



*Mapping and information management
for humanitarian organizations*

ANNUAL REPORT 2014

Association CartONG

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MAPKIT

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Introduction

2014 will have been a year where the courage and dedication of the CartONG team will have been felt all year round. We'd like to take this occasion to thank them all for their relentless hard work.

What work? Well, we augmented our 16 partner organizations' technical capacities with the help of 17 staff and interns – the staff provided constant GIS support for the Ebola crisis in addition to its regular activities of data collection, information management, GIS and capacity building, spending 785 days in the field without mentioning the remote support. Our volunteer branch and its 53 members also reached a new level with very relevant and operational projects: they produced post-disaster maps, built a web atlas and flew a UAV (and have loads of interesting ideas for 2015 also!).

The CartONG team also organized the GeOnG 2014 conference, with growing attendance and increasing diversity: watch out for the next edition in 2016 which will also be our 10-year anniversary!

*Maeve de France, President (2011- 2015) &
Charlotte Pierrat, President (2015 onwards)*

💡 As a reminder, staff projects (funded by partners and implemented by employees) have a **blue Overview box**, and volunteers projects (limited or no funding and implemented mostly by volunteers) have an **orange Overview box**.

ABOUT CARTONG

Our expertise

CartONG offers services to humanitarian and development organizations on all the technologies of information management, and particularly geographic information. We offer our partners state-of-the-art tools, while being always sensitive to sustainability and cost-efficiency of the solutions.

Our activities:

- Mapping, data collection on the field and digitizing
- Research, compilation and curation of geographic data
- Geoservers, webmapping and online data visualization tools
- Data collection, in particular with mobile devices (smartphones/tablets)
- Data analysis to support decision-making
- Information management workflows and procedures
- Visualization of data for reporting or communication
- Analysis of spatial data and satellite imagery
- Capacity building: training in GIS, GPS, mobile data collection, databases, data analysis
- Creation of e-learning modules
- Outreach on geographic information tools, awareness building inside the humanitarian community regarding adapted tools and procedures
- Research and compilation of best practices on information management & mapping

Our team in 2014



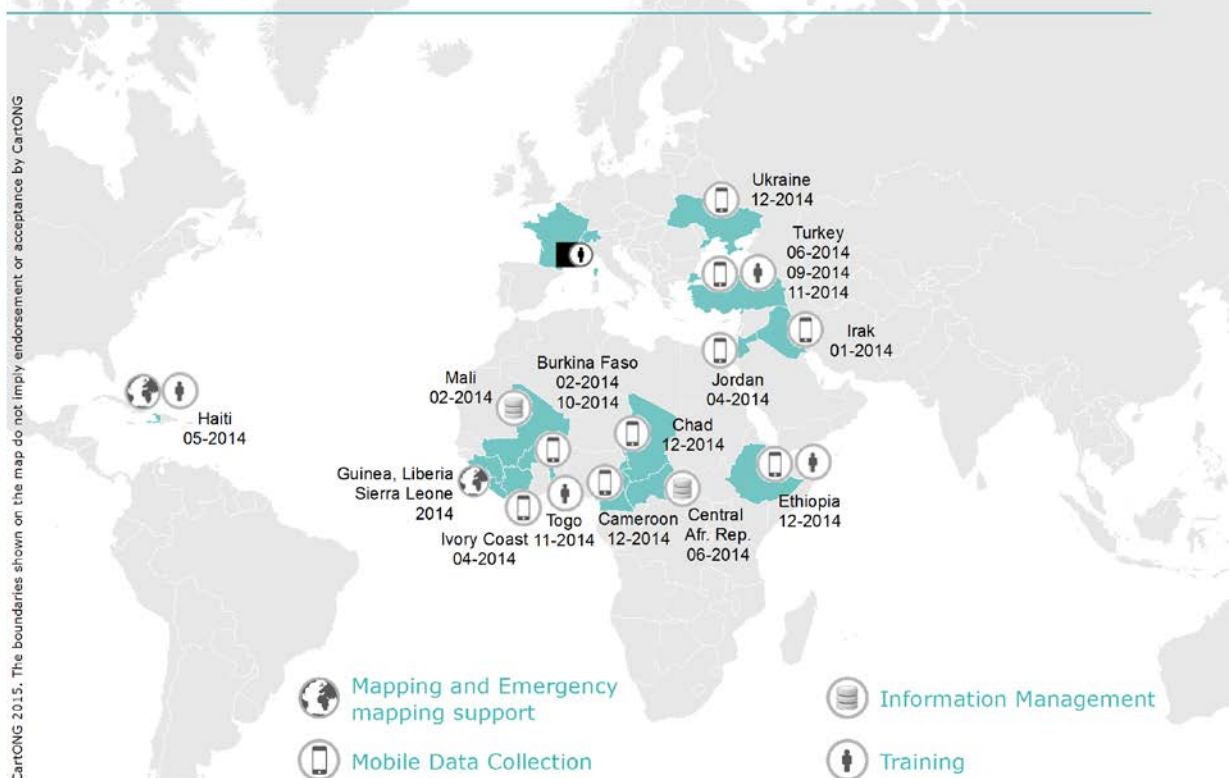
And the volunteers of course!



Where CartONG works

In 2014, CartONG employees, consultants and volunteers, whose headquarters are in Chambéry, worked in the following countries:

In 2014, CartONG has been deployed ...



⚠ All budget figures are rounded for better readability.

2014 HIGHLIGHTS

January “Digital Maps for Humanitarian Need” article published in UNESCO’s SangSaeng 38th magazine issue entitled “**Maps for Mutual Understanding**”

February 22-23rd General Assembly and Get2Gether in Lyon, with a training on emergency mapping for the CartONG volunteers

March 21st Deployment on the Ebola crisis for Doctors Without Borders
Over 2014, 12 deployments of 6 weeks of GIS officers took place, with hundreds of maps produced for local medical teams

March 25th Activation of the HOT OSM community concerning Ebola
After two weeks the incredible OSM community mobilization had already helped map the most affected areas significantly, and it was just the start...

April 4-6th State of the Map France, where CartONG volunteers and staff participated to the event and also co-ran a session on humanitarian and development aid based on OpenStreetMap

April 8-10th Decryptage days, Paris where CartONG volunteers ran a booth with OSM and co-organized a workshop on the uses of OSM data in the humanitarian world

May 20-22nd FOSS4G at the ENSG
An opportunity to meet the open source geographic software community and present our work with Geonetwork

June, 6-7th Marché des Continents, Chambéry, a nice opportunity to raise awareness on CartONG in our hometown!

June UAV training mission in Haiti for OSM, our second-ever field mission for a volunteer, and our first activity using UAVs!

June, 12-14th Salon des Solidarités with OSM-FR

The main event for NGOs in France, during which we discussed e-volunteering, participatory mapping, UAVs, etc. together with our partners from OpenStreetMap

July Case study on GIS use for MSF
A few months only after the first field deployment, we produced for MSF a first [study](#) to demonstrate the impact of GIS on supporting the Ebola response

September 20-21st CartONG Get2Gether with feedback on volunteer projects and to organize the logistics for the GeOnG

September 22-23rd GeOnG 2014, with participants from **70 organizations to discuss** “Turning data into actionable knowledge” during CartONG’s now unmissable event

October 1-2nd ESRI Francophone conference, Paris
Co-organization of a session on humanitarian GIS and presentation of our work with ArcGIS

November 24-28th Innov Africa Forum, Lomé, a very interesting conference that proved (again) that innovation doesn’t only happen in developed countries...

December 4th Meeting with the French president, Elysée Palace
During the Social Gold Week, CartONG was invited to present its activities to President François Hollande

December 6th Launch of the Missing Maps project, Montreuil
CartONG volunteers and staff organized the launch of the Missing Maps project in France, to help map the most vulnerable parts of the world through Open Street Map

December 2nd and 11th TechChange presentations on Mobile Data Collection and emergency mapping

MAPPING AND GIS

Mapping and GIS projects aim at helping our partners (both in the field and at headquarters) with operational maps for immediate decision-making.

