



merci

multi-site events response
and coordinated intervention

LATTS

LABORATOIRE TECHNIQUES
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State of the art

—

MERCI project



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Introduction

According to the reference terms of the MERCI project (Multi-site events response and coordinated intervention), the requested report on the state of the art of the researches into matters of emergency assistance in the case of multi-site or multi-risk events must include

- A definition of what these events entail in the context of large urban areas,
- An analysis of this/these type(s) of events from the point of view of the intervention of the responders, as well as a review of the emerging needs in these situations, and a summary of the recommendations or “good practices” that are already in place or that are likely to be implemented.
- The legal framework in which the planning has to be organised.

Moreover, since the main objective of the MERCI project is to improve the resiliency of large urban areas in Europe to face multi-site and multi-risk disasters by improving coordination between volunteer civil protection organisations and the public authorities, this very same issue of the coordination/cooperation between government authorities and volunteers before, during and after such events was the central theme for determining the state of the art.

Under these conditions, we began our investigations by searching for texts taken from academic literature - through the Internet search engine Google Scholar - that focused on the issue of the relations between the public authorities and volunteers in the strict framework of disasters classified as multi-site and multi-risk.

We quickly realised, by using multi-site and multi-risk as key words, that there wasn't any academic literature on this extremely limited and undoubtedly new subject. This made us expand our search, moving us away from our original issue towards multiple additional directions.

On the one hand, we opened our search on the issue of relations between public authorities and volunteers in a catastrophic situation in general, this time using more general keywords (*volunteer, non-profit organization*). From the earliest works of Emilio Quarantelli and the Disaster Research Center (founded in 1963), there have been many studies on disasters. We will review (part 1 of the report) a certain number of these works that focused more specifically on the relations between public authorities and volunteers (belonging to organisations or countries).

On the other hand, and partially on the basis of the results of the MERCI project questionnaire (Requirements and abilities of the parties involved in crisis management. *Multi-site* and *multi-risk* events) that was distributed simultaneously in European countries, we will present (part 2 of the report) a review of the ways in which the various European countries are currently organised when it comes to crisis management.

Lastly, to conclude, we will focus on the very concepts of multi-site and multi-risk disasters.

Part 1. Academic literature on the relations between public authorities and volunteers in times of disasters

Undoubtedly due to the occurrence, in the past few decades, of disasters of new types and scales (terrorist attacks such as those of 11 September 2001 in New York, natural disasters such as Katrina, natural/technological disasters - which we now call NaTech - such as the Fukushima disaster), the issue of crisis management during such events has gained vital importance.

Until this point, to put things simply, the national and local public authorities in most industrialised countries had not implemented veritable crisis management tools, but rather response plans to pre-identified disasters (such as the ORSEC Plan in France set up in 1952), that they were in charge of implementing on a case-by-case basis, where needed.

With the “new disasters” such as those mentioned above, combined with a certain number of societal or technological developments in the past few years, old issues are being raised with new aspects, alongside other newly emerging issues: How do we plan for events of such a magnitude? What is the role of “civil society” in crisis management? What is the role of “social networks” in managing such crises?

Some of these issues have been addressed in the academic literature. In this part (1), we will try to group the answers given by the researchers into 3 types of questions, focusing especially on the central issue for MERCI, which is the relations between public authorities and volunteers of various kinds in these situations:

- Anticipating disasters, planning crisis management and coordination problems
- The role of “*non-profit organizations*” in crisis management
- The issue of spontaneous “volunteers”.

A. Anticipating disasters, planning and coordination problems

Since the terrorist attacks on the World Trade Center on 11 September 2001, the government of the United States, as well as those of several other countries across the globe have invested significant resources into drafting response plans to terrorist attacks. Perry and Lindell (2003, a) have suggested a guide for emergency planning (*guidelines for the emergency planning process*) and give some advice for this planning. The basic idea is to separate the result (the drafted plan), the fact of being prepared (*preparedness*, a concept also explored by Lakoff (2007)), training, and the planning process itself, which must be continuous. The guide looks at all kinds of threats, including natural or technological risks that may have an impact on the communities. The advice given to managers for creating these plans ranges from the need to have a solid knowledge of the possible threats and responses, all the way to the idea that planning and management

must be kept separate, while also including the need for training, and especially the idea that planning is never complete, that it may be subjected to conflicts and resistance, and that it is actually a process rather than a product.

In an earlier article, Dynes et Aguirre (1979) suggested a typology of the groups involved in disaster management, and focused on the possible problems of coordinating between these different “types”. This resulted in the following table on the distribution of tasks based on the types of groups involved during disasters:

" Tasks

	<i>Regular tasks</i>	<i>Non-regular tasks</i>
<i>Old structures</i>	<i>Type 1 (Established)</i>	<i>Type 3 (Extending)</i>
<i>New structures</i>	<i>Type 2 (Expanding)</i>	<i>Type 4 (Emergent)</i>

- *Type 1 is an established group carrying out regular tasks. This is exemplified by a city police force directing traffic around the impact zone after a tornado has struck a company.*
- *Type 2 is an expanding group with regular tasks. The group frequently exists “on paper”, not as an ongoing organization prior to the disaster event, and would be illustrated by Red Cross volunteers running a shelter after a hurricane.*
- *Type 3 is an extending group which undertakes its men and equipment to dig through debris during rescue operations.*
- *Type 4 is an emergent group which becomes engaged in non-regular tasks. An example is an ad hoc group made up of the city engineer county city director, local representatives of the state highway department and a Colonel from the Corps of Engineers who co-ordinate the overall community response during a flood.”¹*

Although it barely touches on the issue of relations between public authorities and volunteers in the context of disasters, the article of Charles R. Wise (2006), which analyses the response of the American government to Hurricane Katrina, does merit a mention here, for the reflections it offers in terms of organisation. We know that the events of 11 September 2001 were the reason for a major reorganisation in the American government, with the creation of the Department of Homeland Security (DHS) that was in charge of an “*all hazards approach*” that included anti-terrorist activities. The Federal Emergency Management Agency (FEMA), which was previously in charge of natural risks, now fell under the umbrella of the newly created DHS. The disaster caused by Hurricane Katrina (2005) and its management, especially by the FEMA, were both deemed catastrophic and cast a shadow over this organisation. In any case, for Wise: “*Only four years after 9/11 and three years after the establishment of the DHS, the nation is confronted with the question of whether government organization for homeland security is sufficient to ensure security with respect to catastrophic*

¹ Dynes et Aguirre, 1979, p. 72

*incidents, whether they are the result of natural hazards or terrorism*²." To respond to this question, Wise suggests and compares two models for reorganising the DHS: the hierarchical model with *top-down* coordination; and a "network" model that focuses more on horizontal cooperation with other players in crisis management. He believed that in the early stages of the DHS, its main focus was undoubtedly on anti-terrorism, which tends to favour the hierarchical model. While this approach certainly has its benefits, he believes that for truly learning from the experience of Katrina, it is now time to focus more on crisis management methods that are more suited to local situations, which means promoting partnerships and network organisations.

In an article about a tornado in Missouri in 2011, Mason, Drew and Weaver (2017), through more than a dozen interviews of the main parties in crisis management, analysed the manner in which the *first responders* handled the first 48 hours of uncertainty. Uncertainty, here defined as "*ambiguity about the outcomes of various actions, exists when details of situations are ambiguous, complex, unpredictable, or probabilistic; when information is unavailable or inconsistent*"³. The authors suggest an "*uncertainty management theoretical frame*"⁴ for taking into account the communication difficulties between the "*first responders*" (from local authorities to volunteer citizens, also including the Red Cross) that occur during the first 48 hours of a crisis. The collected data helped the authors to compare the advice and other information provided by the American Centre for Disease Control (CDC) to the local situation that was observed.

B. The role of *non-profit organizations* in crisis management

For a certain number of authors, especially North Americans, the question of the role of *non-profit organizations* in crisis management is part of a broader issue, which is the contribution of "civil society" in public action. In any case, most of the publications that can be selected on this topic are based on the theoretical framework proposed by J. Bryson, B. Crosby and M Middleton Stone (2006), who themselves used a literature review to develop the conditions of a fruitful collaboration in public action (in general) between the three "sectors", namely the public authorities, the for-profit organisations (companies) and "*non-profit organizations*" (which can include volunteer organisations). In this rather general article, Bryson et al. especially developed the idea that the three aforementioned "sectors" are more inclined to collaborate once they each experience the limits of their separate interventions: for example, public authorities would be more inclined towards considering a collaboration with the private sector and the volunteer sector if these public authorities had already understood and accepted, following one or more failures with respect to a particular objective of public action, that their solitary actions were not enough. More generally, the authors of this article, like many other North American authors, believe that "inter-sectorial" collaboration for public action has become all the more necessary with the world and public issues becoming more

² Wise, 2006, p. 302.

³ Mason, Drew and Weaver, 2017, p. 231.

⁴ Mason, Drew and Weaver, 2017, p. 232.

complex over the past few decades, which justifies the involvement of as many as possible players of different origins. Other conditions have been reviewed by Bryson et al. for a fruitful collaboration between the 3 "sectors": the habit of collaborative work between the sectors, each one's belief in the abilities of others, the ability to maintain relationships (in cross-sector networks) over time.

