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<td>Karin Meghesan, Cristina Ivan, Valentin Stoian</td>
<td>On July 20th, 2016</td>
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Motto:

A monkey and a fish were caught in a terrible flood and were being swept downstream amidst torrents of water and debris. The monkey spied a branch from an overhanging tree and pulled himself to safety from the swirling water. Then, wanting to help his friend the fish, he reached into the water and pulled the fish from the water onto branch. The moral of the story is clear: Good intentions are not enough. If you wish to help the fish, you must understand its nature.

Ancient Chinese Fable quoted by Anthony J. Marsella, 2008
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Executive Summary

This report provides a multi-disciplinary overview of existing knowledge on cultural factors that shape and influence citizens’ risk perceptions, emotions, and risk behavior in the context of man-made, natural and technical disasters. It also aims to establish a sound theoretical basis for improving disaster policies and procedures by identifying how disaster risk communication itself is embedded in the cultural background of the target population and establishing those cultural factors that influence the effectiveness of risk, crisis and disaster management and response. Furthermore, the report explores the way in which cultural aspects strengthen/weaken the ability of citizens and communities to prepare for disaster situations, respond efficiently and accelerate recovery processes. Finally, the report comprises recommendations for disaster managers on how cultural values can be used for citizen empowerment and resilience in crisis and disaster situations.

The content of the report is based on a review of scientific literature from different disciplines (sociology, anthropology, communication, psychology, political science, risk management) as well as policy documents, strategies and follow-up reports of crisis and disaster management units across the world that have been involved in the management of serious crisis and disaster situations. The approach adopted is by definition multidisciplinary, special focus being placed on communication theories, cultural anthropology, as well as risk, crisis and disaster management.

The aim of the study is to explore to what extent the effect of culturally-informed risk perceptions are known and taken up by disaster managers in their risk communication, and how – in turn – their own cultures (i.e. cultural aspects within disaster management units) influence the effectiveness of disaster preparedness, response and recovery.

Additionally, given the fact that cultural factors can not only inhibit successful risk communication in disaster situations but may also be beneficial to disaster preparation, response and recovery – taking into account the considerable strength of cultural ties and values – the report also explores cultural dimensions and cultural variables that are, or can be, used for capacity building, defining, and enhancing the specific cultural ties between disaster managers and disaster victims.

In Chapter 1 of the report, our aim was to outline the main definitions of terms such as risk, risk communication, disaster and crisis communication. This way, chapter one provides a much needed taxonomy and analytical toolbox for the following sections which discuss the impact of cultural variables in disaster risk communication and present case-studies to explain how these were manifested in specific situations.
The definitions of risk which are assessed here range from a reading of risk as an objective probability of a possible event to the more perception-based definition, which relies on the way individuals understand the perceived probabilities. Thus, the report explains how the literature has transitioned from an understanding of risk as a mathematical relation to a more nuanced reading, based on individual and societal perception. The same is done when defining the rest of the terms associated with the project theme, such as disaster and crisis. The second part of chapter one is dedicated to analyzing models of communication during disasters and crisis as derived from both academic literature, open online sources and reports provided by the project partners.

Chapter 2 looks at “culture” from a combined theoretical and applied perspective and surveys the most relevant cultural variables impacting communication in risk, crisis and disaster management. The understanding of culture undertaken here is that specific to the discipline of anthropology, which understands culture via examining different lifestyles and the way they interact or fail to interact successfully. Therefore, eliminating from the start the concept of *high culture*, namely culture defined as the sum of artistic products and works of art a society produces through its most talented members, the chapter focuses on an understanding of culture as a set of core values, attitudes, beliefs and behaviors that are shared, understood and valued by a community and that informs their lifestyle, their patterns of understanding and their decision making. In this overall framework, chapter two is aimed at discussing those elements in the global and glocal environment that make up the landscape of cultural imageries associated to risk and disaster, as well as those local features that, in the absence of cultural competence on the part of the intervening bodies, can turn opaque intercultural communication and jeopardize the efficiency of risk, crisis and disaster communication strategies. Special focus is placed on cultures which are often exposed to extreme phenomena and that are shown to create coping mechanisms so as to include the abnormal character of disaster into a routine, and, therefore, into the normalcy of everyday life. Finally, Chapter 2 looks at a potential set of recommendations for the successful integration of cultural variables in risk and disaster communication and response strategies.

Chapter 3 is designed to promote a more facts oriented, pragmatic view by opening the discussion on real life events, crisis and disaster situations and by highlighting both best practices and lessons learnt. Subsequently, chapter three aims at offering a broader and interconnected perspective on incidental solutions that could make up the landscape of a future policy oriented strategy of communication integrating cultural competences and skills into the mainstream practices of public authorities and private institutions involved in risk, crisis and disaster communication.

Chapter 4 introduces some of the multiple communication channels analysed in Deliverable 8.2. This is being done here to show the links between D8.1 and the further analysis and thinking carried out in D8.2.
Introduction

1. Institutional Framework

This report is the deliverable D8.1 of Work Package 8 (WP8) "Risk communication and the role of the media in risk communication" of the CARISMAND project "Culture And RISkmanagement in Man-made And Natural Disasters" (Action G.A. no. 653748), funded by the European Union under Horizon 2020, and coordinated by the University of Groningen (RUG).

The project started in September 2015. The project objectives to which the current report aims to contribute, are:

- provide a broad multi-disciplinary overview of existing knowledge about the cultural factors that may shape and influence citizens’ risk perceptions, emotions, and risk behavior in the context of man-made, natural and technical disasters, and establish a sound theoretical basis for improving disaster policies and procedures;
- identify how disaster risk communication itself is embedded in culture – including the role of the media in risk communication – and which cultural factors within disaster management organizations influence the effectiveness of professional management and response;
- explore the possibilities and current practices of how cultural aspects can strengthen the ability of citizens and communities to prepare for disaster situations, respond efficiently and accelerate recovery processes, proposing recommendations for disaster managers on how cultural values can be used for citizen empowerment.

In this overall framework, WP 8 - "Risk communication and the role of the media in risk communication", coordinated by the “Mihai Viteazul” National Intelligence Academy, aims to explore the extent to which the effects of culturally-informed risk perception are known and taken into consideration by disaster managers in their risk communication and how – in turn – their own cultures (i.e., cultural aspects within disaster management units) influence the effectiveness of disaster preparedness, response, and recovery. As risk communication inevitably also involves both mainstream and social media platforms (e.g., terrestrial, satellite, and internet TV and radio channels, twitter, Facebook, etc.), this WP will additionally provide an overview of how risk communication “mediated” by the media affects citizens’ disaster preparedness and responses.
This report represents the first deliverable within WP 8 and presents a taxonomy of key terms in the area of disaster risk communication, it then describes the specific features of communication within public authorities and state institutions involved in risk, crisis and disaster management, as well as private NGO’s, emphasizes the main cultural dimensions and variables that can affect communication with target/victim populations, and, finally, it provides a set of case studies on specific events that can offer an illustrative array of best practices and lessons learnt in real life situations.

This report was written by a team of researchers within the “Mihai Viteazul” National Intelligence University (Karin Meghesan, Cristina Ivan, Valentin Stoian) coordinated by prof. Irena Chiru, in collaboration with partners from Serviciul de Telecomunicatii Speciale (STS), Rijksuniversiteit Groningen (RUG), LP, Ayuntamiento De Valencia (PLV), The Police And Crime Commissioner For South Yorkshire (SYP), Provincie Groningen (PG), Comune Di Firenze (Cdf), Universita Ta Malta (UoM).

2. Theoretical Framework

2.1 General Approach

This review is based on research texts prepared by scholars from different disciplines (sociology, anthropology, communication, psychology, political science, risk management) as well as policy documents, strategies and follow-up reports of crisis and disaster management units across the world that have been involved in the management of serious crisis and disaster situations.

The approach embraced in this document has been multidisciplinary, special focus being placed on the social and anthropological aspects of crisis and disaster situations. To the forefront there have been placed the cultural aspects that either may impede or enforce efficient communication strategies and practices during risk, crisis and disaster situations. At the same time, the paper lays the foundation for a more specific, insight and pragmatically oriented analysis of media filtered communication channels (1) within organizations and (2) between organizations and the general target population that will make the object of analysis and research of Task 8.2. *The Role of the Media in Risk Communication*, which shall be drafted between month 12 and month 24 of the CARISMAND project.
2.2 Aim

The starting point of the current review was the need to explore to what extent the effect of culturally-informed risk perceptions are known and taken up by disaster managers in their risk communication, and how — in turn — their own cultures (i.e. cultural aspects within disaster management units) influence the effectiveness of disaster preparedness, response and recovery.

Specific focus was placed on risk communication practices that are not only designed for and based on single disaster phases, but also allow for learning and adaptation between disaster risk cycles in an iterative process between individuals, communities, and professional disaster managers, and to what extent such evaluations incorporate the local relationships between organizational, social, and cultural structures.

Additionally, the aim was to identify risk communication practices that integrate unofficial communication, are dialogue-based and go beyond one-way communication which is limited to risk awareness-raising and risk information, immediate disaster response, recovery action, and knowledge development in general but, instead, are open for taking into account cultural influences such as collective memory or informal power relations. However, given that cultural factors can not only inhibit successful risk communication in disaster situations but may also be beneficial to disaster preparation, response and recovery — taking into account the considerable strength of cultural ties and values — the report also explored examples where cultural aspects are, or can be, used for capacity building, defining, and enhancing the specific cultural ties between disaster managers and disaster victims.

2.3 Main Focus of the Report

The current report attempts to take a close look and find the common denominators between:

- risk, crisis and disaster definitions advanced by scientific literature and/or specific policy documents;
- the conceptual framework in which risk, crisis and disaster communication are made possible;
- cultural dimensions within which communication during risk, crisis or disaster communication have to be embedded;
- cultural variables that can either impede and enforce communication in general in intercultural formats and their specific application in risk, crisis and disaster communication;
- specific case studies generally accepted as relevant situations in which lessons have been learnt and shaped into better, more efficient communication.
3. Methodological Framework

This report is based mostly on desk analysis and research. At the same time, the report makes partial use of the findings of the Stakeholder’s Assembly that was organised in Bucharest in April 2016. The results from these findings will be detailed in Deliverable 5.9 of Work Package 5.

The following categories of sources have been consulted:

- Books and scientific articles dedicated to the study of risk, crisis and disaster management, special focus being placed on the communication component and, respectively, on the influence of cultural factors upon communication content, flow, efficiency and structuring.

- Programmatic documents made available by emergency response agencies across the world, both governmental and non-governmental entities.