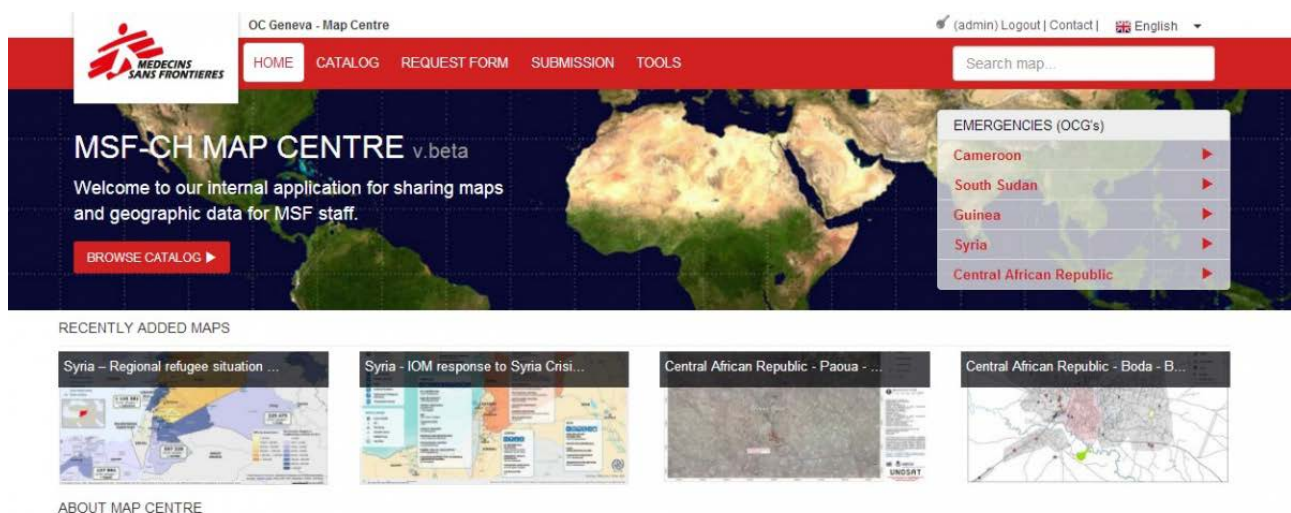
1. Mapping and GIS strategy for Doctors Without Borders-CH

OVERVIEW	Staff involved	11 staff (Manager, GIS officers, IT, Designer)	Budget	266,600 €
	Contractor	Doctors Without Borders –Switzerland	Location	Global + Geneva, Sierra Leone, Liberia, Guinea
	Beneficiaries	MSF-CH teams at headquarters and in the field		
	Content	Creation of an online Map center, implementation of GIS strategy and emergency mapping.		

In 2013 CartONG had started a partnership with **Doctors Without Borders-Switzerland** to support them in identifying their needs and improving their geographic information management. This process led to devising a strategy to develop a Geographic Information System within MSF-CH.



Following this strategy, CartONG implemented MSF-CH's **GIS Unit** in 2014. A key aspect was the development of a **Map center** to centralize the maps produced by the GIS unit but also other actors, as well as geographic data. The Map center was created using the free GeoNetwork solution and was released in July of 2014. It includes advanced metadata features as well as an embedded interactive web map viewer.



This Map Centre is composed of a library of maps and (soon) a centralized database allowing users or dedicated applications - such as QGIS or ArcGIS - to access reference maps and data. The Map Centre is a participative platform since :

- users are allowed to request maps and tools through their GIS focal point
- users & GIS field officers submit their own mapping production & data through the **Submission** platform of the Map Centre.

See **Contact** for access to the GIS UNIT or FOCAL point.

CartONG is also producing maps for MSF remotely to support the country operations with base maps: more than 700 over the year! This can also entail a “rush mode” to create maps in emergency during a crisis, such as South Sudan, CAR, Cameroon, DRC,

Iraq. In addition to producing maps, we have also digitized health areas in DRC and Niger, a work that will benefit the whole humanitarian community.

When MSF-CH deployed in March at the beginning of the **Ebola outbreak**, it was decided to pilot deploying a GIS officer to the field in Guinea to support the teams by producing basemaps as well as epidemiological maps tracking the spread of the disease. This initial deployment proved to be very efficient, with 109 maps produced in 8 weeks, as summarized in a [case study released in July](#). The maps allowed to better locate the cases and therefore respond faster to the outbreak, but also to visualize data, giving MSF staff a better understanding of the extent of the emergency.

Due to the success of the pilot, 5 additional GIS specialists were deployed to Guinea but also Sierra Leone and Liberia, for a total of **12 six week deployments**. As the Case study concluded:

"Given the universally positive feedback about the GIS officer's deployment, it is recommended that headquarters makes GIS officers available to field offices, where direct contact with field operations can bring clear benefits, and where close and timely monitoring of the spread of an epidemic is essential".

These numerous missions have also allowed to improve our skills and tools on many aspects: guidelines, templates, styles; management of decentralized databases; emergency deployment; as well as building a roster that will benefit all our partners.

The Ebola activation was also an opportunity to build strong links with the **Humanitarian OpenStreetMap Team** and the OSM contributors all around the world.

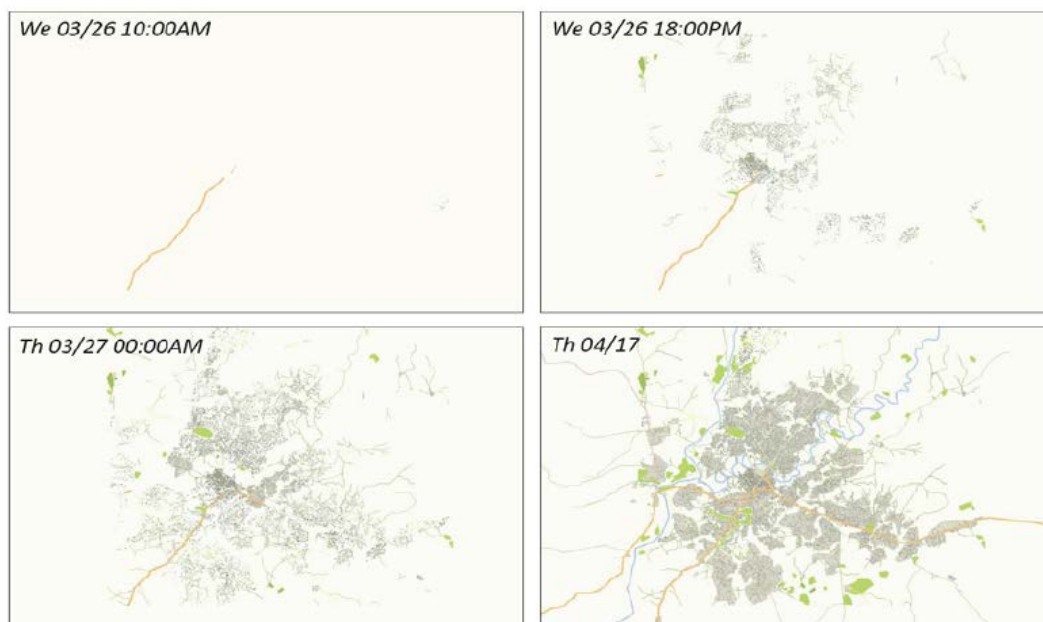
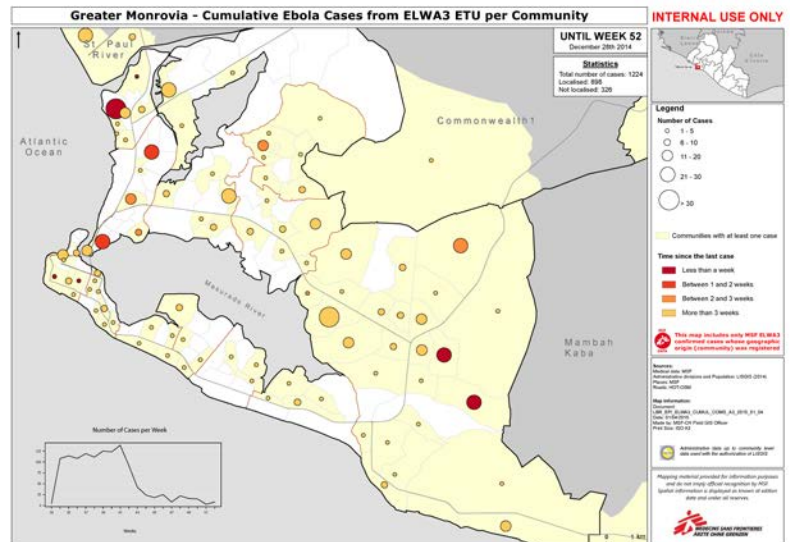


Table 2: Initial mapping of three cities as completed by the OSM volunteers within three days. Volunteers continued to work on maps of the region even after that period (see image bottom right).

The HOT coordinators were solicited very early in the crisis by CartONG, and the involvement of hundreds of volunteer mappers all around the world entailed spectacular results, particularly in mapping some cities to an extent never achieved so far (cf. map).

CartONG is also supporting the OpenStreetMap project through various activities (cf. below). We are delighted that this collaboration leads to output that is directly useful for humanitarian teams in the field, and look forward to continuing & expanding it in the coming years.

2. Improvement of the ArcGIS Server platform for UNHCR

OVERVIEW	Staff involved	4 employees (Manager, GIS officers, IT)	Budget	59,100 € ¹
	Contractor	UNHCR (FICSS section)	Location	Global
	Beneficiaries	UNHCR teams, beneficiaries & partners		
	Content	Implementation of a new global GIS server for UNHCR HQ & missions, standardization of data model, creation of a webmap (with data from said server), and creation of a map center.		