In an article, this time specifically dedicated to collective action in response to disasters, Gloria Simo and Angela L. Bies (2007) take the general model developed by Bryson et al. and criticise it, mostly based on an analysis of the responses given in certain territories that were affected by the passage of Hurricanes Katrina and Rita (2005), in southern United States. The authors especially validate the hypotheses of the Bryson et al. model, for instance by showing that inter-sectorial collaboration on providing immediate aid to evacuees is not imposed as a matter of course at the time of the disaster, but can only be activated under conditions of prior interaction between each other: "*In both New Orleans and southern Louisiana, respondents indicated that it took several meetings and more than six months to come to any initial agreement about where and how to begin collaborative efforts. In the central Texas context, collaboration that were built on previously established agreements were reported more nimble in responding to the needs of evacuees*"⁵. In their conclusions and recommendations for the future, Simo and Bies confirm the interest of an inter-sector collaboration in the case of disasters: "*This study has revealed that cross-sector collaborative efforts in disaster response create and enhance public value*"⁶. They state that their study is no less than pioneering in this matter and that "*the research also suggests the need to link the literatures on nonprofit collaboration, collaboration under conditions of extreme events, and cross-sector collaboration*"⁷ because, according to them, "*extreme events change the assumptions for planning and implementation of cross-sector collaboration*"⁸. They recommend, under these conditions, a better preparation and better anticipation of the role that each sector expects the others to play, with respect to these particular situations; especially concerning volunteer organisations "*non-profit infrastructure organizations could help foster greater nonprofit involvement in state emergency task forces, with a clear understanding of intersections for nonprofits with federal state, and local officials, and other key emergency agencies, such as Red Cross*"⁹.

In a more recent article, W Eller, B.J. Gerber, and L. E. Branch (2015) also use the model of Bryson et al., this time for a different major event, Hurricane Sandy (2010). The study was based on investigations conducted after the disaster on the associations that were involved in the crisis management, and mainly pertains to the collaboration between these associations and the local and federal authorities. The conclusions of the article are resolutely optimistic on these points:

⁵ Simo and Bies, 2007, p. 134

⁶ Simo et Bies, 2007, p. 139

⁷ Simo and Bies, 2007, p. 139

⁸ Simo and Bies, 2007, p. 139.

⁹ Simo and Bies, 2007, p. 140.

*"What our analysis shows is that the non-profit sector's capabilities in coordination and collaboration can be viewed as robust and extensive. The scope of service provision and the ability to meet organizational goals – even in the faith of large scale disasters- is notable. Similarly, we found that in this case the both inter- and intra-sector coordination and collaboration in accomplishing service provision goals functioned at a high level. But at the same time, there are important –if nuanced- distinctions between organizations in terms of what working relationships they maintain and what that means for work efforts on the front end (i.e., mass care service provisions) and on the back end (i.e., community recovery actions) of a disaster incident."*¹⁰

In a more general article, Alexander (2010) examines the role of volunteers in activities of civil protection, by distinguishing between spontaneous volunteers and organised volunteers and by focusing especially on the latter. This summarising article can itself be considered to be the state of the art on this issue, since the author has reviewed a large number of scientific articles on the issue. The author addresses issues that were not properly covered by others, such as those of the recruitment, motivation and satisfaction of organised volunteers, as well as that of psychological aid that they may need due to their activities. He illustrates the theoretical models put forward by others on organising civil protection, vertical/horizontal organisation or hierarchical/network organisation, and emphasizes the need to educate and train all parties involved, including volunteers, on civil protection.

The work of Naim Kapucu (2006) titled *"Public non-profit partnerships for collective action in dynamic contexts of emergencies"*, which is mostly based on an analysis of the attacks of 11 September 2001, is another point in favour of recognising the role of associations, and unorganised volunteers, during disasters. Of course, the public authorities tend to be hesitant to rely on volunteers during extreme events due to a lack of trust, or due to the fear that the volunteers may endanger themselves while working. The author truly believes that the actions of the American Red Cross, the Salvation Army and other volunteer organisations played a key role in responding to the attacks of 11 September 2001. *"Public–nonprofit partnerships (PNP) can play an important role in bridging the critical gap in service delivery that in emergencies is not met by public organizations"*¹¹

Other texts in which this author contributed also merit a mention. The issue of coordination between the various participants during the same events of 11 September is specifically explained in "Inter-organized Coordination in Extreme Events: The World Trade Center Attacks, September 11, 2001" (Comfort, Kapucu, 2006), in which the authors mention (and sometimes criticize) the participation of the American Red Cross in collecting blood for the injured. However, the main focus of Comfort and Kapucu in this article is the creation of a "self-adapting" model for emergency responses, which requires appropriate communication systems to be set up. *"The model builds on the human ability to learn and adapt to new information, but acknowledges that this capacity can only occur with the support of an*

¹⁰ Eller, Gerber and Branch, 2015, p. 235;

¹¹ Kapucu, 2006, p. 140

*appropriate information infrastructure*¹²." In another collective article, Unlu, Kapucu and Sahin (2010) review the evolution of the crisis management system in Turkey (especially for, but not limited to earthquakes), from before World War II to the present. The authors conclude in this case too that it is necessary to mobilise all players in crisis management and to aid them in working together: *"New types of crises around the world show that the traditional top-down crisis management style does not work effectively. New crises such as terrorist attacks and big-scale natural disasters urge governments to plan a crisis management that is more effective. Particularly, the September 11 terrorist attacks had a significant impact on other countries' crisis management approaches. The new perspective in crisis management requires both linear and non-linear management flexibility. Horizontal networks are attracting more attention because it gives governments the opportunity to organize both national and local level public organizations, while considering non-profit organizations' participation*¹³."

In an article, similar to that of Wise cited above, dedicated to the consequences of the Katrina disaster on the organisation of American civil safety, Smith (2011) highlights the evolution in sharing responsibilities between the federal agency FEMA and the American Red Cross with respect to the policy named Emergency Support Functions (ESFs), which pertains to aid given to victims (*mass care, housing and human services*) after a natural disaster. In 2005, in the first months following the disaster, the American Red Cross and the FEMA agency shared the authority for setting up the aid policy (EFS 6) for the victims of Katrina. However, after some confusion and significant delays in responding to the victims of Katrina, the FEMA later (2008) revoked all authority from the Red Cross to implement the EFS policy. The author questions this decision, puts it into perspective with respect to the long history between the public authorities and the American Red Cross, and suggests a number of alternatives for re-establishing an effective partnership between these two institutions.

While the federal administration in charge of crisis management (FEMA) traditionally differentiates between two separate phases (response and "return to normal" - *recovery*), this model is not enough, according to Egan and Tischler (2010), for understanding the role that civil safety associations play, which covers response as well as "*recovery*" operations. This explains why the public authorities have so many difficulties in categorising the role of associations. The authors therefore suggest adding an operational intervention category of "*relief and disaster assistance*", alongside the two previously identified categories. This would allow associations to make better use of the possibilities granted by an article of American law (the "Stafford Act", section 309), which permits the distribution of food and services without first having to share costs with the State, which would be more effective.

Most of the articles mentioned so far describe and suggest ways to improve relations between national-level public authorities and volunteer organisations in disaster situations,

¹² Comfort and Kapucu, 2006, p. 326.

¹³ Unlu, Kapucu and Sahin, 2010, p. 172

especially in the United States of America. Given that there are fewer studies on the manner in which local governments should work with volunteer organisations, Brudney and Grazley (2009) performed a *"national survey of county-level emergency planning agencies to describe the role of volunteers and voluntary organizations in local disaster planning"*¹⁴. This quantitative study was based on the use of questionnaires distributed to the local crisis managers. Collaboration in this planning depends on the risk level in question and the resources of the local community, and is based on whether or not routines have been established between the local public authorities and the volunteer organisations. It encourages the local public authorities in charge of crisis management to associate as quickly as possible with volunteer organisations while planning.

Lastly, this review of texts dedicated to the relations between public authorities and volunteers during disasters will include an initiative described and analysed by a team of researchers headed by a Dutch author (Schmidt et al., 2017), which is based on new information and communication technologies. It pertains to a tool developed by the Netherlands Red Cross, called "Read2help", inspired by a model implemented by the Austrian Red Cross, which enables mobilising volunteer citizens, registered beforehand, on a case-by-case basis. *"Interested citizen volunteers can register themselves through the Ready2help website, where they are asked to provide some personal information and contact details. In case of a crisis situation, volunteers are subsequently contacted by the Red Cross via e-mail, SMS, or automated calls. Volunteers are then asked whether they are available to provide specific assistance at a designated time (filling sand bags, cleaning a refugee shelter, etc.). This allows volunteers to decide for themselves whether they can perform a certain task."*¹⁵ The authors concluded from their study that such platforms work *"as an interface between established, expanding, extending and emergent forms of behaviour, which enables a more flexible form for managing citizen volunteers"*¹⁶ and open new possibilities for coordinating the actions of several parties in a crisis situation.

C. The issue of spontaneous volunteers

The issue of the behaviour of citizens during disasters and their ability to behave as "spontaneous volunteers" has been researched several times over several decades.

In an article that summarises a large number of studies dedicated to this issue, Helsloot and Ruitenbergh (2004) expand on the main points established by the researchers. They expand on the idea that communities behave differently based on whether they have or have not already faced a disaster: *"Communities which have more than once been hit by certain types of disasters often develop so-called « disaster subcultures », in which the exchange of knowledge, exercises and other preparations are of central importance."*¹⁷ They also confirm that, contrary to a well-established myth that is especially believed by the public authorities, citizens do not normally panic in a disaster; nor do they immediately become dependent on outside help and rescue (second myth). Helsloot and Ruitenbergh state that, on the contrary, it

¹⁴ Brudney and Grazley, 2009.