- Websites of international relief organisations.

- Documents and websites of local authorities.

Entry threshold for cited research papers has been considered to be whether they offered a view on modern risk, crisis or disaster situations and their management and whether they included insight on communication processes and the impact of cultural variables upon the shaping of communication between public authorities, nongovernmental agencies and/or target population.

At the same time, given the specific novelty of the topic – how we built cultural competence of intervening field teams and entities in a growingly multicultural context, in which target populations vary in terms of not only gender, education and religious background, but also in terms of ethnic origin and life-experience, it was decided to examine documents concerned with risk, crisis and disaster communication from all over the world, special focus being placed on those that had greater magnitude, coverage and worldwide impact.

Informal consultations were also included, both with CARISMAND partners as well as prominent experts and experienced practitioners in the field which attended the Carismand stakeholder’s assembly that took place in April 2016, in Bucharest.

The drafting of the report, between September 2015 and September 2016, involved the following steps:

- Determining and refining the methodological approach and scientific fields of study to be integrated into the literature survey.
- Establishing criteria for the selection of sources
- Identification of sources (books, articles, reports, policy documents) to be considered as part of the literature review and initial screening of the documents
- Building up a taxonomy
- Drafting the literature review
- Selecting relevant cultural dimensions and variables to be integrated into the report
- First draft of report (end of July 2016)
- Circulating draft to partners for comments (to be completed in August 2016);
- Revising draft and final report (to be completed in September 2016).

4. Methodological Note on Definitions Used

Note on definitions used in this document. Readers having read deliverable 2.1 in the CARISMAND project may wonder why the definitions used in this document are identical but not exactly the same. While in deliverable 2.1, we have tried to 1) select the most updated and widely circulated definitions and 2) preserve conceptual homogeneity across the various disciplines. There are cases however, as in deliverable 8.1, when experts’ opinions in literature as to the most appropriate definitions are worded differently from those documented in deliverable 2.1. This difference in the wording of definitions comes from academic literature examined in the course of the preparation of deliverable 8.1. Where a a more in-depth approach to certain definitions is required in literature, especially in what concerns communication in disaster management situations, these definitions have been used. Hence the definitions used in this deliverable is consistent with the literature in this discipline, and very close to the wording of some of the definitions in deliverable 2.1.

5. Description of the Report

The report has been structured so as to include: (1) an introduction into the institutional, theoretical and methodological framework, (2) a first chapter on risk, crisis and disaster definitions, conceptual interpretations of communication in these particular situations and the various approaches state agencies and private NGOs take on the subject; (3) a second chapter
dedicated to defining the cultural dimensions of risk, crisis and disaster in various relevant local and global contexts, as well as to the interpretation of cultural dimensions and variables that most strongly impact communication in the intercultural contexts and hence need to be taken into account when defining cultural competence for public and private institutions intervening in risk, crisis and disaster prevention, mitigation and response. Finally, a third chapter was aimed at providing insight from specific situations. In this particular part of the report, there were considered a set of two case studies corresponding to the CARISMAND agreed taxonomy for disasters (natural, man-made and technological). Remarks, suggestions and recommendations for efficient communication were integrated within each segment of the report. Conclusions, on the other hand, summarized lessons, main findings from the case studies and highlighted the most important factors to be taken into consideration when confronted with specific situations.
CHAPTER ONE: A Taxonomy of Key Terms in the Area of Disaster Risk Communication

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<th>Core research questions</th>
<th>What are the main definitions of disaster and risk communication that can be found in the academic literature?</th>
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<td>What are the main common characteristics of these definitions?</td>
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<td>Can we find an operational definition of disaster and risk communication in accordance with the objectives of the CARISMAND project?</td>
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<td>To what extent can we create a map of communication types activated before, during and after a disaster situation?</td>
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<td>Which are the main communication models that have been applied in disaster and risk mitigation:</td>
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<td>• How have public institutions approached disaster and disaster risk communication?</td>
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<td></td>
<td>• How have NGOs and civil society approached disaster and disaster risk communication?</td>
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<td>• What models of risk and crisis communication can be discerned from the academic literature?</td>
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<td>What are their points of convergence and how can authorities capitalize on existing knowledge to create better communication strategies?</td>
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<td>How can relevant bodies build up preparedness and response capabilities via communication and education for resilience strategies? Lessons learned.</td>
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1. Risk – from Objective Probabilities to Subjective Perceptions

The simplest definitions available in the literature do not dissociate between the negative event and the probability of its occurrence. At the most basic level, risk can be defined as the “probability that something unpleasant will happen” (National Research Council: 1989, 30). It denotes the possibility of a negative event occurring and of that event affecting a particular group, person or area. Thus, the event in question could potentially cause unpleasant consequences to people. Moreover, unlike the definition of uncertainty (Defined as a situation where the probabilities of potential future events are unknowable, Key Differences, 2016), the definition of risk includes the existence of a measurable probability which can be attributed to the possibility of the event occurring.

Several other definitions which could be classified as the “simple understanding of the concept of risk” can be presented. Thus, the Business Dictionary defines risk as “1. A probability or threat of damage, injury, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through preemptive action” (Business Dictionary - Risk) while the Merriam Webster one argues that risk is “the possibility that something bad or unpleasant (such as an injury or a loss) will happen” (Merriam Webster Dictionary - Risk).

The Oxford Dictionary offers the following alternatives for defining risk:

“1. A situation involving exposure to danger 2. The possibility that something unpleasant or unwelcome will happen: reduce the risk of heart disease 3. A person or thing regarded as a threat or likely source of danger 4. A possibility of harm or damage against which something is insured: all-risks insurance for professional photographers 5. A person or thing regarded as likely to turn out well or badly in a particular context or respect 6. The possibility of financial loss: the Bank is rigorous when it comes to analyzing and evaluating risk” (Oxford Dictionary - Risk).

Further, another variation of the same simple definition can be found in the deliberations of the Royal Society Study Group on Risk. This, in a 1983 report distinguished between risk and detriment. According to the report it issued,

“risk can be defined as probability that a particular adverse event occurs during a stated period of time, or results from a particular challenge. As a probability in the sense of statistical theory, risk obeys all the formal laws of combining probabilities’ (Alternatively, “detriment” can be defined as “a numerical measure of the expected harm or loss associated with an adverse event....it is generally the integrated product of risk and harm and is often expressed in terms such as costs in pounds, loss in expected years of life or loss of
productivity, and is needed for numerical exercises such as cost-benefit analysis or risk-benefit analysis” (Greene: A process approach to risk management).

A more complex definition of risk engages in separating the potential negative effect and the probability of its occurrence. Thus, one definition of risk includes a distinction between the terms “hazard” and “risk”. According to this view, hazard can be understood as an act or a phenomenon is said to pose a hazard when it had the potential to produce harm or other undesirable consequences to some person or thing. In this view, the magnitude of the hazard is the amount of harm that may result, including the number of people or things exposed and the severity of consequences (National Research Council, 1989, p. 38). Further, the concept of risk further quantifies hazards by attaching the probability of being realized to each level of potential harm. Thus, this view translates into the technical definition of risk, understood as “the product of a measure of the size of the hazard and its probability of occurrence” (National Research Council, 1989, 50). According to this view, \( \text{Risk} = \text{probability} \times \text{impact} \) of an event occurring.

In a 1984 article, JF Short scrutinizes different conceptions of risk and distinguishes risks from hazards. In the first definition Short quotes, "Hazards are threats to people and what they value and risks are measures of hazards" (Kates and Kasperson, 1983 quoted in Short, 1984, p. 720). Short quotes Lowrance and provides an explanation of what risk represents: “More precisely, risk is the likelihood, or probability, of some adverse effect of a hazard” (Lowrance, 1976 quoted in Short, 1984, p. 715). Moreover, Short also claims that “the concept of risk need not, of course, be so closed or negative in connotation”. According to him, “a more neutral definition simply specifies that risk is the probability of some future event” (Short, 1984, p. 711).

The third approach defining risk includes a perception dimension to the definition of risk. It was that proposed by Peter Sandman (2012) who in his book Responding to Community Outrage: Strategies for Effective Risk Communication suggested that the notion of risk must also include the way individuals are perceiving it. Thus, in his view, \( \text{Risk} = \text{Hazard} + \text{Outrage} \), where the two components represent an objective and a subjective dimension. Hazard, in Sandman’s view, amounts to what has been previously defined as risk: “Let’s take what risk assessors mean by risk, magnitude x probability, and call it hazard” (Sandman, 2012, p. 7). The other term of the equation represents a subjective assessment by the public of the risk associated with a particular event: “let’s take what the public means by risk, all the things that people are worried about that the experts ignore, and call it outrage” (Sandman, 2012, p. 9) Thus, Sandman proposes to include in the definition of risk such factors as the justified beliefs of citizens, which are influenced by the reliability and credibility of the source which communicates to them about risk:

“As for <<outrage>> I like the word because it suggests strong emotion but also suggests that the emotion is justified. It applies nicely to some of the factors I will be discussing, such as trust and fairness, but has to stretch a bit to accommodate others, such as familiarity and memorability” (Sandman, 2012, p. 7).
Further, according to Sandman, the extent of the outrage highly depends on twelve factors such as whether the risk is voluntary or coerced, natural or industrial, familiar or exotic, memorable or not memorable, dreaded or not dreaded, chronic or catastrophic, knowable or not knowable, controlled by the person or persons outside his potential influence, fair or unfair, morally irrelevant or morally relevant, offered by a credible source, through a responsive process (Sandman, 2012, p. 13).

Sandman graphically illustrates communication strategies to follow in cases of different levels of hazard and outrage:

![Fig. 1 Technical seriousness of a risk (hazard) against its emotional seriousness (outrage and fear)](http://www.psandman.com/CIDRAP/CIDRAP11.htm)

German sociologist Ulrich Beck coined the concept of ‘risk society’ and linked it inextricably to modernization. He distinguishes risk, which is inherent in the modern society, from dangers, which permeated previous societies. According to him, “Risk may be defined as a systematic way of dealing with hazards and insecurities induced and introduced by modernization itself” (Beck, 1992, p. 21). Risk, in Beck’s view, is inseparable from the way in which contemporary industrial society has developed and has created powerful machinery and production processes that lead to potential devastating impacts. In Beck’s opinion,

*Risks such as those produced in the late modernity differ essentially from wealth. By risks I mean above all radioactivity, which completely evades human perceptive abilities, but also toxins and pollutants in the air, the water and foodstuffs* (Beck, 1992, p. 22).
The main characteristics of such risks are that “they induce systematic, and often irreversible harm, generally remain invisible, are based on causal interpretations, and thus initially only exist in terms of the (scientific or anti-scientific) knowledge about them” (Beck, 1992, p. 22).