CartONG continued this year its long-term collaboration with the **Field Information Coordination and Support Section (FICSS)** of **UNHCR**. The objective was to give technical advice and support to operations in data management, in order to implement a GIS strategy streamlining the products and database maintenance, allowing UNHCR and their partners to optimize the mapping response in the future.



The first aim of the project was to implement a **new GIS Production Server** with PostgreSQL/PostGIS and ArcGIS for server and to transfer the existing database. The server was installed successfully and proved to be a very powerful tool – however it was a long effort, specifically to ensure UNHCR has a sustainable capacity to maintain and secure it. The connection between PostgreSQL and ArcGIS Server proved to be more complex than expected and required a strong collaboration with ESRI's support teams to have it running well. The work on the server also led to redefine the **data model** used by UNHCR, to fit OCHA's conventions and ensure its internal consistency.

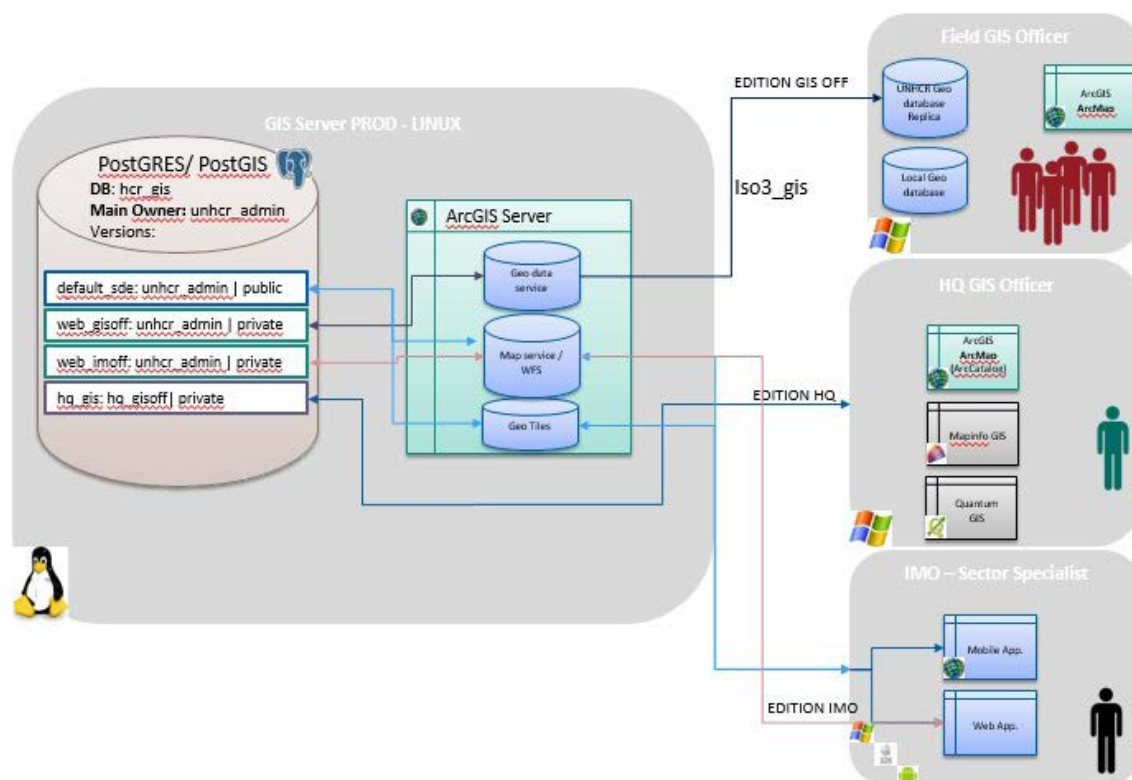
UNHCR is one of the first large humanitarian organizations trying to create a **common replicable geodatabase**. This database will be replicated on the GIS officers' machines, therefore can be edited offline and then synchronized back to the global server. Implementing these features is part of the plan for 2015.

The process of defining and preparing the geodatabase proved to be very time-consuming, thus to ensure the project would be built on sound basis it was decided the prioritize **HQ capacity building** and only a few roll-out missions to replicate the server in the field were conducted in 2014.

Two additional unplanned activities were also implemented: the creation of a **webmap**, constantly updated with the data from the new ArcGIS server. Embedding this web map

¹ Note: This is the total budget for FICSS section, which also contain some elements on mobile data collection, described with the [activities for PHS section](#).

into different projects such as the data portal (planned in 2015) will be a milestone towards merging different databases.



The second new activity was the creation of a **library of maps** accessible both internally and externally. So far, the (numerous) maps produced by UNHCR were stored on a not-so-user-friendly intranet, not accessible to partners. CartONG started to develop a map centre – building on the work completed for MSF – the core application being installed on the same server as ArcGIS. The end-user interface will be launched in 2015.

CartONG also assessed the needs and tools available for **mobile mapping** in refugee camps. A plan was drafted based on this assessment, which may be implemented in 2015 depending on UNHCR's priorities.

3. Support on GIS databases & tools for ICRC

OVERVIEW	Staff involved	4 employees (Manager, Technical Supervisor, GIS officer, IT)	Budget	8650 €
	Contractor	ICRC	Location	Global
	Beneficiaries	ICRC teams		
	Content	Cleaning of admin boundaries for the ICRC databases and working on data tools		

The **International Committee of the Red Cross'** GIS team has set up a state-of-the-art internal geographic database. The ICRC however required external support this year to **clean and integrate the admin boundaries on their ArcGIS geodatabase**. CartONG therefore produced a set of integrated and cleaned baseline data of administrative layers and international borders, using the topology rules and technical constraints defined by the partner. We also provided some additional support on other data tools.

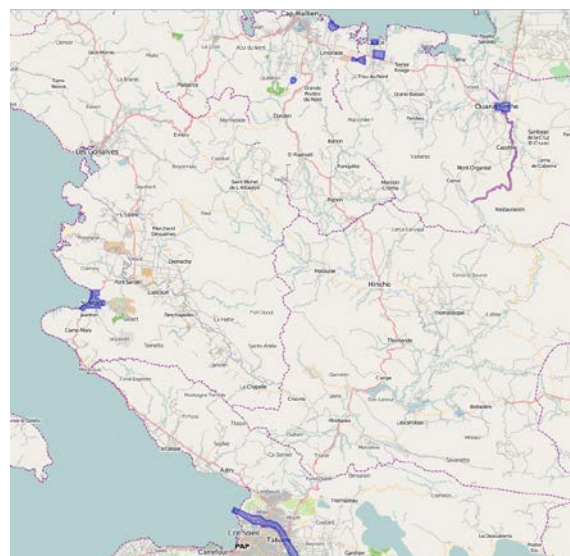
4. UAV & participatory mapping with OSM Haiti

OVERVIEW	Members involved	3 (Manager, GIS officer/ UAV pilot, Trainer)	Budget	12,900 € ² + volunteer contribution not evaluated ³
	Partners	Fondation de France	Location	Haiti
	Beneficiaries	OSM Haiti members & beneficiaries		
	Content	Using UAV to produce aerial imagery in Haiti, training volunteers on the device, and supporting local OSM communities		

Following the long-time personal commitment of one of CartONG's volunteers on the topic, a project using **Unmanned Aerial Vehicles** (UAV or civilian drones) for mapping was implemented in 2014. The objectives were to train the **Haitian OpenStreetMap communities** on the use of UAV, to produce high-quality imagery for mapping, but also to continue creating interest around the OSM project within the community.



Our expert volunteer trained another junior volunteer on the use of the device, who was then deployed to Haiti for almost one month. Our volunteer **trained members from the 3 existing OSM communities** in Port-au-Prince (COSMHA), Saint-Marc (COSMHA STM) and Limonade (COSMHA NNE) on the use of the UAV. Whilst the training offered them a good overview of the technology, additional practice will however be required for a fully autonomous implementation in the future.



Overview of covered areas

The 42 training flights also presented an opportunity to produce **68.5 km² of state-of-the-art imagery** (probably the biggest area covered so far in the country), cf. map. This imagery is available for tracing on OSM, with tasks on the Tasking Managers in Port-au-Prince and Saint-Marc to coordinate.

The project also included the development of a **mini-server** to process the imagery directly on the field. The mini-server was built and tested, unfortunately it was not possible to test it during the field missions due to calendar constraints.

The other aim of the project was to **help the Haitian OSM communities organize and collaborate**. The mission made possible a first meeting between the different communities, which should allow setting up of a national community in the future. It

² Including 1500€ for the Salon des Solidarités activity.