¹⁵ Schmidt et al., 2017, p. 4

¹⁶ Schmidt et al., 2017, p. 9

¹⁷ Helsloot and Ruitenbergh, 2004, p. 100

is often the citizens themselves who are the *first responders* to disasters and that their altruism often manifests through an immediate commitment to provide whatever aid they can provide to the victims. Hence, it is normally these citizens who provide first aid (this was especially observed during earthquakes in Japan).

The authors however indicate that this spontaneous aid varies in nature based on the types of disasters, which they describe in the following manner;

- Flash disaster: explosions, air disaster
- The gradual release of dangerous or contagious substances
- Predicted natural disasters (gradual floods)
- Disasters involving crowds
- Disasters linked to failures in public services.

Perry and Lindell (2003, b) expand on several of these points in the particular case of terrorist attacks. Even in these instances, the authors emphasise that while the first reaction of citizens is fear, it does not normally cause panic or inaction. *"Indeed, most citizens do not develop shock reactions, panic flight occurs only rarely and people tend to act in what they believe is their best interest, given their limited understanding of the situation"*¹⁸. In these conditions, the authors recommend that the public authorities understand that citizens who are informed of danger will take any action that will allow them to escape this danger. However, it should also be expected that citizens will come to the aid of victims, especially if the scene of the disaster is confined to an area. To conclude, Perry and Lindell highlight the fact that the behaviour of citizens during terrorist attacks is not completely unpredictable. The public authorities must take into account the knowledge accumulated by the academic world on these issues for organising crisis management.

The article by Lorenz, Schulze and Voss (2017) pertaining to Germany follows the same lines as the previous two: the myths related to citizen behaviour in case of a disaster are a veritable obstacle to the collaboration of spontaneous volunteers with crisis management professionals. The recent floods in Elbe (2013) are an excellent example of this point. *"Even though the value of informal citizen responses was partially recognized in 2013 and especially during the refugee crisis 2015, professional rescue forces have commonly seen unaffiliated responders as a problem and are reluctant to cooperate with unaffiliated responders because they perceive them as unexperienced, untrained, and unmanageable"*¹⁹. The authors sought to identify the obstacles to collaboration between spontaneous volunteers and professional rescue teams (among which is the German Red Cross) by combining qualitative and quantitative data collection methods. They concluded from their study that all operators of civil safety must be informed about the consequences of persisting myths related to the behaviour of spontaneous volunteers on crisis management itself. In a way, they suggest providing more training to professionals rather than volunteers on these issues: *"To instruct the professional relief forces adequately on this topic, it is for instance*

¹⁸ Perry and Lindell, 2003 b, p. 50.

¹⁹ Lorenz, Schultze and Voss, 2017, p. 3

necessary to adjust their training and give advice on how to cooperate with unaffiliated responders as many professional rescue workers lack respective experience²⁰."

Whittaker, Mc Lyman and Handmer (2015) suggest a broader definition of "informal voluntarism", which recognises the various ways in which ordinary citizens willingly offer their time, resources and abilities to aid others in crisis situations. They differentiate between several types of informal voluntarism, such as that of spontaneous individual volunteers and that of those who previously worked in various associations, and examine the respective relations of the representatives of these two types with the public authorities. They also point to the rise of a new form of informal voluntarism, that of "digital voluntarism", which has taken an increasingly more important place in modern crisis management. With regard to the cooperation between informal voluntarism and more formal organisations, they conclude on the pitfalls of a too widespread and too rapid desire to combine these two: *"Attempts to 'integrate' informal volunteers into formal systems may prove counterproductive by quashing the adaptability, innovativeness and responsiveness that informal volunteers bring in emergency and disaster management²¹."*

D. Conclusion part 1

The texts reviewed above confirm the importance of the action of volunteers during disasters and the need for better coordination of their actions with those of the public authorities in charge of crisis management. However, they encourage us to differentiate, within the general category of volunteers, between those that belong to organisations whose competence in disaster situations is known and recognised (such as the Red Cross), and "spontaneous" volunteers who work on a case-by-case basis in rescue operations. The major volunteer organisations collaborate, in a more or less formalised manner depending on the country (see Part 2 of this report), with the public authorities for crisis management following disasters. On this note, the authors plead for more communication, the pooling of crisis anticipation and planning methods, and common training and simulation exercises that promote the interaction between these two "sectors" of public action.

The issue of relations between public authorities and "spontaneous volunteers", whose representatives vary greatly from certain populations that are used to a "disaster subculture" all the way to "digital volunteers" who, where needed, take individual initiatives in reaction to disasters, is undoubtedly much more complicated. Should we or should we not try to integrate more of the latter emerging category of "informal volunteers" in public action during a crisis situation? These questions are now being answered, for example with the Ready2help platform described earlier. The issue of collaboration between all parties involved, including "digital" ones, for collective action in a disaster situation is still one of the major issues in crisis management. The MACIV project that starts in January 2018 (funded by the ANR) also pertains to these issues (Management of Citizens and Volunteers: the social media contribution in crisis situation).

²⁰ Lorenz, Sculze and Voss, 2017, p. 6.

²¹ Whittaker, Mc Lyman and Handmer, 2015, p. 366.

Part 2. Organising European countries in matters of crisis management

Reading the texts described in (1), as well as the questionnaires returned to the French Red Cross for the survey on "Requirements and abilities of the parties involved in crisis management." *Multi-site* and *multi-risk* events prompt us to clarify the relations maintained between the "public authorities" and "volunteers" during disasters. Depending on the country, and especially in European countries, the public authorities for crisis management can be central or local, the "volunteers" can be of various types (belonging to associations such as the Red Cross, involved independently at the time of the event, or belonging to organisations that are more or less connected to the public authorities), and the volunteer organisations may or may not be on the front lines in crisis management.

We therefore attempted to compile several existing materials, to which we can add some of the information drawn from the responses to the MERCI survey questionnaire, in order to begin comparing the organisation of 28 European countries in matters of crisis management, with special attention on the role attributed to volunteers in this management.

We will begin by presenting the different sources of information used to establish this report, as well as the criteria that these different sources use for characterising and comparing the national crisis management systems. Then, we will propose a description of each of these systems, before attempting to conclude on a few lines of comparison.

A. Main criteria defining the European civil protection systems

In the European context, where different national organisations are required to evolve to become more compatible and consistent with each other, the national civil protection systems are not an exception to the rule. Therefore, several reflections have been undertaken at the European level, from various angles, in order to clarify the national civil protection systems, their major organisational principles, their common and divergent points, and the manner in which they evolve. These different surveys revealed a few major criteria for comparing and defining the national systems.

*The different sources of information

Through several studies conducted in the past few years, there is a more or less systematic documentation on organising national civil protection systems. These studies have specific objectives like us, and a scope that very rarely corresponds to the 28. This is why we propose a combination of different studies. Table 1 lists the different countries that were studied by the sources that we used.

Our main source of information is a research project conducted between 2012 and 2014, funded by the FP7 European Fund, which had the specific goal of analysing the method in

which **civil safety systems** operate in European countries (or European regions). This project, named ANVIL (for *Analysis of Civil Security Systems in Europe*), after describing these different systems, sought to identify what works and what does not work well in these systems, in order to formulate a set of recommendations. We will borrow the concept of “civil safety system” from it, which it defines as a set of procedures and (non-military) organisations that are set up for preventing, responding to and recovering from crises and disasters²². Their investigation does not cover all of the 28, and even extends beyond the Union (Switzerland, Norway and Serbia were also studied).

Two other recent, large-scale surveys are also quite educational. One is the study from the French Institut National des Hautes Etudes de la Sécurité et de la Justice (INHESJ - National Institute for Higher Studies in Security and Justice), named *Crisis management in Europe - promoting a coexistence of current organisations based on the culture of the Member States or promoting a structural convergence in a European system*, published in 2015, and the other is the *CBRN Integrated Response Italy* project, conducted in 2014. Both of them focus on a specific issue: firstly, the convergence of European civil safety systems into a unique European model, and secondly, the manner in which these national crisis management systems are able to handle Nuclear, Radiological, Bacteriological and Chemical (NRBC) threats. However, they provided a description of these existing systems. Also, neither of them pertains to the 28 countries of the Union.

The European Commission has also coordinated several projects that could be useful, especially as part of the disaster management peer review programme. In particular, a report on Bulgaria was drafted in 2015²³, at the request of the country, following major floods. The goal of this report was to reform the national crisis management system. The DG ECHO also develops vade mecums (guides) presenting the main characteristics of the national crisis management structures.

The same applies for the United Nations International Strategy for Disaster Reduction (UNISDR), which has provided several interesting reports: *The Structure, Role and Mandate of Civil Protection in Disaster Risk Reduction for South Eastern Europe*, in 2009.

Our own investigation, conducted as part of the MERCI project, allowed us to collect some data from the parties involved in crisis management in 12 European countries, as well as in Israel and the United States. This modest information, which unlike other surveys was not intended to be exhaustive, can be added locally, especially for a few countries that were not studied in earlier investigations.

Lastly, reading several scientific articles helped us unearth, through the examples provided, a few elements of response on the characteristic lines of these different systems. This mainly concerns articles from D. Alexander (2010) and Barkahoui et al (2016).

²² Civil Security system function in different countries and regions. Civil security systems are the (non-military) processes and organizations in place to prevent, respond to and recover from crises and disasters. (analysis framework, p. 3).

²³ http://ec.europa.eu/echo/what-we-do/civil-protection/peer-review_fr

*Key elements for understanding a civil safety system

To identify and characterise a European civil safety system, several elements can be drawn from these various studies.