Furthermore, Beck argues that contemporary risks are defined by the great order of the magnitude of the destructive consequences they might unleash “more and more destructive forces are also being unleashed, forces before which the human imagination stands in awe” (Beck: 1992, 22) and by the fact that they are generated in one place but shared globally (the most visible example which affected Beck’s writing was the Chernobyl catastrophe) (Beck, 1992, p. 22).

In a later intervention, Beck also argued that the Risk society is “an inescapable structural condition of advanced industrialization” (Beck, 2006, p. 333) and criticized the classical approach of equating risk with the product of probability of occurrence multiplied with the intensity of potential harm. Alternatively, Beck believes risk is a socially constructed phenomenon, in which some people have a greater capacity to define risks than others (Beck, 2006, p. 333). Further, Beck also claims that that some actors have the power to define risk, while others do not, leading to significant social inequalities. Thus, some actors can “maximize risks for ‘others’ and minimize risks for ‘themselves’” (Beck, 2006, p. 333).

The fourth possible option to define risk belongs to cultural theory, which presupposes that risk is not an objective quantity but depends wholly on societal construction. It was coined by anthropologist Mary Douglas and political scientist Aaron Wildavsky. According to this view, risks become relevant when they become associated with a certain lifestyle which defines itself in relation to that risk. Thus, asbestos poisoning became a ‘risk’ with the rise of the anti-industrial movement, while, in the Middle Ages, water poisoning was considered a ‘risk’, because it was a convenient way to vent entrenched anti-Semitism, considering that a popular belief was that Jews were poisoning the water sources. According to Douglas, there is not much difference between modern lifestyles and those of primitive people: for the former negative events were caused by taboo-breaking, while in the latter case, they are used to advance political agendas. Thus, for Douglas and Wildavsky, there are no such things as ‘objective risks’, but culturally defined ones, which become salient according to different political or societal conditions and interests (Elliott, 1983).

Therefore, risk can be understood to have both an objective and a subjective dimension. The objective conception of risk conceives of it as existing probabilities of something negative happening, while the subjective view argues that the perception of this probability varies according to individual characteristics, cultural elements and power relations present in various societies at particular times.
2. Risk Communication

Definitions of risk communication have also varied greatly, according to different authors, which are outlined below. Thus, a series of authors argue that risk communication occurs both vertically and horizontally, involving both communication between individual citizens as well as that between experts and citizens (the ‘democratic’ approach). Alternatively, other academics prefer to define risk communication strictly in the vein of a process that occurs between an authority endowed with expertise and a public which is the recipient of the message (the expert approach). In this view, risk communication aims at informing, educating and persuading (or maybe manipulating) the public into undertaking or not undertaking a particular action.

The United States National Research Council’s report on Improving Risk Communication adopts the ‘democratic’ approach and defines risk communication as

“An interactive process of exchange of information and opinion among individuals, groups and institutions. It involves multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions or reactions to risk messages or to legal and institutional arrangements for risk management” (National Research Council, 1989, p. 20).

Moreover, the same report also discusses the settings in which the democratic type of risk communication can occur: congressional hearings, congressional debates, formal regulatory adjudication and maintains that, in these settings, the process can involve a “wide range of messages, sources and audiences” (National Research Council, 1989, p. 73). In the view of the report, risk communication is a process based on deliberation: “experts from different perspectives dispute with each other, and citizens and their representatives dispute using, among other things, the experts’ findings and criticisms or each other’s results” (National Research Council, 1989, p. 73).

Further, the report includes in the scope of risk communication such communicative actions as expressions of opinion, concern, frustration and the like by all participants, directed at whomever will hear and might hear and might act (National Research Council, 1989, p. 73). At the same time, the report defines different standards for ‘successful risk communication’, depending on who the recipient of the communication is. Thus, in a setting of public debate risk communication is successful to the extent that it raises the level of understanding of relevant issues or actions among the affected and interested parties and those involved are satisfied that they are adequately informed within the limits of available knowledge (National Research Council, 1989, p. 73). Alternatively, the study distinguishes between risk communication addressed to decision makers and that addressed to citizens. In a context where risk communication addresses a decision maker it
Is successful only if it adequately informs the decision maker. A decision maker is adequately informed within the limits of available knowledge if provision of all remaining available information would add nothing to justify a modification of his or her choice”. Finally, in the context of individual choices, risk communication is considered successful “if it adequately informs the individual for making a choice among alternatives (National Research Council, 1989, p. 78).

Another synthetic definition that can be considered as part of the ‘democratic’ approach is provided by Vincent Covello, former president of the Society for Risk Analysis. He defines risk communication as a “process of exchanging information among interested parties about the nature, magnitude, significance, or control of a risk” (Covello, 1992 quoted in National Consortium for the Study of Terrorism and Responses to Terrorism, 2012, p.4). A similar approach is quoted by Renn (1992, 467):

Risk communication is defined as any purposeful exchange of information about health or environmental risks between interested parties. More specifically, risk communication is the act of conveying or transmitting information between parties about (a) levels of health or environmental risks; (b) the significance or meaning of health or environmental risks; or (c) decisions, actions, or policies aimed at managing or controlling health or environmental risks. Interested parties include government agencies, corporations and industry groups, unions, the media, scientists, professional organizations, public interest groups, and individual citizens.

The alternative understanding of risk communication sees it as a process through which the communicators are experts or public authorities, while the recipients are the general public. For example, the Oxford Business Dictionary understands risk communication as the Exchange of information and opinions, and establishment of an effective dialogue, among those responsible for assessing, minimizing, and regulating risks and those who may be affected by the outcomes of those risks (Oxford Dictionary – Risk Communication). The same view is taken up by the Oak Ridge Institute for Science and Education, which understands risk communication as

Through risk communication, the communicator hopes to provide the receiver information about the expected type (good or bad) and magnitude (weak or strong) of an outcome from a behavior or exposure. Typically, it is a discussion about an adverse outcome and the probability of that outcome occurring for an individual” (Oak Ridge Institute for Science and Education)

and by the Ethics in Public Relations Wiki, which sees risk communication as follows: Risk communication describes activities that ensure messages and strategies that protect the public from threats to health, safety and the environment are communicated quickly and effectively (Ethics and Public Relations Wiki – Risk Communication). Moreover, in this view risk communication is a process of interaction and exchange of information and opinions among
individuals, groups and institutions to help everyone understand the risks to which they are exposed and encourage them to participate in minimizing or preventing these risks. Thus, while the communication does not occur only in one direction, the goal is to deliver information to the public: Finally, in consonance with this approach, the functions of risk communications are: 1. Increasing public awareness 2. Increasing knowledge of the risks and 3. Convincing people to “reduce their exposure to hazardous substances or situations” (Oak Ridge Institute for Science and Education). Another definition in the same range understands risk communication as “risk communication, in contrast, most often is associated with the identification of risks to the public health and efforts to persuade the public to adopt more healthy, less risky behaviors (Reynolds and Seeger, 2005, p. 47).

Other academic and professional accounts of risk communication adopt the same expert-based view, despite the fact that they do not define what risk communication means directly. Thus, according to the Handbook of Risk Communication

*Risk communication was largely created as a discipline whereby experts could be brought together with lay audiences to explain and compare risks. Once the lay audiences understood the science (scientists’ perspectives) and compared the risk to other acceptable risks, their concern should be put into ‘proper perspective’* (Heath and O’Hair, 2009, p. 9).

### 3. Disaster

While definitions of risk and risk communication vary, according to the different theoretical paradigms on which an author relies, the definitions of disaster which can be found in the literature and online resources generally employ the same elements: unpredictability and large-scale negative consequences, which the affected community cannot cope with. These elements are manifested throughout a series of definitions, issued by both NGOs and state bodies. Moreover, unlike in the case of terms mentioned above, academic work on disaster has focused on disaster communication or disaster management, but very little on actually defining disasters. That is why definitions discussed below have been far less subject to a process of critical investigation than the previous terms.

This section will present several definitions adopted by different organizations. After reviewing these, it recommends that the best definition for disaster risk is that proposed by the United Nations: *The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period*” (United Nations Office for Disaster Risk Reduction).
According to a study by Johns Hopkins University and the International Federation of Red Cross and Red Crescent Societies, reaching a common definition of the term disaster is fraught with dangers because *The word disaster implies a sudden overwhelming and unforeseen event* (Johns Hopkins University and the International Federation of Red Cross and Red Crescent Societies, *Disaster Definitions*). However, the study concludes that an unforeseen event can mean something different according to the level of analysis:

"at the household level, a disaster could result in a major illness, death, a substantial economic or social misfortune. At the community level, it could be a flood, a fire, a collapse of buildings in an earthquake, the destruction of livelihoods, an epidemic or displacement through conflict. When occurring at district or provincial level, a large number of people can be affected" (Johns Hopkins University and the International Federation of Red Cross and Red Crescent Societies, *Disaster Definitions*.)

Further, a disaster can also be defined according to its effects *most disasters result in the inability of those affected to cope without outside assistance. At the household level, this could mean dealing with the help from neighbors; at the national level, assistance from organizations such as the International Federation of Red Cross and Red Crescent Societies, the United Nations, various nongovernmental organizations (NGOs) and government agencies themselves* (Johns Hopkins University and the International Federation of Red Cross and Red Crescent Societies, *Disaster Definitions*). Finally, the study also argues that it is important to be ready not just to respond to disasters but to increase the resilience of potentially affected communities, in order to make the disaster relief phase as limited as necessary: “as the limiting factor in disaster response is often the coping capacity of those affected, improving their resilience when responding to disasters is a key approach to lessening the consequence of a disaster” (Johns Hopkins University and the International Federation of Red Cross and Red Crescent Societies, *Disaster Definitions*).

The International Federation of the Red Cross and Red Crescent defines disaster as a

"sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community’s or society’s ability to cope using its own resources. Though often caused by nature, disasters can have human origins“ (International Federation of Red Cross and Red Crescent Societies –What is a disaster?).

While including the ideas of unpredictability and large impact, the Red Cross definition also discusses the origins of disasters, which are seen as ‘often caused by nature’. However, they ‘can also have human origins’.