³ Volunteer contributions have however been estimated on the specific Salon des Solidarités activity, accounting for 2000€ on the total 3600€ budget.

was also an opportunity to identify the huge constraints local volunteers are facing, and start thinking on solutions to help them in the future.

The costs of the project (transport, equipment and sustenance of the volunteers) were covered by the **French OpenStreetMap chapter** through a **Fondation de France** grant.

In order to capitalize on this project and spark the interest for humanitarian OSM activities in France, part of the grant was assigned to pay for a common booth at the **Salon des Solidarités in Paris** in June. The booth was part of the Social Good Camp (part of Social Good Week initiative), including several actors of social innovation. It was also an opportunity to present the UAV project to NGO professionals and to organize a **follow-up workshop on the Haiti mission**. CartONG participated to several **conferences** during the event, on digital volunteerism, humanitarian innovation and GIS tools for NGOs.

We were able to exchange with several NGOs, individuals or future volunteers, however the decreasing attendance of the overall Salon and a packed agenda didn't allow to reach as many persons as expected during our sessions.



5. Volunteer Emergency Mapping team

OVERVIEW	Staff involved	C. 10 volunteers	Budget	0€ (volunteer contribution not evaluated)
	Partners	GIS74, SOS Attitude, PHF	Location	Global (remotely)
	Beneficiaries	Partners supporting populations victim of disasters		
	Content	Providing base maps and compiling maps produced by relief actors for small NGOs deployed in emergency missions.		

To improve the quality and efficiency of humanitarian action by providing mapping and information services to small aid actors in need of it, CartONG's **volunteer emergency mapping team (CUB)**, **founded in 2012, provides maps to small NGOs deploying in the field** after disasters, which do not have access to mapping resources.

The volunteer team produced base maps in a short time frame after activation by the partner (24 to 48 hours) to take them to the field. They also when needed compile various maps produced by other relief actors that could prove useful.

In 2014, the team was activated for the following emergencies:

→ **Quimperlé** (France) for the NGO **GIS74** who deployed there after severe floods (January; this was a particular activation since in France mapping resources available were already good, however it was useful to test the team and the workflow).

→ **Vatomandry & Tamatave** (Madagascar) for the NGO **Pompiers Humanitaires Français** who organized a training and mission there (May)

The team also continued the collaboration with the **Paris-I University for a "GIS for development" course**.

CartONG's volunteers submitted requirements to the students (maps and data mining) that looked like what an NGO could actually need, and then reviewed the results. This collaboration allows on one side for the students to be trained in a practical situation, and on the other side for CartONG to gather data on countries we have defined as priorities for future activations.



Finally, another initiative was launched in parallel to our emergency mapping project: our volunteers realized it is not always easy to find relevant data when mapping certain countries, especially when working with a tight schedule. They have therefore started to build a platform **to inventory the various free data sources** available.

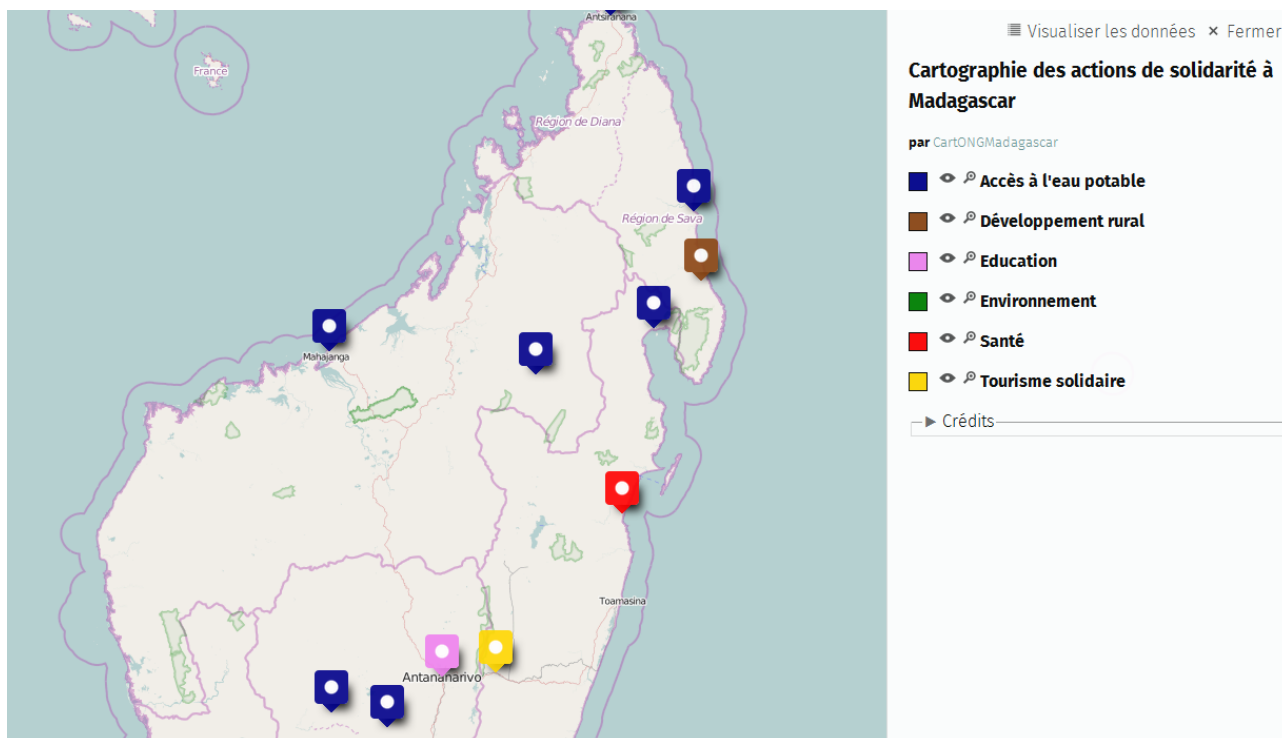
6. Atlas Solidarité Madagascar & other webmapping initiatives

OVERVIEW	Members involved	5 volunteers	Budget	0€ (volunteer contribution not estimated) ⁴
	Partners	None so far	Location	Madagascar
	Beneficiaries	Grassroots NGOs, and indirectly all their beneficiaries		
	Content	Creating an interactive platform to localize solidarity projects developed by grassroots NGOs and community organizations in Madagascar		

This project aims at **mapping solidarity projects (health, education, environment...) developed by grassroots community organizations in Madagascar**. The idea is to map the location of these small-scale organizations that play a crucial role in the social, educative and WASH system of the country, in order to help them be more efficient through **coordination and improved visibility**. The mapping tool would give an overview of the solidarity actions both at local and international level, ease up the sharing of resources and sharing of lessons learned, improve the monitoring of ongoing projects in the field, and would eventually contribute to an improved efficiency of the aid sector.

⁴ PDM has submitted an application to a small grant for the Skoura project.

Our volunteers published a **test website** based on the mapping tool uMap in 2014 (which was presented during GeOnG 2014) and are completing the final webmapping solution that will be released in 2015. We are also preparing an inception mission that will help present the tool to the stakeholders on the field. The analysis of their feedback will then allow us to adapt and improve the tool in order to better fit the requirement of the future users.



The pilot website

We have already been in contact with various actors that have expressed their **interest for the project**: the Consortium de Solidarité avec Madagascar (which coordinates French NGOs working there), pS-Eau (the network of development organisms working in WASH) and several local NGOs and actors.

The project's full potential is obviously beyond CartONG's volunteers' possibilities, we are therefore **looking for partners or funders** interested in helping us develop this pilot.

Concurrently, we launched a brainstorming on how to **promote OpenStreetMap in the country**, since the quality topographical data produced by OSM contributors would be very helpful for an accurate geolocation of the projects featured in the Atlas.

We are also planning on **duplicating and adapting** the project to two other settings (in Mali and Madagascar), cf. [Perspectives for 2015](#) section.

Finally, we had another ongoing mapping-of-initiatives project idea in Morocco on the oasis of **Skoura** with the NGO Pédiatres du Monde, but it is currently frozen because of the security conditions in the region.

CAPACITY BUILDING⁵

Capacity building through the GeOnG, training sessions and general outreach remains one of CartONG's key fields of interests, to help the geographical information community in the humanitarian field be as independent as possible in their projects.

1. GeOnG 2014: "Turning data into actionable knowledge"

OVERVIEW	Staff involved	1 admin and 1 intern + all the staff and 17 volunteers	Budget	13,600€
	Sponsors	ESRI, Novel-T, EpiConcept, CNES, PSI Mobile, Mairie de Chambéry, Camptocamp, Isogéo, Audit Savoie Conseil, 3Liz	Location	Chambéry, France
	Beneficiaries	GIS specialists and project managers of humanitarian organizations.		
	Content	Organization of a 2-days conference on mapping and information management for the humanitarian sector		

Like every even year, we again organized **GeOnG**, the key event on geographic information for relief & development. 144 participants from more than 70 organizations came to question the ability to process all the data produced and shared by new technologies and turn it into relevant information, hence "turning data into actionable knowledge".



