBS App is freely available online for use by any humanitarian actor</p> <p>Grow community of volunteer developers with 70 people.</p>	<p>Relevant documentation available through Open Access Publications</p> <p>Code base for CBS App freely available in CBS GitHub repository (<a href="https://github.com/IFRCGo/cbs">github.com/IFRCGo/cbs</a>)</p> <p>Participation lists and logs from Codeathons and code evenings.</p> <p>Contributions to Github repository</p>	<p>The volunteer developers are available, skilled and committed</p> <p>The IFRC platform to host the CBS App on a global scale is developed in a timely manner.</p>

		<p>User manual of CBS App readily available in relevant language(s)</p> <p>Technical indicators - CBS App can run (reference functional requirements):</p> <ul style="list-style-type: none"> <li>- SMS data collection</li> <li>- Registration of users</li> <li>- Capacity to export data</li> <li>- Alert functionality</li> <li>- Two-way SMS feedback</li> </ul>	<p>Reports generated by the CBS App during field implementation.</p>	
Outcome 2	<p>At the end of the project, the CBS App is deployed and field tested in 25 local communities in Senegal.</p>	<p>25 local communities in Senegal use the CBS App to detect, report and respond to health issues.</p> <p>350 SRC volunteers are trained on using the CBS App to detect, report and respond to health issues.</p>	<p>CBS App deployment report</p> <p>CBS App user and tracking logs</p> <p>Data uploaded and data flows</p> <p>CBS training reports</p> <p>Activity reports by SRC volunteers</p>	<p>The project implementation is not hindered by a degradation of the political or security situation in Senegal</p> <p>The Senegal Ministry of Health maintains its current commitment to Community-Based Surveillance</p>
Outcome 3	<p>Red Cross societies and other community based humanitarian actors active in the Sahel have all needed information and knowledge to design plans to scale-up the implementation of CBS App in Sahel countries and beyond.</p>	<p>25 staff from Sahel Plus group are trained as CBS focal points in the Sahel.</p> <p>Sahel Plus Red Cross/ Red Crescent societies governing bodies are informed about CBS and know about opportunities it represents in each respective country.</p> <p>CBS App, technical documents, training material</p>	<p>Public versions of internal reports</p> <p>Peer reviewed scientific publications</p> <p>Steering group ToR and minutes from meetings</p> <p>Training reports</p> <p>Training curriculum available in French and English</p> <p>CBS Assessment and feasibility reports for 2 NS in Sahel</p>	<p>Access to the field for assessment and research activities due to security and political issues.</p>

		<p>are available in French, online.</p> <p>Study conducted and published online for each of the 10 Sahel Plus countries on CBS including: current state of play, gaps, needs, opportunities, risks.</p> <p>Study conducted and available online on how to ensure data protection and GDPR compliance for CBS App.</p> <p>CBS Implementation in Senegal critically reviewed and analysed. Lessons learnt reports are available online.</p>	<p>ToR, PoA and meeting reports from Sahel plus and SLG HIE CBS</p>	
<p><b>Activities</b></p>	<p><b>Outcome 1. At the end of the project, the CBS App is developed and ready for use, free of charge, by local community-based humanitarian actors.</b></p> <p>O1A1. Organisation of Codeathons and code events in Oslo, Brussels and Dakar</p> <p>O1A2. Management of the volunteer developers community: mobilisation, motivation, retention; definition of policy and strategy</p> <p>O1A3. Technical development of the App</p> <p><b>Outcome 2. At the end of the project, the CBS App is deployed and field tested in 25 local communities in Senegal.</b></p> <p>O2A1. CBS SOP Development within SRC</p> <p>O2A2. Translation and online availability in French of CBS App, technical documents and training material</p> <p>O2A3. Training of SRC Staff in CBS</p> <p>O2A4: Community engagement activities</p>			

	<p>O2A5. Field simulation of outbreak O2A6. Data Dissemination</p> <p><b>Outcome 3. Red Cross societies and other local community based humanitarian actors active in the Sahel have all needed information and knowledge to design plans to scale-up the implementation of CBS App in Sahel countries and beyond.</b></p> <p>O3A1. Lessons learned, critical review of the testing in Senegal O3A2. Promotion and training on the CBS App for Sahel RC National Societies and other local humanitarian actors O3A3. Study on current state of play and way forward for CBS in each of the ten countries of Sahel Plus O3A4. Study and recommendations on CBS and data Protection O3A5: Regional coordination and integration with existing mechanisms and initiatives in the Sahel O3A6: Presentation of CBS App and outcomes of field tests outcome to main humanitarian stakeholders in Belgium</p>	
		<p><b>Prerequisites</b></p> <p>The political and security situation remains stable in Senegal and Sahel countries</p> <p>The back donors already engaged in the funding of CBS don't disengage</p>



#### 4.3.2 More detailed information per outcome

##### 4.3.2.1 **Outcome 1: At the end of the project, the CBS App is developed and ready for use, free of charge, by local community-based humanitarian actors.**

###### 4.3.2.1.1 ***At the proposal stage***

- Sectors: Disaster Risk Reduction / Health

The project will contribute to epidemics risk reduction through real time information allowing early warning and early response.

Related sub-sectors: Community and local level action; Hazard, risk analysis and early warning; Contingency planning and preparedness for response / Epidemics

- Beneficiaries (status + number)

The whole humanitarian community

- Indicators for this outcome:

**OVI 1:** CBS App is freely available online for use by any humanitarian actor.

**OVI 2:** Grow community of volunteer developers with 70 people.

**OVI 3:** User manual of CBS App readily available in relevant language(s)

**OVI 4:** Technical indicators - CBS App can run (reference functional requirements): SMS data collection; Registration of users; Capacity to export data; Alert functionality; Two-way SMS feedback

- Outcome-related activities

This specific activities related to the first outcome will be led by the NorCross due to their strong experience in CBS App development.

###### O1A1: Organisation of Codeathons and code events in Oslo, Brussels and Dakar

Organizing a Codeathon is a resource-intensive undertaking (See *section 2.3.2*). It requires logistical, financial and volunteer support. A key outcome for the project by organizing a Codeathon is to generate excitement and engagement amongst volunteers, donors and partners towards the project. Typically the Codeathon lasts for 48 hours over a period of three days. It will most likely start on Friday at 1500 and ended Sunday at 1500, to ensure volunteers don't have to take time off from work to participate. This includes costs related to renting a venue, food, snacks, refreshments, and travel for CBS staff. A Codeathon demands non-developer volunteers as well who can assist with planning, supporting and logistical concerns throughout the event. Over the three days, the volunteer developers typically spend 22 - 26 hours coding, which multiplied by 50 (which was the number who attended the first Codeathon in Oslo) amounts to over 1200 volunteer hours contributed. It is smart to partner with a corporate tech-company or tech networks who can help generate publicity, expertise and volunteers for the event. In between Codeathons, code evenings will be organized where existing volunteer developers will gather to work on the app. The consortium plans to organize Codeathons and code evenings in Oslo, and expand to Brussels to make linguistic preparations for the establishment of coding events in Dakar.