The Merriam Webster definition defines disaster as something *(such as a flood, tornado, fire, plane crash, etc.) that happens suddenly and causes much suffering or loss to many people, something that has a very bad effect or result, or a complete or terrible failure* (Merriam Webster Dictionary...
– Disaster). The same approach is adopted by the dictionary.com website which understands disaster as "a calamitous event, especially one occurring suddenly and causing great loss of life, damage, or hardship, as a flood, airplane crash, or business failure" (Dictionary.com – Disaster). Moreover, the same view is taken up by Renee Pearce who views disasters as a nonroutine event that exceeds the capacity of the affected area to respond to it in such a way as to save lives; to preserve property; and to maintain the social, ecological, economic, and political stability of the affected region (Pearce, 2000, p. 40) and by the the Center for Research on the Epidemiology of Disasters (CRED), which defines disaster as a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance (Center for Research on the Epidemiology of Disasters).

According to the United Nations Office for Disaster Risk Reduction, a disaster is “A serious disruption of the functioning of society, causing widespread human, material, or environmental losses which exceed the ability of affected society to cope using only its own resources” (United Nations Office for Disaster Risk Reduction), while the main US legal act on disaster prevention, the Stafford Act understands disaster as

Any natural catastrophe (including any hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought) or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which, in the determination of the President, causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby (Stafford Act).

Based on the Stafford Act definition, the FEMA (Federal Emergency Management Authority) understands disaster as an occurrence of a natural catastrophe, technological accident, or human-caused event that has resulted in severe property damage, deaths, and/or multiple injuries (Federal Emergency Management Authority - Glossary of Terms). Moreover, the FEMA extends this definition to the terms of a ‘large-scale disaster’, which represents a calamity that “exceeds the response capability of the local jurisdiction and requires State, and potentially Federal, involvement (Federal Emergency Management Authority - Glossary of Terms).

Thus, unlike previous definitions, those employed by legal acts offer the executive power the right to define concrete cases of a disaster and to decide when Federal assistance can be employed. This leaves a wide scope of power to the executive authorities of the United States, as they can decide which case represents a disaster and which does not.

Overall, disasters are considered non-routine events that create major damage and overwhelm a community’s capacity to react. They can be either man-made or natural and can affect considerably the state’s normal functioning.
4. Crisis

Similarly to disaster, the term crisis has not been subjected to much academic debate, as studies focused on aspects such as crisis resolution or crisis communication. Therefore, one can analyze only several dictionary-type definitions, all focusing on similar elements: a situation that is out of the ordinary and which upsets the existent equilibria. Thus, according to the Merriam Webster’s Dictionary definition of crisis, it represents “a difficult or dangerous situation that needs serious attention” (Merriam Webster Dictionary – Crisis) while according to the Oxford definition, crisis is “A time of intense difficulty or danger. A time when a difficult or important decision must be made” (Oxford Dictionary – Crisis) and to the Free Dictionary

“1. A crucial or decisive point or situation, especially a difficult or unstable situation involving an impending change. 2. A sudden change in the course of a disease or fever, toward either improvement or deterioration. 3. An emotionally stressful event or traumatic change in a person’s life” (The Free Dictionary – Crisis).

Finally, according to the business dictionary, a crisis is a “Critical event or point of decision which, if not handled in an appropriate and timely manner (or if not handled at all), may turn into a disaster or catastrophe” (Business Dictionary – Crisis).

A scholarly definition offered by an academic work is provided by Spence, Lachlan and Griffin (2007: 540) as a “a specific, unexpected, and non-routine event or series of events that create high levels of uncertainty and threaten or are perceived to threaten high priority goals,” including security of life and property or the general individual or community well-being.

A perception-based scholarly definition of the term crisis-as narrative has been provided by Colin Hay (1996, p. 255-258), who argues that at the basic level, a crisis is “a perception of the need to make a decisive intervention or a moment of decisive intervention”. In Hay’s view, a crisis moment represents one in which the decision-making system of a particular state changes radically. According to Hay:

Crisis can thus be seen as a process; a process in which the tangential unity of the state is discursively renegotiated and potentially (re-) achieved as a developmental trajectory is imposed upon the apparatuses and institutions which comprise it. Crisis is a process in which the site of political decision-making shifts from the disaggregated institutions, policy communities, networks and practices of the state apparatus to the state as a centralized and dynamic agent. The state is constituted anew through crisis (Hay, 1996, p. 250).
Hay employs this definition to study the discursive strategies of the British media during the events of the winter of 1978-79, remembered in British politics as the ‘winter of discontent’. He claims that the tabloid media constructed the events of that time as a ‘crisis’ and set the stage for the advent of the Conservative party, which was promising a quick and immediate intervention (Hay, 1996, p. 255-258).

Therefore, similarly to risk, crisis is also susceptible of having both an objective and a subjective dimension. One the one hand, it can represent an unexpected event, potentially disastrous for the affected system or community. On the other hand, crisis can be a perception of decision-makers or regular individuals that a particular moment is crucial for the definition of future events.

Considering that this deliverable is concerned with defining crisis communication, after presenting the definitions of crisis, one can also approach this term. Taking into account the idea of communication as the transmission of a message from an emitter to a receiver, one can understand crisis communication as done by Spence, Lachlan and Griffin (2007, p. 542): “crisis communication aims at preventing or lessening the negative outcomes resulting from a crisis, often crisis communication has an informative function. Such messages encourage the receiver to take some action to avoid a possible threat or harmful effect and to create a rational understanding of the risk, a persuasive function. The crisis message makes clear directions on the current state regarding the crises and what actions should now be taken

5. Disaster Communication

Disaster communication can be, at the most general level, understood as “an exchange of information about disasters”. This issue has been addressed from different perspectives by several reports, authors and studies, as this section will outline below. Again, very few explicit definitions can be traced in the literature, as most of the studies consulted outline incidences of or measured the effects of disaster communication, rather than defining it. However, from reading the available literature, one can discern several ways in which disaster communication is approached and classified. This is done according to who the communicator and who the receiver are. Similarly to risk communication, the literature on disaster communication sometimes employs the same term without meaning the same thing. Therefore, a necessary set of clarifications is in order.

A first approach to disaster communication concerns communication of information about disasters between authorities and citizens. In the same way as risk communication is defined in some studies as a top-down process through which information is conveyed from authorities to
individual citizens, disaster communication, involves, in some views, only the way public authorities act. In this reading of the term, there are four stages in the life of the disaster: preparedness, response, mitigation and recovery. The task of the authorities are to send proper and clear messages, which are meant to explain to the population what they should do in case of a disaster, during the preparedness phase. Further, during the response phase, authorities should guide the population about what they should be doing, while undertaking the proper response measures. Finally, during the mitigation and recovery stages, authorities are tasked with sending messages to re-emphasize the unity of the population and to show strength and hope for the future.

![Diagram of disaster communication phases](source: National Consortium for the Study of Terrorism and Responses to Terrorism, 2012)

Another approach to the idea of disaster communication regards communication from the affected population, addressed either to the authorities, to other people or to the general public. A study conducted by the Associated Press’ NORC Center for Public Affairs Research of the University of Chicago discussed how citizens used different means of communication in the aftermath of Superstorm Sandy, which affected the New York and New Jersey Areas. According to the study, individuals in the affected areas of New York and New Jersey report using a variety of communication methods to reach out to those around them, including cell phones (77%) in person communications (73%) and landline phones (41%). Residents in the affected area also
utilized electronic methods to communicate during the storm. Thirty-three percent reported using email, 31 percent reported using Facebook, and 7 percent reported using Twitter (Associated Press, 2013). Moreover, the study also organized the data according to age groups and showed that

Communication by cell phone, landline and in-person conversations differed significantly based on age of resident. Those 65 and older were the most likely to report using landlines but the least likely to report using any other mode of communication [...] Additionally, social media usage during Superstorm Sandy varied significantly by age of resident. Overall, 7 percent of those living in the affected region report having used Twitter, and 31 percent used Facebook to communicate during Superstorm Sandy. Less than 2 percent of people over 50 used Twitter to communicate. Sixty-one percent of residents age 18-29 used Facebook to communicate during Sandy, while 34 percent of residents age 30-49 and 21 percent of residents age 50-64 did so. Just 5 percent of people age 65 and older used Facebook to communicate during the storm during Superstorm Sandy, compared to 8 percent of people age 30 (Associated Press, 2013).

The third understanding of disaster communication concerns communication between the public authorities before and during a disaster. The literature on this discusses the first process as one of bureaucratic negotiations in order to establish such documents as definitions, action plans and common procedures to react in case of a disaster. Alternatively, during the response phase, the sources consulted address the technical issue of communication: how communication equipment has to be placed, organized and maintained so that efficient and speedy communication is achieved inside the members of a public authority in order to deliver fast and efficient results. A presentation of FEMA equipment on the agency’s website begins from the statement that “It is important for public safety agencies (such as law enforcement, emergency medical services, and fire services) to be able to provide and maintain communications before, during, and after a disaster or emergency” (FEMA website).

Disaster communication, crisis communication and risk communication are strongly interrelated. While during the response and mitigation phases, authorities might conduct communication concerning the most effective ways to save lives and livelihoods, during the preparedness and recovery phase, disaster communication type of risk communication. During the preparedness phase, authorities or citizens communicate information about potential disasters and ways to react in these circumstances, while during the recovery phase, one might transmit information about how to avoid such an event happening again and how to increase resilience. Furthermore, from the point of view of the state authorities, disaster communication is a type of crisis communication at all times, as the organization is confronted with managing a crisis and with a potential crisis of its image, if the intervention is perceived as inappropriate or ineffective.
6. The Academic Literature

Risk and disaster communication have been approached as different topics in the academic literature. On the one hand, the literature on risk communication generally concerns best practices for efficient top-down risk communication on issues such as smoking, seatbelt use, contraceptive use and the radon scare of the 1980s. A second strand in the academic literature, which evolved out of cognitive psychology research, on risk communication analyzes risk perception in order to improve risk communication. A very small part of the academic literature understands risk communication as a horizontal process and addresses issues such as the transmission of risk information inside the family.

On the other hand, disaster communication literature analyzes how authorities engaged in the communication of practical information during disasters and how this information was perceived by the target audience. It addresses issues on the framing of disaster messages and the potential existence of cultural variables which influence this perception.