8 roundtables on topics like information in health and epidemiology; volunteers and crowd sourcing; access/use of satellite imagery; data analysis, visualization and data sharing from HQ to field; maintaining indicators; data for donors; etc., 16 training workshops delivered by specialists on innovative tools or data management essentials (ArcGIS, CartoDB, KoBo, mobile OSM, multi-stakeholders surveys, UAV imagery, R software, advanced Excel, HXL, GeoJSON, etc.), a plenary, a keynote speaker (Dr. Philippe Calain of MSF-CH on ethics in data management) and the speed geeking session made possible intensive discussions and sharing between participants.



⁵ All the training sessions that also include an information management component are covered in that section rather than this one for the convenience of readers.

We'd like to warmly thank our sponsors who made this event possible, all the speakers for their captivating interventions, the various actors and volunteers who helped in organizing the event and of course all the participants that contribute to making the GeOnG such a special event.



2. GIS and information management trainings for ACU (REACH)

OVERVIEW	Staff involved	4 (MDC and GIS)	Budget	18,000 €
	Partners	Assistance Coordination Unit (REACH)	Location	Gaziantep, Turkey; Geneva, Switzerland
	Beneficiaries	GIS specialists and Information Managers		
	Content	Extended training sessions on Mobile Data Collection as well as GIS + short training in Geneva on KoBo Toolbox		

Through a funding granted by their partner REACH, we were able to support the **Assistance Coordination Unit** (ACU) with two training sessions. ACU is an NGO based in Turkey and bringing relief to the Syrian population, supported by the Norwegian's people aid.



وحدة تنسيق الدعم
ASSISTANCE COORDINATION UNIT

REACH Informing more effective humanitarian action

We conducted two connected trainings, one on **GIS and mapping**, and the other one on mobile data collection. The first part covered a review of the current information management practices by the Information Management Unit (IMU) of ACU, with a 10 days complete training session from beginners to advance level on **ArcGIS**.

The second training on **mobile data collection** was a comprehensive session including 2 days for the data collectors (40 people) and 5 days with the 8 members of the IMU on managing a survey (including choosing between server options, forms management, questionnaire coding, survey logistics, data analysis, etc.). After comparing several solutions, the IMU eventually chose to use **KoBo Toolbox**.

It was advantageous to be able to conduct these two trainings one after the other with a short gap between them, since the partners thus had the time to **assimilate and practice the overall IM procedures before learning mobile data collection**.

We also conducted a short one-day training for REACH's coordinators during their gathering in Geneva, on mobile data collection using KoBo Toolbox.

3. GIS training for Triangle GH

OVERVIEW	Staff involved	2 (GIS)	Budget	1600€
	Partners	Triangle Génération Humanitaire	Location	Lyon, France
	Beneficiaries	Triangle's technical advisers, and indirectly all their field staff		
	Content	Basic GIS, QGIS and GPS training		

We were also contacted by **Triangle Génération Humanitaire**, an NGO based in Lyon and supporting local development through integrated projects in water & sanitation, civil engineering, rural development, food security and socio-educative aspects. They wanted to have a **general training on GIS** in order to improve their internal data management.



We presented to 3 staff (technical advisers on WASH, building and food security) the **fundamentals of GIS** and their use in the humanitarian sector, followed by an in-depth training on **QGIS and on GPS point collection**. This was a really interesting collaboration since we had the opportunity to assess TGH's information management processes before the training, and suggest improvements that were implemented during the training.

It was also nice to work with a small-scale organization and to be able to give them simple but very useful advice on how to improve their daily workflows.

4. GIS & GPS course for Bioforce's logistician students

OVERVIEW	Staff involved	1 (MDC and GIS)	Budget	900 €
	Partners	Institut Bioforce	Location	Lyon, France
	Beneficiaries	36 future NGO logisticians		
	Content	GIS and mapping training in humanitarian context		

CartONG has been teaching GIS regularly to the trainees of **Institut Bioforce** over the past few years. This year, we trained 36 students from the **logistician program** on the basics of mapping, and how it can be useful for their future work.



We introduced them to the use of **QGIS**, the most commonly used open source GIS, very suitable for occasional users. The objective was also to present the actual constraints usually found in the field (in particular the lack of internet connection) and how to overcome them. The trainees learned how to **collect GPS points**, import them on QGIS, and use them for thematical analysis. Finally, they were able to practice what they learned with a mapping exercise based on the Minkamman camp in South Sudan, with real data provided by a partner.

This type of training is important not only because the future humanitarian workers have received a basic training on GIS, but also because it heightens their awareness on the usefulness of geographic information and data sharing. We will renew it in 2015 and potentially extend it to the WASH trainees.

INFORMATION MANAGEMENT

Information Management (IM) aims at improving the quality of data used by humanitarian actors over time and its rapid dissemination for decision-making. We contribute through mobile data collection and general IM support for our partners.

1. Remote support for UNICEF

OVERVIEW	Staff involved	1 employee (Information Manager)	Budget	16,300 €
	Contractor	UNICEF	Location	Central African Republic
	Beneficiaries	UNICEF Western and Central Africa Office and their beneficiaries		
	Content	Information management on data use and sharing		

After a first assignment in 2013 on mobile data collection, our 2014 assignment for the **UNICEF Western and Central Africa Office** consisted in the **deployment of an information manager in Bangui** (Central African Republic) to back up the crisis-response mechanism, especially on data use and sharing.



CartONG assessed the current capacities of the RRM in Central African Republic, analyzed its needs in collaboration with the teams and evaluated the current tools used. CartONG's expert then built on these insights contributing to the improvement of the information management of the RRM (development of the Excel analysis tool, propositions for the recruitment of an IM officer, suggestions of tools to ease the analysis process).

Following the mission, recommendations were issued to further improve the RRM's IM tools and procedures.

2. Mobile data collection for UNHCR

OVERVIEW	Staff involved	6 staff (developers and trainers)	Budget	€ 90,4006
	Contractor	United Nations' High Commissioner for Refugees (PHS) and Joint IDP Profiling Service (JIPS)	Location	Burkina Faso, Jordan, Chad, Ethiopia, Cameroun, Ivory Coast, Remote Support.
	Beneficiaries	UNHCR teams at headquarters and on the field		
	Content	Building survey forms for rapid data gathering in the field with Android mobile technologies.		

⁶ Estimated, since the full project with the respective UNHCR sections contained more elements than Android surveys. The budget for Android surveys also includes any training activities related to the topic.

We continued our long-term work with the **PHS** (Public Health Section) of **UNHCR**, through different projects.

The main activity was to support the **SENS nutrition surveys with mobile data collection**, conducted since 2011 mostly with Android phones. This included **in-country support** in Jordan (in an urban context), Burkina Faso, Chad (where the UNHCR survey managers partly conducted for the first time the training of enumerators themselves – with our specialist's support) and Cameroon, as well as **remote support for Kenya** (mostly on form coding and updating the system since the teams already had a good grasp of the tool). CartONG also organized a full **1-week training for UNHCR & partners' staff in Ethiopia**, for both beginners and advanced profiles. Since several UNHCR teams (particularly in Eastern Africa) are now proficient with mobile data collection, we'll try in future to enable them to train their colleagues themselves (enumerators but also survey managers) to enhance capacity building and sustainability.



We also fully recoded the SENS forms using the new **XLSforms** technique- which is both more user-friendly and faster since it is done via Excel- and kept updating and improving the PHS training material, with a new and streamlined online FAQ for field staff, and five mini-videos detailing the key part of the procedure.

Another key aspect of our work using mobile data collection is the **benchmarking of various solutions**. This work is a part of many of our projects using MDC, however, since PHS has been instrumental from the beginning on supporting us to test and compare various solutions, it is presented here. Many solutions (paying or free, open source or not) were developed to offer a more user-friendly experience than the core ODK software; we deployed two of them in 2014, Formhub (which unfortunately proved to be unreliable due to management changes) and KoBo Toolbox (created within the Harvard Humanitarian Initiative and supported by UN OCHA, therefore offering a better visibility). We also monitored the development of ODK 2.0, that should bring powerful new features to the app (including a fully customizable relational database for subforms, form interface, etc).

Our activities in 2014 also included **analyzing the results from the Niger blanket feeding monitoring pilot from 2013**: the use of the XScanpet Android application proved to be relevant, especially thanks to its Excel direct export. Since monitoring MDC

systems (that can synchronize data in 2 directions) is an increasing request from our partners, we'll continue testing technologies for this need next year.

