Sciences Po
School of management and innovation
The Great Transition
Hot topic: Climate Change

Presentation file

Safe Together

Application to inform, prevent, protect and cure about the natural disasters in French Antilles

Participants :

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Welcome to SafeTogether

Who are we ?

We are a group of 10 students from the school of management and innovation of Sciences Po. In the framework of the lecture "The Great Transition", we have to do a collective project.

The aim of the collective project is to propose an innovative product, service or policy advancing solutions to some of the key issues associated with the Great Transition :

- The Purpose of the Corporation?
- Tax Responsibility or Philanthrocapitalism?
- Challenges of Transnational Governance.
- Sharing economy
- Governing digital platforms and algorithms
- Digital politics
- Negotiating climate change
- Stopping biodiversity destruction
- Preserving ecosystems/Preserving human habitats

We have decided to work on the topic of Climate Change which involve the three last hot topics. More specifically, we wanted to work on natural disasters and their effects on civil population.

Presentation file of your project

This paper is the theoretical presentation file of our project that we named Safe Together. We have also created a website where you can find information : https://thegreattransition.github.io/group25-bzQu4AwmyG/index

The table of contents

What is Safe Together ?

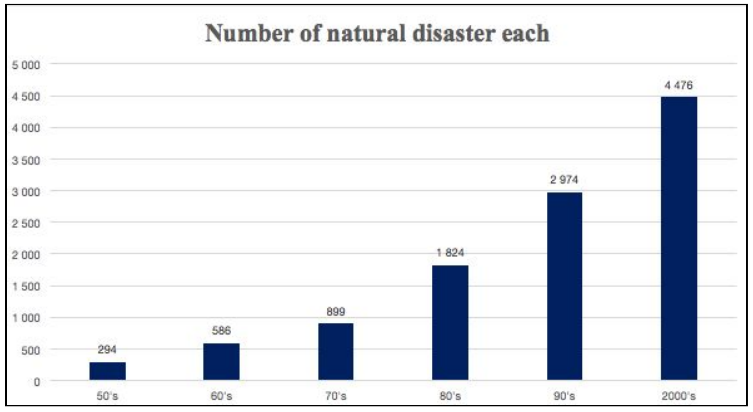
Our topic: Climate change and the increase of natural disasters

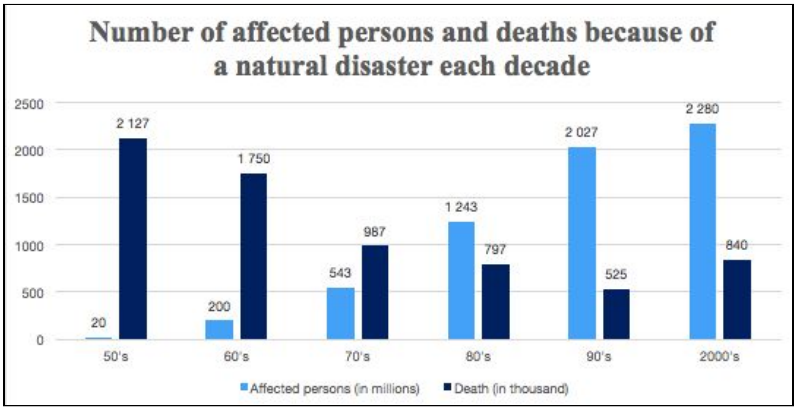
Climate change has been a major topic ever since the publication of the report of the Intergovernmental Panel on Climate Change (IPCC) in the 1980s. Climate change is one of the greatest challenges of this century and the centuries to come that our generation has to address.

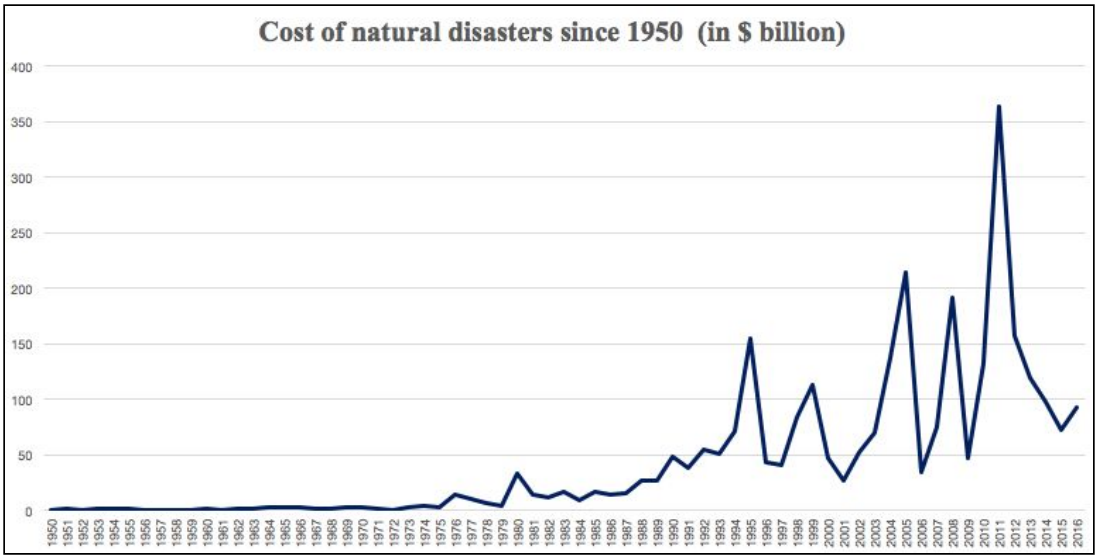
The increase of natural disaster

The growth of climate change and global warming, accelerated by human activities, bears direct consequences for civil population: among other the increase of natural disasters.

The number of natural disasters has increased to reach 448 natural disasters each year during the 2000s. In average, there were 15 times more natural disasters during the 2000s than during the 50s. More and more people are affected by natural disasters, the number doubled between the 80s and 2000s. The costs of natural disasters are exponentially rising, from $18 billion each year during the 80s to $148 billion each year during the 2010s.







Climate change and natural disasters : Highly topical issues

In August and September 2017, Hurricane Harvey (category 4) and Hurricane Irma (category 5) have devastated the regions of the Carribeans and the Gulf of Mexico. These two hurricanes killed more than 115 people, thousand were affected and caused more than $250 billions of damage.

The French Premier Ministre Edouard Philippe said about the French islands Saint Barths and Saint Martin :

"95 % of homes have been affected and 60 % are no longer inhabitable".
"Electricity is cut off, there is no more safe drinking water and fuel is unavailable".

2017 was a disaster year concerning natural disasters. An increased number of natural disasters are happening in 2017. Hurricane Harvey was the most powerful hurricane in the US since Katrina, the earthquake of Mexico killed 98 people and injured more than 300, Sierra Leone was hit mudslides after torrential rainfalls … 2017 could be the year the most costly about the natural disaster damages.

A pessimistic future

The increase of natural disaster number and intensity will continue, because the earth temperature will continue rising by a few degrees. The think tank Global Humanitarian Forum estimated that the number of deaths due to natural disasters could be of 500 000 people in 2013 (300 000 people in 2009) and that the natural disaster costs could exceed $600 billion. Nature Climate Change thinks that the world population part exposed to more than 20 days by year at potential fatal heatwaves could increase of 30% in 2016 to 74% in 2100.

Natural disasters affect civil population

Natural disasters do lasting damages to fragile and vulnerable people, because natural disasters affect the livelihoods (food, accommodation …) and could entrain involuntary movement of population. In fact, more than the half of affected people by natural disasters live in fragile states or states in conflict.

Furthermore, natural disasters could exacerbate fragilities and conflicts in countries, where governance systems are already failing.

Our proposition : An application to inform, prevent, protect and care about the natural disasters in French Antilles

With regards to these assessments and the pessimistic world evolution towards a more frequent occurrence of natural disasters, we face a global and urgent problem. That is the

reason why we have decided to orient our project on this topic. Our goal is to reduce the possible dramatic consequences of natural disasters for civil population.

In order to fulfill this objective of reducing negative consequences of natural disasters for civil population, we think to create an organization which will be responsible for the creation, development and implementation of an mobile application. We decided to name our organization and application Safe Together.

In order to be efficient and have a real impact on civil population affected by natural disasters, we identify that our application will have to respond to three major needs :

- Inform people about the possible natural disasters in their living or vacancy residence
- Prevent potential damages of natural disasters before it
- Care and protect affected people after a natural disaster.

We decided to focus our action on the French Antilles, because the zone was totally devastated by Hurricane Irma in September 2017. Furthermore, we decided to focus on a small scale in order to test and improve our project before a possible international expansion.

The positioning of our application

We have studied the different charities that already exist to inform, protect and care people before and after a natural disaster. We wanted to offer people added value with our application and not to be an another useless application or project. We are aware that different possibilities already exist in this domain. First of all, we have identified that there are a lot of charities that work in the field. We did not want to substitute to these associations that did and do a great and excellent job for people in need. Second, there are a lot of applications and websites that deal with natural disasters. But we remark that they are not practical, convenient, smart and/or connected. In most cases, theses applications and websites are specialized on a specific topic.

Furthermore, we identify a lack of information for population about the natural disasters, particularly the knowledge of the potential threats which could touch the living or vacancy residence. The procedures to be followed in an emergency (for example, first-aid intervention, localisation of medical emergency …) are mostly unknown. This lack of information may also be due to the difficulties to find information or the misunderstanding of the information. People are bad informed about the natural disasters, their consequences and how to protect oneself. This misinformation increase the negative consequences of natural disasters, which could be avoided with a full and simple information.

With these different information, we identified the need to create one universal application, easy to use, quick and useful for people in need.

Marketing and branding decisions

Our name and logotype

The name Safe Together is clear and direct, noting how the app bands people together in safety against potential natural disasters. We wanted to focus on a sense of community and link amongst the users, conveying this mainly through typography.

Our research shows that rubble is generally one of the biggest challenges, thus representing it with the word Safe, that was stopped with the “T” of Together’s crossbar. This in turn enables Together to represent a huddle, a sense of community.

The deep red colour is commonly used in safety and first aid, it was thus important to have it as a major component. Moreover, the lowercase “t” makes a cross, resembling the red cross and first aid. Thin outlines over each letter makes the overall logotype breathe. A small rounded square on the bottom right corner reminds of a full stop and helps balance the overall composition, giving way to the idea that Safe Together cannot be put into question.

As a secondary mark, the “S”, “T” and cross merge together as a pattern that can be used in many promotional materials and also look appropriate for the app icon. This mark can also be used in specific cases with the name written in Futura PT Heavy. Futura is a font that is relatively round, with its signature long apexes; breaking the symmetry all the while giving a professional and serious vibe mixed with relatability.

The corners are rounded as to give the eye a smoother feeling, sharp angles would be too aggressive and counterproductive to the project’s meaning.

You can find the different logos that we use :

Distribution channel

We decided to use the Internet as an outlet channel for our project because, as already mentioned, we did not want to resort to charities that work on the field. We aimed for collaboration with said charities. Our project was to be based on their work, and thus

contribute considerable to the associations and to the civil society. Furthermore, we are convinced that we can spread more information online and hence reach more people.

Our choice to create an application rather than a website was related to the sheer structure of the two formats and corresponded more to our vision and our ideas. Furthermore, an application interface is easier to browse and can be used everywhere by everyone.

Pricing

In order to be properly aligned with its purpose and the intentions behind it, we decided that our application will be offered for free on the different download platforms : Apple's App Store and the Google Play Store.

Our application will not be based on the principles of Freemium or In-App purchase. Users, who download the application for free, will have an unlimited access to the application's functions and its data. They will not have to buy additional services in order to have full access to the application.

Target market

Our project should be directed to everyone who lived or who travel in this area. We don't segment our proposition and our application in function of socio-demographic criteria, because we want to be useful for the majority and used by everyone.

Our goal is that everyone, no matter their age, job or level of education, can use our application.

The obstacles of applications

Not everyone has access to the Internet via a mobile phone

The greatest weakness of our application is that people have to have a smartphone or a tablet to have access to the application.

In 2013, 26 % of Guadeloupians and 28 % of Martiniquais had a smartphone and 9 % of Guadeloupians and 7 % of Martiniquais had a tablet. No other official data is available for the French Antilles. Nonetheless, we can observe that the smartphone ownership rate of France rose to 39 % in 2013 to 65 % in 2016, increasing by 9 percentage points each year. If Guadeloupe and Martinique follow France, the smartphone ownership rate should amount to 53 % for Guadeloupe and to 55 % for Martinique in 2016.

Smartphones or tablets are more and more used by people to access online content. The number of websites accessed via smartphone increased by 49 % in Martinique from 2016 to 2017. But we observe that smartphone or tablet ownership has been correlated with the age, the job and the level of education of the population. In the entire French DOM-TOM (French oversea Departements and territories), we observe that the average smartphone users are young (age 15 to 35 years), well-educated (university degree) and with a high revenue (more than 3000€/month). An impressive 42 % of high socio-professional category people have a smartphone versus 21 % of employees and workers. Regarding the education, 43 % of people who have a university degree own a smartphone versus 33 % of people who possess a high school degree. This data analysis suggests that our aim of providing unlimited access to information no matter the location or data connection is not compatible under these circumstances.

Consequently, our application is the first to target users who live or travel in the French Antilles and who own a smartphone. This target group is young, well-educated and in a high socio-professional category. However we are not only focused on this base, because we observed that roughly about the half of the French Antilles population owns a smartphone and/or a tablet. This percentage increases steadily in every age, revenue and level of education category, which allows to release our application and its ideas worldwide.