A group of studies discusses the effectiveness of disaster messages and analyzes the extent to which these have been successful in modifying behavior. These rely mostly on controlled experiments and compare groups of individuals who have received disaster messages and groups which have not. One such study was conducted by a team from the Mississippi State University and assessed the extent to which people evacuated during the 2007 San Diego wildfires, when they received different forms of warning from the authorities. The study concluded that the most efficient way of engaging the population was through ‘reverse 911 calls’. This meant that people would register their mobile telephones with a centralized system and receive disaster warnings from the authorities through these. This system proved, during the 2007 wildfires, more reliable than TV or radio warnings (Strawderman et al., 2012). Another study discussed the impact of a public campaign in Singapore during the 2003 Severe Acute Respiratory Syndrome (SARS) outbreak. The article assesses the government information campaign as highly efficient to combat SARS-spreading behavior as measured by the response of the population. According to the study, almost 85% of the population monitored their temperature regularly during the SARS outbreak, whilst a majority of the population engaged in frequent washing of their hands as a preventative measure. The study explained the success of the campaign through the use of multiple communication channels, such as TV and newspapers. It also showed that, at least in the 2003 Singaporean case, traditional media was more efficient than new media in communicating messages (Karan et al., 2007).

A study conducted in Haiti after the 2004 floods caused by tropical storm Jeanne concluded that an effective grassroots campaign among poor communities to communicate the risks of drinking unsafe water and to spread a water disinfectant succeeded in increasing the use of water
purifying substances. Thus, according to the study, the success of the campaign was attributed to
the involvement of local leaders, who spread the message inside the community about the
necessity of using water disinfectants and their correct use: respondents heard about PuR (the
respective water-disinfectant product) via multiple channels: 66 learned about PuR from a
community leader; 61 had attended a PSI demonstration; 38 heard a radio spot (60% of
households had battery-powered portable radios), and 37 heard about it from neighbors
(Colindres et al, 2007).

One of the most famous studies on risk communication is that of Baruch Fischhoff (1995) Risk
Perception and Communication Unplugged: Twenty Years of Process. It presents eight stages of
risk communication developed by communication experts throughout time. Fischhoff’s main goal
with the study is to show how risk communication (understood here as a top-down process) has
evolved over a number of years to become much more participatory than before. According to
Fischoff, the eight stages of risk communication are:

"1. All we have to do is get the numbers right 2. All we have to do is tell them the numbers
3. All we have to do is explain what we mean by the numbers 4. All we have to do is show
them that they’ve accepted similar risks in the past 5. All we have to do is show them that
it’s a good deal for them 6. All we have to do is treat them nice 7. All we have to do is make
them partners 8. All of the above” (Fischhoff, 1995, p. 138).

The first and second stages of risk communication were, according to Fischhoff, a basic
presentation of the odds ratio of the probability of a particular negative event. The third stage
involved a wider explanation of what exactly these probabilities meant. According to Fischhoff,
this approach was laden with perils as lay audiences who had been subject to communication
from confident-looking experts might be less convinced when addressed by a presumed expert
who admits that his ability to appraise the future is relatively limited. The fourth stage is,
according to Fischhoff, based on undertaking a comparison between the new risk and previously
assumed risks. Thus, these types of analyses “often take the form of risk comparisons, in which
an unfamiliar risk is contrasted with a more common one. Individuals are invited to use their
response to the familiar situation as a guide to action in the new one” (Fischhoff, 1995, p. 141).
The next stage presupposes presenting not only the risks of an activity, but also its potential
benefits for the target audience. Similarly to the way risk messages are framed, messages about
benefits can be differently constructed in such a way that they can be used to unfairly affect the
decision of the audience.

The last three stages of disaster communication address the way in which the communicator
must relate to the audience. The first requirement is that a person communicating risk should not
behave arrogantly, but should have a pleasant demeanor towards those they are in
communication with. The last requires a participatory approach to communication, whereby the
top-down messages (from an expert to a lay audience) is complemented by feedback and
inquests, which must also be answered respectfully. According to Fischhoff, *Often, though, members of the public want, and can fill, a more active and constructive role. At times, they have information to consider. At other times, they may just want a seat at the table. These are components of being partners in risk management* (Fischhoff, 1995, p. 143).

In a later article, Fischhoff (2009) also argues that risk communication by experts to lay people must take care to include several approaches. First of all the expert communicators should ‘fill in the blanks’ that lay people have, relying on the knowledge they have already. Thus, an expert communicator should first: *Complete mental models, by bridging the gaps between expert and lay mental models. That could mean adding missing concepts, correcting mistakes, strengthening correct beliefs, and de-emphasizing peripheral ones.* (Fischhoff, 2009 p. 949). Secondly, experts must target those beliefs that are held with too little or too much confidence, as these lead to poor choices (over-estimation of risks prevents a good choice being made, while under-estimation or risk leads to poor choices. (Fischhoff: 2009, p. 949). The third stage is, according to Fischhoff the provision of information according to its expected impact on decisions. In his view, different pieces of information are granted different values and these types of information should be provided to the target audience in a designated order, according to the importance that each information has to the final decision. (Fischhoff, 2009)

Crisis communication studies, such as those of W.T. Coombs, have been conducted most often in the context of the expansion of capitalism and the emergence of the large-scale multinational companies. Initially, professional crisis communication emerged in the private sector, in the context of corporate reputational crises. These were caused by events such as the failure of a product to function properly, especially in cases where this had effect on clients or even led to significant harm to human beings. Thus, crisis communication was developed as a discipline and an object of study, with the aim of saving the reputation of corporate actors in these circumstances and repairing it afterwards.

One of the first models of crises and crisis communication has been proposed by WT Coombs (2007) and has been called the Situational Crises Communication Theory (SCCT). According to the SCCT, there are several types of crisis that an organization can face and a number of strategies it can adopt in order to address these situations. In this model, crises are classified according to the perceived responsibility of the offending targeted organization and can be defined as: ‘victim crises’, where the organization is, itself, not guilty and is mostly negatively impacted by the crisis. These crises pose a mild reputational threat and include situations such as “natural disasters, rumors, workplace violence or product tampering by an external force” (Coombs, 2007). The next type of crises are those where the organization is accidentally responsible and which pose a moderate reputational threat. These include situations such as challenges, where an organization is accused of faulty operation, technical accidents or equipment failure. The last type of crises are those for which the organization is directly responsible, and which pose a grave reputational
threat. These include human errors due to negligence or management misconducts, potentially leading to injuries (Coombs, 2007).

Also according to Coombs, an organization can respond to a crisis in the following ways: Firstly, it can attack the accuser: Crisis manager confronts the person or group who claims that a crisis exists. Secondly, it can engage in crisis denial, arguing that no crisis is actually present. Third, an organization can opt for an excuse where crisis managers try to minimize the organization's responsibility for the crisis. This can include denying any intention to do harm or claiming the organization had no control of the events that led to the crisis. Another option is that of justification. Through this, the crisis manager tries to minimize the perceived damage associated with the crisis. A fifth potential strategy involves ingratiation, which implies actions that are designed to make stakeholders like the organization. Yet another strategy is that of corrective action, through which “crisis managers seek to repair the damage from the crisis and take steps prevent a repeat of the crisis”. Finally, crisis managers also have the option of a full apology where the organization takes full responsibility for the crisis and asks forgiveness for the crisis. This might involve offering compensation to those negatively affected by the crisis (Coombs, 1998).

Disaster communication is treated in the literature according to two main lines: as disaster risk communication (transmitting messages that something negative might happen), which occurs during the preparation phase or as disaster communication as a subset of crisis communication, during the response phase of the disaster. This can involve communication either from the government to the citizens or among citizens themselves. Studies in the academic literature aim to measure the efficiency of these communicative actions.

Several studies treat disaster communication as a form of crisis communication, either from the government to the citizens or among citizens, analyzing the ways in which it has been performed during major disasters. The most famous case study identified in the literature is Hurricane Katrina, probably the greatest disaster to hit the continental US. One study found that there were visible cultural differences between whites and non-whites in the way of seeking out information about the disaster, as non-whites were more likely to rely on interpersonal connections to find out about the impending evacuation (Spence, Lachlan and Griffin, 2007).

Another study based on interviews undertaken after the Katrina evacuation, analyzed the reasons for which different cultural groups chose different strategies in response to the evacuation message sent from authorities (Eisenman et al. 2007). The study was conducted in shelters provided for those who did not evacuate New Orleans and was based on qualitative interviewing. It found that most of those who did not evacuate did so for both objective and subjective reasons. Objective factors which limited the evacuation of low-income blacks in New Orleans were the desire to protect property, the lack of transportation, and the lack of a social network on which to rely and where to evacuate. Among the subjective factors, which were connected to risk perception, the study found that these could be classified as: a lack of understanding of the
messages sent: Some was telling us that we should evacuate ( . . . ) and some of them was telling us to stand by, a faulty risk perception. And, well, we didn’t take it seriously. Because we thought it was going to be another Betsy. You know, with a little water coming in the house or sociocultural reasons (a deep distrust in the official authorities) The mayor, the governor of New Orleans, that run the city of New Orleans they let the waters go in the poor neighborhoods and kept it out of the rich neighborhoods like that French Quarter where tourists goes at, “It was from them opening flood gates, telling lies about the levee breaking and stuff ( . . . ) I believe they do these things intentionally ( . . . ) so they can flood out those black neighborhoods” (Eisenman et al., 2007).

Barbara Reynolds and Matthew Seeger have argued that crisis (according to them, disasters are a form of crisis) and risk communication should be integrated in a common model. They start from the assumption that risk communication is proactive (aiming to change behavior), while crisis/disaster communication is reactive (aiming to help people after the crisis has emerged). They argue that crisis/disaster communication should be divided into the three familiar stages: preparedness, mitigation and recovery. During the pre-crisis period, communication should attempt to instill safe behavior and disaster preparedness. According to Reynolds and Seeger, during the crisis/disaster, the goal of communication should be twofold: communication addressed to victims or potential victims should help mitigate or contain harm, while that addressed to the wider audience should reduce the uncertainty, allowing audiences to create a basic understanding of what happened so that they may act appropriately. Finally, the authors describe the post-crisis/disaster stage as “a period of postmortem, assessment, learning, and constitution of new understandings of risk and risk avoidance” (Reynolds and Seeger, 2005).

In the end, the two authors suggest a model defined according to five stages: In the first, the pre-crisis stage, messages should aim at monitoring emerging risks and creating an understanding and preparation for the risk by the general public. During the second stage, the initial event one, communication to the general public should aim to establish empathy, reassurance, and to make the designated crisis-response agency well-known to the public. The third stage aims to reach goals such as correcting rumors or establishing Broad-based support and cooperation with response and recovery efforts. The authors call the final stages ‘resolution’ and ‘evaluation’ and argue that they should be concerned with informing people about the ongoing clean-up, remediation, recovery, to “facilitate broad-based, honest, and open discussion and resolution of issues regarding cause, blame, responsibility, and adequacy of response” and eventually to “document, formalize, and communicate lessons learned and rebuilding efforts (Reynolds and Seeger, 2005).