The last activity we conducted for PHS in 2014 was a **nutritional monitoring project pilot in Goz Amir camp (Chad)**. It uses mobile data collection and a system of bar codes distributed to beneficiaries to improve monitoring anthropometric data. The data is captured, every time when children participating in the programs visit the nutrition center. Our specialist designed and started the pilot, which will be ongoing for 6 months. The process included distributing laminated cards with barcodes to beneficiaries to identify them; data collected (and former visits) could then be consulted directly on the smartphones, allowing live monitoring during the food distribution/medical visit. Implementing mobile data collection on this process has helped increase information sharing, and will also allow global analysis of health conditions in the camp that were not possible with the previous hand-recorded system. A follow-up mission and potential duplication on other topic/place will probably be necessary to fully capitalize on the results of this pilot.

Collaboration with FICSS also includes mobile data collection, but due to the limited time available of FICSS staff outside GIS activities, it was not possible to hold a training. CartONG however continued to **provide FICSS with information on technologies and devices available**, an output shared with the PHS section (cf. above). CartONG also offered **remote support for a survey in Cameroon**, using the new KoBo Toolbox platform. The support included advising, preparing training material, and reviewing the forms. The remote support thus strengthened the skills of the field team in an efficient and cost-effective manner.

CartONG also supported the **Joint IDP Profiling Service (JIPS)**, under the FICSS agreement, for a **survey in Ivory Coast on internally displaced populations**. This support consisted of a training mission on mobile data collection for the survey managers and enumerators. However, since the large-scale survey was delayed for several months due to logistical reasons, only remote support could be provided during the actual data collection phase – which is not ideal since usually data cleaning and consolidation efforts increase when in-country monitoring is not possible for the first few days of data collection.



3. Mobile data collection for Terre des Hommes-CH

OVERVIEW	Staff involved	4 staff (Information Management, GIS, MDC)	Budget	€ 12,800
	Contractor	Terre des Hommes-Lausanne	Location	Burkina Faso, Lausanne
	Beneficiaries	TDH's teams and beneficiaries		
	Content	Supporting mobile data collection surveys and capacity building.		

CartONG helped **Terre des Hommes-Lausanne** in 2014 through several trainings on mobile data collection, for their operations in Burkina Faso but also at headquarters.



Two trainings were conducted in Burkina Faso for TdH's local team, for food security surveys they run in the course of their project to support full and diversified nutrition in the region. The first one, in March, introduced the technology, and the second one, in October, assisted leading TdH's staff towards autonomy and introduced more advanced information management procedures. We also coded TdH's forms and developed a full set of customized training documents in French.

The good results of the trainings in the field led to **another training at headquarters**, to give the head office staff the capacity to implement mobile data collection during emergency deployments, using **KoBo Toolbox**. The training also covered aggregation and **management of data, and visualization/analysis tools**. This project included remote support to facilitate the transition towards MDC in various country operations.

4. Information management for Solidarités International

OVERVIEW	Staff involved	3	Budget	8700 €
	Contractor	Solidarités International	Location	Mali, Paris (France)
	Beneficiaries	Solidarités International's teams and beneficiaries		
	Content	Supporting information management + training		

Solidarités International is one of our oldest partners, and we had again in 2014 the opportunity to collaborate with them on two projects.

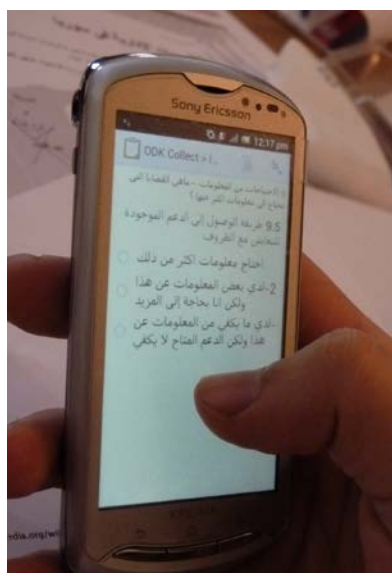


The first one was a **support mission for their Mali operation** to help them on information management. The objective was to consolidate and merge several WASH databases in order to attain a more efficient and sustainable IM. Our specialist consolidated the different tools in an Access database and produced documentation for local staff to continue it- however there is still work to do after his mission to attain a state-of-the-art system.

The second action was a **1-day training at their headquarters in Paris**, for WASH, Log and Monitoring & Evaluation coordinators. The training covered the basics of information management and mobile data collection. It included an exercise on KoBo Toolbox based on a WASH situation, and the data collected was then used in a Google Earth exercise. This basic training will allow Solidarités' coordinators to start their own MDC process in their country operations, with the support of HQ.

5. "Access to information" surveys for IMS

OVERVIEW	Staff involved	3 (Survey Manager, Project Manager, Advisor)	Budget	€ 14,200
	Contractor	International Media Support	Location	Iraqi Kurdistan
	Beneficiaries	IMS's teams and beneficiaries		
	Content	Supporting mobile data collection surveys		



We collaborated again this year with the NGO **International Media Support**, who supports free & professional media around the world. We supported them on assessing the information needs of Syrian refugees in Kurdistan. IMS surveyed Syrian refugees, the hosting communities as well as the media.



The project included support to design the form, the sampling methodology and a training mission in Sulaymaniyah for the survey. CartONG also helped IMS on analyzing the data collected and producing the report. This project was once again an opportunity to prove the versatility of OpenDataKit, with a four section survey fully translated in Arabic.

6. Refugee situation surveys for the Kader NGO

OVERVIEW	Staff involved	4	Budget	11,900 €
	Contractor	Caritas Luxembourg	Location	Antakya, Turkey
	Beneficiaries	Kader's teams and beneficiaries		
	Content	Supporting mobile data collection surveys		

We conducted this year another project to support an NGO helping the victims of the Syrian conflict: **Kader**. Thanks to the support of their partner **Caritas-Luxembourg**, we were able to deliver a full information management and mapping training.



During a first mission, we trained Kader's staff on **mobile data collection** with Android phones, using the Formhub technology.



We then worked with them to identify their needs for a mapping platform to display their internal information, and chose **CartoDB** to implement it. A second in-country training covered the **essentials of data management** and managing CartoDB for the Kader technical focal point. We also **created maps** remotely after the end of the mission.

7. School surveys for the Education Cluster

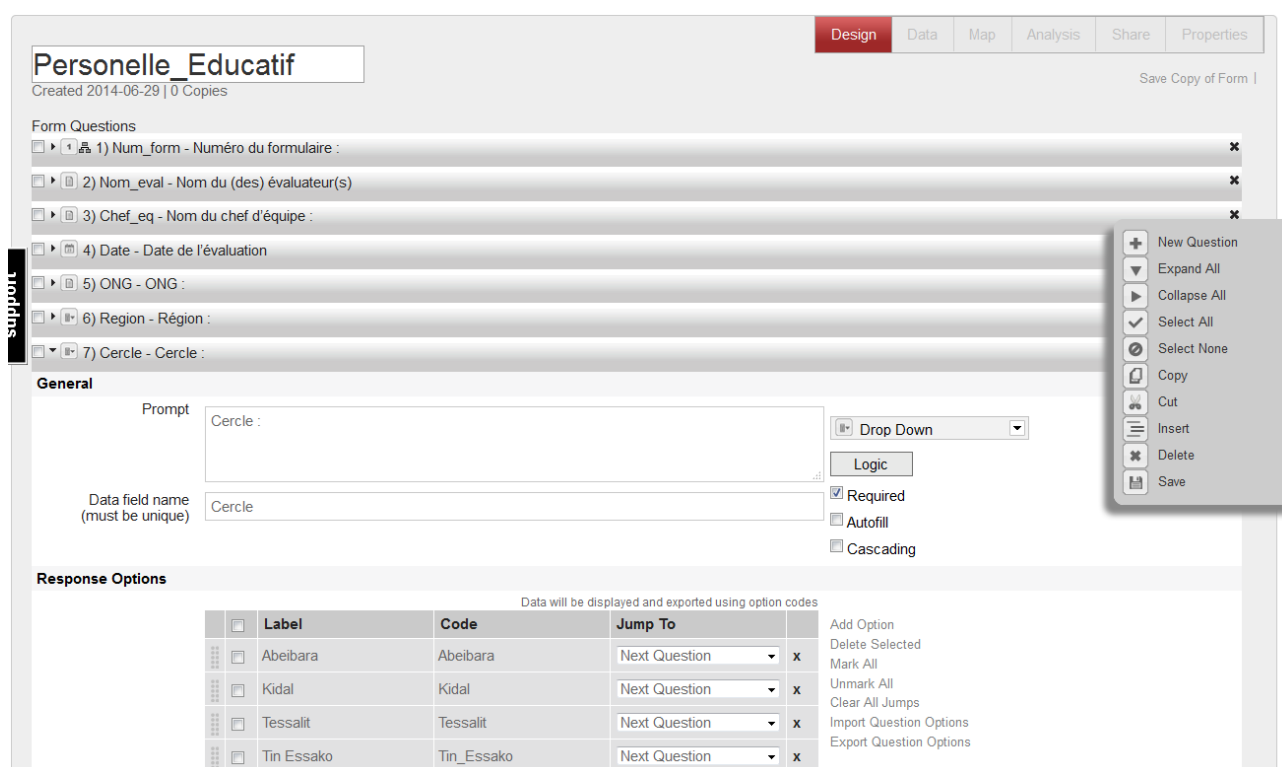
OVERVIEW	Staff involved	2	Budget	1800 €
	Contractor	Save the Children	Location	Mali (remotely)
	Beneficiaries	Educational cluster's teams and beneficiaries		
	Content	Supporting mobile data collection survey on schools		

Following our 2013 intervention we did with our NOMAD partner iMMAP at the **Education cluster** global meeting, Save the Children (cluster coordinator) contacted us to **support their team in Mali on mobile data collection remotely**. The survey was investigating the condition of schools in the Northern part of the country following the crisis.