Not everyone can use an application

The second issue that we identified is that not everyone is familiar with the interface an application, even if the user in question owns a smartphone or a tablet. This is why we intend to create an intuitive application with an easy navigation through the different parts of the application.

The content of our application

The application will be design in 3 sections :

1. The risk mapping : A map that indicates the risks and shelters in the area you live or you travel.
2. The tutos : Short videos to inform about the risks and to learn how to react in front of natural disasters
3. Locating users in danger : A signal to find the victims

The risk mapping

What is the aim of the dynamic cartography ? Why do we need a risk mapping ?

The citizens are the first actor of their security and that is the reason why they have many ways easy to reach for being informed about the risks to whom they are exposed.

A lot of information is available and at citizens' disposal, at the town hall for instance, such as the DDRM (Dossier Départemental des Risques Majeurs) or the PPRN (Plan de Prévention des Risques Naturels) but the datas are too disseminated and not really practical, not really easy to understand and it does not allow a quick look.

The dynamic cartography will help people to better show the data about the riskiness and it will allow to have an intuitive understanding of the risks. It's not only in order to prevent, it's also in order to educate people and help them to be more awareness of their living conditions.

When you tape the region you are going in, it gives you the natural risks link to this region and also indicate the person shelters, hospitals and so on.

It's a collection of information and datas in only one app !

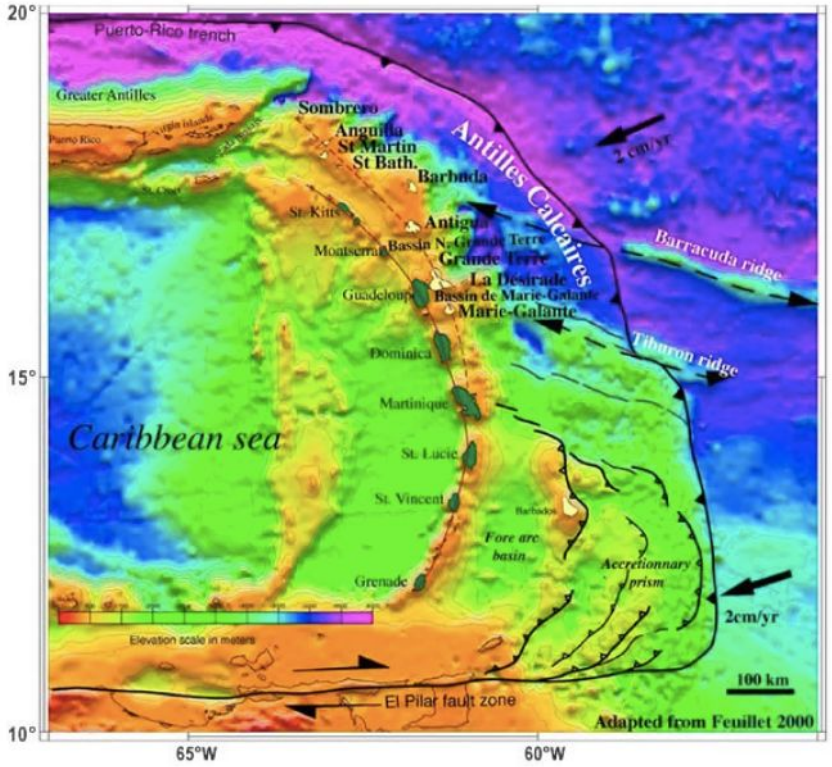
The French Antilles : geological characteristics

The risk prevention is crucial in the French Antilles for many different reasons. But first and foremost, most of the cities in Guadeloupe, Martinique, Saint-Martin or Saint-Barthélemy are situated on the coast because of the topography of the islands. By consequences, the populations are really exposed and it is absolutely vital for them to know perfectly not only the potential natural hazards, but also how to react in front of them or just before/after.

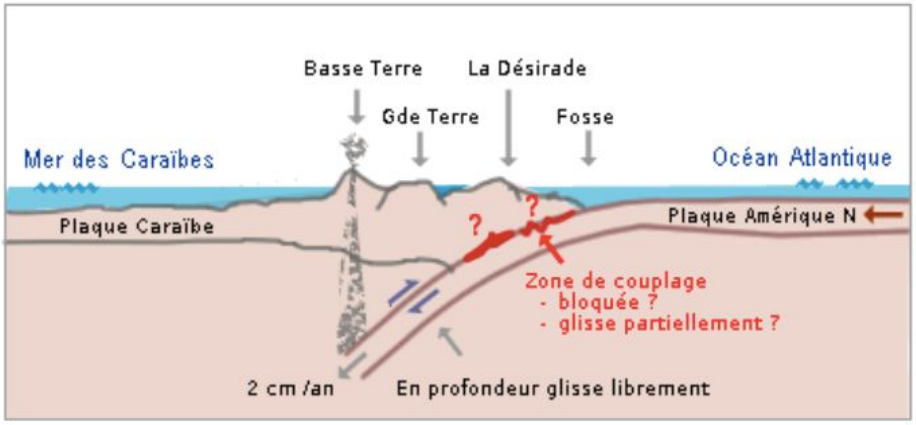
From a geological point of view, the French Antilles are situated in a context of convergence of two tectonic plates : the North-American plate and the Caraïbe plate. At the level of the volcanic arc of the Antilles, the North-American plate plunges under the Caraïbe

plate, at a rate of 2 cm/year. It is called a « subduction ». This convergence is characterized also by many earthquakes, more or less deep. On the earth, the subduction zones are really defined by their important seismic and volcanic activities, with some earthquakes that could reach an intensity above 9 on the Richter scale, as the one of 2004, near to Sumatra (Indonesia).

This specific situation explains the fact that the island arc of the Antilles is an area with a high probability of volcanic eruptions, earthquakes and also tsunamis.



Schematic map : « *The island arc of the Antilles in the context of plate tectonics* »
Source :D. Bertil, S. Bazin, D. Mallarino, F. Beauducel. Séisme des Saintes, rapport de synthèse, Centre de Données Sismologique des Antilles, 8 décembre 2004.



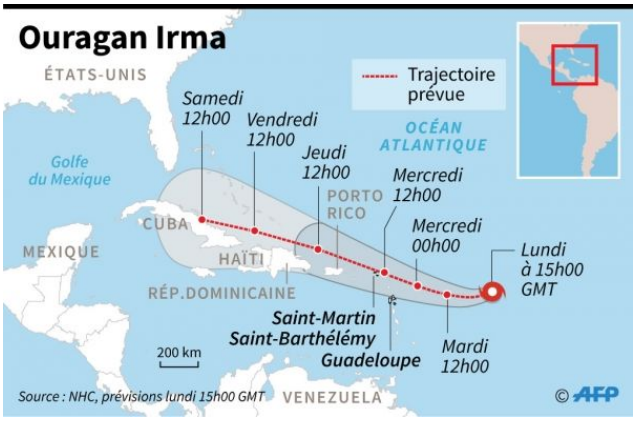
Interpretative model: « *The seismic and volcanic activity link with subduction under the French Antilles* »
Source: M. Corsini, Nice Sophia-Antipolis University.

Concerning the risks in the French Antilles:

The seismic risk is one of the most apprehended in terms of potential victims. Every year, more than 150 seisms of a magnitude higher than or equal to 6 on the Richter scale happened in the world. And concerning the French Antilles, as we said previously, the position at the frontier of two tectonic plates of the Guadeloupe and Martinique islands reinforce the risk. Currently, the scientific are waiting for the « Big One », a huge earthquake, which could occur soon, but no one could say exactly when.

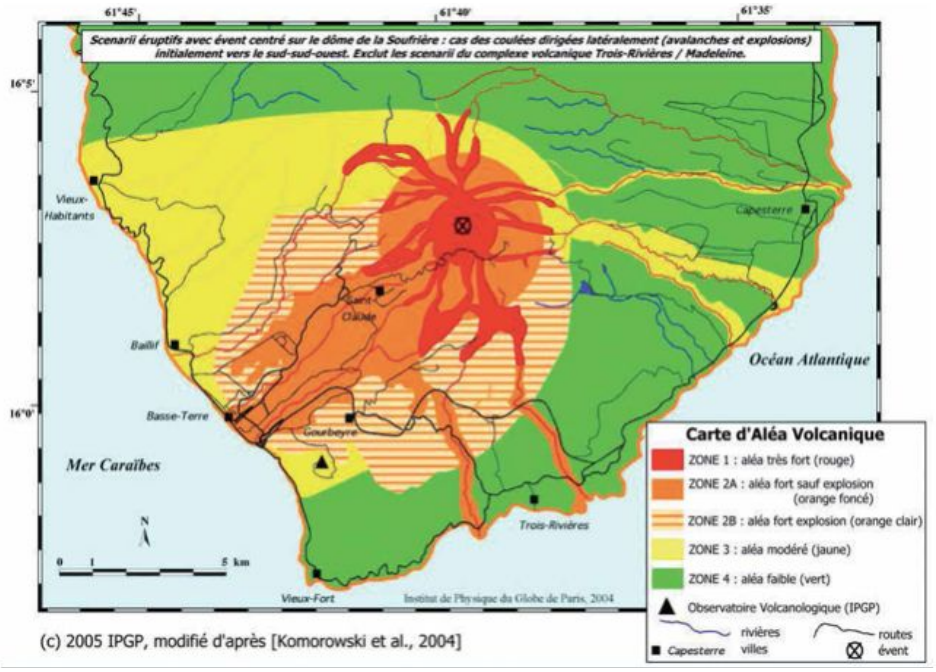
Moreover, with the earthquakes there is sometimes a tsunami, more or less important, and the prevention of that is not really efficient on the French Antilles. Firstly, it doesn't really exist a risky knowledge about tsunami such as for earthquakes or hurricanes for instance. This situation can be explained with the fact that tsunamis are really less present in the region than hurricanes. According to Meteo France, there is a frequency of 0,06 tsunami/year, whereas for the hurricanes it is 0,4/year, which means that the frequency is seven times higher for hurricanes than for tsunamis.

The Islands of the Antilles have a tropical climate (warm and wet), which is favourable for the development of hurricanes. The hurricanes are a major risk for the French Antilles. Because of the straight of the natural phenomenon, and despise the progress of science in understanding, observation and prevention, the hurricanes are still every year at the origins of huge and terrible human costs and economic costs. We had an example of this with Irma hurricane in september 2017 for instance.

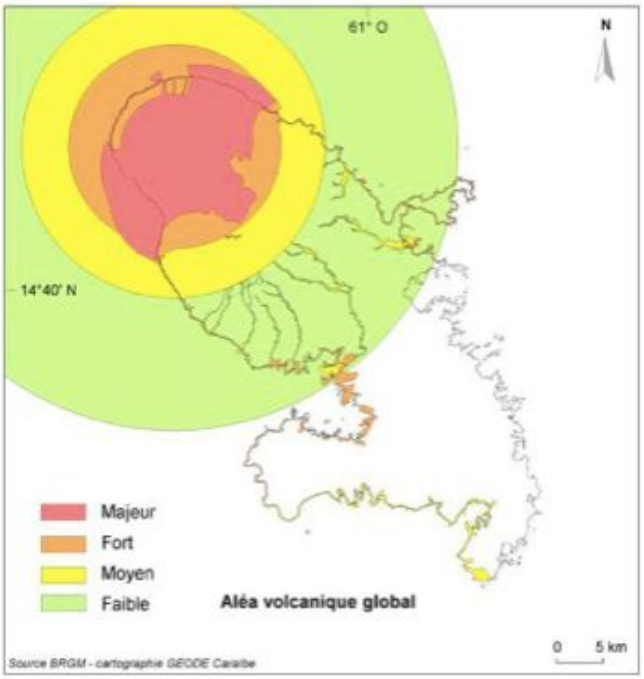


source: Europe 1, NHS, ©SOPHIE RAMIS,PAUL DEFOSSEUX / AFP

Furthermore, the volcanic eruption is also an important natural hazard in Guadeloupe, with the « Soufrière » volcano and in Martinique, with the « Montagne Pelée » volcano, which threat directly more than 200 000 people. The following illustrations show the importance of the dangerous zone in case of volcanic eruption.



source: DDRM of Guadeloupe, 2014 (Dossier Départemental des Risques Majeurs)



source: DDRM of Martinique, 2013

How to build a risk mapping: the different stages:

1st: Finding a relevant background for the app:

We decide to use Google Earth maps for our background, because it is quite precise and it allow different point of views (2D, 3D). We used screenshots. For instance, with Martinique Island:

2D

3D:

2nd: Finding the data concerning the risks (which turned out to be more complicated than planned !):

At the beginning of our researches, we thought that we could find easily some datas about the risks in the French Antilles, such as on data.gouv or on the website « Géorisques ». But quickly, we met some difficulties, in particular with « Géorisques ». Indeed, it functions perfectly for every city in metropolitan France, but when you begin to search many accurate details about the French Antilles, the website turns in the air but give you nothing about it.