Firstly, the authors of the ANVIL survey encourage us to be careful about the terminology used, and to not reduce the analysis to a single term: they highlight the diversity and partial confusion in the European terminology on civil safety²⁴: the term “crisis” appears very rarely in the procedures, which mostly speak of accidents, emergencies or disasters²⁵; the concept of “civil safety” is only found in German legislation, while the others mostly mention “civil protection”, “civil defence” or “crisis management”²⁶. There are many terms that translate into approaches that are subtly different from these European systems.

This same ANVIL study proposes four main entries for describing European civil safety systems:

- The cultural and historical aspects;
- The legal and constitutional aspects (is there a single law or rather fragmented legislation; is this legislation recent or old; who has the executive responsibilities, what are the operational mandates²⁷);
- The relation between the system and the citizens (is the crisis management system trusted);
- The roles of the private sector (which include non-profit organisations, such as the Red Cross).

We will only retain a few criteria of this rather exhaustive comparison, in order to gain a better understanding of national civil safety systems.

- Is the system “multi-risk”: is there a unique response system irrespective of the source of the crisis, or is it more fragmented, with different legislations and hierarchical structures depending on the type of threat?
- Is the system centralised or decentralised: who legislates in matters of crisis management?
- What is the place of the military in the civil protection system?
- What is the place of volunteer organisations in the system: are they the major organisations, do they participate in exercises, in innovation projects?

The last point will be given special attention. In fact, as stated by D. Alexander, *the degree to which volunteers participate in emergency response organisations varies considerably from one country to another*²⁸. According to him, one of the differences in the theoretical framework between the concepts of “civil defence” and “civil protection” lies in the place of volunteers in this organisation: in countries where the focus is civil defence, parties are more

²⁴ *The prevailing diversity and partial confusion in European civil security terminology.* P. 6 ANVIL.

²⁵ Accident, emergency, disasters

²⁶ Civil protection, civil defence, crisis management.

²⁷ executive responsibility and operational mandates

²⁸ P. 157, Alexander 2010

specialised and less concerned by the participation of the general population, than those in countries where people speak of civil protection.²⁹

The INHESJ investigation provides a dual categorisation of the European crisis management systems: those organised by **a vertical subsidiarity**, which adjusts the level of the response to the scale of the crisis, going from local all the way up to national, and prioritising the responsiveness of collective action; those organised by a **horizontal subsidiarity**, which preserves the independence of the parties involved while coordinating them, and which strongly associates the local players³⁰.

Which countries were studied in these different large-scale studies?

Country	Integrated NRBC	ANVIL	INHESJ study	MERCI preliminary investigation	Other specific documentation
Germany	X	X	X		
Austria		X		X	
Belgium	X			X	X
Bulgaria				X	X
Cyprus					X
Croatia		X			
Denmark				X	
Spain	X		X	X	
Estonia	X	X			
Finland		X		X	
France	X	X	X	X	X
Greece				X	
Hungary		X			
Italy	X	X	X	X	X
Ireland	X	X			
Latvia		X			
Lithuania		X			
Luxembourg				X	X
Malta		X			
Netherlands	X	X		X	
Poland		X			
Portugal				X	
Czech Republic	X	X	X		
Romania		X			X
The United Kingdom	X	X	X		X
Slovakia		X			
Slovenia					X
Sweden	X	X	X		

B. Description of national crisis management systems

²⁹ Elsewhere, civil defence, as opposed to civil protection, becomes more specialised and less subject to popular participation. P. 157, Alexander 2010

³⁰ P. 10, INHESJ, 2015

*Germany

The German system, which is traditionally decentralised, recently underwent major changes to make it more relevant at the federal level. Previously, the division between the Länder (the states) and the Federal State was based only on the distinction between disasters in times of peace, or in times of war (only the latter involved the intervention of the Federal State), with two different systems: *disaster prevention (Katastrophenschutz)* for the first, and *civil protection (Zivilschutz)* for the second. Due to this, the role of the military in the civil safety system is traditionally not very important: the German army is not authorised to intervene in the territory in times of peace.

However, the lack of responsiveness and resources observed after the flooding of the Elbe in 2002 led to the legislation being changed, giving more weight to the Federal level. Since the adoption of the framework law on civil protection and assistance in disasters, the responsibilities are shared more equally between the Länder and the State. The State has been given a certain number of tools to prepare itself for crisis management, especially the Federal Office for the protection of populations and assistance in disasters (*Bundesamt für Bevölkerungsschutz und Katastrophenhilfe – BKK*), and a common operational monitoring centre (*Gemeinsames Melde- und Lagezentrum – GMLZ*).

The Länder still retain significant independence: insofar as the domains of the police and civil safety are decentralised jurisdictions, it is these parties that legislate in this matter. Therefore, there is a great deal of diversity in these applicable laws relating to crisis management. Some Länder have a “multi-risk” approach, covered by a single piece of legislation, whereas others have distinct mechanisms depending on the type of risk.

Lastly, the German system is characterised by the highly important role granted to volunteers and volunteer organisations. The ANVIL study mentions “more than one million” volunteers, whereas the INHESJ study specifies the number to be 1.8 million (“i.e. one of every 22 inhabitants”). Apart from international organisations such as the Red Cross or the Order of Malta, Germany also has other large volunteers corps: volunteer fire-fighters (1,200,000 members), and the technical support agency (*Technisches Hilfswerk – THW*), which has around 630 bases across the country³¹.

According to different analyses, the significant level of using this qualified and large manpower contributes to the effectiveness of the German crisis management system, but it may also become weaker over time, for *demographic* reasons (ageing of the population) as well as *sociological* reasons (abandoning of voluntary service).

*Austria

The crisis management system of this second Germanic country is similar to that of Germany in several respects. As in Germany, it is qualified as a horizontal subsidiarity model, i.e. where the local levels have greater importance in legislating and intervening in case of major events.

For most scenarios, it is the local authorities (city councils and districts) that are in charge of organising the response with the help of the police and the fire brigade. The role of

³¹ Alexander, 2010

coordination may, however, be taken up at the federal level when crises spread beyond the local level. Moreover, the Federal State has greater importance for some types of risks, especially those concerning epidemics and forest fires. The approach is therefore mostly multi-risk, although it coexists with specific approaches for certain threats.

Moreover, unlike in Germany, the army plays a greater role. Although their intervention is mostly considered to be a “last resort”, the army is frequently called on in Austria, especially for its heavy-duty equipment.

Like in Germany, volunteers play a key role in this system. Volunteer organisations are integrated at all levels of crisis management: they communicate with the local levels as well as with the federal level. Their integration in the crisis management system is properly formalised. As indicated by the respondents to the MERCI project, the national Red Cross is one of the main rescue organisations for the population, on a daily basis. The proportion of volunteers is comparable to that of Germany: 413,000 volunteers, i.e. around 5% of the population. Some organisations are specialised, such as the fire-fighters or the mountain rescue services, while others are more general, such as the Austrian Red Cross or the Samaritan organisation.

The same sociological and demographic issues weighing on Germany are also present in this crisis management system. However, the “Team Austria” initiative, launched somewhat successfully in 2007, has encouraged each person’s participation in crisis situations, without requiring an affiliation to a given group.

*Belgium

Unlike the previous two systems, the Belgian crisis management system has been designated by the INHESJ report as being based on a *vertical subsidiarity*. The regulation and roles of each party in matters of crisis management are defined by the central government. Depending on the scope of the event, the coordination of the response is entrusted to the local level, provincial level or directly to the Federal State: emergency plans are therefore divided into these three levels. The principles are general, defined in the General Emergency and Intervention Plan (PGUI), but can be supplemented depending on the type of risk via specific plans.

The volunteer organisations appear to play a more marginal role in crisis management. It is the fire brigade, the operational civil protection units, the army and the police that intervene in the field. However, the civil protection units and the fire brigade do have a large number of volunteers: 12,000 volunteer fire-fighters and 650 volunteers in civil protection³², i.e. a much smaller portion of the population (0.1%). On the other hand, the other organisations, such as the Red Cross, have not been mentioned in the different reports. According to our own survey data, these organisations must obtain an accreditation to be authorised to intervene in the field.

*Bulgaria

The Bulgarian civil safety system seems to be in the midst of being restructured. In fact, the two main sources of information that we found both mention significant changes. Following

³²https://www.belgium.be/fr/justice/securite/precautions_a_prendre/services_de_securite/protection_civile; <http://jedevienspompiers.be/fr/un-pompier-sommeille-en-vous>; viewed on 12/10/2017

the 2005 floods, the UNISDR report of 2009 speaks of a deep reform. The same applies to the report coordinated by the European Commission in 2015, one of the prerequisites to a national reform. While there are undoubtedly rather significant developments in progress, we were not able to find any sources in English that explained the ongoing reforms.

However, we can use what the Commission report considers to be “good practices” to identify a few characteristic lines that are probably maintained in the Bulgarian system.

Risk prevention in Bulgaria is based on the Disaster Protection Act (DPA) of 2006, which organises the response for all risks. The approach is therefore centralised. However, the prevention actions are barely interlinked³³, and intervention plans are developed for each type of risk: this segmentation has been deemed to be problematic by the Commission report. The local players (regional State representatives and city councils) also have responsibilities in crisis management: their plans are derived from the general principles established at the national level.

The main players in crisis management are the services of the DGFSCP (Directorate-General for Fire Safety and Civil Protection), with one national department and territorial delegations that coordinate response actions. It is therefore the departments of the Ministry of Interior, and some of those of the army, that are on the front lines, unlike other countries of the former Soviet bloc. Lastly, the Bulgarian Red Cross appears to occupy a specific place in this system. Unlike other volunteer organisations or players in the economic sector, the Bulgarian Red Cross is closely linked with the national system: its role is defined in the laws. However, local volunteer organisations are emerging now. They are organised around the city councils of each commune.