###### O1A2: Management of the volunteer developers' community: mobilisation, motivation, retention; definition of policy and strategy

Through the two Codeathons already organised in Oslo, NorCross has already recruited quite a large community of volunteer developers in Norway. The Red Cross Movement has a prolonged experience and expertise in managing volunteers, but working with volunteer developers is new for us. These specific volunteers need to be accompanied, motivated, and managed in a particular way. Hence new guidelines, policy and procedures for managing the community will be created, in order to maintain the community in Oslo and scale it to Belgium and Senegal. As the policy and guidelines will be based on learnings and experiences from managing the community in Oslo, this work will be coordinated from Oslo. The Consortium will organize Codeathons in both Belgium and Senegal and establish a community of volunteer developers in both countries. This entails that the consortium must work in close collaboration with the National Societies in Belgium and Senegal when organizing the code events, recruiting and onboarding new volunteers. The Community Support Coordinator will be responsible for developing these policies and guidelines, and contribute to growing and maintaining the communities of volunteer developers in Senegal, Belgium and Norway.

### O1A3: Technical development of the App

To manage a community of volunteer developers it is very important that the consortium has the relevant technical knowledge and capacity to provide effective guidance and support. More specifically, the consortium will need to write instructions and technical issues (what the volunteer developers will code) on GitHub<sup>43</sup> (the co-working platform the volunteer developers collaborate through). Issues will have to be created for the two remaining functionalities (bounded contexts) which will be added to the MVP (see *Section 2.2*). In addition the consortium will need to have an internal resource that can take ownership of the app's system architecture and have detailed knowledge of each functionality (bounded context) and the programming language used. This is to ensure that the consortium is well positioned to make informed decisions and evaluations on the performance and scalability of the app, and can against this background effectively engage the volunteers on a practical and technical level to maintain the system and develop new functionalities. Another important activity related to the development of the app is to map how the system can configure and integrate with other relevant systems and platforms the Red Cross Movement utilizes when aggregating data. Coordinating this activity demands a high level of technical knowledge, relevant programming languages and system architecture. The high competition for this kind of expertise may require a higher salary to be paid.

A key determinant moving into the piloting phase will be the project's ability to fix bugs / problems with the system on a continuous basis. Therefore a key activity of this outcome will be to provide timely and effective support to fix any problems that may occur when implementing the system. Long term, a tender will need to be put out to contract a professional software supplier to maintain the system once it is live and operates at scale. Short term, it is important the project has the expertise and capacity to follow up ongoing problems, especially as the system is being piloted in contexts where there is a real potential of epidemic outbreaks, meaning the MVP of the CBS App will with its core functionalities be used to convey life-saving information in real time. To manage these activities a software developer will be hired that will be based in Oslo as the app is currently hosted in Norway, and it enables close cooperation with the Project Lead, Technical Lead, the core team and the current community of volunteer developers. The software developer will under the leadership of the Technical Lead and in collaboration with the community of volunteer developers be responsible for making changes to the current bounded contexts based on feedback from the pilot, and develop the new bounded contexts that are beyond MVP.

By the end of the project period, the aforementioned activities will deliver a CBS App that is ready for use by local humanitarian actors, and have established a geographically diverse community of volunteer developers that will ensure sustainability and continuity in the

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<sup>43</sup> <https://github.com/IFRCGo/cbs>

development of additional features either for health-based CBS or new use cases such as Food Security or Disaster Risk Reduction.

#### **4.3.2.1.2 Interim report**

- Updating of the indicators
- Updating of the beneficiaries (status + number)
- Updating of the activities

#### **4.3.2.1.3 Final report**

- Indicators for the outcomes obtained
- Beneficiaries (status + number)
- Activities carried out
- Resources and related costs finally committed and incurred

#### **4.3.2.2 Outcome 2: At the end of the project, the CBS App is deployed and field tested in 25 local communities in Senegal.**

##### **4.3.2.2.1 At the proposal stage**

- Sectors: [Disaster Risk Reduction / Health](#)  
Related sub-sectors: [Community and local level action](#); [Hazard, risk analysis and early warning](#); [Contingency planning and preparedness for response / Epidemics](#)

- Beneficiaries (status + number)

The SRC, and specifically 25 RC local committees (district level) of 7 regions (350 RC volunteers)

- Indicators for this outcome:

**OVI 1.** 25 local communities in Senegal use the CBS App to detect, report and respond to health issues.

**OVI 2.** 350 SRC volunteers are trained on using the CBS App to detect, report and respond to health issues.

- Outcome-related activities

The CBS App will be implemented in 25 local committees in Senegal, spread in 7 priority regions (See map). A roll out to other regions of Senegal will be explored, based on capacity and needs. SRC will focus on the health risk identified by the MoH, including the One Health Approach.

#### O2A1: CBS SOP Development within SRC

Definition of SOP for SRC staff and volunteers engaged in CBS. Where relevant, the SOP will be consistent with existing standards and protocols in Senegal, including MoH and RC guidelines. SOP development will be technically lead by the CBS delegate and will build on the Somaliland experience. Draft SOP will be field tested and reviewed following feedback from the field.

By the end of the project, SOP will include:

- key monitoring indicators identification for surveillance regarding the most common health risk events identified;

- Data Collection process : volunteers identification and safety, Mobile phone technology, Ethical aspects, community engagement;
- CBS structuration with Health system: data dissemination and protection, information flow;
- Monitoring and evaluation process

#### O2A2: Translation and online availability in French of CBS App, technical documents and training material

For the moment, documentation, guidelines and training tools on CBS are only available in English. In order to facilitate the deployment of the App in francophone countries, all relevant documents will be identified, translated into French and posted on dedicated webpages. The translation workstream will be managed to allow living documents to be updated in real-time both in English and French.

#### O2A3: Training of SRC Staff in CBS

350 volunteers will be identified after community meetings in order to create the CBS volunteer network. Priority will be given to volunteers already involved in the community based activities such as ECV and Nutrition, Health and Hygiene Promotion (NHHP) activities. Training will be organised over four days periods for batches of 50 volunteers and MoH resource people will participate to the training to ensure consistency with MoH guidelines. Training curriculum will include Community Based Health First Aid (CBHFA) and Epidemic Control for Volunteers. Follow-up and monitoring systems will be set-up to allow monitoring, quarterly field supervision, refreshers and feedback loops to improve the training quality and relevance.

#### O2A4: Community engagement activities

Community meetings will be conducted in the target areas, where community prevention, mitigation and response strategies will be identified, and acceptance for CBS will be sought. If there are no active SRC volunteer in the area, the community will nominate a community member to undertake the CBS reporting. Ideally detection and response will be linked with the existing community health committee. The volunteers will be trained to detect the prioritised diseases/events by applying simple community case definitions; take the first course of action (first aid and infection prevention and control measures); start prevention activities in the community; and report the event in the CBS platform. CBS will aim to always enable early response; local, community based response to the first cases will eliminate the need for any regional or national response, if cases or events are detected early.

To foster community participation, SRC will explain to the community why it is important to have a surveillance and response plan in place even when there is no outbreak. This will be explained at the regional level to the Regional Branch Committees (President, Focal Points and Volunteer Supervisors), to the Regional Health Office and Regional authority. At the community level, SRC will communicate at their classic stakeholders and counterparts: Traditional and religious Chiefs, Elders, Teachers and motherhood local clubs.

#### O2A5: Field simulation of outbreak

As relevant, simulations will be conducted for training and testing purposes. In addition, simulation will allow to benchmark detection, reporting and response time. Simulations will be scenario based and carried out in selected regions. Simulation exercises will be publicized, for awareness raising purposes and visibility.

#### O2A6: Data collection and dissemination

The project aims to collect data through SMS system. The SRC CBS Data Manager and other authorized individuals will have login rights for the CBS system where all data sent via the system will aggregate and stored. The volunteers will also report when there are no cases: Zero-reporting.