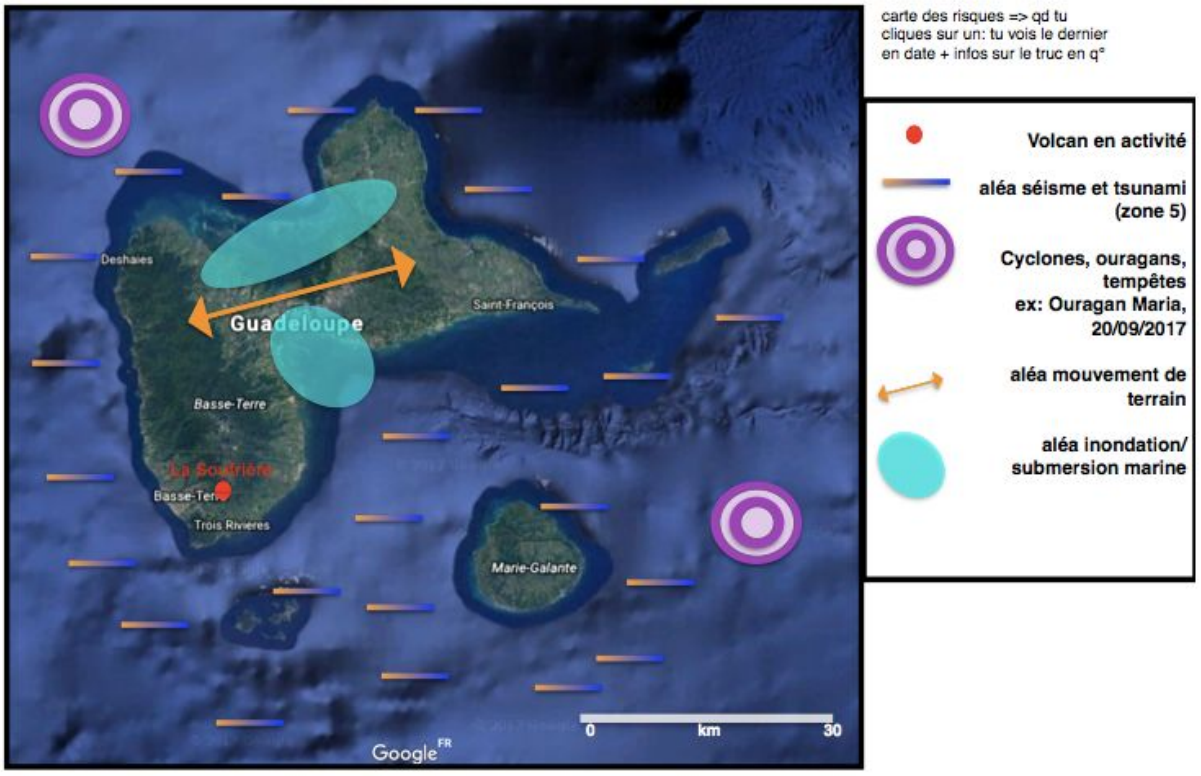
So we have to do very accurate researches, on the prefecture websites, scientific websites such as the website of the International Tsunami Information Center (ITIC), CataNat, the website of the « Observatoire volcanologique et sismologique de Martinique », etc. We also have to read the DDRM (Dossiers Départementaux sur les Risques Majeurs) in order to better understand the specific situation of the French Antilles.

Finally, we have a lot of disseminated information, but very useful to map the risks.

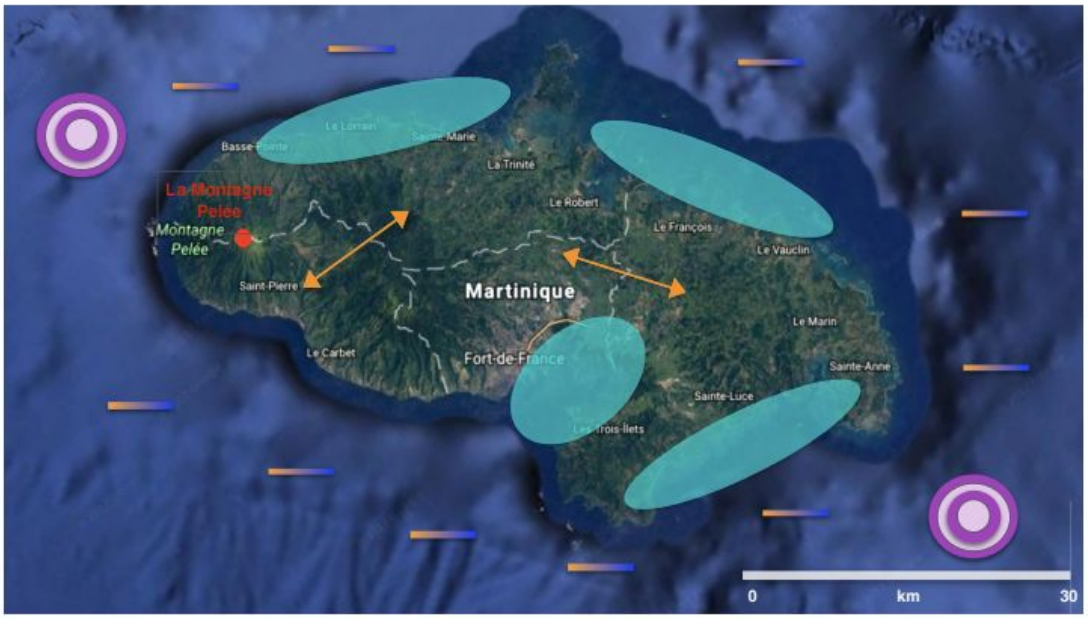
3rd: Creating the risk maps for each island:

Firstly, we did a first draft, with some details in order to help the work of digitalization.

First draft: the risk mapping of Guadeloupe:

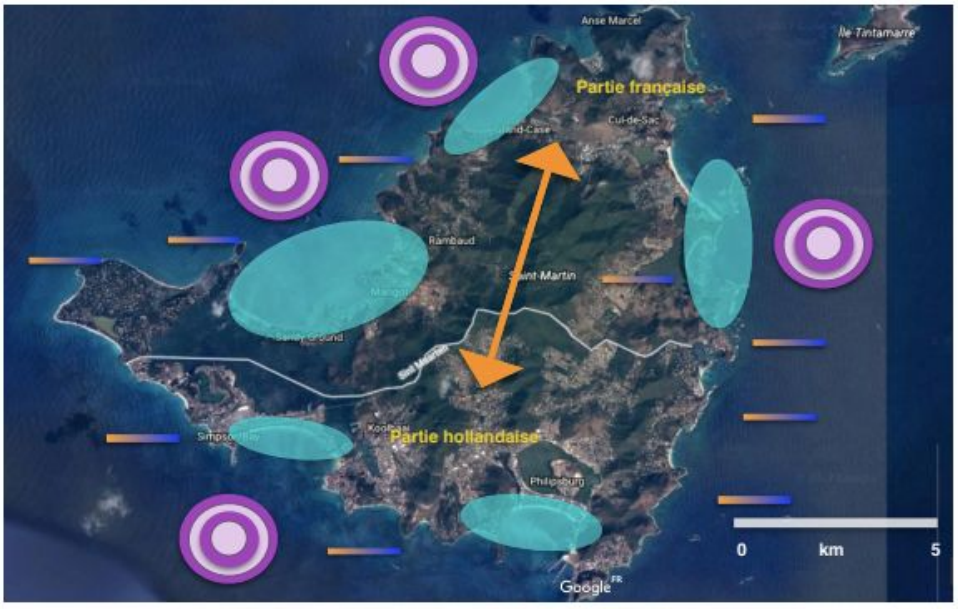


First draft: the risk mapping of Martinique



aléa — inondation / submersion marine (moins puissante qu'un tsunami, mais dégâts matériels et humains malgré tout).

First draft: the risk mapping of Saint-Martin



Alea: mouvement de terrain

First draft: the risk mapping of Saint-Barthélemy

4th: Finding the data concerning the helping services (complicated too):

As for the datas concerning the risks, the documents about the shelters in case of tsunamis or hurricanes, the meeting points, the safe zone, the hospitals or the police stations are numerous but different and nothing was on the same document.

The DDRM and the websites of the prefectures were really helpful, and Google Maps too, to better visualize some data in order to put them correctly on the map.

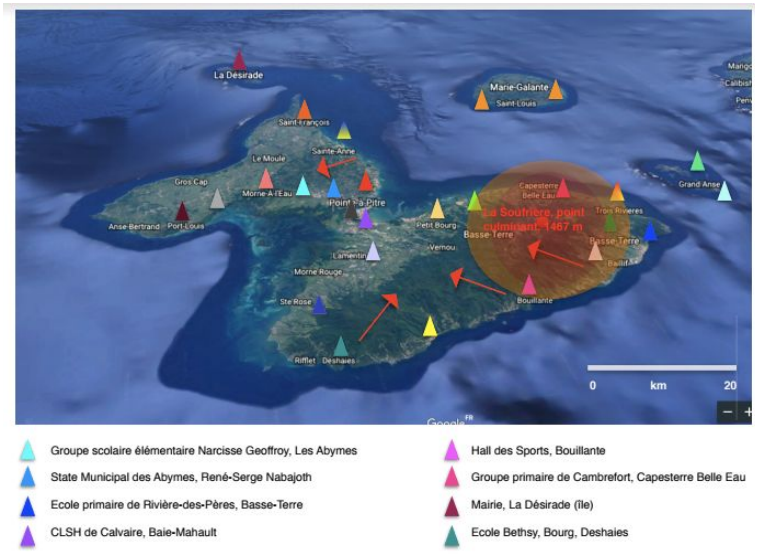
For instance, we used this kind of documents, found on the Saint-Martin / Saint-Barthélemy websites in order to know the hurricanes shelters and after we compare the address with Google Maps in order to put in on the map.

LISTE DES ABRIS CYCLONIQUES 2016

NOM DE L'ETABLISSEMENT	NUMERO DE TELEPHONE DES ABRIS	CAPACITE D'ACCUEIL	PIECES DISPONIBLES
Secteur N° 1 – Sandy-Ground - Terres-Basses			
Ecole Aline HANSON *(Route de Sandy-Ground)*	06 90 88 85 01	50 à 55 personnes	Salles N° 07 à 10 Salles N° 16 à 19 Salles N° 03 et 13
Secteur N° 2 – Marigot – Saint-James			
Ecole Emile CHOISY *(Rue Léopold MINGAU -Concordia)*	06 90 88 84 05 05 90 87 13 27	65 personnes	Salles N° 01 à 03 Salles N° 06 à 10 Salles N° 1B à 5B
Secteur N° 3 – Concordia - Spring			
Ecole Hervé WILLIAMS *(Route du Spring)*	06 90 88 83 67 05 90 87 91 20	90 personnes	Toutes les salles de classe (sauf BCD, informatique, administration)
Secteur N° 4 – Hameau-du-Pont - Agrément			
Eglise Assemblée de Dieu *(Rue Nana CLARK – Agrément)*	06 90 88 84 55	15 personnes	Salle de Culte
Secteur N° 5 – Cripple-Gate – Friar's Bay - Colombier			
Eglise Méthodiste de Colombier *(Route de Colombier)*	06 90 88 83 96	08 personnes	Salle de Culte

5th: Creating the helping maps for each island:

first drafts of Guadeloupe:



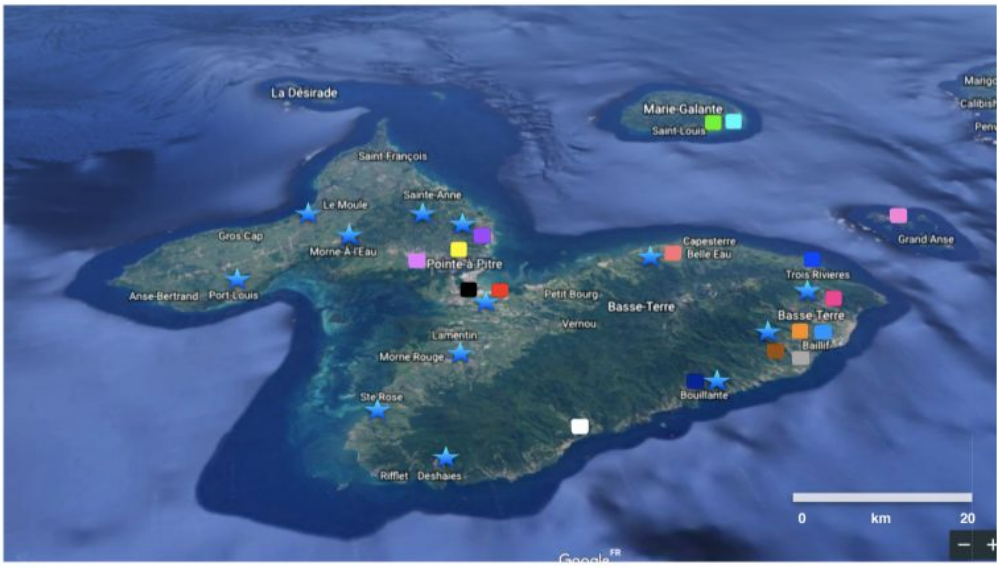
- Groupe scolaire élémentaire Narcisse Geoffroy, Les Abymes
- State Municipal des Abymes, René-Serge Nabajoth
- Ecole primaire de Rivière-des-Pères, Basse-Terre
- CLSH de Calvaire, Baie-Mahault
- Hall des Sports, Bouillante
- Groupe primaire de Cambrefort, Capesterre Belle Eau
- Mairie, La Désirade (île)
- Ecole Bethsy, Bourg, Deshaies
- Ecole de Dolé, Gourbeyre
- Ecole primaire François Auguste, rue des Ecoles, Goyave
- Salle des fêtes - rue Mulatresse Solitude, Marie Galante
  Ecole Elementaire Léon Léopold Lubino, Saint-Louis
- Palais des sports, Le Gosier
- Salle polyvalente de Vieux Bourg, Morne-à-l'eau
- Palais omnisports Laura Flessel, Petit Bourg
- Stade Municipal, Petit-Canal
- Campus Universitaire de Fouillole, Pointe-à-Pitre
- Collège Coubarils, Pointe Noire
- Ecole primaire et cantine de Castel, Lamentin
- Maison Communale du Haut de la Montagne, Port-Louis
- Ecole Primaire, La Boucan, Sainte-Rose
- Gymnase D.Cassin, Ducharmoy, Saint-Claude
- Petite Anse, Salle OMCSL, Terre-de-Bas
- Fort, Terre-de-Haut
- Ecole Christophe Proto, Saint-François
- Office du Tourisme, Trois-Rivières
- Ecole Albert Lazard de Douville, Saint-Anne