We assisted the Education cluster's local coordinator in coding 4 forms, planning the survey workflow, and providing documentation for the training of enumerators. We then supported him during the survey to troubleshoot quickly all the issues he faced, and finally worked with him on the data cleaning and analysis following the evaluation.

It was an interesting project because it allowed us to use the MDC solution **Magpi** for the first time, but also because it was proof that for a motivated field coordinator, remote support on an affordable budget was enough to implement a successful survey.



The screenshot shows the Magpi interface for designing a form titled "Personnelle_Educatif". The interface includes a top navigation bar with tabs: Design (active), Data, Map, Analysis, Share, and Properties. Below the title, it says "Created 2014-06-29 | 0 Copies" and "Save Copy of Form |".

The "Form Questions" section lists seven questions:

- 1) Num_form - Numéro du formulaire :
- 2) Nom_eval - Nom du (des) évaluateur(s)
- 3) Chef_eq - Nom du chef d'équipe :
- 4) Date - Date de l'évaluation
- 5) ONG - ONG :
- 6) Region - Région :
- 7) Cercle - Cercle :

The "General" section for the selected question "Cercle" shows:

- Prompt: Cercle :
- Data field name (must be unique): Cercle
- Drop Down menu
- Logic button
- Required checkbox (checked)
- Autofill checkbox
- Cascading checkbox

The "Response Options" section shows a table with the following data:

	Label	Code	Jump To	
<input type="checkbox"/>	Abeibara	Abeibara	Next Question	x
<input type="checkbox"/>	Kidal	Kidal	Next Question	x
<input type="checkbox"/>	Tessalit	Tessalit	Next Question	x
<input type="checkbox"/>	Tin Essako	Tin_Essako	Next Question	x

Below the table, there are buttons: Add Option, Delete Selected, Mark All, Unmark All, Clear All Jumps, Import Question Options, and Export Question Options.

Overview of the Magpi interface used to design the form

FINANCIAL REPORT

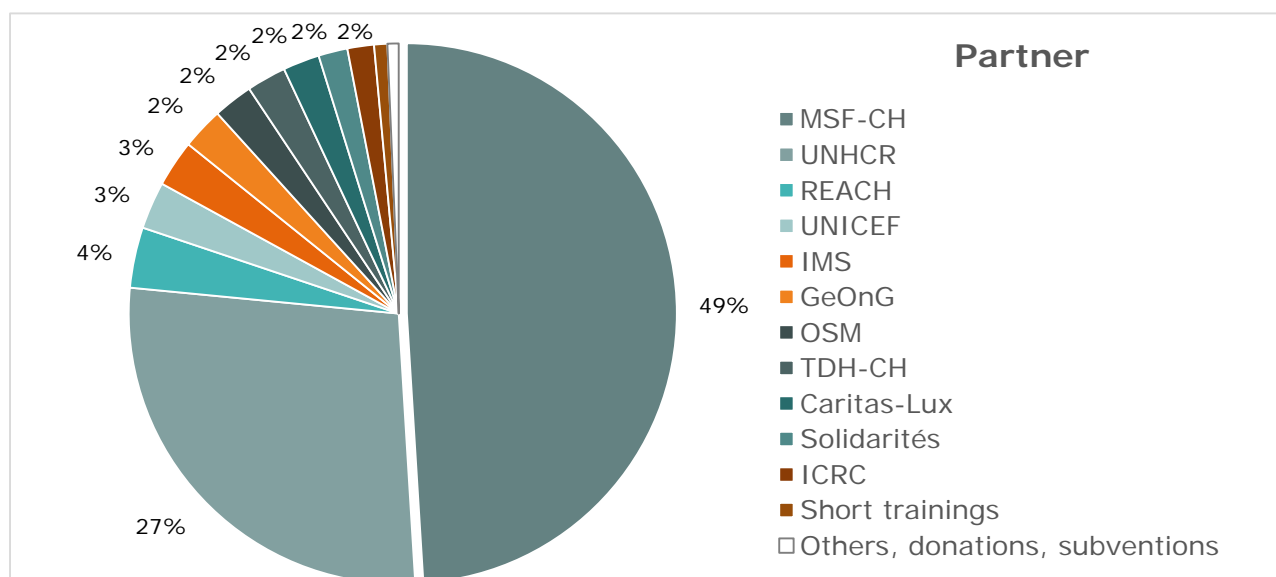
CartONG managed to produce a positive balance this year again, which was more important than expected, at around **129,400€**. This is due to the intensive work done by all the team to answer the requests of our partners, and particularly the Ebola response for MSF – all staff worked without counting the hours to face this exceptional situation.

Given that this amount is by far superior to what we usually manage to add to our security savings, it has been decided to re-invest part of it in 2015. An investment plan was defined by the board of the NGO (cf. [Budget and investment plan](#)), that will help us implement several long-standing needs as well as invest on future developments that will benefit all our partners.

This year's budget amounted to a total of **521,800€**, an increase of 70% from last year. This important growth is largely caused by the many staff deployed for the Ebola outbreak, which had increased our salary line. We are therefore expecting a slight decrease of our overall budget in 2015, with less exceptional emergency deployments.

As usually, our budget has been **funded almost exclusively** (99.4%) **by the partner organizations we work for** (the rest came from donations and membership fees for 0.4%, subventions for 0.1%, and various sources for 0.1%).

We also managed to reach a long-term objective of the NGO, the **diversification of our funding sources**, since our main partner (MSF) accounted for less than half of our incomes this year. Here is the overview of our donors in 2014:



We still haven't managed to evaluate the value of our volunteers' contributions this year – it has been considered as too time-consuming and the volunteers have preferred to focus on project implementation – but keep the objective to measure it in a foreseeable future, starting with a few projects⁷.

Our **expenses** amounted to **396,700€** (also increasing from last year's 312,000€). They were split between equipment expenses & offices costs (32.8%), transport & missions fees (14.1%), insurance, bank & various fees (3.7%) salaries & social charges


⁷ The only measured contribution is the in-kind when volunteers don't claim expenses.

(46.1%) taxes (1.7%) and amortization (1.6%). The distribution is very similar to last year (52% material and missions expenses, 46% salaries and 2% other expenses).

This overall growth of our activity has helped **improve the quality of our action**: the position of administrator at headquarters opened in 2013 was secured, allowing us to deliver accurate reporting to our (now many) partners, and also to increase our outreach. We also created a **new permanent position of GIS officer**: our technical team now includes **6 regular staff** (including 3 permanent contracts), in addition to our regular interns (2/years) and consultants.

The **stabilization of a core team** is important because it allows us to have staff available for both missions & trainings in the field, and research & remote supports from the headquarters. It is also a way to pursue **CartONG's core objective of delivering state-of-the-art services** to all our partners thanks to a shared research & capacity building effort.

For instance, the expertise developed while creating MSF's Map center will be re-used for implementing a similar tool for UNHCR next year. And similarly, the expertise built with UNHCR on mobile data collection now profits the many partners we train. This allows savings at the global level, and **benefits all humanitarian organizations, and particularly the small ones** that wouldn't have been able to develop this expertise on their own.

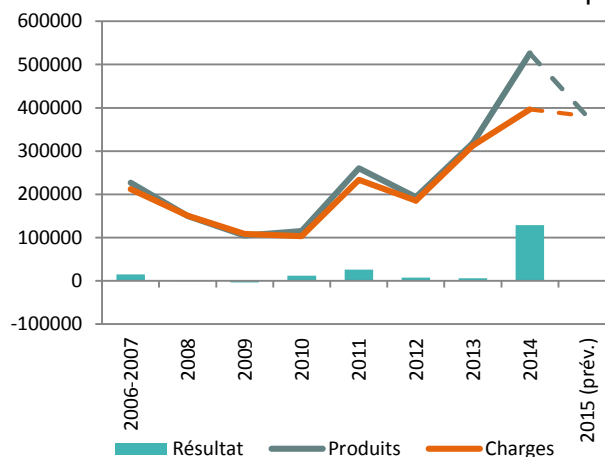
 Our complete financial report compiled by our accountant is available for partners & donors, contact us to receive a copy.