Graphs, Tables and Maps will be used to display the analyzed data. The CBS data manager will extract the analyzed information from the system for reporting and action. This information will be passed onto the volunteers who will then report back to communities. The outputs will be displayed on the SRCS CBS dashboard where the partners can easily view. The data manager will update the dashboard on a daily basis. The national or regional health coordinator will share the data received with Ministry of Health and other partners based on the agreed coordination mechanism define in the SOP.

Data flow charts will be designed, in discussion with all relevant stakeholders, in line with SOP drafting. Below is an example of data dissemination process and recipients.

Information (What)	Audience	When	How
Confirmed cases	Community	Immediately with caution	Community meetings, emails, phone calls, media
Confirmed cases	Volunteers	Immediately with caution	Community meetings, emails, phone calls, media
Suspected cases/Alerts on the trends, response and actions taken	MoH	Daily basis, MoH meetings	Emails and in person meetings
Report on event trends, population affected by age, gender and location. Action taken when it's an outbreak	SRCS Branches and volunteers at community level	Immediately, daily, weekly basis, monthly depending on the situation	Reports, meetings

#### 4.3.2.2 Interim report

- Updating of the indicators
- Updating of the beneficiaries (status + number)
- Updating of the activities

#### 4.3.2.3 Final report

- Indicators for the outcomes obtained
- Beneficiaries (status + number)
- Activities carried out

**4.3.2.3 Outcome 3: Red Cross societies and other community based humanitarian actors active in the Sahel have all needed information and knowledge to design plans to scale-up the implementation of CBS App in Sahel countries and beyond.**

#### 4.3.2.3.1 *At the proposal stage*

- Sector: Disaster Risk Reduction / Health  
Related sub-sector: Community and local level action; Hazard, risk analysis and early warning; Contingency planning and preparedness for response / Epidemics

- Beneficiaries (status + number)

Countries of the Sahel Region

- Indicators for this outcome:

**OVI 1:** 25 staff from Sahel Plus group are trained as CBS focal points in the Sahel.

**OVI 2:** Sahel Plus Red Cross/ Red Crescent societies governing bodies are informed about CBS and know about opportunities it represents in each respective country.

**OVI 3:** CBS App, technical documents, training material are available in French, online.

**OVI 4:** Study conducted and published online for each of the 10 Sahel Plus countries on CBS including: current state of play, gaps, needs, opportunities, risks.

**OVI 5:** Study conducted and available online on how to ensure data protection and GDPR compliance for CBS App.

**OVI 6:** CBS Implementation in Senegal critically reviewed and analysed. Lessons learnt reports are available online.

- Outcome-related activities

Red Cross societies and other local community based humanitarian actors active in the Sahel have all needed information and knowledge to design plans to scale-up the implementation of CBS App in Sahel countries and beyond.

This outcome aims at preparing for scaling up of the CBS App beyond Senegal. As outlined above, a key feature of the present project is the fact that the CBS App is designed for scale up. It is designed and will be developed in a way that allows for it to be used by multiple local humanitarian actors. In order to prepare for a wider use of the CBS App in the Sahel, the activities implemented within the framework of this outcome will lay the groundwork to facilitate the scaling up of the CBS App in the Sahel.

O3A1: Lessons learned, critical review of the testing in Senegal: The CBS App implementation in Senegal will be analysed and critically reviewed. All the tools, procedures, reports, and other data will be scientifically and critically reviewed by a partner academic institution. Preliminary contacts are ongoing with the Institut Pasteur<sup>44</sup> in Dakar and the Institute for Tropical Medicine in Antwerp<sup>45</sup>. The documentation of the testing, with a focus on lessons learned, will be posted online, freely available to all humanitarian actors interested in using the CBS App. If possible, peer-reviewed articles will be published. In addition to the obvious importance of documenting the field testing, the availability of data in French will facilitate the scale up of the CBS App in the Sahel, and other French-speaking countries (see O2A2).

O3A2: Promotion and training on the CBS App for Sahel RC National Societies and other local humanitarian actors:

A series of workshops and trainings will target local humanitarian organisations in the Sahel, with a focus on the RC National Societies. They will fall within three types of activities:

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<sup>44</sup> Institut Pasteur in Dakar is a key actor of the national surveillance mechanism in Senegal. For more on its role, visit <http://www.pasteur.sn/recherche-et-sante-publique/>

<sup>45</sup> The Institute for Tropical Medicine in Antwerp has a partnership with Dakar University. For more on the Institute, visit: [https://pure.itg.be/nl/organisations/gezondheidssystemen\(fe1fd31b-007f-491e-8085-2c48599a0b6c\).html](https://pure.itg.be/nl/organisations/gezondheidssystemen(fe1fd31b-007f-491e-8085-2c48599a0b6c).html)



A) Workshops to improve decision-makers' understanding of CBS and the institutional requirement for CBS to be operational in their context and develop a governance structure to lead the extension of the CBS App to Sahel countries, at policy level.

B) Training to build the capacity of local field practitioners to use the CBS App, at field level.

C) Regional training addressed to 30 key employees of RC national societies in the Sahel region.

O3A3: Study on current state of play and way forward for CBS in each of the ten countries of Sahel Plus Group: Publication online of approx 10 pages study on current state of play, gaps, needs, opportunities and risks on availability of Data and analysis for early warning and early response in each country of Sahel Plus Group. The main purpose is to avoid duplication with existing systems and identify possible gaps that CBS could address, including synergies. The publication process will start with a Regional workshop that will agree on a unified methodology and framework for the studies. Then some desk reviews and field work will allow for data collection and analysis. Once finalised, each study will be launched in-country and posted online. The study will serve as the basis for future scale up of CBS App in Sahel countries, beyond Senegal.

O3A4: Study and recommendations on CBS and data Protection: Within the framework of this project, a special attention will be dedicated to data protection and to ensure all data collection, storage and use are consistent with Red Cross standards as outlined in the Red Cross Handbook on Data Protection in Humanitarian Emergencies<sup>46</sup> published by the ICRC and the Vrije Universiteit Brussel (VUB). As we consider the issue of data protection essential, we will commission a study by an academic partner to scientifically accompany the implementation and identify, each step of the way, how to improve data protection when planning the scale up of the CBS App. Preliminary contacts are ongoing with VUB (Brussels) and Signal HHI from Harvard Humanitarian Initiative. The focus is to scientifically identify data protection risks and opportunities that should be taken into account when planning for CBS scaling. All recommendations, lessons learned and other outcomes will be published online. If possible a scholarly peer reviewed article.

O3A5: Regional coordination and integration with existing mechanisms and initiatives in the Sahel:

As referred to in 2.3.3, the system architecture of the CBS system makes the App intrinsically built for scale. However there is a need for inclusive discussions to ensure the best integration in existing systems, avoid duplications and seek synergies. Meetings, workshops, working groups, etc. with all stakeholders will be organised by the Consortium. This Sahel integration discussion will be managed in coordination with an ongoing discussion at the global level led by the IFRC.

The project will specifically rely on 2 existing coordination platforms: the Sahel Plus Group<sup>47</sup> and the shared leadership group on CBS for Africa region, and work on linking these two initiatives.

The **Shared Leadership Group** is a RC Movement working group consisting of African National Societies and RC Movement partners. NorCross is co-leading efforts to strengthen coordination and sharing and lessons learnt through this group on CBS for Africa region.