Titre: Liste des abris sûrs dans les communes (choix d'1 par commune pour l'application, mais possibilité d'accès à la liste complète via le lien ci-dessous, site de la préfecture de Guadeloupe)

source: http://www.guadeloupe.pref.gouv.fr/content/download/9107/65231/file/Liste%20des%20abris%20sûrs%20saison%20cyclonique%

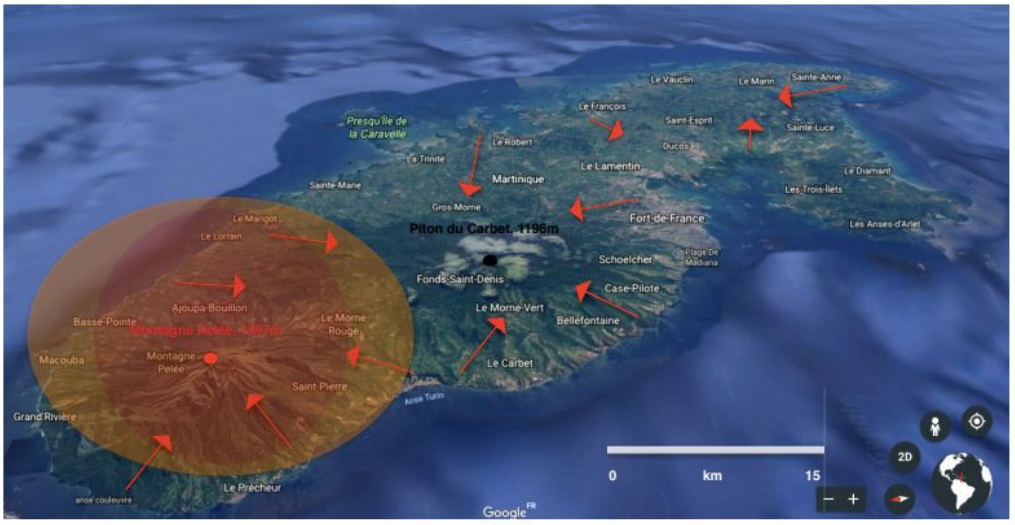
Points culminants, en hauteur, à rejoindre en cas de tsunami

Zones fortement exposées à l'aléa volcanique: en cas d'éruption: zones à évacuer en premier lieu



- Clinique Les Eaux Claires, Baie-Mahault
- Clinique Manioukani, Gourbeyre
- Centre Médico-Social, Terre-de-haut
- Clinique de Choisy, Le Gosier
- Centre Médico-Social, Basse-Terre
- Clinique La Violette, Trois-Rivières
- **Centre Hospitalier de Monterran**, Saint-Claude
- **Centre Hospitalier** de Monterran, Baie-Mahault
- **Centre Hospitalier,** Casperelle-Belle-Eau
- **CHU** de Pointe-à-Pitre
- *Police nationale, police municipale, Gendarmerie, Brigade de proximité*
- Polyclinique Saint Christophe, Grand-Bourg
- Clinique Les Nouvelles Eaux Vives, Basse-Terre
- Polyclinique de la Guadeloupe, Les Abymes
- **Centre Hospitalier** Sainte-Marie, Grand-Bourg
- **Centre Hospitalier** Maurice Selbonne, Bouillante
- **Centre Hospitalier** Louis Daniel Beauperthuy, Pointe-Noire
- **Centre Hospitalier** de la Basse-Terre, Basse-Terre

first drafts of Martinique:



http://www.martinique.franceantilles.mobi/actualite/environnement/tsunami-itineraires-d-evacuation-disponibles-en-2018-407074.php

Points culminants, en hauteur, à rejoindre en cas de tsunami. En Martinique: mise en place actuelle des lieux de refuge (plan prévu pour 2018), pour le moment panneaux de signalisation + consignes: rejoindre le point le plus proche le plus élevé (sur une morne par exemple). ET pas d'endroits particuliers pour les cyclones => consignes de sécurité et consignes pour constructions.

Zones fortement exposées à l'aléa volcanique: en cas d'éruption: zones à évacuer en premier lieu

http://www.martinique.pref.gouv.fr/Politiques-publiques/Les-risques-majeurs/Risque-sismique/EXERCICE-EXERCICE-EXERCICE-Fin-d-alerte-Tsunami
=> exercices à l'heure actuelle

- Clinique de la Tour, Fort-de-France
- Hôpital Lorrain-Basse Pointe, Le Lorrain
- Centre Hospitalier du François, Le François
- Centre Hospitalier Nord Caraïbe, Le Carbet
- Centre Hospitalier du Marin, Le Marin
- Centre Hospitalier, Le Lamentin
- Centre Hospitalier La Meynard, F-de-France
- Centre Hospitalier Colson, Saint-Pierre
- Hôpital Maison de Retraite R. Blondet, Saint-Joseph
- Centre Hospitalier Colson, Fort-de-France
- Centre Hospitalier Colson, Le François
- Centre Hospitalier Colson, Schoelcher
- CHU Martinique Louis Domergue, La Trinité
- Hôpital Maison de Retraite, Les Trois Ilets
- Centre Hospitalier de Colson, Sainte-Marie
- CHU Fort-de France
- Hôpital, Saint-Esprit
- Hôpital Pierre Zobda-Quitman, Fort-de-France
- Clinique Saint-Paul, Fort-de-France
- *Police nationale, police municipale, Gendarmerie, Brigade de proximité*

first drafts of Saint-Martin:

abris sûrs ouverts de la collectivité en cas de cyclones (partie française):

- Ecole Aline Hanson, Sandy Ground - Terres Basses, capacité 50/55 personnes
- Ecole Emile Choisy, Marigot-St James, 65 personnes
- Ecole Hervé Williams, Concordia - Spring, 90 personnes
- Eglise Assemblée de Dieu, Hameau du Pont - Agrément, 15 personnes
- Eglise Méthodiste du Colombier, Cripple Gate - Friar's Bay - Colombier, 8 personnes
- Eglise Adventiste, Rambaud - Saint-Louis - Morne O'Reilley, 10/16 personnes
- Eglise catholique de Grand-Case, La Savane - Grand-Case, 12 personnes
- Ecole Emile Larmonie, Cul-de-Sac, 40 personnes
- Ecole Clair Saint-Maximin, Quartier d'Orléans - Oyster Pond, 70 personnes

- Centre Hospitalier Louis Constant Fleming, Marigot
- Centre Médico-Psychologique, Marigot
- Hôpital de Marigot, Grand-Case
- Sint Maarten Medical Center, Philipsburg (partie hollandaise)
- *Police Nationale, Police Municipale, Gendarmerie, Brigade de proximité, Douanes*

first drafts of Saint-Barthélemy:

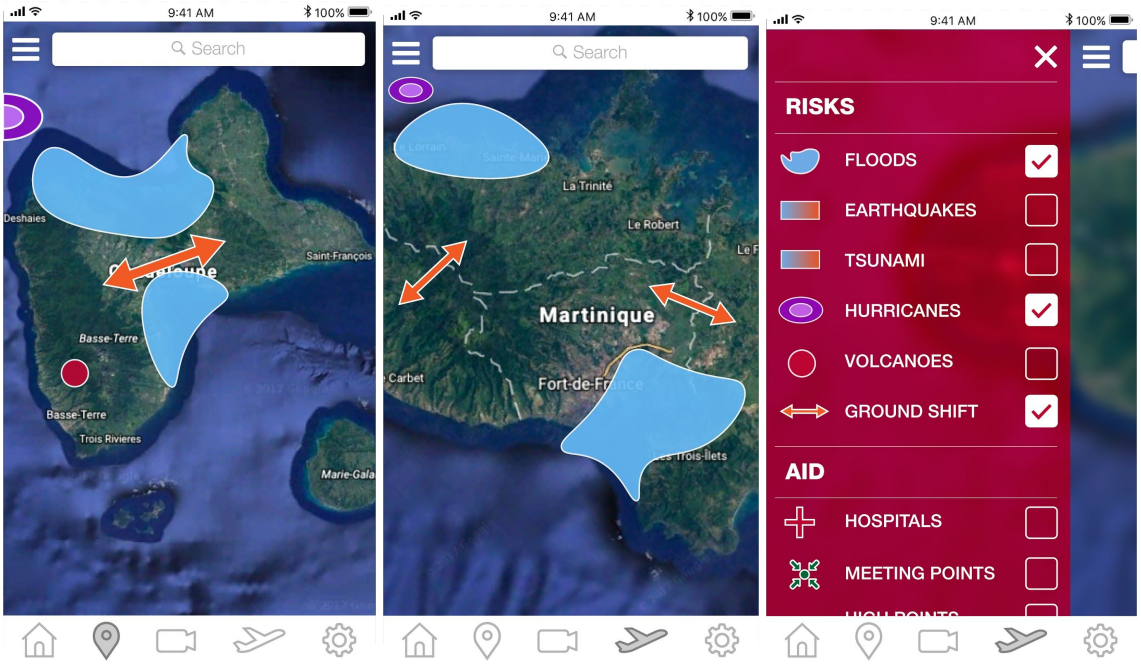
abris sûrs ouverts de la collectivité en cas de cyclones:

- Ecole Clair Saint-Maximin, Rue Corossol, Quartier d'Orléans
- Ecole Saint-Joseph, Lorient
- Ecole Primaire, Gustavia

- Hôpital de Bruyn, Gustavia
- Dispensaire, Gustavia
- *Police municipale, Gendarmerie Nationale*

6th: Digitizing and embellishing all the maps for the application:

After this work of creation, we give our maps a more practical aspect for our application, through the digitalization:



7th: Preparing the texts and the data linked with the maps for the application:

Definitions

Natural Hazards : It's the manifestation of a natural phenomenon with a particular occurrence and intensity.

Stake: All the people and the goods that are likely able to be affected by a natural phenomenon.

Natural risks: A violent or extreme natural phenomenon, of meteorological, geological or climatic origins, that could go off anywhere on earth. We call it a natural disaster when people's lives and goods are destroyed.

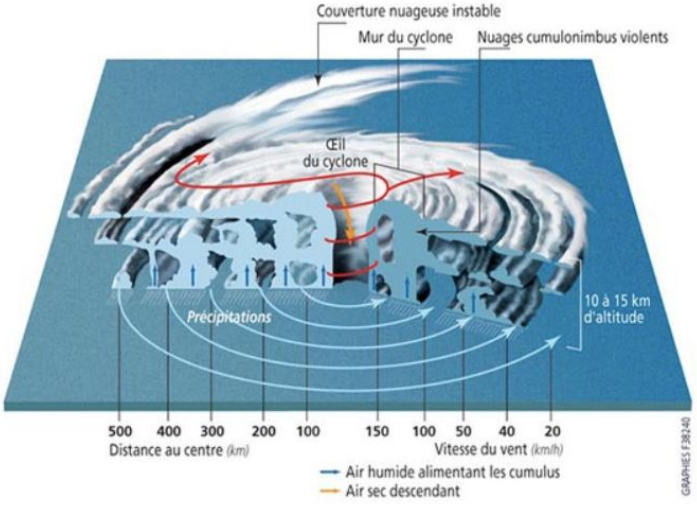
Major risk: The risk is the combination of a hazard and the vulnerability of a stake, such as the presence of a population. The seriousness of the risk depends of the intensity and the probability of the hazard to occur and of the vulnerability and the exposure of the stakes.

The major risk is the consequence of a natural hazard or human one, of which the effects could bring into play many people's lives, bring about huge damages and exceed the ability to react of the societies and of the government.

Tsunami: It's a series of huge waves created by an underwater disturbance such as an earthquake, a submarine volcanic eruption or the fall in sea of big pieces of cliffs or glacier. It causes important damages when it breaks out on a coast. Around 85% of the tsunamis have for origin an earthquake, but an earthquake doesn't necessarily trigger a tsunami. A tsunami can cross the ocean and comes from a seism which is not feel in the area.
The natural signals of a tsunami are:
- an important seism, very strong or very long
- an unusual withdrawal of the sea
- a rumble, which is coming from the sea

Volcanic eruption: A volcanic eruption happens when lava and gas are discharged by a volcano because of the pressure. There are different kind of volcanic eruptions (effusive volcanoes and explosive volcanoes). The most dangerous is the volcanic explosion: the magma is formed with hot pyroclastic flow from rock fragments (up to 1200 degrees).