*Cyprus

The civil safety system of Cyprus gives a central role to the District Officers. These senior civil servants, who represent the State in the 5 main districts (Eparhies), have significant independence, but are still under the authority of the Ministry of the Interior. In matters of crisis management, they are responsible for the inter-ministry coordination in their territory, for all subjects: prevention, planning, crisis management, etc. They also review all emergency plans set up by other players (other ministries, police, municipalities, fire brigade, healthcare services, etc.). The local communities of Cyprus are not very independent, but they still have to create plans and also inform the population about them.

Coordination also exists at the national level, especially with the civil defence department of the Ministry of the Interior. Volunteer organisations do not seem to play a central role in this system.

The information that was collected for understanding this system is still not sufficient. For clarification, one possibility is to read the work of Piertantonios Papazoglou³⁴.

*Croatia

While the Croatian system originally inherited the traditions of the Yugoslav federation, and therefore a system largely dominated by the military, it has evolved since then and is now

³³ Peer review rapport, p.16

³⁴ Research in progress, according to Crisis Management and Emergency planning in Cyprus, 2014 .

based more on the civil forces. The military is now called on only in support of the police or other operational bodies. At the national level, this system is conceived as a multi-risk system, whereas the response system, organised at the local level, is subdivided and specialised to respond to specific threats. However, depending on the scope of the crisis, this responsibility may be taken up by the national level. The ANVIL report on Croatia mentions that a law was being prepared when the research was being carried out (the report was published in January 2014); it is therefore possible that significant changes have occurred since then. However, we were unable to find traces of these reforms.

Volunteer organisations play a key role in this system. They collaborate closely with all of the public bodies involved in crisis management, at all levels of administration. All the volunteer organisations (Red Cross, fire brigade, as well as the rather famous *Croatian Mountain Rescue Service – CMRS*) participate in the prevention, preparation and in rescue operations. The Croatian Red Cross, for instance, plays a key role in raising awareness among the population about the risks related to mines in the country, which is still significant. In numbers, these volunteers represent close to 9,000 persons for the Croatian Red Cross, 750 for the CMRS and more than 58,000 fire-fighters³⁵, i.e. 1.5% of the population.

*Denmark

The Danish civil safety system is flexible in the management authority, but is based on a multi-risk approach, which allows applying the same response principles to all types of accidents or disasters³⁶. All the public authorities must prepare themselves for crisis management, whether they are local players (municipalities), the regions or even the central government and the ministries. All of them draft continuity and maintenance plans under their jurisdiction. The response principles are therefore based on sector-wise responsibility and subsidiarity. These response principles are enacted by the national crisis management agency (DEMA - Danish Emergency Management Agency), under the authority of the Ministry of Defence. This agency stipulates the manner in which the national crisis management system must be organised, and integrates the emergency and fire-fighting services, which assist the local services and the police when they become overwhelmed. It supervises the regional response centres, and aids the State departments and the communities in their preparation. Moreover, it is responsible for preparing for chemical and nuclear risks.

As per our own survey data, the volunteer organisations are not part of the main response resources: they are not integrated in the national response plan (ibid), and represent rather modest resources. The main organisation mentioned is the Danish Civil Protection League, with 5,000 members³⁷.

³⁵ <http://www.hvz.hr/en/>, viewed on 12/10/2017

³⁶ *In Denmark, the crisis management system is constructed as a general and flexible capacity, and therefore the system is applied to any kind of accident or disaster, as well as scheduled large-scale events, such as political summits in*
http://brs.dk/eng/emergency_management/national_emergency_management_organisation/Pages/national_emergency_management_organisation.aspx

³⁷ <http://ercportal.jrc.ec.europa.eu/vademecum/dk/2-dk-1.html>, viewed on 16/10

*Spain

Like in Germany, the Spanish civil safety system has undergone significant changes in the 2000s, following difficulties that were observed during two major crises, the attacks in Madrid in 2004 and the violent fires in summer 2005. Whereas since thirty years, the trend was towards decentralisation where the independent regions and communes played a key role in the organisation against crises; this architecture was partially remodelled in 2005.

Firstly, the State jurisdiction was reaffirmed: the central government coordinates crisis management when the situation affects multiple independent communities or “when the crisis requires national management”. This role of the central government is also established in the cooperation between civilian and military forces, with the latter being integrated to a greater extent recently, especially via a Military Emergencies Unit. However, the system is still mostly decentralised: the jurisdiction remains in the hands of the independent regions, as municipalities having more than 20,000 inhabitants carry out the civil protection planning. Their planning is general, with specific provisions for certain types of risks. For certain threats, it is directly the federal level that is responsible.

Moreover, the INHESJ report also highlighted that one of the original weaknesses of the Spanish system was the limited contribution of citizens to civil protection: their actions were limited to prevention and protection, even though numerous volunteer associations exist. While informing the public was reaffirmed as the principle of the civil protection system, there were not notable changes highlighted on the role that they play.

*Estonia

The Estonian system was rebuilt from scratch from 1991 onwards and progressively transformed the Soviet approach, which mobilised the entire civil society for all defence or rescue operations, into a system that is more people-oriented. The system has remained centralised, but segmented: every ministry is responsible for crises that may occur under its domain of intervention. The law states that emergency response plans must be developed at the national level and, if necessary, at the regional and local levels. However, a single institution has been given a directive role in the planning and in rescue operations: the Estonian Rescue Board (*Päästeamet*), which coordinates the operations and examines the work conducted by the regions. This ensures that the Estonian system has a multi-risk approach.

The Estonian “people-oriented” approach does not mean that traditional volunteer organisations, such as the Red Cross, play a key role in the crisis management system. In fact, it is the organisations of the private sector that are mobilised, including economic players. Private resources are contributed for preparing and planning actions. The Estonians have also retained significant participation in the crisis management system via national initiatives, some of which are quite recent. The main ones, as per the ANVIL report, are: the Estonian Voluntary Rescue Union; the volunteer assistants of police officers; and also the citizen initiative ENW (Estonian Neighbourhood Watch).

*Finland

The Finnish system has retained the heritage of a system developed during the Cold War, which focused on preparation for extreme situations, such as total war: this heritage is especially seen in the distinction made between civil safety and protection.

Crises that require a global management correspond to a narrow definition: situations related to armed conflict, those that have major economic impacts, and lastly natural or man-made disasters. The authors of the ANVIL study insist on the fact that terrorist activities do not fall under these situations.

It is both sector-based in matters of risk as well as decentralised, with significant independence of the administrative and functional sectors. Each sector authority retains responsibility during all crisis situations. The Finnish tradition makes every sector clearly independent. The intervention capacities of a superior level in inferior levels are strictly defined. Therefore, there are no agencies dedicated specifically to crisis management in the Finnish municipalities or counties. However, to encourage regional planning, regional preparation committees have been set up in charge of planning, but which can also be called upon in case of a crisis. They are directed by the agencies representing the State in the regions - although these agencies have no power in matters of crisis management - and include all key players: police, rescue services, border corps, military, healthcare institutions, and other organisations such as the Red Cross. These committees promote similar planning for all types of risk.

Thus, while volunteer organisations are not the main responders in case of a crisis, they still play an important, and still growing role. In some territories, arrangements have been signed so that they can aid, or even stand in for the official civil safety services. The project aims to formally contract these volunteer activities. The fire brigade has 14,300 volunteers. The Red Cross and other organisations such as the canine units called VAPEPA are also used.

*France

The French crisis management system is particularly centralised and hierarchy-based. Several levels of the “prefectural chain” are in charge of planning and directing operations in case of a crisis. When one level is “overwhelmed”, the superior level takes the reins. At the local level, it is the mayor, as a representative of the State, who has the responsibility. Then comes the department’s prefect, who is also a representative of the State. Then comes the zone Prefect, and lastly the national level. Depending on the type of event, there are several possibilities in national crisis management. The defence code states that *each ministry is responsible, under the authority of the Prime Minister, for preparing and enforcing national defence and security measures that fall under the scope of the department that it is in charge of (article L. 1141-1)*. When the crisis concerns only civil safety, the Ministry of the Interior takes charge, with its Inter-ministry Crisis Management Operational Centre - the COGIC (Centre Opérationnel de Gestion Interministérielle des Crises). On the other hand, if a crisis has a wider impact, the Inter-Ministry Crisis Centre (CIC - Centre Interministériel de Crise) can be activated for the response actions. An organisation created by the circular of 2 January 2012, the CIC coordinates all operational centres of all ministries. When a crisis occurs, it falls on the Prime Minister to decide whether or not to activate the CIC, and which ministry should be in charge of the crisis management and direct the CIC. This responsibility often falls to the Ministry of the Interior.

Within the Ministry of the Interior, it is the General Directorate of Civil Safety and Crisis Management (DGCSGC - Direction Générale de la Sécurité Civile et de la Gestion des Crises), which includes the police and civil safety, which handles the planning and coordination. The COGIC is organised within this body. The Prime Minister has the General

Secretariat for National Security and Defence (SGDSN - Secrétariat général de la Défense et de la Sécurité nationale) under him for the inter-ministry planning.

The approach is therefore multi-risk: the ORSEC (Organisation of the Response of Civil Safety) mechanism lays down the broad guidelines of response, the contents of which are defined by law. Drafted at the national, zonal and departmental level by the State representatives, it also lays down specific provisions for certain types of risk. It allows for organising relief efforts under a unique management.