O3A6: Presentation of CBS App and outcomes of field tests outcome to main humanitarian stakeholders in Belgium

<sup>46</sup> The handbook is available on: [https://shop.icrc.org/e-books/handbook-on-data-protection-in-humanitarian-action.html?\\_\\_store=default&\\_\\_from\\_store=default](https://shop.icrc.org/e-books/handbook-on-data-protection-in-humanitarian-action.html?__store=default&__from_store=default)

<sup>47</sup> See box 5



During the last month of the project, the Consortium will organise a conference on CBS in Brussels, in order to introduce the CBS App to the humanitarian community, present the outcomes of field tests and explain how everyone can access CRB App and which services are available. All the humanitarian NGOs present in Brussels will be invited, as well as RC National Societies, IFRC, UN institutions and donors (DGD, European Commission...). This conference will be a key step to make CBS App and system available for the whole humanitarian community.

#### 4.3.2.3.2 Interim report

- Updating of the indicators
- Updating of the beneficiaries (status + number)
- Updating of the activities

#### 4.3.2.3.3 Rapport final

- Indicators for the outcomes obtained
- Beneficiaries (status + number)
- Activities carried out

#### 4.4 Work plan (e.g. annexed Gantt diagram)

	2018			2019								
	10	11	12	1	2	3	4	5	6	7	8	9
Outcome 1: At the end of the project, the CBS App is developed and ready for use, free of charge, by local community-based humanitarian actors.												
O1A1: Organisation of codeathons and code events in Oslo, Brussels and Dakar		X	X	X	X	X	X	X	X	X	X	
O1A2: Management of the volunteer developers community: mobilisation, motivation, retention; definition of policy and strategy	X	X	X	X	X	X	X	X	X	X	X	X
O1A3: Technical development of the App	X	X	X	X	X	X	X	X	X	X	X	X
Outcome 2: At the end of the project, the CBS App is deployed and field tested in 25 local communities in Senegal.												
O2A1: Development of the SOP with SRC		X	X	X								
O2A2: Translation and online availability in French of CBS App, technical documents and training material	X	X	X	X	X	X	X	X	X	X		

O2A3: Training of SRC Staff in CBS		X	X	X	X								
O2A4: Community engagement activities	X	X	X	X	X	X	X						
O2A5: Field simulation of outbreak					X	X	X	X	X	X	X	X	X
O2A6: Data dissemination					X	X	X	X	X	X	X	X	X
Outcome 3 – Red Cross societies and other local community based humanitarian actors active in the Sahel have all needed information and knowledge to design plans to scale-up the implementation of CBS App in Sahel countries and beyond.													
O3A1: Lessons learned, critical review of the testing in Senegal							X	X	X	X	X	X	X
O3A2: Promotion and training on the CBS App for Sahel RC National Societies and other local humanitarian actors			X	X	X	X	X	X	X	X	X	X	X
O3A3: Study on current state of play and way forward for CBS in each of the ten countries of Sahel Plus				X	X	X	X	X	X	X	X	X	X
O3A4: Study and recommendations on CBS and data Protection						X	X	X	X	X	X	X	X
O3A5: Regional coordination and integration with existing mechanisms and initiatives in the Sahel	X	X	X	X	X	X	X	X	X	X	X	X	X
O3A6: Presentation of CBS App and outcome of field tests outcome to main humanitarian stakeholders, in Belgium													X

#### 4.4.1 [INT] Revised work plan in the event of changes following the proposal

#### 4.5 *Monitoring, assessment, auditing and other analyses*

##### 4.5.1 Monitoring of the activities (explain how, by whom)

The Consortium is in charge of the global implementation of the present project. Result 1 will be mainly implemented in Norway by the NorCross. The monitoring of this result will be the responsibility of the Project Manager based in Oslo. Result 2 will be mainly implemented in Senegal by the Senegalese Red Cross with i) close supervision from the Belgian Red Cross through its Country Representative and HQ monitoring missions; ii) technical support from the CBS delegate benefiting from the CBS expertise of the RC Nairobi office and the CBS Oslo

team. This result will be implemented in close coordination with the national and local health authorities.

Result 3 will be implemented jointly by the Belgian Red Cross and the Norcross. A steering committee will be established to monitor this project, ensuring regular communication between the members of the consortium through skype conferences, phone calls, email communication; meetings between the BRC and the Norcross will be held every 2 months. All along the project, the technical support will be provided by the CBS expert team based in Oslo and Nairobi.

The scientific support will be provided by an academic institution accompanying the pilot project in Senegal.

4.5.2 Tick the boxes corresponding to the analyses that may be undertaken:

- External assessment during the action
- External assessment after the action
- External auditing during the action
- External auditing after the action
- Internal assessment or internal auditing relating to the action

4.5.3 Other analyses:  Please provide information:

## 5. CROSS-CUTTING ISSUES

5.1 *Please describe the expected level of sustainability and/or of connectedness.*

This project falls within a global effort, spearheaded by RC Movement<sup>48</sup> and other humanitarian actors such as WHO<sup>49</sup>, to improve and strengthen the capacity of local humanitarian actors to detect, report and respond to humanitarian emergencies through CBS. While the implementation of this project will be focused in its results, it will be conducted in an inclusive way, to nurture synergies and interaction with this wider efforts, within and beyond the RC Movement.

Thus, this project will serve two complementary purposes: It will reach its own results and, at the same time, contribute to the broader effort by the RC Movement to improve the surveillance and response capacity of local humanitarian actors, especially RC volunteers. Both are obviously totally aligned and will cross-pollinate throughout implementation. The fact that the Consortium is an integral part of the broader effort strengthens this consistency.

This project timeline is 12 months, as per donor request. While the project results will be achieved in that time frame, the integration in a broader, longer-term approach will guarantee that the progress made within the framework of this project is effectively continued and used beyond its implementation timeframe. In innovative projects such as this on, there is a high

<sup>48</sup> For more information on the IFRC approach to CBS, please refer to the Annex 1 - IFRC CBS Guiding Principles.

<sup>49</sup> Such as WHO IDSR strategy. For more on this topic, please refer to:

[http://www.afro.who.int/sites/default/files/2017-12/Integrated%20Disease%20Surveillance%20and%20Response%20edited\\_Final.pdf](http://www.afro.who.int/sites/default/files/2017-12/Integrated%20Disease%20Surveillance%20and%20Response%20edited_Final.pdf)

risk for momentum to fall and impact to dwindle when projects end. The fact that this project falls within a broader ongoing and sustained effort allows to significantly lower that risk and guarantee a higher than average sustainability. After the end of this project, The RC Movement will continue developing, testing and scaling up the CBS App, with an active participation of the BRC and the NorCross.

The CBS Application is built as an integral component of the methodology that supports community based health-monitoring. The specific applicability of the CBS App is one of its key strengths. Although the system architecture enables the app to be applied and tailored for different types of use cases beyond health, the initial focus on community based health monitoring, focusing specifically on the potential outbreak of epidemic related diseases, gives the CBS App a natural and institutional home in the Red Cross Movement. The number of National Societies that are already applying the CBS methodology demonstrates the relevance, appropriateness and need for developing this app. It is the full intent that the CBS App be scaled and utilized by National Societies who conduct community based health surveillance. The CBS team have already developed a thorough and extensive curriculum that will be applied together with the app. Regional and context specific implementation trainings have already been organized: one global CBS pilot training organized in Oslo, one Africa regional CBS training in Zimbabwe, and one Asia Pacific training organized in Myanmar, and implementation trainings in Haiti, Sierra Leone, Madagascar and Somaliland have been organized. Further regional and implementation trainings have been planned for Dakar and the Sahel region.