Hurricane: It's a strong low-pressure, which is born generally above warm water (above 26°C) in the tropical wet zone (550 km far from the equator) and which is characterized by very violent winds (could reach 350 km/h) and torrential rains. It is an enormous cloud, in spiral. It could have a radius from 500 to 1000 km. The « eye of the hurricane », the center zone, is the most dangerous one.



source: government website, risk prevention

Ground Shift: It's a movement, more or less sudden, from the soil or the subsoil. It gathers different phenomenons: the landslide, the pile of rubble or the collapse of underground cavity

for example. These movements are punctual but they are still a major risk, because of their huge human and material consequences.

Earthquakes: An earthquake is a consequence of a fracturing along a fault. The breach leads to a sudden release of a huge amount of energy, which is conveyed in surface by vibrations more or less important of the soil.

Floods: An overflow of a large amount of water beyond its normal limits, especially over what is normally dry land.

Last in date:

Guadeloupe:

volcanic eruption:

- La Soufrière, 1976

seism:

- 3/02/2017, intensity: 5,8
- 21/11/2004, intensity: 6,3

tsunami: 1er novembre 1755, 30 novembre 1823, 30 novembre 1824, 26 juillet 1837, 18 novembre 1867, 1876, 5 mai 1901, décembre 1901, mars et avril 1902, 6 mai 1902, 30 août 1902 et 24 juillet 1939

hurricane:

- 22/08/1964, Cléo, class 3, death of 14 people
- 27/09/1966, Inez, class 3, near 4, death of 25 people
- 16/09/1989, Hugo, class 4, death of 11 people, many material damages.
- 30/08/2017 - 12/09: Irma, class 5, material damages.
- 16/09/2017 - 3/10: Maria, class 5, death of 2 people, huge material damages.

Martinique:

volcanic eruption:

- Montagne Pelée, 1929-32,
- major eruption in 1902: destruction of Saint-Pierre with glowing clouds, causing the death of 29 000 people.

seism: more than 600 earthquakes / year, one of the area where the risk is stronger.

- 15/09/2017: intensity: 5
- 3/02/2017, intensity: 5,8
- 29/11/2007, intensity: 7,4

tsunami: strong risk. 1er novembre 1755, 30 novembre 1823, 30 novembre 1824, 26 juillet 1837, 18 novembre 1867, 1876, 5 mai 1901, décembre 1901, mars et avril 1902, 6 mai 1902, 30 août 1902 et 24 juillet 1939

hurricane:

- 25/09/1963, Edith, class 3 to 4, death of 10 people
- 29/08/1979: David, class 4
- 27/08/1997, Dean, class 2, huge damages, because of the eye of the hurricane.
- 30/08/2017 - 12/09: Irma, class 5, material damages.
- 16/09/2017- 3/10: Maria, class 5, huge material damages.

Saint-Martin:

seism:

- 19/04/2014, intensity: 5
- 20/03/2016, intensity: 6
- 05/02/2017: intensity: 3,9

tsunami: 16/05/2014, alert only

hurricane:

- 5/09/1960, Donna, class 4, huge damages.
- 5/09/1995, Luis, class 4.
- 18/11/1999: Lenny, class 2
- 15,16/10/2008: Omar, class 2, near 3
- 30/08/2017 - 12/09: Irma, class 5, death of 10 people, huge material damages (According to Daniel Gibbs, President of the Territorial Council of Saint-Martin, 95% of the island are destroyed).

Saint-Barthélemy:

seism:

- 19/04/2014, intensity: 5
- 20/03/2016, intensity: 6
- 05/02/2017: intensity: 3,9

tsunami: 16/05/2014, alert only

hurricane:

- 5/09/1960, Donna, class 4, huge damages.
- 5/09/1995, Luis, class 4.
- 18/11/1999: Lenny, class 2
- 15,16/10/2008: Omar, class 2, near 3

- 30/08/2017 - 12/09: Irma, class 5, huge material damages, 85% of the houses are destroyed.

Useful tips:

Guadeloupe: http://www.guadeloupe.pref.gouv.fr
https://www.ecologique-solidaire.gouv.fr

Martinique: http://www.martinique.pref.gouv.fr
https://www.ecologique-solidaire.gouv.fr

Saint-Martin: http://www.saint-barth-saint-martin.pref.gouv.fr
https://www.ecologique-solidaire.gouv.fr

Saint-Barthélemy: http://www.saint-barth-saint-martin.pref.gouv.fr
https://www.ecologique-solidaire.gouv.fr

The tutos : To inform and prevent from natural disasters

The video tutorials aim to respond to three commitments of Safe Together which are inform, prevent and protect citizens.

Topic of the tutorials

There will be three different categories of videos, that will cover the knowledge about natural disasters to first actions to take.

1-Videos concerning the risks present in French Antilles: **INFORM about natural disasters**
The aim is that every citizen in the region knows what is a seism, what is a hurricane and so on to better prepare themselves. Information about the environment is a key to a successful protection campaign against natural disasters.

2-Videos concerning the anticipation of risk: **PREVENT from natural disasters**
What are the basics to have in a house in French Antilles? What are the best anti seismic materials? Which precautions are necessary to take when you live in a risky area?

3-Videos concerning the first help to provide when a natural disaster happens: **PROTECT against natural disasters**
What are the first aid gestures? How to handle stress in such situation? What are the right people to contact?

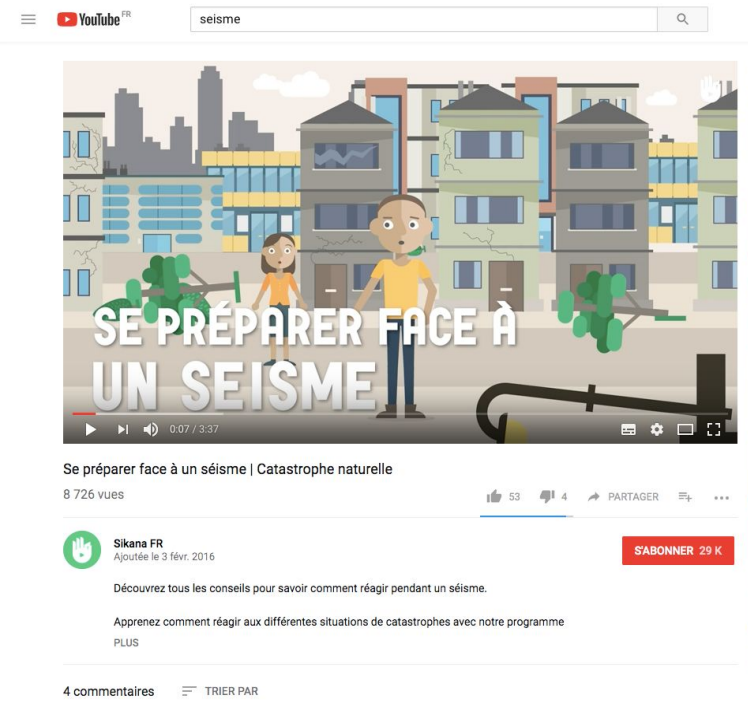
Format of the tutorials

No matter the different category of the videos, the tutorials will be simple, accessible and short. The length of the videos will remain between 2-4 minutes.

In the long term, if Safe Together would expend in others countries, the idea would be to provide with the same videos but in different languages.

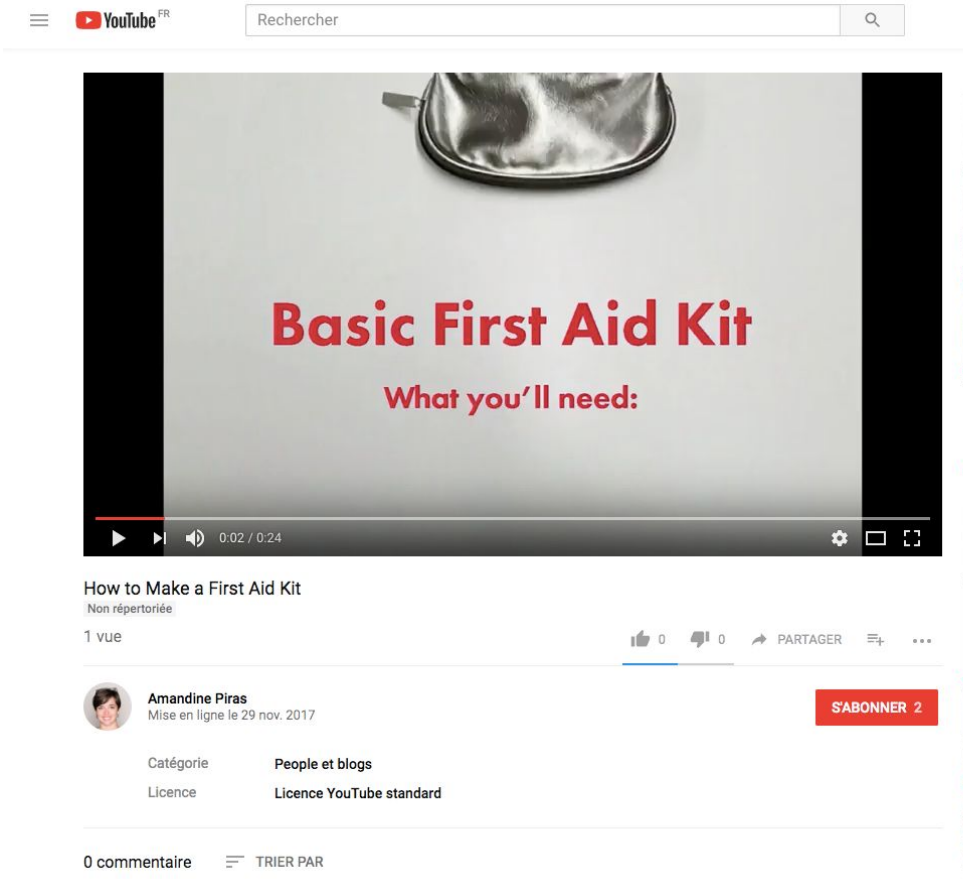
Where the videos come from ?

Many French associations such as Sikana, the Red Cross, provide with very simple videos to understand the basics of natural disasters. The idea is to create several partnerships to incorporate already existing videos on Safe Together application. For the example, here is an example of a video to explain how to get prepared when a seism is coming. This video is a good example of a tutorial that would be integrated in the section TUTOS in the category: Prevent from natural disasters. How to react ?



https://www.youtube.com/watch?v=YHiH4tvHNxA&t=78s (provided by Sikana)

In the case, there is a lack of videos concerning a specific topic, Safe Together will take the responsibility to create new tutos. For example, our team design a tutorial to teach what are the basic in a first aid kit. You can find the video on YouTube :



https://www.youtube.com/watch?v=n1qwnqoKaHQ&feature=youtu.be

Locating users in danger

One of the aims of SafeTogetger is to enable your smartphone -a device no one leaves anymore- to be a tool for you when a natural disaster occurs. First, it can help you have the good behaviour in order to protect yourself and others. But it can also be a way for rescue services to locate where you are if you are in danger, or for you to inform these services you don't need help (and enable them to focus on other victims).

The problem is, concerning natural disasters, that it is very difficult to know what resources would be still working. Indeed, the mobile phone network, could be damaged, like any other device of this kind. Another limitation is the average smartphone. If we want our app to be efficient and useful, it has to be well spread and thus, to be suitable with a large

majority of smartphone currently used. A study showed that almost 62% of the population of West Indies-Guyana region had used their smartphone to surf on the internet but, there is not a lot of studies concerning the technology used although we can assume these devices have a WiFi device or even a Bluetooth device.

What is currently used by rescue team, the example of the example of the Avalanche Bip.

Locating victims is one of the biggest challenges for rescue services. Indeed, a very important number of wounds are way more likely to be healed if it is done quickly. Rescue services are currently using numerous detectors (including rescue dogs of course). In France, the areas where this kind of event is the more common are mountains areas. Rescue services are used to look for skiers after avalanche. Avalanche bips are a way to ease their localization. This is an device emitting a special frequency only used for safety reasons. This protected frequency cannot be emitted by smartphones it follows the same scheme than the one we would like our app to offer. Moreover, some researchers thought about using smartphones in case of avalanche.