The inclusive approach proposed by Reynolds and Seeger is highly suited within the context of CARISMAND’s objectives, as it is inclusive and flexible. It provides a useful analytic toolkit for

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1 Another previous tropical storm.
evaluating how disaster risk communication is embedded in culture. The five-stage taxonomy provided by Reynolds and Seeger allows researchers to identify different culture-dependent and stage-specific actions undertaken by different actors that communicate on disaster risk. Further, it can also help with proposing recommendations for disaster response managers, providing them with stage-by-stage instructions on how to develop culturally informed communication practices.

7. Communication by Public Institutions

Overall, the available literature generally documents failed or ineffective communication strategies of public institutions. This occurs because these events have captured the public attention much more than successes (many times few people know that a successful communication strategy has been implemented), especially because the consequences of failed or ineffective communication are felt by the wider public. Moreover, these instances also lead to the establishment of investigative committees which produce reports documenting the reasons for failure and which are useful for researchers.

By far the best-known and documented instance of ineffective communication by public institutions during and after disasters is that of Hurricane Katrina. According to the post-Katrina bi-partisan report issued by the Congress of the United States, entitled ‘A failure of initiative’ (US Congress: 2006), communication during the event was severely affected by the intensity of the storm. The report details the failures of communication both within the Federal Emergency Management Agency (FEMA), between FEMA and other responding authorities and between the authorities in general and the wider population.

The first type of communication failure occurred due to the overwhelming nature of the Hurricane and the extent of the floods. The storm and floods severely damaged communication infrastructure. This, together with a lack of proper communication equipment and a lack of coordination between separate agencies (for example through buying interoperable equipment), led to significant difficulties in the transmission of orders between the disaster managers and teams on the ground. In some cases, National Guard officers were forced to resort to communication through written dispatches (US Congress, 2006, p. 163). Thus, according to the report, hundreds of New Orleans first responders were trying to communicate on only two radio channels on a backup system, forcing them to wait for an opening in the communications traffic to transmit or receive critical information (US Congress, 2006, p.163), which led to a severely weakened situational awareness. One of the key factors which led to negative results was the subordination of FEMA to the Department of Homeland Security and the policy orientation to terrorist-based disaster preparedness.
The *failure of initiative* report also quotes the fact that due to a near-absence of communications between authorities and the general population, sensationalist media reports were allowed to take hold and spread both among the victims themselves and among the population of neighboring states. The most famous cases were the fake rumors that media generated about events occurring in the New Orleans Convention Center and the New Orleans Superdome. Media speculated about incidents such as evacuees shooting at the rescue helicopters, the rape and murder of a 7 year old and the existence of 30-40 bodies in the Convention Center freezer. The main effect of this was that truck drivers carrying critical supply goods became scared and refused to finish their transports, requesting armed escorts. Moreover, authorities from the neighboring states refused to send emergency personnel to help with the evacuation, as they feared for their safety. Finally, even evacuees living in the Superdome became themselves agitated due to radio reports about what was (supposedly) happening, despite repeated attempts by emergency personnel to calm them down (US Congress, 2006, p. 70).

In addition to the findings in the literature, information about the way public institutions approached disaster risk communication was also gathered by a survey administered to project partners. According to information provided by the partners for this project, public institutions convey information on disaster and disaster risk to citizens through a variety of means, especially TV, radio, and the internet. What can be noticed from the information provided is that information was offered in a similar way for all the target groups, without any the design of specifically tailored messages., through mass-media, addressing all potential target groups similarly. The report on the 2014 Genoa floods shows how a post-event alert system was implemented, based on a three level preparedness system (yellow-orange-red). Moreover, according to the report, the three phases of a disaster are also implemented in the alert system. In the preparation phase, people are advised to pay attention to weather updates, not to stand or stay in basements or rooms located at street level, to protect street-level doors with bulkheads or sandbags, to close the doors of cellars, garages or basements and to move their cars and / or motorcycles to higher ground, which is not subject to potential flooding. During the response phase, locals are advised to not try to reach their destination, but to look for shelter in the nearest stable and safe place and to go out only when necessary and to use public transport. Finally, during the response phase, public authorities advise citizens to make sure the termination of the disaster was declared before moving to a safe place, not to drink water before it is confirmed that it is not contaminated and not to pass along flooded roads as the water could hide potholes or open manholes (Genoa floods report by LSC).

The report on the 2014 floods in Serbia shows that the initial messages by authorities were not widely spread by the media. In the case of the city of Obrenovac, the local alarms were not turned on until the flooding had begun. Moreover, apparently, the mayor initially told people to stay in their homes, whilst the evacuation had begun. The absence of proper communication from the authorities was supplemented by horizontal, inter-citizen communication through internet
websites and social media. Furthermore, during the post-disaster phase, authorities failed to
clearly and promptly communicate the number of victims, leading to an increase in rumors and
even panic-mongering. Several people were arrested for spreading false rumors (Report on the
Serbian floods, provided by University of Novi Sad)

Other reports provided for this inquiry pointed out to the fact that, in disaster situations, public
authorities act and communicate according to well-established plans and procedures. This
streamlines actions of large organizations, but might make communication more formal and
extremely general, without paying attention to specificities. From the reports gathered, one can
conclude that messages communicated involved ways to react during the disaster and what to
do to mitigate the effects of what was happening. For example, in the case of the Florence
Municipality, once the Emergency Plan is activated, the local authorities communicate to the
population through any possible media such as radio, TV, newspapers, Facebook or twitter.
Moreover, the Florence Municipality also established a ‘Reverse 911’ alert system where a
recorded message containing the voice of the mayor is played to citizens after they receive a
telephone call. Further, the Florence Municipality also sends messages to citizens about how to
react in cases of disaster through panels (painted or electronic signs) _ in museum or libraries
while the stream of Twitter and of Facebook messages are also conveyed or through panels on
the road or tramway tracks. All of these were employed by the Florence Municipality during the
severe thunderstorms of August 1, 2015 (Report by the Florence Municipality). A similar structure
of communication (a centralized command dispersing messages on how the disaster response is
going and what the people can do) could also be observed in the case of National Emergency
Operational Command (CNOS) of the Portuguese National Civil Protection Authority during the
2015 Albufeira floods (Report by Lisbon Police).

A similar pattern can be discerned from the reports provided by the Valencia police, the
Gronningen Region (Report by Gronningen Region) and the University of Hannover. Two major
trends can be discerned from these reports: the existence of a centralized system and the
spreading of messages throughout the population. Thus, during the Valencia region fires, the
authorities activated the Emergency Territorial Plan. This included issuing alerts to the population
through public address systems, informing them of what they need to do. Moreover, authorities
also communicated messages about desired behaviour through different classical mass-media
(radio, TV, and press) and social media (Twitter, Facebook), as well as through the website of the
Regional Emergency Coordination Centre. Another, very efficient, means of communication, was
the ‘reverse 112 (the European equivalent of the US 911 number)’, which was especially useful
for alerting outdoor workers, which had been geolocated through GPS (Report by Valencia
Police). Similarly, in the case of the 2013 Danube floods in Germany, federal and state authorities
employed a number of means to communicate disaster warning to the population such as
internet, SMS, newsletters and social media, loudspeakers, flyers and sirens. One novelty brought
by the German authorities was the KATWARN application. (a mobile application which allows
citizens to transmit information to public authorities in disaster situations, messages which can be later forwarded through mass communication means) Authorities were highly successful in communicating the disaster risk, as 93% of the population had had warning before the floods began (Report by University of Hannover).

A different type of communication could be observed during the Romanian Colectiv fire in October 2015. The Special Telecommunications Service (STS) is the 112 operator for Romania and was on the frontline of the response to the disaster. While it has no official capacity to publicly address general-interest information, its 112 operators communicated to those calling them to report the fire. They addressed those that called them, but due to the necessities performing a task under very stressful conditions, their tone had to be cool and professional (Report provided by STS).

The general picture described by both the literature and the reports by project partners is that of centralized authority communicating through different means to citizens. These means include both traditional and new media. However, when the disaster situation was too great to handle and the proper command chains were not clearly established, messages sent out to the population could become confusing.

8. NGO Approach to Communication

NGO communication about disaster situations can be studied along three lines: communication to affected people, communication to the wider world and communication with the authorities. Moreover, given the nature of the activity, NGO action in disaster situations has focused on disaster preparedness and post-disaster mitigation and reconstruction. The actual response phase is left to the responsible authorities. From analyzing two cases (The International Federation of the Red Cross and the Romanian Habitat for Humanity organization), one can say that NGO communication on disasters and disaster risk has been in line with the wider narrative that each NGO represents.

Habitat for Humanity is a transnational non-governmental organization, founded along Christian principles, which aims to help indigent people have decent shelter. It works through collecting donations and volunteer labor and builds homes for those that do not have decent housing. It operates globally, on all continents and addresses each problem which each country faces differently (Habitat for Humanity International website). It constitutes a case of an NGO directly preoccupied with disaster risk reduction and disaster management and permanently involved in local communities.
The Romanian chapter of Habitat for Humanity aims not only at repairing or building shelters for people, but at mitigating the risks of already existent shelters being destroyed by disasters. A large number of Romanian villages are built in areas exposed to floods. In order to mitigate the risk of floods, the Romanian chapter of Habitat for Humanity undertakes risk communication campaigns, aiming to communicate information to the people exposed.

Habitat for Humanity Romania has carried out, since 2005 the Disaster Risk Reduction and Response program, which aims to reduce risks to vulnerable communities and to intervene in areas affected by natural (fires, floods, landslides or earthquakes) or technological disasters” (Habitat for Humanity Romania, Disaster Response Program)

The program’s two strategic directions are risk reduction and disaster response. On the risk reduction dimension, Habitat for Humanity undertakes information campaigns addressed to the local population, informing them about risks to their communities. Locals are taught about how to behave in cases of disasters and how to limit damages in cases of disaster, as well as how to volunteer to help in disaster situations. On the disaster response dimension, Habitat for Humanity Romania distributes rapid response kits, which include shovels and sandbags, personal hygiene kits, provides technical assistance for evaluating damage, donates building materials and brings volunteers to assist in rebuilding affected homes (Habitat for Humanity Romania, Disaster Response Program). After the 2014 floods, Habitat for Humanity together with Prima TV started a funds-collection campaign, which requested donations through SMS, for helping flood victims (Habitat for Humanity Romania website).