Once the key features of the CBS App are developed and the system is implemented at scale, it will be important to evaluate and establish revenue models that support the long term hosting and maintenance of the system. This could entail a Software as a Service (SaaS) model, in which National Societies would purchase a license to use the system over a given time period. National Societies in developing country contexts could seek funding from Partner National Societies to purchase licenses for the system. This revenue model would, naturally, only seek to cover the costs of hosting and maintaining the system.

One durability option to help reduce the cost of SMS is to look at opportunities for negotiating with local telecom operators. The SRC benefits of a good image in the country, which private actors could be interested in being associated with. The goal is to find an agreement on a “low-costs” subscription or a total subsidy for the volunteer mobile fleet.

## 5.2 *Continuity strategy (links between emergency aid, rehabilitation and development)*

The main strength of the RC Movement is to be active in all phases of the continuum, as we are present everywhere and all the time, through our volunteer network. In situations where there is no emergency, the volunteers are working together with the communities on development projects aiming at strengthening their resilience. When the area faces an emergency situation, the volunteers are already here and operational, trained to be deployed for rapid response.

Epidemics are a constant threat to the well-being of communities all over the world, especially in societies where resources are scarce. Detecting cases, early responding to local health threats and so preventing epidemics is critical to improve lives of people in the long run. The present project will contribute to save and improve lives of the most vulnerable communities in the world, ensuring less suffering, less death, less exposure to risks, improved means for responding and recovering, but will also free up more time and resources to focus on development efforts, and opportunities for a more serene life. Moreover, the CBS App is designed to allow the development of further functionalities that can be tailored to a range of information and communication needs. After the completion of the present project, this open source app will be available for adaptation to multiple fields (food security, DRR...) in relief, rehabilitation and development phases (early detection, surveillance, monitoring...).

### *5.3 Integration (e.g. reduction of disaster risks, children, human rights, gender equality, environmental impact, others to be specified)*

The RC Movement has a principled approach anchored in its seven fundamental principles. In all its activities, including the present project, the RC Movement promotes these humanitarian values and strives for the better respect of the Rights and Dignity of all, without discrimination. In any RC Movement activity, including the present project, priority is always awarded to the most vulnerable.

In addition, specific measures will be implemented within the framework of this project to ensure gender balance, such as:

- Half of Senegal RC volunteers will be female and a special effort will be made to enroll women at every stage of the project.
- Mother and child health issues will be given a priority, whenever it is relevant
- All collected data will be gender disaggregated
- The CBS App will allow gender-based analysis of all data
- Women's rights, including girls will be actively promoted and discussed at every possible opportunity (trainings, workshops, monitoring visits, etc.)
- Gender issues will be included in the studies commissioned with this project.

### *5.4 Describe the ethical and other considerations (including data protection) arising from the project.*

Collecting data on vulnerable populations and in potential conflict-affected areas demands well established and strict guidelines on what data to collect, who gets access to the data, and how the data is used and shared with relevant stakeholders. Informed and active consent will be a pillar of the guidelines that are currently being developed. Although the CBS system does not collect personal information, meaning the data collected cannot be traced back to a specific individual, written consent will still be acquired at a community level when initiating a CBS project, and oral consent upon collecting data from individuals. As the data collected is not personally identifiable data, it is not extremely sensitive. However some countries or regions may consider the aggregated health risk data to be sensitive, hence the CBS App will base its guidelines for management and sharing of data on the assumption that the data is of a sensitive nature. The CBS App is built for national ownership, meaning there will be a data owner in each National Society who will have the authority to decide when or if data is to be

shared outside of the country. The CBS App will be available both for cloud-storage (using Microsoft Azure) and for local deployments (data stored in local databases), enabling countries to decide how they want to have their data stored.

The assessment that will be done as part of outcome three on how the CBS App adheres to the GDPR regulation, will feed into and be a key determinant of the guidelines for data collection and management that are being established. The IFRC is taking lead on continuing to develop these guidelines with the support of the consortium. The Red Cross Movement have extensive experience in collecting data, and the guidelines for data collection in CBS will be based on the existing policies.

See “Handbook on data protection” co-authored with the Belgium Privacy Hub for more information on Red Cross Movement policy:

[file:///C:/Users/105010olbj/Downloads/4305\\_002\\_Data\\_protection\\_and\\_humanitarian\\_action\\_low.pdf](file:///C:/Users/105010olbj/Downloads/4305_002_Data_protection_and_humanitarian_action_low.pdf).

**5.5 Summarise in tabular form a risk analysis of the ethical and other issues pre-identified in 5.4, mentioning :**

- *Typology of ethical and other pre-identified risks associated with the project*
- *Likelihood of risk occurring (rare-possible-almost certain-certain)*
- *Severity of the impact on the project if the risk arises*
- *Identification of the actions to be carried out*
- *Type of action (accept the risk/ refuse / neutralise or reduce the risk / share the risks with a third party).*

Description of the risk	Probability	Impact	Actions to be carried out	Type of action
Risk that availability, skills and commitment of volunteer developers is inadequate.	Medium	Important	The role of the Community Support Coordinators will be to adapt RC Movement volunteers management policies to the specificity of managing a developer volunteers community.  The project will benefit from NorCross experience in this field so far.	Reduce the risk
Risk that the IFRC platform to host the CBS App on a global scale is not developed in a timely manner.	Medium	Medium to important	Close follow-up of the development of IFRC platform through NorCross/IFRC partnership and regular communication on CBS project follow-up.	Reduce the risk
Degradation of the political or security situation in Senegal	Low	Important	If the political and security situation in Senegal doesn't allow the deployment of the CBS App in country, the Consortium will consider another location in Sahel for field testing	Accept the risk and get around it



The Senegal Ministry of Health is not committed anymore to Community-Based Surveillance	Low	Important	Communication and coordination between the SRC and the Senegal Health national and local authorities will be permanent and SRC will strongly advocate for CBS to remain a priority	Reduce the risk
Severe degradation of the political or security situation in Sahel region	Low	Important	If the situation in Sahel worsens so much that it doesn't allow to deploy the present project, this will be discussed with the DGD to decide if the DGD funds have to be used for response to emergencies in the Sahel or if the project can be deployed in another region of the world.	Accept the risk

5.6 [INT] *In the event of changes or issues to be dealt with, please provide information*

5.7 [FIN] *In the event of changes or issues to be dealt with, please provide information*

## 6. SECURITY AND EMERGENCY MEASURES

6.1 *Emergency measures (plan B/mitigation measures to be taken if the risks and assumptions set out in the logical framework materialise)*

For the last several years, the Red Cross Movement has managed to adapt its operational surface and strike the right balance between access to people in need and security constraints. The present project will be implemented within this flexible and solid operational framework, where local acceptance is leveraged to implement principled humanitarian action that, in turn, further strengthens the local acceptance. Managing the risks, including the security risks is at the heart of the Red Cross Movement. The current project will be part of this security management framework.

Access to the beneficiaries is the strength of RC Movement, because RC volunteers are part of the local communities and because of our tight links with the local authorities. In Senegal, if the volunteers of the selected zones are mobilized by a consequent emergency, a dialogue would take place with the SRC and the national and local authorities to choose a more appropriate zone for field testing.

6.2 *Security-related aspects*

6.2.1 Situation in the field. Please provide a brief description

### Senegal and Sahel

Regarding Sahel, security issues in the region are considered complex and volatile.

Senegal is known to be under the threat of terrorist attack since years. However the country seems to be less vulnerable to terrorism due to its inner religious structuration based on brotherhoods.