Using the WiFi device : the experiment of Jonathan Cheseaux

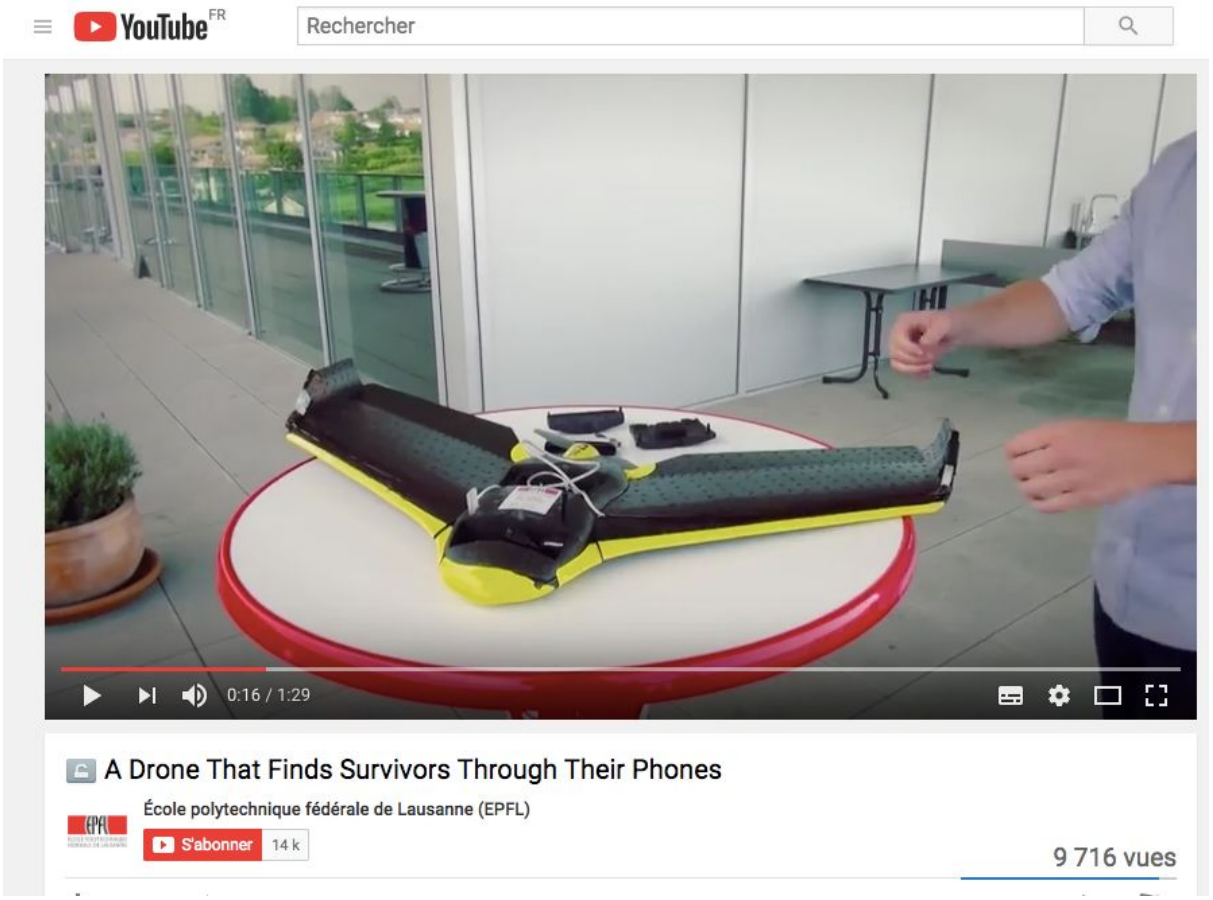
The team of Mobile Communications Laboratory had the idea of using them to know the position of victims and thus ease a search. Indeed, while WiFi mode is on, the devices emit data packets at regular intervals so that it's possible to know different parameters, like the power received by the antenna connection. The surrounding terrain, the weather or interference can make it vary.

Another important factor is the thickness of the layer of rubble over a person that make it weaker. Nevertheless, there is little similarity between these signals and a distance in meters that would enable us to know directly the position of the device emitting the signal, and its owner.But in case of natural disaster, we cannot rely on existing antennas in order to receive the data emitted to locate smartphones.

With a drone, rescue services could locate the phone with the GPS points of the captured signals from several places. These benchmarks are regarded as the center of circles which could probably find the phone. The intersection of the latter determines where is the phone and, therefore, probably the person.

"By refining the system to automatically eliminate weaker signals, the system has become even more accurate," explained Jonathan Cheseaux

Here is a video showing the technology:



In French : https://www.youtube.com/watch?time_continue=3&v=7ysg-m7kV14
In English : https://www.youtube.com/watch?time_continue=9&v=FVoj43Cwk4c

We would like to make a partnership with this project in order to promote our common solution.

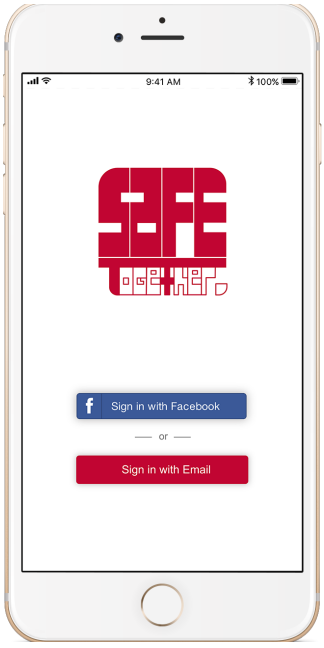
In effect, our app would enable any user to press a button “I need help” which activates the Wifi mode and stops the other potential applications and functions in order to save battery autonomy. It would help rescue teams equipped with these new drones.

The application

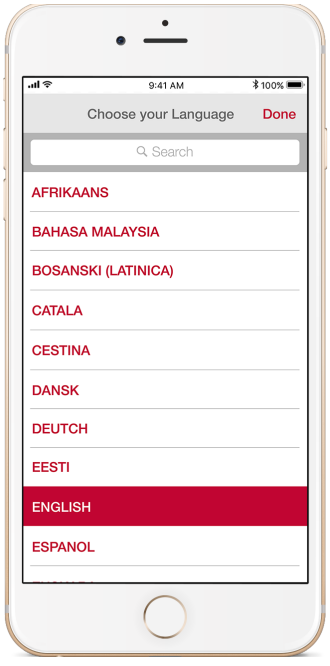
In this section, we will present you our application and the pathway of a classic user through screenshots. We can divide the application in 5 parts.

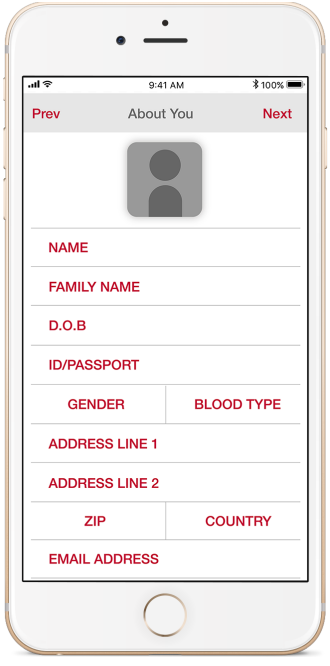
First part : Introduction

When opening the application for the first time, the classic user will have these screenshots :

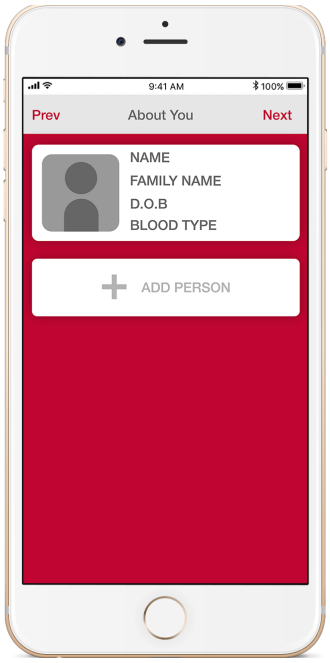


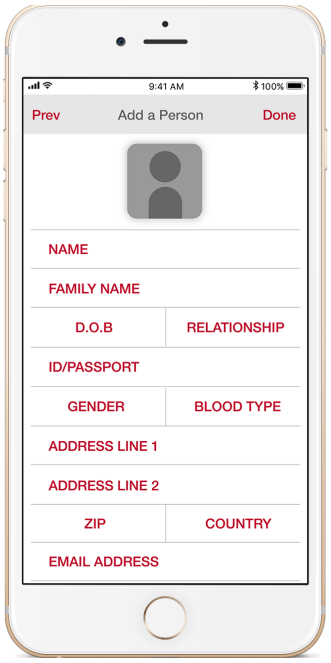
The user can choose to sign in with Facebook or with email before creating the profile by providing name, age, address, blood type …



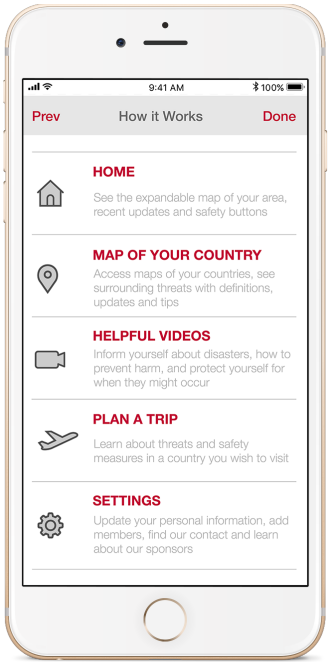


Furthermore, the option to add an additional person with the same data is given.



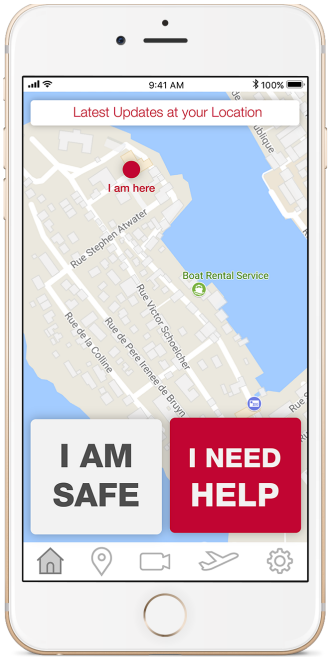


Before of submitting its profile, users will have the presentation of the different categories and the explanation.

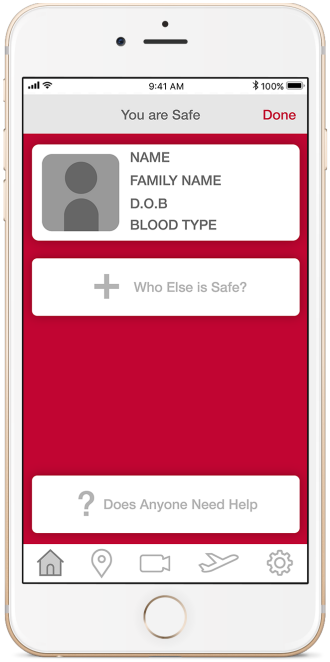


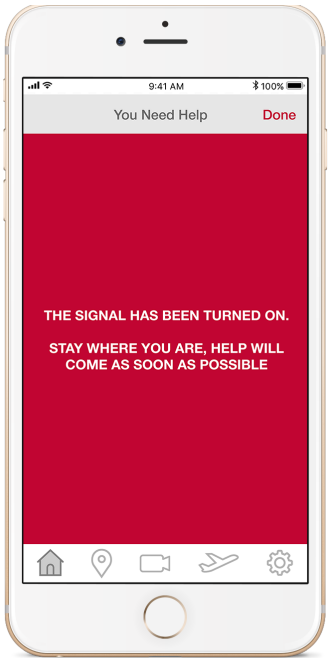
Second part : Homepage

After creating the profile, the user's homepage will look the following way :



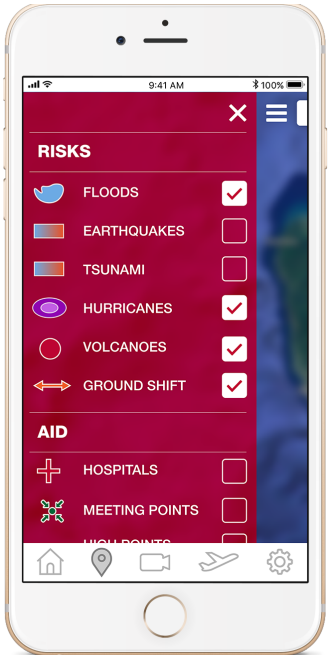
The map indicated the user's localization and recent updates of potential natural disaster. In case of an emergency, the user can choose between the buttons "I am safe" or "I need help". According to the information provided the application will continue with following commands:

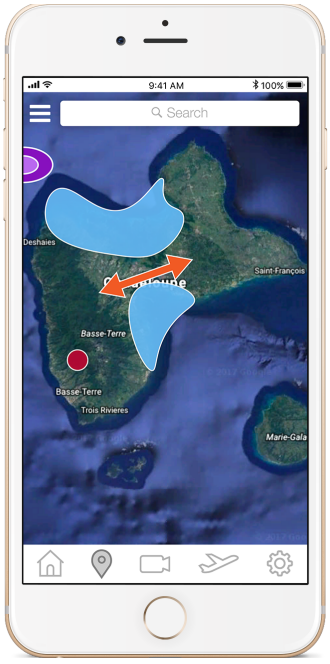


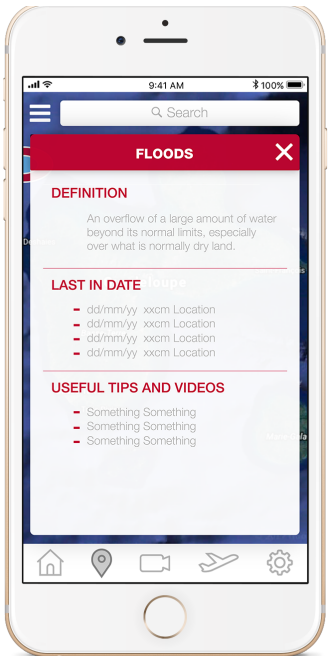


Third part : The local map

In this part, the classic user could have access to the map of the island or the country of current localization. With this map, it is possible to detect potential threats of natural disasters with definitions, updates and advice.