PERSPECTIVES FOR 2015

1. Budget and investment plan

We have established a **provisional budget for 2015 of 381,200 €**. As stated previously this amount is decreasing from last year since we anticipate less emergency deployments. With the increasing part of emergency deployments in our activities, our budget will be more sensitive to the development of humanitarian crisis – this we hope to avoid as much as possible to ensure a stable work employment for our staff.

The distribution of expenses will be the following: 292,200€ for staffing (including consultants), 30,000€ for transport and mission fees, 27,000€ for equipment, 11,100€ for office costs, 14,000€ for insurance, bank & various fees, 1900€ for taxes and 5000€ for amortization. Reflecting the growth of the team (and the fact that we'll employ more consultants proportionally), **the proportion of salaries (76.6%) is expected to be higher than for the previous year**, whereas the equipment/mission (17.8%) and other (5.5%) will decrease.



As explained previously, we have decided to write an **investment plan for 2015-2019** to make prudent use of the exceptional 2014 result. The main priorities identified by the NGO's board are the following:

- **Stabilization of CartONG's core staff** through the creation of permanent contracts, which has proven not only necessary but also very productive (cf. above) and will imply increasing our permanent savings. We will also need to abide well with new regulations in terms of social benefits that will have a cost.
- Creation of **new positions** (2) to be able to respond to humanitarian emergencies, but also to face an ever-growing administrative complexity.
- Improvement/update of the **website**, which is not only an essential communication tool for a technical NGO, but also at the heart of the life of our association.
- Purchasing **software** licenses (ArcGIS Server) and testing others (ODK Aggregate) that will be useful for all our partners.
- Continue investigating **UAV technology**, which has proved to have high potential (cf. the project conducted this year).
- Investment in a project management/time tracking tool and improvement of our **administrative processes**, necessary for improving our reporting to partners but also to keep increasing our efficiency.
- Funding the **NOMAD project**, a platform useful for all NGOs.
- Organizing **trainings** for both staff and volunteers to stay on the edge of innovation and improve the quality of services delivered (cf. below).

💡 This investment plan is also available for donors, please contact us to receive a copy (in French).

2. Staff projects

The investment plan should allow to reach a total of 8 permanent staff in 2015 (7 full-time equivalent), plus 1 to 2 interns and a varying number of field staffs/consultants. The team will grow but we will take extra care in maintaining our habit of working cross-topics and cross-partners, to make sure all our staff is up-to-date on all the technologies we offer. We will also be attentive to keep a flexible, adjustable organization, as well as defending our work ethic.

Several key partners have already renewed their support for 2015, allowing us to foresee the following projects:

- We will continue to support **MSF-CH's** Map Center and field missions and emergencies (Ebola response and potentially other settings).
- We will continue to support the **UNHCR Public Health Section** on the nutrition surveys and on their overall mobile data collection strategy.
- We will follow-up with the **FICSS section of UNHCR** on their ArcGIS rollout and additional mapping and information project.
- The agreement signed with **UNICEF** plans two activations this year, in locations we don't know of yet.
- We will again provide support to **Terre des Hommes-Switzerland** and **Solidarités International** on their mobile data collection and information management activities.
- We will continue supporting **ICRC** on the technical developments of their information management tools.

- Additional trainings for **Bioforce** students (WASH and log).
- And we hope to meet new partners in 2015!

3. Volunteers' projects

The objective in 2015 for our volunteers is to produce deliverables on several projects that were under preparation in 2014:

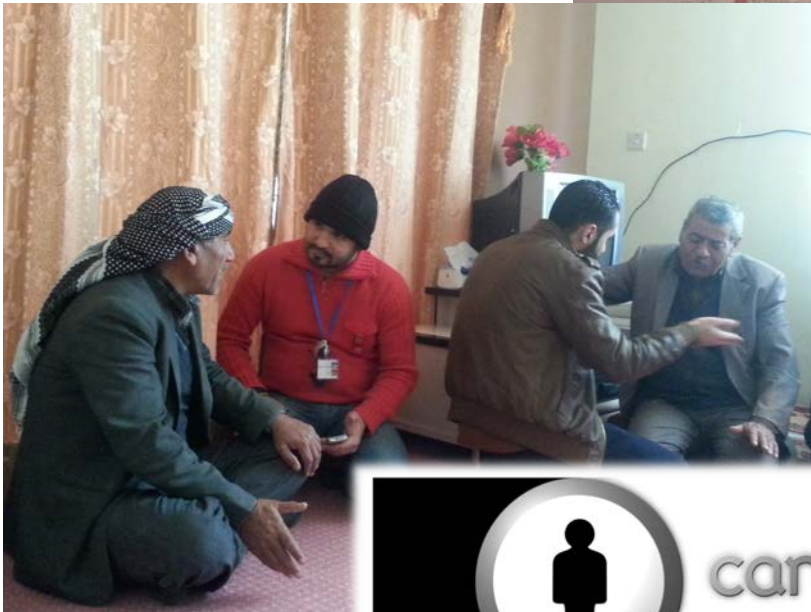
- Develop a first version of the **Atlas Solidarité Madagascar**, and organize a mission on the field to present the tool to the various stake-holders and receive direct feedback on it. We are currently looking for funding for this initial mission.
- Kick starting two new webmapping projects (which should share the technical tools of the Atlas): one in Madagascar too in partnership with the **Centre National de Lutte contre le SIDA and ONUSIDA**, and the other in Mali in partnership with the local governments of Ille-et-Vilaine (France) and **Mopti** (Mali).
- Find more partners for the **Volunteer Emergency Mapping** team to be activated more frequently.
- Produce a first version of the **free datasources repertoire** we're compiling, and deciding on the final tool to implement it.
- Increase our **support to the OpenStreetMap communities worldwide**, through a continued collaboration with the Humanitarian OSM Team during emergencies, support to the Missing Maps project & other mapping parties, as well as a field project to support the **inception of a community in Madagascar** (in parallel to our others activities in the country).
- Start participating to the **Digital Humanitarian Network** we applied to this year.

We also plan to organize more **internal trainings** this year: whereas many of our volunteers have useful and diversified skills, we've realized that it is not always the right person who has the proper skills as well as available time at a given moment. So we will encourage internal **capacity building between volunteers and with the staff** in 2015. We will also try to develop more projects where both components of the association can work together, and share the outputs and technical developments.

*Mapping
remote & in
the field*



*Mobile data
collection*



*Capacity
building*



	A	B	C	D
1	type	name	label-English	label-Français
2	deviceid	DeviceID		
3	start	TimeStartRecorded		
4	end	TimeEndRecorded		
5	note	KCHILD	THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL CARETAKERS OF A CHILD THAT LIVES WITH THEM AND IS BETWEEN 0 AND 59 MONTHS OF AGE.	CE QUESTIONNAIRE DOIT ÊTRE ADMINISTRÉ À LA MÈRE OU À LA PERSONNE PRINCIPALEMENT EN CHARGE DE NOURIR L'ENFANT ET L'ÂGE DE L'ENFANT DOIT SE SITUER ENTRE 0 ET 59 MOIS.
6	select_one camp	CAMP_c	Tick the camp in which you conduct this survey.	Cochez le camp dans lequel vous effectuez cette enquête.
7	integer	SECTION	Section number	Code section / numéro
8	integer	ZONE	Zone number	Code zone / numéro
9	integer	BLOCK	Block number	Code bloc
10	date	SURVDATE_c	Date of interview	Date d'entretien
11	integer	CLUSTER_c	Cluster number	Numéro de grappe
12	integer	TEAM	Team number	Numéro d'équipe
13	integer	HHH	Household number	Numéro du ménage
14	begin_repeat	K	Child questionnaire	Questionnaire enfants
15	calculate	CAMP		
16	calculate	SURVDATE		
17	calculate	CLUSTER		
18	calculate	TEAM		
19	name	ID	Child ID	ID de l'enfant
20	text	NAME	Name of the child	Nom de l'enfant
21	calculate	HH		
22	select_one yesno	CHCONST	Consent given for conducting all measurements?	Le ménage a-t-il donné son consentement à la prise de mesures sur l'enfant?
23	select_one sex	SEX	Sex of the child?	Sexe de l'enfant?
24	select_one yesno	XDOBK	Do you know \$NAME's birthdate?	Connaissez-vous la date de naissance de \$NAME?

*Information
Management*