Regarding the project implementation, this risk is assessed low by the RC Movement. This assessment is enhanced by the community approach of the project, based on local volunteer mobilization. The Red Cross have a good access and benefit of a positive image in communities.

A regular risk analysis will be manage by the BRC Country Representative in coordination with the SRC and ICRC.

6.2.2 Has a specific security protocol been drawn up for this action?

yes  no  Standard procedures

If yes, provide information:

There is no specific security protocol defined for this action. SRC follows its standard security protocol based on RC Movement security standards.

Regarding BRC staff movement in the country, each field trip has to be approved by a security clearance mechanism, jointly by BRC and SRC, according to eventual ICRC brief on security issues. Nonetheless, target areas of this project has been chosen with access criteria to facilitate field monitoring.

6.2.3 Have the staff in the field and the expatriates received information and training concerning these procedures?

yes  no

National and expatriates staff are informed and trained on RC Movement security protocol called "Stay Safe".

Moreover, each staff signed a commitment code of conduct.

6.3 [INT] *In the event of changes or issues to be dealt with, please provide information*

6.4 [FIN] *In the event of changes or issues to be dealt with, please provide information*

## 7. COORDINATION IN THE FIELD

7.1 *Coordination in the field (please state the humanitarian organisation's participation in the coordination mechanisms with other stakeholders, such as "clusters", NGOs, the United Nations agencies, others (to be specified), as well as the links to the consolidated appeal procedure, if necessary)*

### Coordination inside RC Movement

The development of the CBS tool involves many different actors of the movement. IFCR is the main partner of NorCross in this project. The App is field tested in Somaliland and Myanmar and lessons learned will be exchanged between the RC national societies of Senegal, Somaliland and Myanmar.

The CBS delegate for the Sahel will be piloted by the NorCross office in Nairobi and attend all CBS meetings in Nairobi, in order to spread CBS expertise to the Sahel region and link East and West Africa.

The project will support meetings of the Sahel Plus Group in order to sensitize the 10 Sahel RC National Societies to the relevance of the community based surveillance on health.

### **Coordination outside of the RC Movement**

At the national level, the ministry of health with its Direction of Diseases Surveillance, is leading monthly coordination meetings on diseases surveillance issues. The Red Cross will be associate to this regular meetings as a key actor of surveillance. This platform is the place to share experience, lessons learned and data collecting issues with all stakeholders. In case of epidemic outbreak, the WHO is strengthening the MoH for coordonate the national response. The Red Cross Movement, beyond International actors is part of this Ad-hoc platform.

At the International Level, NorCross has a technical reference partner with Norwegian Institute on Public Health (NIPH) on Surveillance, and coordinates all CBS activities with IFRC Geneva who has the strategic lead on CBS development, in order to ensure a coordinated approach within the RC Movement. IFRC Geneva holds responsibility to coordinate with WHO Geneva and Lyon. The African Shared Leadership group on CBS, co-lead by NorCross and IFRC, ensures coordination with Africa CDC and WHO AFRO at the regional level on CBS implementation, evidence generation and knowledge sharing and best practices. This project will contribute to those efforts.

#### **7.2 *National and local authorities (relationships established, authorisations, coordination)***

Coordination with the local and national health authorities is a key aspect of CBS, as CBS aims at widening the reach of existing national surveillance and response.

As auxiliaire from the public authorities, the Senegalese Red Cross has privileged relations with the national and local authorities, especially in the health sector. The Ministry of Health is the supervising ministry of the SRC.

At each step of the pilot implementation, the MoH at the national level and/or at the local level, will be associate. Joint missions on field will be organized as well as regular project revue in order to guarantee the integration of the CBS mechanism to the national Health Information System.

#### **7.3 *Potential coordination with the Belgian diplomatic representation***

The Belgium diplomatic representation in Senegal will be informed of the main implementation stages of the project. BRC will maintain an open channel of communication with the Belgium diplomatic mission and happily provide all necessary information upon request. BRC Country Representative will meet the Belgian representation on a regular basis and meetings will be organised at each monitoring mission from BRC HQ in order to provide an update of the project. The Belgian diplomatic representation will be invited to visit the areas of implementation of the project in Senegal.

7.4 *[INT]* In the event of changes or coordination issues to be dealt with, please provide information

7.5 *[FIN]* In the event of changes or coordination issues to be dealt with, please provide information

## 8. IMPLEMENTATION PARTNERS

### 8.1 Name and address of the implementation partner(s)

The project will be implemented by the Consortium Norwegian Red Cross / Belgian Red Cross, with the support of the Senegalese Red Cross.

All the activities implemented in Senegal will be conducted by the Senegalese Red Cross, with close supervision and support from the Consortium.

#### **Croix-Rouge du Sénégal**

3 Boulevard Franklin Roosevelt

Dakar, Sénégal

(+221) 33 823 39 92

crsnational@orange.sn

### 8.2 Status of the implementation partners (e.g.: NGOs, local authorities, etc.) and the role played by them

Senegalese Red Cross Society was admitted to the IFRC in 1963 and recognized as an NGO in Senegal the same year (décret 63/055 du 29 janvier 1963 et 63/597 du 11 sept 1963). In 2018, SRC activities rely on 30,000 active volunteers (47% males/53% females).

With a wild presence on the whole Senegalese territory, SRC is structured on 14 regional committees. In partnership with Movement members, SRC is a key national actor for emergency response, first aid and community health awareness to support public health programs. Strongly committed in community resilience, SRC has developed a strong expertise on community health issues, nutrition, livelihood and food-security projects. Thanks to an operational team structured on six departments (Health, Disaster, Volunteer, First Aid, Communication and Support), the SRC is a key partner inside the RC Movement as well as outside e.g. UNHCR for the information and protection of migrants.

As an auxiliary of public authorities, SRC is recognized and involved in public programs and national contingency plan. This specific position gives SRC a strong leadership in the country for project implementation at the community level.

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### 8.3 Type of relationship with the implementation partner(s) and the reports expected from the implementation partner

The SRC is responsible for the implementation of activities as well as the partnerships with public institutions and the Senegalese associations. The SRC will manage operational aspects of the CBS App deployment in Senegal, including mobilization of volunteers, organization of the trainings, link with national, local authorities and ministry of Health. The project will be integrated to SRC structure through its Health department.

The BRC plays in turn an essential role in monitoring and evaluating the project. A CBS manager delegate will be appointed to monitor, supervise and manage all CBS deployment steps and the data collection mechanism. Financial and administrative aspects will be managed jointly by BRC country representative and SRC accountability manager. The SRC logistic department will monitor the supply plan of action with the support of the BRC.

These objectives and all the roles and responsibilities of both partners will be formalized in a specific partnership agreement.

8.4 [INT] *In the event of changes, please provide information*

8.5 [FIN] *In the event of changes, please provide information*

## 9. COMMUNICATION, VISIBILITY AND INFORMATION ACTIVITIES

### 9.1 *Planned communication activities*

3 codeathons will be organised in Oslo, Brussels and Dakar. These events will provide large visibility to the project; the financial support of the Belgian Government will be largely emphasized (logo).

The websites of NorCross, BRC and SRC will publish articles on the project, mentioning the Belgian Government grant. The project will also be represented on the IFRC's innovation page ([www.ifrc.org/innovation](http://www.ifrc.org/innovation)).

The Consortium will build a website for CBS that will be used for onboarding new volunteers and to orientate stakeholders and the wider public about the status of the project and ongoing updates. The project will also be communicated with partner organizations and the wider humanitarian sector through platforms, conferences and newsletters (see *section 9.2*).