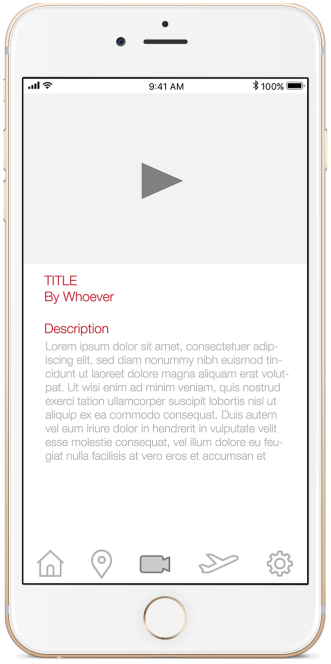






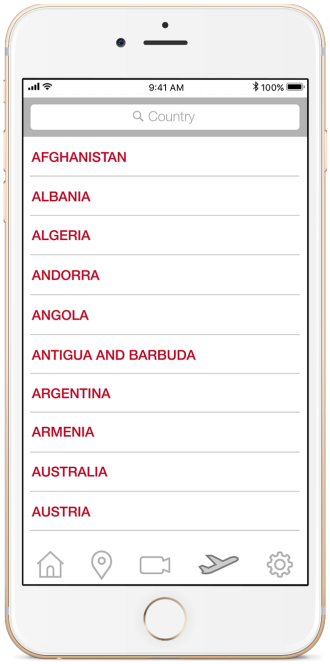
Fourth part : The tutos

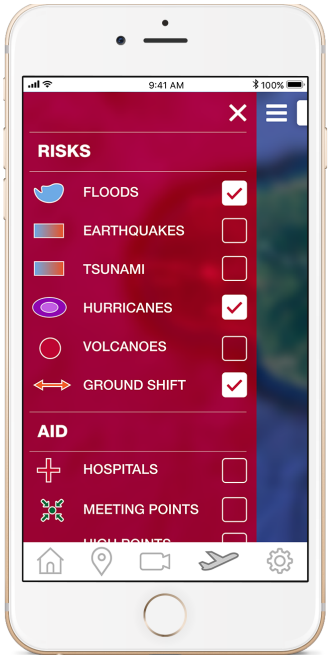
In this part, the classic user could watch the videos, the tutorials explained in the chapter "Content"

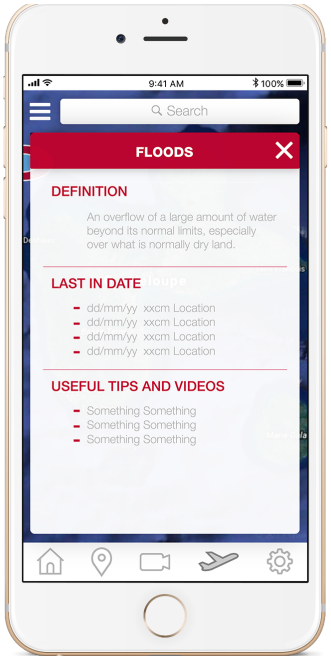


Fifth part : Plan a trip

In this part, the user can have access to the map of the travel destination with information and the threats concerning the natural disasters in this region.

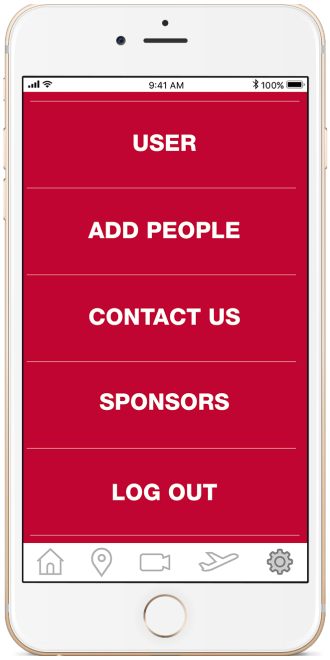






Sixth part : Settings

The settings (personal information, add a new person ...) can be changed by the user at any moment. The partners of our application will be also available in this part. The user can as well choose to log out.



Financial aspect of our application

Launching budget

In this section, we will present you the launching budget of our application. This budget shall be in balance. Safe Together does not make profits, because it is a not-for-profit association.

Operation/production costs

To launch the application, obviously some initial costs would apply.

First, for the application development, we need 2 developers, one for each platform (Android and iOS). We figured out that to develop an alpha+beta+final version, we would need one year. The developers would test them out each time, translate it into English and French. We plan some extra time to face any unplanned issue. The average day rate for a freelance mobile developer is 450€. The "Development" cost will be : 450 x 360 x 2= 324,000 €.

Second, it costs $25/year to publish the app on Google's Play Store, and 99€/year for Apple's AppStore. The "Application Store" cost will be 120 €.

Third, the cost of a server is estimated to $8,000 (6,855€).

Fourth, our communication campaign will cost 60,000€.

Finally, the costs of using Google's Google Maps are null, as we estimate that Google's "Standard Plan" for using Google Maps API is sufficient

TASK	COST
Development	324,000€
Application Store	120€
Server	6,855€
Communication and marketing	60,000€
Google Maps	0€
TOTAL	**390,975€**

Financing

Our costs are offset by various sources of revenue.

The sells of the application will not generate any revenue, as we plan to offer it for free, in the philosophy of a public service.

In this philosophy, the taxpayers are the ones who finance the public service. We do not plan to create a tax, obviously, but the public will contribute to the financing, through a crowdfunding campaign. And if we are recognised as an association, our donors could receive a 66% tax-discount on their donation. That would mean that when we raise 140,975€, donors actually paid 46,521.75€. We believe that this multiplicative effect can help a lot.

Finally, we plan to receive public fundings and to raise money from private actors through our partnerships. The amounts, which have been estimated by our partnership officers, reflect what we want receive from these partners.

SOURCE	REVENUE
Application sells	0€
Crowdfunding	140,975€
Private partnerships	150,000€
Public subventions	100,000€
TOTAL	**390,975€**

The partnerships of our application

Public Partners and legal statute

As this app has a humanitarian goal, looking for public subventions is worth considering. Given the fact that this app will be conceived in France, we could take advantage of the national legislation. Indeed, we could get significant subventions from the State as a recognized public-interest organization.

According to the French legislation of 1901 concerning non-profit organizations, it is possible to be "labelized" public-interest organization. It would allow us to receive donations, legacies and devices. Contrary to basic non-profit organizations, we could have the right to benefit from notarial deeds, such as buildings, fournitures, etc. What's more, within the scope of a favorable tax structure, the legislation foresees tax breaks both for the donors and sponsors and for the organization itself.

The criterias to be recognized public-interest are the following :

- concerning the aim of the organization, it has to act in favor of general interest and not only of the exclusive use of its members.
- it has to have an impact at least on a national scale.
- concerning the statutes, it has to follow the rules set up by the French Council of State (Conseil d'Etat). The organization has to comprise a board of directors and a voting general assembly that would meet up every 6 months at least.
- the organization has to be financially robust. Its annual income must exceed 46 000 euros, and must mainly provide from its own resources and not from public subventions. What's more, the organization must show positive outcomes from the last three years of activity.
- only organizations with at least three years of seniority can ask for this label.

Thus, the legal procedure to be recognized public-interest organization could be launched in three years minimum, and our financial situation should be assiduously watched in order to preserve, over a first phase, certain independency from public subsidies and focus on private partners.

But in the short term, asking for a basic non-profit organization statute guaranteed by the law of 1901 seems to be a necessary step forward to take. It would give a stronger credibility to our project. The procedure is relatively simple. It is a question of proving that our organization is not looking for profit to give to its founders and it is purely declaratory. It would allow us to create a legal personality able to open a banking account and to organize events in its own name. Most importantly, we could ask for a certain amount of public subventions, for tax benefits and for donations.

Private Partners - Corporate Philanthropy

In order to rationally be efficient, our project needs to find financing partnership in the private sector. Indeed, **corporate philanthropy** might appear as a good way to finance the app.

Corporate Philanthropy is a phenomenon that appeared in the 1990s, where the social responsibility of the firms began more and more important. Since then, corporations tend to give noticeable amounts of their funds to fight for common well. It can be in the fields of education, culture, health, integration, etc. Nowadays, some of the most influential corporate foundations have more money and power than the biggest NGOs. For instance, the *Bill and Melinda Gates Foundation* gathers more money than the UNICEF and the World Health Organization altogether.

In a context of social responsibility, corporate philanthropy is therefore a really good way to find resources to develop our project.

At this stage, even though our project would touch anybody, it seems to be really important to focus on specific industries and firms that might find a direct interest to enter in a partnership with us. For instance, the sector of construction is one of the industrial sector that thinks the most about new ways to construct, to live, to built, in order to fight against natural disaster and catastrophes. Vinci and Bouygues Construction in France have for example groups of researchers that are finding new materials, new ways of construction for specific geographic areas that are prone to natural catastrophes, such as earthquakes. Our project is directly linked to their field of interest.

As a counterpart of their financial support, they would have our sponsor, as a label. This label can really value the overall image of the firm and contribute to their “social responsibility”.

Furthermore, according to Nicolas Simon and Marianne Eshet, two French sociologists, corporate philanthropy might appear as a way to create link between the people and the organizations, in a context of a capitalism crisis. It can change the image the public opinion has of capitalism and permit to create an assistance towards people in need. The help of private companies can help our project to achieve a relevant and noticeable development, but also can establish a link between the private sector and the common well.

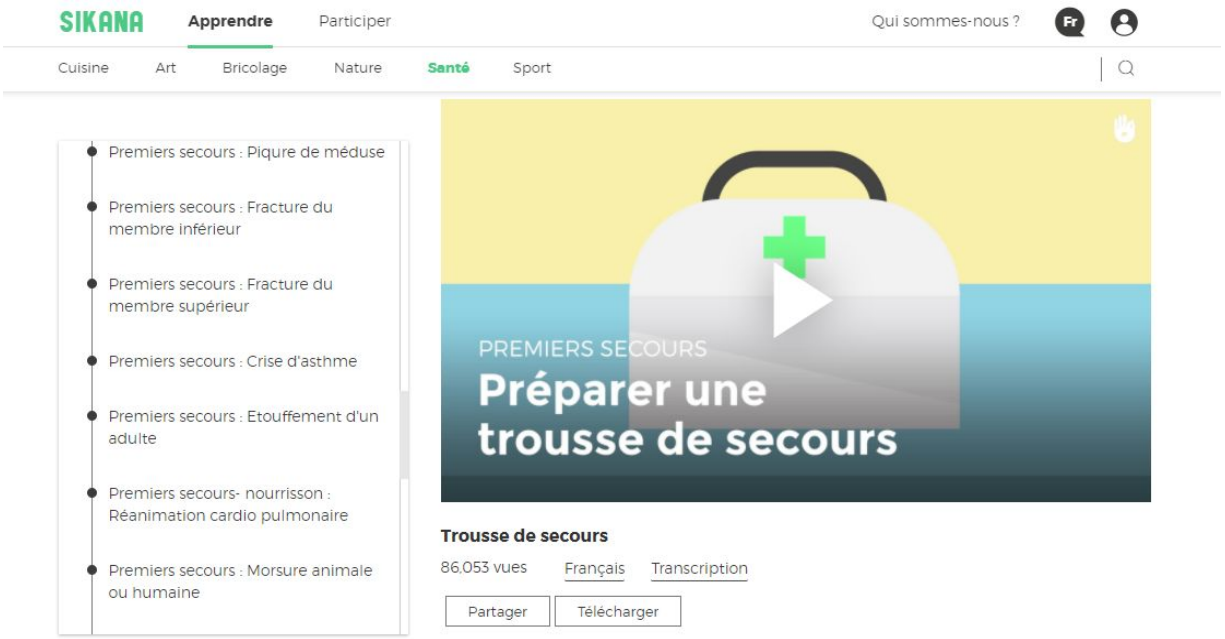
Other partnerships

To optimize the app’s potential functions and maximize the benefits for users, the support of the logistical and legitimizing partnerships is vital. Some partnerships are fundamental to keep the app updated and useful.

First, an active partnership with **Google** would be essential. The aim of this partnership would be to benefit from continuous updates of the maps used in the app: any changes or new informations would simultaneously translate in the app's display. This is crucial to ensure the best management in a critical situation and to guarantee the accurate functionalities for our users.

Sikana would also be a valuable partnership. Their operations focus on producing and sharing educational videos in order to inspire and improve the lives of all those in need by sharing knowledge. This mission is perfectly coherent with our values and purpose. They produce wide range of useful tutorial videos: from surf and yoga to first aid and shelter building, all videos are characterized by their flawless quality and clear instructions. This partnership would therefore be ideal to create a wide range of useful videos in case of a natural disaster that would be available on the app and also shared through their website.

Since this non profit organization has shown a true commitment towards supporting educational projects and social initiatives, a partnership between Sikana and Safe Together would be natural and mutually beneficial.



Website of Sikana - https://www.sikana.tv/fr

Another interesting partner would be Facebook. The Safety Check is a feature activated only when there has been a major incident to easily determine the safety of a person in the affected area. The partnership would synchronize the Facebook Safety Check with the data on the app simultaneously, to outline secure regions and differentiate them faster from sectors in distress.

Finally, a collaboration with the Red Cross would pertinent as well as mutually beneficial. While their input would be essential to instruct the users to the nearest rescue team and medical assistance, the app would provide them in return with valuable information to determine where their help is required and less affected areas.

Other partnerships would not bring a direct logistic support but would rather fulfil the role of legitimizing the work. Credibility is imperative. To deem the app trustworthy in the eyes of the users is to ensure its utility: in the event of an emergency they have to be certain they can rely on the app with their lives!