There are several parties involved in crisis management. Firstly, the armed forces constitute significant resources for the civil authorities, but their mobilisation is restricted to major crises, those that threaten the life of the Nation. The civil safety associations are integrated side by side with the public service missions. They can only intervene at the request of the prefectural authorities. These various associations (French Red Cross, the French National Federation for civil protection, the French National Marine Rescue company, etc.) include close to 250,000 volunteers, which represents around 0.3% of the population. Lastly, the communes have the option of developing local volunteer organisations that work under the authority of the mayor, called the municipal civil protection reserve (RCSC). They are not yet very developed.

*Greece

There was too little information collected on Greece to develop a solid presentation of its civil safety system.

As per our own survey data, the local Red Cross is not an essential organisation in the rescue services, and planning is mostly organised at the local level.

*Hungary

The Hungarian civil safety system has undergone significant changes since 2012, strengthening its centralisation and creating new institutions. A new professional corps was created in particular, in charge of aiding city councils in their crisis-related tasks. When the state of emergency is activated, these professionals take up the executive responsibilities of the mayor. However, not all crises result in the declaration of this state of emergency.

The centralisation of the Hungarian system is based on the fact that the crisis management authorities are under the authority of the Ministry of the Interior (the National Directorate General for Disaster Management - NDGDM), and the regional directorates supervise all other institutions. However, the mayors must provide the initial response to crisis situations. Yet, they must follow the principles defined at the national level. Under this management of the Ministry of the Interior, specific plans are drawn up at the local, regional and national level for each type of risk.

Whereas the armed forces are only mobilised in rare cases, the non-profit sector plays a key role. This sector has been steadily growing in number of persons and organisations over the past fifteen years³⁸.

³⁸ In Hungary the non-profit sector shows an increase both in involved persons and number of such organisations during the last 15 years, ANVIL

During the two major events of 2010 (floods and the Akja industrial accident), the four main volunteer organisations signed an agreement with the Ministry of the Interior to supervise their intervention. Several volunteer organisations are present in Hungary (Hungarian Maltese Charity Service, Baptist Charity Service, Hungarian Interchurch Aid and the Catholic Caritas), but it is the Red Cross that is the largest organisation, with close to 130,000 volunteers in 2011 (i.e. 1.3% of the Hungarian population). Owing to the fallout of these major events, discussions are underway to legally define the principles of coordination between volunteer organisations and authorities.

*Italy

The Italian system is quite complex, since it is based on a flexible interaction between all its institutional players. Depending on the type of crisis, the central government and/or the local players intervene with the private players and volunteer organisations³⁹. The particularity of Italy is the distinction between the civil protection system and the civil defence system. The former intervenes in natural disasters/industrial accidents that create emergency situations at the national, regional and local level, while the latter (Civil defence) intervenes in the same situations when they worsen and become crises. The latter also intervenes when intentionality is proven, and when the crisis is not accidental (criminal activities, terrorist actions, military attacks, etc.). The two concepts of “crises” and “emergency” are defined in Italian law, but these definitions do not permit drawing a clear line of separation between the two systems (apart from the reference to national scope in a crisis). Thus, while the major crisis management approach is based on civil activities in certain cases, the armed forces also contribute to the operations.

The “civil protection” part of the Italian system is decentralised, and is based on the principle of subsidiarity: the actions are first executed at the local level, and involve superior administrations if needed. In this respect, crises are classified into three levels: *level A* only involves the municipality, *level B* involves the province and region, and *level C* signifies that the crisis is at the national level. Municipalities, provinces and regions draw up prevention plans. However, the part involving the armed forces (civil defence) is clearly centralised. Therefore, the Italian model corresponds more to horizontal subsidiarity.

However, the planning is linked to the type of risk: there are several plans for different types of risk. Volunteer organisations play a key role in the Italian system, both in the planning phases as well as in rescue operations. The Red Cross, with 160,000 volunteers, as well as the Catholic Church also participate actively in this system. Moreover, there are numerous local civil safety reserves, which are well organised and connected to the national level. Overall, Italy has more than one million volunteers.

*Ireland

The Irish system is quite distinctive in Europe: whereas crisis management is organised in the civil sector, the administrative role of the Department of Defence is important, since it is this department that contains all of the structures responsible for civil safety. This can be explained by the fact that, historically, the Irish system was mostly developed based on the

³⁹ The complex Italian civil security system is based on a flexible interaction among its numerous institutional actors, ANVIL p. 4

issues related to Northern Ireland, since this border region was only pacified in the late 1990s.

This system possesses typical characteristics of both a system centred on the State and a decentralised system. It is firstly the Central Government that manages a crisis, and several administrations work under its wing. However, a significant reform in 2012 ensured that local authorities are on the front line for responding to emergencies. Thus, the system can be considered to be decentralised, with a possibility for the local authorities to delegate power if the crisis becomes too major in scope.

This Irish system is very flexible, similar to the Italian system, since three local authorities are defined as the Principal Response Agencies (PRAs). Depending on the type of disaster, one of these three agencies takes the role of leader and coordinates the response, in addition to its own functions related to the emergency. Each one therefore has its own crisis management plan.

Therefore, the number of persons mobilised is quite logical. Moreover, the response is partially based on the voluntary sector (6,000 volunteers for the civil defence service, and close to 3,000 for the Red Cross), as well as on several other associations.

Like in Luxembourg, the management of the Irish Red Cross is connected to the public authorities: the President of the national society is the Irish President, and a member of the Department of Defence sits in his council.

*Latvia

The Latvian system is a combination of coordination centralised by the Prime Minister and the actions of multiple agencies. Owing to this, no ministry or any other agency has primary responsibility in crisis management, for strategic or tactical operations. The ANVIL report gives us an example of these implied responsibilities: prevention against dangerous substances is the duty of the Ministry of Economy, whereas the Ministry of the Interior and the Ministry of Environment handle the situation when it occurs. Each ministry is in charge of managing a crisis when it falls under its scope of expertise.

The system is therefore segmented and centralised. However, a national security council (NDP), chaired by the Latvian President, reviews all of the ministerial plans and mechanisms in order to provide standardisations. It can only give recommendations.

The local communities play a key role in the mechanism: they must coordinate the response and manage evacuation. They are especially in charge of the fire brigade and rescue services, which are the primary players in crisis management.

However, very little importance is given to volunteer organisations. Their intervention is more visible in the domain of preparation, than in the actual response actions. However, the few existing organisations, and especially the Latvian Red Cross, which is the main one, are included in the management structures and participate in the exercises.

*Lithuania

Even more clearly than the Latvian system, the Lithuanian system is centralised and segmented by type of risk, although it is progressively leaning towards a more integrated and “multi-risk” approach. The law of 1 January 2010 has subtly changed the system.

While it used to be organised in three levels (local, county and national), the legislative modification removed the intermediate level, leaving only the local and national levels in charge of planning and rescue operations. There are two main players: the Fire and Rescue Department (FRD), in charge of coordinating civil protection at all levels, and the Emergency Committees (EC), assisted by the fire and rescue services, are implemented at the national and municipal levels. These are the operational bodies in crisis management. The armed forces only intervene in extraordinary cases.

The volunteer organisations are granted key importance in the system, especially for the response actions. Their intervention is framed by the law of 2010, which permitted organisations such as the Lithuanian Red Cross or the Lithuanian Riflemen's Union to set up arrangements with the communities.

*Luxembourg

Unlike other French-speaking countries, Luxembourg does not have general plans establishing a general crisis management procedure. H. Barkaoui et al (2016), put forward the assumption that the small surface area and the low number of persons concerned (about 583,000 inhabitants in 2016) could explain the direct recourse to specific plans, referred to as PIU (Plan d'Intervention et d'Urgence [Intervention and Emergency Plan]). The approach is therefore segmented: depending on the type of risk, or the sources of the crisis, the responsible ministerial authority varies. Thus, the Ministry of Economy is responsible for the PIU's power interruption, whereas the Ministry of the Interior is responsible for the "numerous victims" plan⁴⁰.

Crises are managed centrally: the local authorities do not have to prepare their own crisis management plans, but are still involved in implementing the national plans: community PGUI can therefore be drawn up⁴¹.

Rescue services are mostly handled by the public services; according to the data collected in MERCI, volunteer organisations do not have a significant role. However, while these associations do not need official accreditation to intervene in crisis management, there is, in fact, a close connection between the Luxembourg Red Cross and the public authorities: the Presidency of the Luxembourg Red Cross Society is granted to the Grand Duchess consort of Luxembourg, and its statutes have been defined by a ministerial order.

*Malta

Crisis management in Malta is centralised: regardless of the type of emergency, it is always the national level that takes charge of the response. There is no crisis response at the local or regional level. Very few planning actions have been undertaken: in general, the public authorities tackle a crisis only after it occurs. The civil protection department, which is part of the Ministry for Home and Parliamentary Affairs, can sometimes fall under the authority of other ministries.

⁴⁰ <https://www.infocrise.lu/fr/web/guest/urgence-nucleaire>, viewed on 13/10

⁴¹ *In Luxembourg, there is no requirement for local authorities to prepare their own emergency plans. However, they are usually involved in implementing national plans and are therefore required to make preparations for such implementation.* European and Mediterranean major hazards agreement (Europa), *Involvement of local and regional authorities in major hazard management*, 2010

Since the means of intervention of the public authorities are limited, the community and volunteer sector, and perhaps even the entire citizen community, is an extremely important support. The volunteer organisations play a massive role in the preparation, response and reconstruction actions. The Malta Red Cross informally manages a group of civil safety organisations working for protection (CSO). This group can intervene as a backup for the civil protection department in rescue actions.

*Netherlands

Like the other studied countries, the Netherlands has undergone a recent reform in their civil safety system. While historically, “crises” and “emergencies” were given different definitions and responses, in 2010, the Safety Regions Act implemented a more coherent system.