9.2 *How will knowledge and learning generated by the project be shared with the entire humanitarian system?*

### **Humanitarian Innovation Platform**

The Norwegian Red Cross is part of the Humanitarian Innovation Platform - a consortium between leading humanitarian organizations from Norway, Norwegian Refugee Council, Norwegian Church Aid and Save the Children Norway - that collaborate on developing shared tools and best practices for innovation in the humanitarian sector. The open-source development model and the use of volunteer developers are innovative approaches to building effective tools for humanitarian action, which will be shared with the platform.

### **ICT4D conference**

The CBS system will also be presented at next year's ICT4D conference - an international conference that wishes to share innovative approaches for leveraging information and communication tools in development work. The conference attracts participants from across the globe, and will be a valuable arena for sharing and promoting the benefits of the CBS system.

### **CBS technical meetings**

NorCross and IFRC will host a global CBS technical meeting as part of the internal ERU health technical working group meeting in Italy June 2018. A regional CBS meeting will be hosted in Nairobi/Dakar (to be determined) in September 2018 as part of the Shared Leadership Group on CBS in an effort to share implementation experience and lessons learnt. A key objective is to systematically document existing projects in the region and contribute to evidence generation and lessons learnt. Africa CDC, WHO AFRO and AFINET will be invited to this meeting. A global meeting with external stakeholders (CDC, WHO, ECDC and academia) will be hosted in 2019.

### **Kindling platform**

Online forum created to support the Digital for Development (D4D-Be) platform coordinated by Close the Gap and Agoria and supported by Belgium Development Cooperation. The BRC will communicate and share its experience on CBS and on its App directly on Kindling and through potential events managed by members.

### **Belgian humanitarian sector**

The Belgian humanitarian community will be invited to the Codeathons organised in Brussels and in Dakar (See O1A1). A specific event will be organised to introduce CBS System and App to the Belgian humanitarian community (See O3A6)

### **HDX<sup>50</sup> in Dakar and online**

Part of the Centre for Humanitarian Data, HDX is a platform for sharing data from a range of partners and across multiple crises. The SRC opened a user access to share its data in HDX since 2017. SRC will start to feed this open source database with data collected through CBS mechanism.

### **The SRC App and website**

The App as the website are updated regularly with the SRC actuality. The CBS deployment highlight will be published in the App and on website. Reports, research and all communication materials will be available online.

## **9.3 Outreach on durable equipment, the main supplies and on the project location**

This project will be branded as financed by the Belgium government and implemented by BRC and NorCross.

At every opportunity, local, regional and international stakeholders and media will be systematically informed of the Belgium government funding.

The Belgium funding will also be highlighted during all events including:

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<sup>50</sup> <https://data.humdata.org/>



- 3 Codeathons in Oslo, Brussels and Dakar
- The International Conference in Brussels
- All training sessions, workshops, etc.

As well as in all publications and webpages.

#### 9.4 *Publication activities planned*

Within this project, the following publications are foreseen:

1. 10 studies on current state of play and way forward for CBS in each of the ten countries of Sahel Plus Group
2. Study and recommendations on CBS and Data Protection
3. Lessons learned, critical review of CBS testing in Senegal

If the scientific content awards it, peer review articles will be published on the last two.

It is to be noted that due to the innovative nature of this project, publications may vary during implementations.

All publications will be online. Print versions will depend on relevance and needs.

9.5 *[INT] In the event of changes, please provide information*

9.6 *[FIN] Report on relevant activities*

## 10. HUMAN RESOURCES

### 10.1 *Please state the overall figures by function and by status*

Human resources are an important part of the budget needed for this project. This need for human resources is a direct consequence of the operational and, to a certain extent, ethical choice made by the Consortium. We had a choice between the purchase of an off-the-shelf App or develop an open source one<sup>51</sup>. The overall costs were very similar. However, the cost structures were different. Buying an App requires a purchase budget, building it needs an HR one. The option of buying an App and adapting it was explored. We decided against it and adopted the option of an open source development of the App because it is the only way to allow the App to be scaled up and used by multiple local humanitarian actors in the Global South. Buying an off-the-shelf App would have involved a purchase cost and a yearly licensing fee. Such fee would have been prohibitive for local humanitarian actors. Thus, the strategic decision was made to develop, within the Red Cross Movement, an open source App available, free of charge to all humanitarian actors. The budgetary structure of this project reflects this strategic decision. It is to be noted that, at the end of this project, the HR costs will decrease since the bulk of the development work will be over. In addition, the decision to develop an open source App is an opportunity for the RC Movement to leverage volunteering,

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<sup>51</sup> For more information on Off-the-shelf and open source App, please refer to *section 2.2, Box 2: 'Off the shelf' and Open source*

a core principle, and expand it in the field of developer volunteers<sup>52</sup>, as described in *section 2.3.2*. Last but not least, the choice to develop an App within the RC Movement is much more conducive to data protection since a commercial App is more likely to use the stored data for non-humanitarian purposes.

The present project will tap into existing, and thus already funded, human resources provided by the Norwegian Red Cross, the IFRC and the Senegalese RC. Specific extra positions will be needed as indicated in the table here below.

Function	Status	Number of staff	Number of man/ month in project	Comments
Project manager	NorCross employee based in Oslo	1	0	Funded by Norwegian MFA
Global CBS coordinator	IFRC employee based in Geneva	1	0	Funded by Norwegian MFA
Data protection advisor	IFRC employee based in Geneva	1	0	Funded by Norwegian MFA
Technical lead	NorCross employee based in Oslo	1	12 months	Technical development of the CBS App; ownership of the system architecture
Software developer	NorCross employee based in Oslo	1	12 months	Responsible for making changes to the software based on feedback from the pilot
Community Support Coordinator	NorCross employee based in Oslo	1	12 months	Coordination of the volunteer developers network; writing of policies and guidelines for the HR management of the volunteer developers network
CBS delegate for East Africa	NorCross employee based in Nairobi with frequent travels to the Sahel countries	1	0	Funded by Norwegian MFA
CBS delegate for Senegal and Sahel	BRC employee based in Dakar with frequent travels to Nairobi + in the Sahel countries	1	12 months	Technical support to deployment of CBS in Senegal and preparation for other countries in Sahel

<sup>52</sup> Also called digital volunteers.

BRC delegate Dakar	BRC employee based in Dakar	1	4 months	BRC country representative
SRC Data Manager	SRC employee based in Dakar	1	12 months	
Senegalese community support coordinator	SRC employee based in Dakar	1	12 months	Coordination of the volunteer developers network in Senegal and Sahel; French-speaking
SRC admin-fin manager	SRC employee based in Dakar	1	12 months	
SRC coordinator (30%)	SRC employee based in Dakar	1	4 months	

***In Senegal, 350 SRC active volunteers will support the project.***

**The Technical Lead** will be based in Oslo where the app is currently being developed. The reason why this position must be based in Oslo is because that is where the core team of volunteers sit and where the Project Lead sits. Although the project will expand the geographical base where volunteer developers are recruited from and will establish a community of volunteer developers both in Belgium and Senegal by the end of the project period, the project will still be managed from Oslo and it is therefore important that the Technical Lead is based there. The role of the Technical Lead will be to take ownership of the system architecture of the app and have detailed knowledge of each bounded context and the programming language used. This is to ensure that the Technical Lead is well positioned to make informed decisions and evaluations on the performance and scalability of the app, and can against this background effectively engage the volunteers on a practical and technical level to maintain the system and develop new functionalities. The Technical Lead will also be responsible for ensuring that the system can configure and integrate with other relevant systems and platforms the RCM utilizes when aggregating data. This position demands a high level of technical knowledge, relevant programming languages and system architecture. The high competition for this kind of expertise may require a higher salary to be paid.