The International Federation of the Red Cross and Red Crescent Societies (IFRC) is one of the oldest trans-national NGOs involved in humanitarian work. Founded in the aftermath of the First World War with the aim to help victims of armed conflict, the IFRC expanded significantly, both in scope and in coverage over the next century. Currently, the IFRC represents a wide transnational network of 189 local chapters, which mobilizes resources to help victims of different harmful events. It constantly intervenes in cases of disaster and carries out large-scale programs aimed at disaster risk reduction.

The IFRC is also concerned with disaster risk reduction and post-disaster response. The IFRC professes three main strategies aimed at reducing disaster risk: “to strengthen the preparedness and capacities of communities so that they are in a better position to respond when a disaster occurs; to promote activities and actions that mitigate the adverse effects of hazards; and to protect development projects such as health facilities from the impact of disasters” (International Federation of the Red Cross, Risk Reduction)

The IFRC undertakes a large number of initiatives aimed at increasing disaster preparedness and reducing disaster risk. These involve both training local people to evacuate in cases of disasters, building dams or canals in order to divert potential flooding or distributing necessary resources to people who are affected by disasters. The IFRC’s activity in disaster situations is guided by the
2003 ‘Agenda for Humanitarian Action’ adopted at the 28th IFRC International Conference. According to this agenda, the IFRC’s disaster risk reduction program is based on the following five pillars:

1. **Preparedness.** A component of DRR, not a synonym for it.
2. **Warning.** The Red Cross Red Crescent is working on getting “high resolution” warnings, including those originating in satellite images or computer models, down to remote communities that only volunteers have easy access to.
3. **Mitigation.** Education on how to avoid danger; concrete physical measures to limit the impact of disasters.
4. **Recovery.** A good example of DRR-minded recovery would be to “build back safer” after an earthquake.
5. **Livelihoods.** Strengthening livelihoods, like vegetable gardens that improve nutrition and increase reserves during droughts, helps house. (International Federation of the Red Cross, 2009)

The IFRC has established the International Day for Risk Reduction on the 13th October and carried out a number of disaster risk communication programs in different countries. One such program was carried out in Bangladesh and aimed to change locals’ behavior in cases of cyclones. In addition to building the physical infrastructure required to protect local people from cyclones, the IFRC also aimed to explain to them the benefits of moving to a protected shelter during such an event. According to the evaluation team, the program was mostly successful, as local communities succeeded in learning how to operate cyclone shelters and in managing a donation-based fund to maintain it (International Federation of the Red Cross, Empowering communities to prepare for cyclones).

Unlike public institutions, NGOs are involved in the process of disaster communication and disaster response in supportive roles. They generally create and implement programs aimed at helping people prepare for disasters and participate in the mitigation phase by offering humanitarian aid. Further, NGOs are generally seen as closer to the affected individual, relying on a more compassionate approach as opposed to the bureaucratic and hierarchical type of response provided by the state apparatus. Therefore, they can collect better data on the needs of the affected population as well as on the failures of the public authorities’ response.

### 9. Conclusions
The chapter has undertaken a review of the main definitions of terms such as disaster, risk, risk communication and crisis and has applied them to the strategies of public institutions and NGOs. It has found that the academic literature is generally divided between an objectivist strand that is concerned with defining concepts and then using empirical research methods to study specific occurrences and a subjectivist strand approaching the construction of discourse around concepts such as “risk” or “crisis”. While the former concerns itself with particular events and institutional strategies, the latter is dedicated to study perceptions and the way they are shaped by actors that have power to shape social meaning. Risk and crisis are particularly contested concepts. By analyzing several case studies, the chapter concluded that public institutions imply a top-down bureaucratic style of communication, transmitting messages across several channels about what has to be done in cases of disaster or to prevent such occurrences. Alternatively, NGOS are primarily involved in the preparedness and mitigation phase and generally develop and implement programs to increase grassroots resilience to disasters.
# CHAPTER TWO: Cultural Aspects of Risk Communication

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1. What is Culture? An Applied Perspective

For the purpose of the current study in which the main objective is that of identifying the most relevant cultural variables impacting communication in risk and disaster management, we shall undertake an understanding of culture as specific to the discipline of anthropology, which understands culture via examining different lifestyles and the way they interact or fail to interact successfully. Therefore, eliminating from the start the concept of *high culture*, namely culture defined as the sum of artistic products and works of art a society produces though its most talented members, we shall focus on an understanding of culture as a set of core values, attitudes, beliefs and behaviors that are shared, understood and valued by a community and that informs their lifestyle, their patterns of understanding and their decision making. In a recent handbook of applied anthropological studies, Andreatta and Ferraro, for instance, observe that

“the anthropologist does not distinguish between cultur ed people (those who have the finer things) and uncultured people. All people have culture according to the anthropological definition” (Andreatta and Ferraro, 2013, p. 33)

For Andreatta and Ferraro (2013, p. 34), culture can be defined as *everything that people have, think and do as members of a society*”. Such an approach to culture comes in a long anthropological tradition established in the 19th century by anthropologists such as Edward Tylor, Raymond Williams, Malinowski and Radcliff Brown, for whom culture was understood as a way of life rather than a sophisticated means toward civilization, moral perfection and social good (as by contrast Mathew Arnold, or F.R. Leavis used to define culture).

In another comprehensive attempt to define culture as nowadays understood by both specialists and lay people, Chris Barker observes:

“The multitudinous ways that culture has been talked about within cultural studies include culture as a whole way of life; as like a language; as constituted by representation; as a tool; as practices; as artefacts; as spatial arrangements; as power; as high or low; as mass and as popular only to conclude that the concept of culture is thus political and contingent and (refers to) a shared social meaning (The SAGE Dictionary of Cultural Studies, 2004, p. 44).

In this sense, culture is not only a socially transmitted set of shared behaviors and meanings, but also a shared community construct that displays the following characteristics:

“Cultures can be (1) transitory (i.e., situational even for a few minutes) or (2) enduring (e.g., ethnocultural life styles), and in all instances are (3) dynamic (i.e., constantly subject to change and modification). Cultures are represented (4) internally (i.e., values, beliefs, attitudes, axioms, orientations, epistemologies, consciousness levels, perceptions,
expectations, personhood) and (5) externally (i.e., artifacts, roles, institutions, social structures). Cultures (6) shape and construct our realities (i.e., they contribute to our world views, perceptions, orientations) with ideas, morals, and preferences (Marsella, 2008, p 5).

At a closer look, all definitions of culture cited above point to an understanding of culture as a complex system of meanings that is disseminated, shared, embraced and propagated by its individuals through the production and dissemination of material goods, ethical values and symbolic relations.

![Culture as complex system of meanings](image)

Fig. 5 Culture as complex system of meanings

2. Cultural Variables Related to Risk and Disaster.

Towards a definition

Culture, risk and disaster. What do they have in common? In order to better understand the cultural variables that have an impact in modeling understanding, attitudes, behaviors and the overall reception of messages that make up risk and disaster communication we must first take a look at what a risk, disaster or crisis signify in the collective memory of the community. Regardless of individual, particular traits of one community or another, it must be stated that in any given culture, a disaster and/or a crisis represent a traumatic disruption of the normal routine of society. As such, they have a traumatic connotation that starts to loom over the horizon of the community once the risk has been made aware and imprinted in the conscience of the individual and the community. Therefore, the experience of conveying significance and rendering the crisis/disaster into the routinized patterns of thinking is mediated through cultural variables made available via collective shared values, ethical code and last but not least, collective memory of similar events. It has been noted that:
“Both the immediate chaotic experience of the catastrophic event and the calm and composed retrospective comprehension thereof draw on our collective reservoir of cultural forms and patterns of understanding. It is in this way that one can talk about catastrophes and crises having a cultural life (Meiner and Veel, 2012, p 4)

If regarded through specific cultural lenses, it must be noted that any crisis or disaster has an exceptional character which evades routinized patterns of understanding. Therefore, such events often are first grasped as incomprehensible, a fissure in the reality of the individual and the community. Cultural patterns therefore act as a mediating filter, an aid in framing ‘the incomprehensible’ into the known or at least comprehensible reality.

In this, we can only agree with Isak Winkel Holm that:

“every new catastrophe or crisis also depends on and is culturally constituted by the experiences and cultural processing of previous events in that it rearticulates the ideas, forms and fantasies related to catastrophic and critical situations which reverberate in our cultural imagination” (Holm, 2012).

Therefore, we believe, cultural imagination and the overall cultural package that make up the collective set of memories and values of a community should be carefully considered if we are to understand the impact culture can have in the integration of a successful risk, crisis situation or disaster management strategy.

Furthermore, if considering the impact of technology on communication patterns and the circulation of information at global level, we understand that now more than ever the local and global cultural values and practices combine to create cultural packages with unprecedented forms of evolution and hybridization. Let’s take for instance the agenda promoted by local NOG’s whose main objective is the protection of the environment. A local e.g. anti-fracking movement in the USA, or anti-cyanide mining in the Amazon gets to have significant echo in e.g. Romania, Canada or Peru, where information, protest practices and civic movements are replicating a pattern developed continents apart and further hybridizing both the message and the practice of environmental protection. Not to mention here the cultural impact of online connectivity between movements, individuals and messages that achieve a global shared conscience of a common agenda and why not power of action.

Another illustrative example, closer to risk management is the highly mediatized New Orleans disaster in the aftermath of the Katrina Hurricane. Citizen outrage, empowered by the media account of the destruction of New Orleans led to a publicly embraced narrative in which the ineffectual authorities and the epic dimensions of the outrage held the stage for weeks to come (US Congress, 2006). Elsewhere in Europe, every time a terrorist attack occurs, such as the Bataclan or Nice murders, or the Bruxelles terrorist attacks in March 2016, both classic and social media seem to focus discussions on the human component, the error, the inability of the
This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 653748.

authorities to control and contain the danger. Most frequently invoked reasons range from “institutional failures, short staffing and communication struggles” (A., 2016); “insufficient resources, missed signals, failure to pass on information, complacency” (Heath, Sheftalocvich, & Spillane, 2016); failure to carry out investigations extensively (Dalton, 2015).

This particular trend which makes an underlying characteristic of the current glocal (global and local) society, has to be understood in the overall framework of the changing nature of risk in the 21st century, a change prophesized by Ulrich Beck in his concept of ‘risk society’ (Beck, 1992).

2.1. Risk Society and Its Cultural Variables

Quoting UN statistics, Cristof Mauch observed that:

every year approximately two hundred million people are directly affected by natural disasters—seven times the number of people who are affected by war. In just the past few years, earthquakes, tsunamis, hurricanes, and floods have wrought tremendous devastation around the world. Hurricane Katrina, which in late August 2005 submerged large parts of New Orleans, was by far the costliest natural disaster of American history after accounting for inflation. The South Asian tsunami on December 26, 2004, known in the scientific community as the Sumatra-Andaman earthquake, was one of the most terrible natural disasters of this type in recent history; more than one hundred eighty thousand people died as a result (Mauch, 2009, p 3).