Whereas crisis management was initially handled by the different ministries, a single organisation (Netherlands’ National Coordinator for Security and Counterterrorism – NCTV) was created, under the authority of the Ministry of Justice and Security. It is in charge of counter-terrorism, cyber-security and all crisis management in the country. Several events led to the implementation of the *Safety Regions* act, which defines the organisation of relief efforts in the territories.

- May 2000: “the fireworks disaster” at Enschede (explosion at a fireworks warehouse, resulting in 23 dead and 947 injured).
- December 2001: the fire in the “De Hemel” bar (Volendam) (resulting in 14 dead and 241 hospitalised).

These two events birthed the idea that it was necessary to organise crisis management at a larger scale than the commune level, and especially in a multi-disciplinary manner. This allows for having a single directorate in case of a crisis - the safety regions correspond to the administrative partitions of the police. The system is still fragmented, but the high level of familiarity between the different agencies allows for great coordination. The primary responsibility for assistance and safety in case of a crisis remains in the hands of the municipalities, but in the case of disasters, they must cooperate with the regions. The system is therefore essentially decentralised.

The armed forces do not have a major role in this civil safety system, as the Dutch do not have a grand military tradition. Occasionally, they may be mobilised for aiding in evacuation and managing equipment. On the other hand, volunteer actions are very important. Between 70 and 80% of fire-fighters are volunteers, as well as 4% of the police force. Also, the Dutch Red Cross and the Dutch Rescue Service intervene alongside the public authorities. There are also volunteer organisations that are specifically dedicated to helping the government in case of floods. A decree of 1988 defines the conditions of coordination and the roles of the Dutch Red Cross in case of a crisis. It can mobilise up to 25,000 persons for its various operations.

*Poland

The Polish system was rebuilt in the 1990s and is still undergoing a transformation, and hence the terminology is not yet determined: civil defence, civil safety, civil protection and crisis management can be found in the legislative literature. Yet, a few traits can be seen: the system is mostly sector-based, with a few elements of a multi-risk approach: several

independent services are in charge of specific risks. On the other hand, there is a single coordination platform for all crises.

Moreover, the creation of the national fire fighting and rescue system, marking the transition of crisis management from the military sector to the civilian sector, has reinforced the unification of the system. This service handles day-to-day emergency operations as well as crisis management interventions. The army is still regularly called on for reinforcing civilian operations.

The crisis management system is decentralised: the three local levels (municipal, county, province) must draw up the emergency plans. However, procedures are in place for crisis management to be handled at a suitable level if the crisis worsens.

The decentralisation of the preparation is reinforced by the role played by the volunteer fire-fighters, who are markedly present in rural areas and small towns, in crisis management. It is the fire fighting and rescue services that are on the front lines for intervening in emergency situations. Although the private sector is not very integrated in the mechanism, the volunteer organisations, and especially the volunteer fire-fighters, are essential and collaborate closely with the authorities. The other central volunteer organisations in the country are the mountain rescue services and the water rescue services.

*Portugal

Very little information has been found on them in English. However, we can still state that, while the State of Portugal is one of the most centralised in Europe, the responsibility of civil safety still lies first with the municipalities⁴². However, these municipalities can delegate their jurisdiction to inter-community or infra-community entities (*les freguesias*). The national civil protection agency (*Autoridade Nacional de Proteção Civil*, ANPC), manages the coordination of all parties involved.

If the crisis response overwhelms one community, the ANPC activates the national coordination centre. This agency plays a central role in crisis management.

According to our own survey data, the Red Cross is not the primary rescue organisation.

*Czech Republic

After the major floods in the late 1990s, the Czech government reorganised its civil safety system, drawing inspiration from the French system. Due to this, crisis management is handled according to a pyramid hierarchy, where the principles of organisation and planning are the same for all players (Government, regional commissioner, mayor, district authority).

The Czech law defines 4 crisis states: danger, emergency, threat, war. The danger state is declared when an event overwhelms the response capacities at the local level. The greater the scope of an event, the higher the level of response management. Therefore, there is a single response system, with a multi-risk approach.

Crisis management is no longer under the supervision of the Ministry of Defence, and is now part of the Ministry of the Interior. However, the armed forces are part of the integrated rescue system created in 2000, which integrate rescue services such as the fire brigade,

⁴² <https://www.oecd.org/regional/regional-policy/profile-Portugal.pdf>, viewed on 14/10

police and volunteer organisations. Formal participation in the integrated rescue system signifies that the services can be called upon, and that they participate in regular exercises and in State-sponsored projects.

Among these organisations, the major ones are the Voluntary Fire Brigades (VFB). Inheriting a ancient national tradition, the group has more than 300,000 members. The Czech Red Cross is also present, and had more than 27,000 members in 2011. Other organisations such as ADRA or Caritas also intervene.

*Romania

Significantly transformed during the 2000s, the Romanian civil safety system is mostly centralised, based on a subsidiarity that can be qualified as vertical according to the terminology of the INHESJ report. In fact, based on the scope of the crisis, it is the local level (the mayor), the county prefect or the national level that coordinates the actions. The national level takes over when multiple counties are affected. The approach is multi-risk.

Non-governmental players are highly involved in the mechanism: the ministries, the involved agencies as well as non-governmental organisations all participate in the National Committee for Emergency situations. The UNISDR report mentions 140,000 volunteers who can be mobilised (representing 0.6% of the population).

*The United Kingdom

The British system is based on a completely decentralised logic. However, this system was greatly destabilised by the London attacks in July 2005, although it had just been reformed in 2004 to give a clearer role of coordinator to the central government of London.

Therefore, two approaches coexist in the British system: on the one hand, the idea of an⁴³ (Integrated Emergency Management), in order to encourage cooperation between agencies; on the other hand, the clear preserving of the decentralised logic, and the responsibilities of each government being assigned. While there are possibilities of the superior level taking charge, they are very rarely implemented.

The system identifies three degrees of crisis intensity, at the local level: the bronze, silver or golden level. The last level signifies the activation of a strategic coordination group, involving the different local authorities, and connected with the crisis cell of the Home Office, in London. This system also ensures that the type of response is greatly determined by the type of risk: the approach is mostly segmented.

In addition, two categories of responders are identified by the legislation. Responders of the first category include the emergency services (police, fire brigade, ambulance services), the local authorities, the State agencies and medical corps. Responders of the second category are the parties involved in distribution services (water, electricity, telephone), transportation and other State agencies. Therefore, it is the police that are the first responders in crisis

⁴³ 'Contingency planning arrangements need to be integrated both within and between organisations in a coherent multi-agency effort to build greater overall resilience to disruptive challenges. They should be an integral part of departmental and organisational planning and should work both individually and in collaboration with each other on certain key activities' (Ministry of Defence, 2007), in ANVIL, p. 12.

situations, except for health-related crises, where it is the fire brigade and the healthcare agencies that intervene.

Volunteer organisations can be considered to be part of the first category. Their role mainly depends on the local agreements made with the authorities, though a national framework for these agreements has been defined.

The British Red Cross has approximately 35,000 volunteers.

*Slovakia

The ANVIL study highlights that there is insufficient clarification on the authorities responsible for crisis management, which can be explained by a wave of significant reforms that recently transformed the administration. In fact, there is an administration that uses what is called a “parallel model”: the regional State governments are independent from the political authorities. Hence, and while the administration is mostly decentralised in Slovakia, the civil safety system is centralised. However, the city councils play an important role. The approach is also unique for all types of risk.

The rescue operator is the integrated response system, a platform that includes the ministries and the rescue services, which are differentiated between “basic services” (fire brigade, healthcare, mountain rescue and mine rescue services) and other services, which include the army, the municipal fire brigades, the Red Cross and other volunteer organisations. In fact, at the local level, the volunteer organisations are very important, especially the volunteer fire brigade (90,000 members). The Red Cross (close to 75,000 members) has also signed an official cooperation agreement with the Home Office, and is fully integrated in the response governance mechanism.

*Slovenia

Originally created in the 1960s for rescuing populations in times of war, the Slovenian civil safety system has progressively evolved to pay more attention to disasters in times of peace. The national safety system is built on three pillars: protection, rescue and relief. The rescue system is organised for all types of risk. It should be noted that the term “civil protection” refers, in the country, to a very specific entity (Civil Protection Units), namely the services in charge of specific accidents (including, for instance, chemical threats) that cannot be handled by more traditional rescue services.

There are two levels of planning and response: Central Government and communities. At the local level, the city councils are in charge of the planning. At the national level, it is the Administration for Civil Protection and Disaster Relief – ACPDR.

Although this organisation is affiliated with the Ministry of Defence, the armed forces are not the only players involved in field actions. Volunteers play a key role in the Slovenian crisis management system, at the local as well as national levels. In fact, in total, the available manpower represents 5% of the population, and a large portion of it are volunteers (70%), or

work as part of the national service⁴⁴. The main volunteer organisation is the fire brigade service, but the Slovenian Red Cross is also present.

*Sweden

The State of Sweden is mostly decentralised, and hence it is the local authorities that have initial responsibility for the response to emergencies and crises. It is one of the most decentralised systems in Europe. There are three levels that can intervene: the communes, the counties and finally the national level, if the scope of the crisis is major. There is a governmental agency for crisis management, the Swedish national office for civil protection and crisis preparation (MSB), but its role is that of a coordinator, and it has no hierarchical power. In fact, the principle of responsibility is fundamental in Swedish legislation: an entity responsible for an activity in normal time retains its responsibility until cooperation is established between different sectors. However, the crisis management principles are defined nationally, which permits an integrated response approach.