The project will also employ a full-time **software developer**. A key determinant moving into the piloting phase will be the project's ability to fix bugs / problems with the system on a continuous basis. Timely and effective support is essential when implementing the system. Long term, a tender will need to be put out to contract a professional software supplier to maintain the system once it is live and operates at scale. Short term, it is important the project has the expertise and capacity to follow up ongoing problems, especially as the system is being piloted in contexts where there is a real potential of epidemic outbreaks, meaning the MVP of the CBS App will with its core functionalities be used to convey life-saving information in real time. The software developer will be based in Oslo as the app is currently hosted in Norway, and it enables close cooperation with the Project Lead, Technical Lead, the core team and the current community of volunteer developers. The software developer will under the leadership of the Technical Lead and in collaboration with the community of volunteer developers be responsible for making changes to the current bounded contexts based on feedback from the pilot, and develop the new bounded contexts that are beyond MVP.

The **Community Support Coordinator** will be responsible for establishing the guidelines, policy and procedures for managing a community of volunteer developers. The Community Support Coordinator will be based in Oslo as the existing community of volunteer developers is primarily based in Oslo. Working closely with the established community in Oslo will enable the Community Support Coordinator to formalize the necessary policies and guidelines needed to establish these communities in Belgium and Senegal. The project plans to host Codeathons in both Belgium and Senegal and establish a community of volunteer developers in both countries. The Community Support Coordinator will have to work closely with the National Societies in Belgium and Senegal when organizing the code events, recruiting and on boarding new volunteers. The Community Support Coordinator will have to travel as needed when the project scales the community of volunteer developers. The project will employ a Senegalese counterpart to animate the volunteer developers' network developed in Senegal and Sahel. The Senegal-based Community Support Coordinator will be employed by the Senegalese Red Cross and will work in close coordination with the Oslo-based Community Support Coordinator.

10.2 [INT] *In the event of changes, please provide information*

10.3 [FIN] *In the event of changes, please provide information*

## 11. ADMINISTRATIVE INFORMATION

11.1 *Name and title of the legal representative signing the agreement*

Pierre HUBLET, Directeur Général, Croix-Rouge de Belgique, Activités Internationales ASBL

11.2 *Name, telephone number, e-mail address and titles of the person(s) responsible for the management of the dossier*

Bob Ghosn, Responsable Urgences Internationales

Tel : 0499 51 03 22 ; Email : [robert.ghosn@croix-rouge.be](mailto:robert.ghosn@croix-rouge.be)

11.3 *Name, telephone and fax number and e-mail address of the representative in the intervention area*

Félix de Marliave, Représentant Pays au Sénégal

Tel: 00221 78 016 78 94. Email: [felix.demarliave@croix-rouge.be](mailto:felix.demarliave@croix-rouge.be)

11.4 *Bank account*

Name of the bank: ING

Address of the bank agency: Rue du Trône, 1, 1000 Bruxelles

Precise designation of the account holder: Croix-Rouge de Belgique AI

IBAN code: BE22 3101 2912 2547

SWIFT code: BBRUBEBB

## 12. BUDGET

The total budget for the project is 1.170.364€, as detailed here below:

Budget line	Unit Cost	Number of Units	Total Cost in €	Result 1	Result 2	Result 3	%
<b>Investment</b>							
Vehicle	30.000	1	30.000		30.000		
ICT Equipment - SRC	20.000	1	20.000		20.000		
ICT Equipment - NRC and BRC	10.000	1	10.000	10.000			
Furnitures	5.000	1	5.000	5.000			
<b>Total Investment</b>			<b>65.000</b>	<b>15.000</b>	<b>50.000</b>	<b>0</b>	<b>6%</b>
<b>Activities &amp; services</b>							
Translation of APP and relevant documents to French	30.000	1	30.000		30.000		
Organisation of Codethon and Code evenings - Brussels	30.000	1	30.000	30.000			
Organisation of Codethon and Code evenings - Dakar	20.000	1	20.000	20.000			
Organisation of Codethon and Code evenings - Oslo	30.000	1	30.000	30.000			
Scaling-up consultancy	30.000	1	30.000			30.000	
Sahel Countries Assessment for CBS Deployments	8.000	10	80.000			80.000	
Partnership with Academic Institutions for field research	40.000	1	40.000			40.000	
Training on CBS, CBHFA for Senegal	10.000	7	70.000		70.000		
Volunteers Perdiems	3.150	12	37.800		37.800		
Volunteers Visibility	15	350	5.250		5.250		
Communication cost for volunteers (phone credit)	1.400	12	16.800		16.800		
Volunteers Insurance	2	350	700		700		
Regional workshop for Sahel +	10.000	2	20.000			20.000	
Regional trainings on CBS	50.000	1	50.000			50.000	
Final workshop for the CBS field testing in Senegal	10.000	1	10.000		10.000		
CBS conference in Brussels	15.000	1	15.000			15.000	
Ministry of Health - SRC joint field missions	1.500	4	6.000		6.000		
Communication (Films, live streams, etc.)	20.000	1	20.000	10.000	10.000		
<b>Total Activities and services</b>			<b>511.550</b>	<b>90.000</b>	<b>186.550</b>	<b>235.000</b>	<b>46%</b>
<b>Operation support</b>							
Running Cost -SRC HQ and Local Committees	1.000	12	12.000		12.000		
Running Cost - BRC Representation	500	12	6.000		6.000		
Communication cost for SRC staff (HQ + branches )	150	12	1.800		1.800		
Missions Cost CBS Delegate	4.000	4	16.000		8.000	8.000	
SRC - BRC representation field monitoring	1.000	12	12.000		12.000		
HQ Monitoring Missions	3.000	6	18.000		18.000		
HQ Coordination cost (meetings BRC/NRC)	1.500	6	9.000	3.000	3.000	3.000	
Final audit	15.000	1	15.000	5.000	5.000	5.000	
Final evaluation (external)	20.000	1	20.000	6.667	6.667	6.667	
<b>Total operation support</b>			<b>109.800</b>	<b>14.667</b>	<b>72.467</b>	<b>22.667</b>	<b>10%</b>
<b>Human resources</b>							
Tech lead	8.500	12	102.000	102.000			
Software developer	8.000	12	96.000	96.000			
Community Support Coordinator - English speaking	7.500	12	90.000	90.000			
Community Support Coordinator - French speaking	750	12	9.000	9.000			
CBS delegate for Senegal and Sahel	7.000	12	84.000		42.000	42.000	
CRS Data Manager	750	12	9.000		9.000		
CRB delegate Dakar	6.000	4	24.000		24.000		
CRS admin-fin manager	500	12	6.000		6.000		
CRS coordinator	750	4	3.000		3.000		
<b>Total HR costs</b>			<b>423.000</b>	<b>297.000</b>	<b>84.000</b>	<b>42.000</b>	<b>38%</b>
<b>Total Direct costs</b>			<b>1.109.350</b>	<b>416.667</b>	<b>393.017</b>	<b>299.667</b>	
Structural costs			61.014				
<b>Total indirect costs</b>			<b>61.014</b>				
<b>GRANT TOTAL</b>			<b>1.170.364</b>				

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