For this, we would seek the approval of internationally well known and respected entities such as CARE, Médecins sans Frontières and Amnesty International. Their support would validate our efforts, if a major humanitarian organization endorses the project it would not only promote its popularity but also further the reach of the help provided.

Communication

In order to make known our application, it seemed to us important to create and diffuse a important communication campaign, that we decline in three parts : Activation, Rollout and Transition.

Activation

First of all we would activate our campaign in the form of various billboards. They would be outlined in the subway and on different buses in the cities:

However in the French Antilles, we would only use big pictures displayed only on buildings or on various city spots. For the French Antilles, it would mainly target the locals that are unaware of many risks such as tsunamis or earthquake:

Rollout

We would follow up this campaign with many preventions adds in travel agencies. One example of caption could be « you never forget your passport, do the same for the app : log in », or « to connect oneself, is to save oneself », or « it's easy to save your life : just one click away »…

We would also have some tv spot, with a hot topic : such as a man standing on the beach (following the communication style of Corona) enjoying himself just before a big crack/wave comes in. He then finds himself buried under a pile of sand, with just his phone out as he was taking a snapchat selfie just one minute before. We have a close-up of the phone where the button « I need help » is on. The saviors arrive very quickly thanks to the phone/the button/the message. Then a voice over is explaining that the right choice is to get the app, available on Android and iOS.

You can find our animatic of the tv spot:

https://www.youtube.com/watch?v=erHVBSs9azE&feature=youtu.be

Transition

We would also create and foster many partnerships with local and national associations that would then promote us and be promoted on our app.

We would also have a strong media campaign on the social networks such as Facebook, Instagram, Twitter, Youtube and a chatbot with messenger. We would put videos, interviews, updates and informations regularly.

Cost

We estimate that the communication campaign will cost 60,000 euros for the French Antilles. The biggest component of the campaign cost will be the spot TV that will be diffused before 20h00, which will cost 15,000 euros.

Development perspectives

International expansion

Our application regards only the French Antilles. Even if this region is concerned by many natural disaster risks, this region is home to only 817 106 people, or about 1,26 % of the French population and 0,011 % of the world population.

	Population 2016	Population / French population	Population / world population
Guadeloupe	395 725	0,61 %	0,0054 %
Martinique	376 847	0,58 %	0,0051 %
Saint-Martin	35 107	0,05 %	0,0005 %
Saint-Barthélemy	9 427	0,01 %	0,0001 %
French Antilles	817 106	1,26 %	0,0111 %
France	64 604 599	100 %	0,875 %
World (2015)	7 383 009 000		100 %

Our goal is to cover the entire world population. The French Antilles is just a test phase to identify the different problems and concerns of our application, its financing and its promotion before to develop it in other part of the world.

Our international expansion project is to simple. We want to develop our application in different world areas but one by one.

We have cut the world in 14 areas : Caribbean and Central America, Northern America, South America, Oceania and South-Eastern Asia, Southern Asia, Eastern Asia, Central Asia and Russia, Middle East, North Africa, Eastern Africa, Western Africa, Southern Africa, Eastern Europe and Western Europe. Each area includes in average 17 territories and 519 441 910 inhabitants.

Before to launch our application, we need to adapt our application at the world area. First of all, it is necessary to translate our application and its functionalities in different official languages of the different territories. Then we have to establish partnerships with the

state and its agencies, with private sector and with charities in each territories of these world area. A communication action has also to be developed in each territories in the world area just before the launching of our application in order to make our application know to the public.

For each world area, Safe Together has to employ one person to establish partnerships, one computer developer (to create and manage the application) and a communication officer (to launch the communication action and manage social networks). A director will be hired for each area in order to coordinate the work of each team.

Our international expansion could be achieved in 10 years.
In 10 years, Safe Together will be composed of 14 teams. 42 people will work for our application (14 area directors, 14 communication officers, 14 mobile developers and 14 partnership officers). Safe Together will have launched 233 communication operations.

Draft budget

We create a draft at year 5 and year 10. It represents our goal, our objectives. As for the launching budget, the draft budget at year 5 and at year 10 are in balance.

To calculate this draft budget, we made some hypothesis that we exposed you :

- We will, on average, extend the app to 1.4 area per year.
- We estimate that 6 months are necessary to extend our application to a new area for each platform
- The task "Development" includes the application maintenance costs (17,000€)
- We estimate that we have to launch on average 23.3 communication operations by year.
- Each communication operation will cost 60,000 €
- We estimate that the server costs would increase to 10,000€ per year as from year 3 due to an increase of users, which means more data to gather and store
- We estimate that the average annual gross salary for an area director is to 35,000€, the average annual gross salary for a communication officer is to 28,000€ and the average annual gross salary for a partnership officer is to 28,000€.

Operation costs

TASK	COSTS AT YEAR ONE	CUMULATED COSTS AT YEAR 5	CUMULATED COSTS AT YEAR 10
Development	243,800€	1,219,000€	2,438,000€
Application Store	120€	600€	1200€
Server	6,855€	43,710€	83,710€
Communication and marketing	1 398 000€	6 990 000€	13 980 000€
Google Maps	0€	0€	0€
Area director	49,000€	245,000€	490,000€
Communication officer	39,200€	196,000€	392,000€
Partnership officer	39,200€	196,000€	392,000€
TOTAL	**1,775,375€**	**8,890,310€**	**17,776,910€**

Revenues

SOURCE	REVENUES AT YEAR 1	CUMULATED REVENUES AT YEAR 5	CUMULATED REVENUES AT YEAR 10
Application sells	0€	0€	0€
Crowdfunding	775,375€	3,890,310€	7,776,910
Partnerships	500,000€	2,500,000€	5,000,000
Foundations	500,000€	2,500,000€	5,000,000
TOTAL	**1,775,375€**	**8,890,310€**	**17,776,910€**

About us

We are the group 25 composed of 10 students from the school of management and innovation of Sciences Po. This document is the presentation of our collective project about natural disasters and their effects on civil population. We decided to name our project Safe Together.

Our group is composed of :

- **Amandine Piras** - Design director
- **Felicie Bied Woods** - Public partnership director
- **Maxence Jaboulet-Vercherre** - Content director
- **Melanie Mazin** - Associative partnership director
- **Noeline Louat** - Content director
- **Oriane Truchetto** - Communication director
- **Telma Obadia** - Content director
- **Valentin Faye** - Private partnership director
- **Victor Leroy** - Financial director
- **Robin Lefebvre** - Marketing director

References

What is Safe Together ?

"Statistiques sur les catastrophes naturelles", *Notre Planète*, 2017
https://www.notre-planete.info/terre/risques_naturels/catastrophes_naturelles.php

Debarati Guha-Sapir Philippe Hoyois Pascaline Wallemacq and Regina Below, "Annual Disaster Statistical Review 2016", *Centre for Research on the Epidemiology of Disasters* (CRED) of the Université catholique de Louvain , 2017
http://emdat.be/sites/default/files/adsr_2016.pdf

Laura Philippon, "Edouard Philippe : Irma est "une catastrophe inouïe et sans précédent pour Saint-Barth et Saint-Martin"", *France TV Info*, 07/09/2017
https://la1ere.francetvinfo.fr/edouard-philippe-irma-est-catastrophe-inouie-precedent-saint-barth-saint-martin-509471.html

Marketing and Branding

We are social, "Digital in 2017: Western Europe", *Hootsuite*, 2017
https://www.slideshare.net/wearesocialsg/digital-in-2017-western-europe

We are social, "Digital in 2017: The Caribbean", *Hootsuite*, 2017
https://www.slideshare.net/wearesocialsg/digital-in-2017-the-caribbean

Arcep, "Equipements en communications électroniques et audiovisuels des ménages et des individus Synthèse des 5 départements ultra marins", *LH2 DOM*, 2013
https://www.arcep.fr/uploads/tx_gspublication/etude-equipements-usages-2012-synth-juil2013.pdf

Content

- **The risk mapping**

Risques naturels, *French Government*
http://www.gouvernement.fr/risques/risques-naturels

"Ouragan Irma : au moins deux morts à Saint-Barthélémy et Saint-Martin", *Europe 1,* 5 septembre 2017

http://www.europe1.fr/societe/a-lapproche-de-louragan-de-categorie-5-irma-les-antilles-francaises-placees-en-vigilance-rouge-cyclonique-3428213

Michel Corsini, "EVALUATION ET GESTION DES RISQUES NATURELS", *UVED*
https://e-cours.univ-paris1.fr/modules/uved/risques-naturels/html/1/11/111.html

The dossier départemental des risques majeurs of Guadeloupe
http://www.guadeloupe.pref.gouv.fr/Media/Files/DDRM-2014

The dossier départemental des risques majeurs of Martinique
http://www.martinique.pref.gouv.fr/content/download/4216/23638/file/DDRM%2520972-janvier%25202014.pdf

French government:

data.gouv, french government website with open data
https://www.data.gouv.fr/fr/

« Ministère de la Transition Ecologique et Solidaire » website, french government
https://www.ecologique-solidaire.gouv.fr/prevention-des-risques-naturels

« Géorisques » website, french government website, with open data
http://www.georisques.gouv.fr/cartes-interactives#/

Local governments:

Martinique prefecture website: file about major risks
http://www.martinique.pref.gouv.fr/content/download/4216/23638/file/DDRM%2520972-janvier%25202014.pdf

Guadeloupe prefecture website
http://www.guadeloupe.pref.gouv.fr

Saint-Martin and Saint Barthélemy prefecture website
http://www.saint-barth-saint-martin.pref.gouv.fr/Les-actions-de-l-Etat/Environnement-et-prevention-des-risques/Prevention-des-risques/Risques-naturels

« Région guadeloupe » website
http://www.regionguadeloupe.fr/accueil/#_

« DEAL of Guadeloupe » website (DEAL = Direction de l'Environnement, de l'Aménagement et du Logement, french government)

http://www.guadeloupe.developpement-durable.gouv.fr/risques-naturels-r227.html

PPRN Martinique website (PPRN = Plan de Prévention des Risques Naturels)
http://www.pprn972.com

Other institutes:

Catnat website: Permanent monitoring center of natural disasters and natural risks
https://www.catnat.net/index.php

ITIC (International Tsunami Information Center) website, attached to Unesco
http://itic.ioc-unesco.org/index.php?option=com_content&view=category&id=2234&Itemid=2758

« Institut du Globe de Physique de Paris » website
http://www.ipgp.fr/fr/ovsm/tsunamis

- **The tutos**

The website of Sikana
https://www.sikana.tv/fr

Youtube. “Se préparer face à un séisme” *Sikana*,
https://www.youtube.com/watch?v=YHiH4tvHNxA&t=15s

- **The signal**

Médiamétrie, “Observatoire des Usages Internet Antilles-Guyane : Plus de 47 000 nouveaux internautes aux Antilles et en Guyane en 2 ans”, 2016
http://www.mediametrie.fr/internet/communiques/observatoire-des-usages-internet-antilles-guyane-plus-de-47-000-nouveaux-internautes-aux-antilles-et-en-guyane-en-2-ans.php?id=1574

Website of the *SMAVNET* project
http://smavnet.epfl.ch

Smavnet proj, “Swarming Micro Air Vehicle Network (SMAVNET II)”, *Video Youtube*
https://www.youtube.com/watch?v=FVoj43Cwk4c

Finance

Robert Raiola, “La vérité sur le coût des applications mobiles, du développement à la gestion du cycle de vie”, Brightcove, 2012
https://www.brightcove.com/fr/blog/2012/02/la-verite-sur-le-cout-des-applications-mobiles-du-developpement-la-gestion-du-cycle-de-vie

Partnerships

- Public

“Financement public des associations: un état des lieux”, vie-publique.fr, actualités, 2013
http://www.vie-publique.fr/actualite/alaune/financement-public-associations-etat-lieux-20130704.html

Direction de l'information légale et administrative, Ministère chargé de la vie associative, “Subventions versées aux associations”, service-public-asso.fr, fiche critique, 2017
https://www.service-public.fr/associations/vosdroits/F3180

- Private (Reviews and academic researches)

John Vidal, The Guardian, *Why is the Gates Foundation investing in the GM giant Monsanto?* (2010)

Anahad O’Connor, The New-York-Times, *Coke and Pepsi Give Millions to Public Healt, Then Lobby Against It* (Oct. 2016)

Anthony Bugg-Levine & Kerry Sullivan, Stanford Social Innovation Review, *Improving Corporate Partnerships* (2012)

D. Aaron, W, Siegel M, Babor, *Beverage Brand Popularity Among Youth and Youth-Appealing Advertising Content*. (2017 Oct)

Nicolas Simon and Marianne Eshet, *Le Mécénat - Valeur actuelle, Quand la société peut compter sur l’entreprise*, Gallimard (2009)

Jacob Dahl Rendtorff, *Responsability*, *Ethics and Legitimacy of Corporations,* Copenhagen Business School Press (2009)

- Associative

The crisis response of Facebook
https://www.facebook.com/about/crisisresponse/

The website of Sikana
https://www.sikana.tv/en/about-us

Development perspectives

Insee, “Estimation de la population au 1 er janvier 2016”, “Séries par région, département, sexe et âge de 1975 à 2016”, 2017
https://www.insee.fr/fr/statistiques/1893198#consulter

Insee, “Population et lieu de résidence antérieure en 2014”, 2017
https://www.insee.fr/fr/statistiques/2867639?sommaire=2867849

United Nations, “World population prospects”, 2017
https://esa.un.org/unpd/wpp/Download/Standard/Population/