The Swedish system only partially integrates volunteer organisations in planning: only half of the communities have established partnership contracts with volunteer organisations that are present in the territory. However, volunteer resources represent a significant proportion in a crisis situation, with close to 400,000 members - 4% of the population. The national office (MSB) has established agreements with several of these organisations.

C. Similar characteristics among national civil safety systems within the European Union

The following table summarises the main characteristics identified for each of the European countries that were studied, on four aspects:

- Which ministry is in charge of the civil safety system?
- Is the approach more centralised or decentralised, i.e. to what point are the crisis management principles defined at the national level or left to the discretion and choice of the territorial players?
- Is the approach integrated or segmented based on the type of risk: is there a relatively global manner of grasping all risks, or are there several coexisting mechanisms?
- What is the position of volunteer associations in this organisation: they can sometimes constitute one of the main sources of response, such as in Germany for instance, or they may be more of a support to public resources (such as in Belgium, for example), or they may even be almost absent.

⁴⁴ These units and services involve around 5 per cent of the total population of Slovenia, the majority of which carries out tasks voluntarily or as part of national service. The main rescue service is the Fire Rescue Service, p. 48; *The structure, role and mandate of civil protection in disaster risk re-education for South Eastern Europe*, UNISDR report, 2009

Country	Ministerial jurisdiction	(De)-centralisation?	Risk integrated or segmented approach	Position of volunteer associations
Germany	Interior	Decentralised	Segmented	Important
Austria	Interior	Decentralised	Segmented	Important
Belgium	Interior	Centralised	Integrated	Secondary
Bulgaria	Interior	Centralised	Segmented	Important
Cyprus	Interior	Centralised	Integrated	Very rare
Croatia	N/A	Decentralised	Segmented	Important
Denmark	Defence	Centralised	Integrated	Secondary
Spain	Interior and Defence	Decentralised	Integrated	Secondary
Estonia	Interior	Centralised	Segmented	Secondary
Finland	Interior and Defence	Decentralised	Segmented	Secondary
France	Interior	Centralised	Integrated	Secondary
Greece	N/A	N/A	N/A	N/A
Hungary	Integrated	Centralised	Segmented	Important
Italy	Prime Minister	Decentralised	Segmented	Important
Ireland	Interior and Defence	Decentralised	Segmented	Important
Latvia	Multiple	Centralised	Segmented	Secondary
Lithuania	Interior	Centralised	Segmented	Important
Luxembourg	Grand Duke (Head of State)	Centralised	Segmented	Secondary
Malta	N/A	Centralised	Integrated	Central
Netherlands	All ministries	Decentralised	Integrated	Important
Poland	Prime Minister	Decentralised	Segmented	Important
Portugal	Interior	Decentralised	N/A	N/A
Czech Republic	Interior and Defence	Centralised	Integrated	Secondary
Romania	Interior	Centralised	Integrated	Important
The United Kingdom	Prime Minister	Decentralised	Segmented	Secondary
Slovakia	Interior	Centralised	Integrated	Important
Slovenia	Defence	N/A	Integrated	Important
Sweden	Prime Minister	Decentralised	Integrated	Important

Key: N/A means that we were unable to identify the situation in the country.

D. Conclusion part 2

This overview of the organisation of the national crisis management systems of the different Member States of the European Union allows us to analyse their great diversity. This analysis does not give any standard profile of a European crisis management organisation, but instead several types of organisations. If we only look at the organisation profile based on the scale of intervention, there is a dichotomy between the “centralised” State profile and the “decentralised” State profile: slightly more than half of the European countries studied here (14 vs. 12) have a centralised organisation. However, there is no uniformity in these two subgroups, when we take other criteria into account.

In fact, for the three main variables studied (organisation scale, integration or segmentation, position of the Red Cross), all possible criteria combinations are present. However, it is observed that the decentralised State model, implementing a segmented risk approach and granting an important position to the Red Cross or to other volunteer organisations, is more widespread, with 6 States corresponding to it. (Germany, Austria, Croatia, Italy, Ireland and Poland) The second model observed is its exact opposite: that of the centralised State, where the risks are approached in an integrated manner, whereas volunteer organisations such as the Red Cross are more secondary in the mechanism. 5 States correspond to this model: Belgium, Cyprus, Denmark, France and Czech Republic. The other models each have between 1 and 3 “representatives”.

Conclusion

The current state of the art shows both the diversity of disaster situations that public authorities and volunteers face, and the variety of national organisation modes for carrying out the rescue operations for victims. It also shows the successes and difficulties in coordination between the public authorities and volunteers, in a pre-organised association or otherwise, in the implementation of rescue operations among the population.

These issues of coordination can be even worsened, or may arise in a subtly different manner, when faced with “new” disasters that are qualified as “multi-risk” or “multi-site”.

Although the concepts of multi-risk and multi-site disasters have not yet been given unequivocal academic definitions, they are widespread in the vocabulary of crisis managers (see MERCI survey), as well as elsewhere for qualifying the same complex events. However, when we search for academic texts that refer to the concept of multi-site disasters, we firstly and inevitably encounter the events of 13 November 2015 in Paris, or those that concern similar terrorist attacks (almost simultaneous attacks at multiple nearby sites). And when we search for texts concerning multi-risk disasters, the example that we get most often is that of Fukushima. When we actually ask players in crisis management (see MERCI survey) to give an example of either category, it is mostly the same examples that are given.

We will assume that the terrorist attacks of 13 November constitute the archetype of a multi-site disaster, whereas the Fukushima disaster constitutes the archetype of a multi-risk disaster. These two events are different in several aspects:

	13 November 2015, Paris	Fukushima
Origin	Intentional acts	Natural disaster, and then technological disaster
Area	Geographical scope restricted to the crisis.	Crisis with geographically widespread effects
Victims	Victims: All to be treated with absolute urgency. Question of the “sorting” of victims	Urgent (earthquake) + Urgent + long-term crisis with continuous risks: nuclear radiation
Uncertainties during the crisis	Other sites are possible. New attacks at the same locations.	Domino effects. Up to scientific questions on the levels of exposure and their harmfulness

In addition, the scientific articles on the attacks of 13 November 2015 were mostly written by doctors (Hirsch et al., 2015; Special issue of the *Annales Françaises de la Médecine d’Urgence*, 2016), and describe the responses of the Paris healthcare system during this unusual situation, whereas Fukushima gave rise to articles and commentaries that were much more varied in origin.

However, it was observed that the case of multi-site disasters and the resulting problems of resource allocation are now being looked at by researchers using simulation techniques (Hawe et al., 2015); whereas the researchers interested in developing tools for aiding in decision-making during multi-risk situations have started tackling their methods alongside civil safety partners (Komendantava et al., 2014).

Lastly, the relations between public authorities and volunteer organisations, although not central to the scientific articles about the attacks of 13 November, have been mentioned in certain feedbacks (Fenech report, national assembly, 2015). In this type of situation, volunteer organisations such as the Red Cross are integrated into the hierarchical mechanisms as backups for the public authorities, without this seeming to cause any particular problem. On the contrary, the manner in which the Fukushima crisis, and especially the issue of information about radiation danger in the territories was managed by the Japanese authorities, led the Chairman of the Japanese Red Cross to retrospectively question the utility of having its own information to respond to the needs of the population: *“Our response to the accident at the nuclear power plant was not sufficient due to the lack of information and inadequate preparedness. We keenly realized the importance of independently assessing the situation without relying entirely on administrative agencies and swiftly establishing appropriate politics on how to respond to the situation.”*⁴⁵ Multi-risk disasters of the same scale as Fukushima could thus, in certain contexts and especially when there are major scientific uncertainties on the effects of the phenomena on the

⁴⁵ JRCS, 2013

population, give rise to greater mistrust between volunteer organisations and public authorities.

Rather than propose definitions of terms that are now commonly used, such as multi-site and multi-risk disasters, we instead suggest comparing the two archetypes that appear to be the most representative of these two types of disasters. This approach permits raising some questions: are multi-site disasters always intentional? Or can certain natural disasters (earthquakes) be included in this category? In the concept of multi-site disaster, should we not first tackle the issues of resources and organisation that are generated by these events, which are urgent in nature and limited to a restricted territory, for an optimal treatment of the wounded? From another point of view, should we reserve the definition of multi-risk disasters to those resulting from unpredicted domino effects? The ones that generate, in a territory with constantly changing borders, and over a longer period of time, successive victims of the different disasters in the sequence?

If we opt for the preceding “definitions”, it appears that the two types of disasters generate different modes of crisis management. Multi-site disasters of the “13 November 2015” type require implementing a more hierarchical crisis management, which uses the capabilities of pre-identified players (police, hospitals) to coordinate the actions of the rescue teams under emergency circumstances. In the case of multi-risk disasters of the “Fukushima” type, this primary requirement also comes with the issue of the progressive evolution of the nature of the crisis itself. Disasters that occur due to the domino effect result in progressively widening the area of effect of the crisis and identifying new players that can contribute to managing them. This obliges the public authorities to choose a more open and horizontal management for the crisis or the successive crises, with all coordination difficulties arising therefrom.

The uncertainty faced by the players in crisis management, rescue and by the population itself varies based on whether the disaster is multi-site or multi-risk. In one case, the field players mostly fear a replica of the events that they are currently responding to, and in the other, they must face uncertainties that are more scientific in nature (harmfulness of a pollution, for instance) regarding the short or long-term evolution of the disaster that they are intervening for. What consequences do these differences have on the spreading of information and the coordination of rescue, between public authorities and volunteers?

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