If put in a historical perspective, these figures may not seem too impressive in comparison to past disasters. What has however changed dramatically is people’s exposure to their representations. If a century ago a disaster would have impacted the collective imagination and the cultural framework of a region or perhaps a country, today, with televisual representations, digital images and comments from the scene being instantly shared by both mainstream and social media, the impact on the anthropological structure of our collective imagination is far larger. Communities are exposed to images of disasters almost every day. As a result, human frailty, vulnerability, as well as the need to contain and control vast forces of nature combined with man made errors and/or ill-intent and violence have become a recurrent pattern in a larger narrative about survival and endurance of the human species and planet Earth. Therefore, post 9/11, post Hurricane Katrina, post the Sumatra-Andaman earthquake, post London, Madrid and Paris terrorist attacks and well into a late modernity framework, we are witnessing and experiencing at the same time a world in which the many faces of risk are changing and transforming at an unprecedented rate. Every advance from gene technology to nanotechnology opens a “Pandora’s box” that could be used as a terrorist’s toolki (Beck, 2002). Social networks, connectivity and collective commons can in their turn affect the way we live our lives both for the good and the bad. They can foster liberty of thinking and individual agency, but they can also facilitate the emergence of enhanced
surveillance and regressive, over securitized, over regulated states. In order to determine how all these factors affect the way communities of citizens perceive risks today, and how they understand to mitigate and manage them, we need to understand what are the driving forces of change and which are the level of expectations and the framework of understanding that are being shaped with the advent and embracing of new technologies, of connectivity, of globalized communities and of social activism. Therefore one feature that needs to be underlined right from the beginning is the increasing lack of credibility and legitimacy of centralized authorities.

The globalized, urban, digital natives that make up the world’s youth population have been increasingly changing patterns of thinking on authority. The authorities and institutions are questioned in terms of efficacy and expertise by both media and common citizens. This shows a profound change in the patterns citizens process information and address authority. The ‘skeptical public’ (Bennet 2000) or the ‘reflexive public’ (Beck, 2009) expresses an increasing need to demystify old certainties and figures of authority – be it church, doctors, or police officers. Increasingly, the public tends to favor and give voice to anti-establishment figures, alternative voices and countercultures.

According to Bennet (2012) and Beck (2009) in late modernity established loci of authority and power – science, the State – are challenged and, in the case of the forces of law and order, undermined. Furthermore, as Beck observes:

“strategies that lend the appearance of control and security instead of guaranteeing them and exacerbate the general feeling of insecurity and endangerment (...) it is not the terrorist act that destroys the West, but the reaction to its anticipation. It ignites the felt war in the minds and centers of the West.” (Beck cited in Bennet, 2009, p. 28)

The unprecedented challenge to established authority is most likely caused by the high levels of connectivity, intermedia communication and transnational cultural patterns emerging with the advent of globalization, internet and the overall impact of the social networks on the way citizens across the globe relate to theirs and others feelings, values, expressions of shared humanity and fighting against shared challenges and dangers, be it incurable diseases, migration, terrorism, scarcity of resources, famine, severe income disparity or climate change. Eduardo Neiva once noted that today,

“without great cultural chasms around them, like the waters where schools of fish swim, societies will not tighten themselves with organic solidarity, forging the impression of stability and permanence so enchanting to anthropological monographs. Whether we like it or not, singular cultural systems are presently preyed on with information and messages that sprout and leap suddenly not from the rims but from their core. There are no parochial limits to the international media networks, much less to the computerized communication exchanges happening on the Internet. The tendency is to have communication rings that are hopelessly without boundaries.” (Neiva, 2001, p. 49)
Referred to as ‘the global village’ by Marshall McLuhan or ‘the global ecumene’ by Ulf Hannerz (2001: 58), the highly irregular and interconnected phenomenon that lies at the center of the formation and circulation of shared value(s) across the divides of the nation states has come to be regarded as the starting point of a distinct, influential and unusual grassroots cultural construct that informs attitudes, beliefs and perceptions on life of citizens across the world – and with them perceptions of risk and crisis situations as well.

In an interesting study on the cultural analysis of disaster, a rather new field of study, speaking of community perceptions in the aftermath of Hurricane Katrina, Isak Winkel Holm underlines the two most important themes in contemporary disaster research, both of which were dramatically underscored by Hurricane Katrina were the fits of anger directed against the man-made character of the calamity that doubled the biophysical phenomenon, and against

“the media-borne character of a calamity caused to a large decree by the severe misrepresentations and misunderstandings of the city of New Orleans by federal and international media, behaving less like sober eye-witnesses and more like vultures preying on death and suffering (Holm, 2012, 17)

These two keen observations highlight a characteristic of the global village or the global ecumene – the acute distrust in both state and media establishments of at least some categories of target audiences. The 2016 Edelman Trust Barometer for instance, shows a 3 point increase in trust inequality during 2012-2016, between informed public and mass population with regard to their trust in the four institutions of government, business, media and NGO’s (Edelman’s Trust Barometer, Trust Inequality ), accelerated disparity and decreasing trust of mass population in the media outlets being highlighted in most parts of the world, including France, UK, US, Spain, Singapore, Malaysia, India, China, Brazil, Germany, Australia, Ireland, Russia, Poland etc. Low levels of trust have also been linked in the Edelman’s Trust Barometer to the low levels of income, with respondents in bottom quartile of income in each country ranked significantly lower in the level of trust in mentioned authorities.

As the following case-studies will show, similar perceptions and attitudes can be detected in the public perception across the globe with regard to any of the more recent events, be they the series of terrorist attacks in France, the floods across Europe, the fire in the Colectiv club in Romania, to name just of few of the case studies and incidents mentioned in the current project.

Therefore, admitting that crisis and disasters have come to be perceived across the globe according to and/or in reaction to media generated archetypes and cultural representations of disaster, we can only conclude that vulnerability, incapacity and a certain malignant passivity have come to populate collective imaginary of disaster and disaster management - a trend all the more relevant and dangerous as it signals an undercurrent of pessimistic reluctance to act upon and generate solutions. Therefore, we agree with Holm that
“The recent decade (...) has seen a growing recognition of the importance of the way we frame disaster culturally. According to this “cultural turn” in sociological disaster research (Webb), not only the physical and institutional but also the cultural infrastructure of a society play a major role in shaping disaster by determining how it is interpreted by human beings.” (Holm, 2012, p.: 17)

The cultural infrastructure of the - recurrent Hollywoodesque interpretations of disaster, media reports on terrorism, the “no comment” zone of online media promoting the so called unfiltered reports from conflict zones or the social media unpredictable circulations of narratives – generates models of understanding and coping with risk and disaster. We thus understand the fundamental role that the cultural infrastructure of a community (combining elements of the global ecumene, the local community and the collective imaginary of its living members) plays in generating cognitive patterns that frame both the perception of crisis and disaster and the response to it. Being able to contextualize communication and action within these cognitive patterns would then be the stakes that any risk and disaster management communicator should have on the radar.

2.2. The Repertoire of Cultural Variables in the Risk Society

Trying to search for cultural variables that nowadays populate the glocal imaginary is in many ways the same as watching the patterns and movements of a kaleidoscope. One can only follow a limited number of bits at a time, guess their movement and imagine a pattern according to the limited experience of its formation. This is the reason why, in this particular section, and before we move on to the particular and grassroots makings of risk, crisis and disaster communication management, we feel the need to take a closer look on several cultural traits that seem to emerge as global rather than local imaginings of the cultural infrastructure of disaster.

Taking into account human emotions, routine experiences and the way they are modelled by the mediated digital communication nowadays can be another key factor to explore for a better understanding of the way people, especially in urban areas, respond to risk and crisis situations. Let us not forget that emotions stirred by cultural symbolism can and will play a dominant role in the way perceptions are shaped and mitigated with, especially when dealing with fear, anxiety and panic. This is the reason why, today more than ever, we need to integrate a deep understanding of cultural stereotypes and cultural taboos into the way we transform risk perceptions for better crisis mitigation. According to Lull,

“The global availability of ever more diverse and mobile symbolic forms emanating from the culture and information industries, when combined with increased access by individuals to micro-communication technologies, uniquely empowers many people” (Lull, 2001, p. 3)
2.3. The Lack of Trust in Established Authority

The lack of trust in the established loci of authority is a pervasive characteristic of the global *ecumene* and the risk society that seems to be directly connected to the advent of technology and the instant circulation of digital information. Growing numbers of citizens nowadays demand to occupy public space, have access to information and claim transparency of the public affairs. In this larger framework and due to the instant access to information, it has become more and more frequent a practice to address, whenever necessary, the ‘poor quality’ of government response in crisis and disaster situations. Individual interrogations quickly turn into public outrage, citizen journalism combines with professional journalistic investigations, people demand the right to know on social media and the mainstream media channels often have no choice but to follow popular leads. All these have become frequent elements in the repertoire of public reactions. This specific trend must be addressed by crisis and disaster management communicators in rapid, informed, specific and transparent manner that can thus help in the building of a solid capital of trust, able to remain resilient in the advent of a crisis situation.

2.4. The Self-help, Open source, Globally Networked Local Community

The fast paced technology development and the almost instant circulation of digital information have also had enduring effects on communication patterns embraced by citizens across the world. Today, we are witnesses to increasing bidirectional communication between established authorities and citizens, between citizens and communities themselves as well as between communities situated continents apart. Grassroots initiatives get propagated with increasing speed while the creative commons generate open-source initiatives that everyone who wishes can contribute to. And though not yet a general trend of initiative, movements of self-help combined with open source initiative and citizen alert systems created ad-hoc via e.g. social media in the advent of e.g. a major earthquake or a terrorist attack, must be taken into consideration when designing communication strategies for risk, crisis and disaster management.

2.5. The Constitutive Pleasurable Forms of Violence and Disaster in the Risk Society

Community and individual understanding of risk, crisis and disaster is often embedded in those forms of violence that have become constitutive to our shared identity. The plethora of disaster imaginings of epic proportions that populate Hollywood movies, videogames, science-fiction literature circulate across the world and contribute to the creation of behavioral models and cultural practices. Such mental models, in their turn, are used by individuals later on in order to decode real events, expect meaning and generate attitudes and reactions towards ways of
managing crisis situations. In the beginning of a study on natural disasters and their cultural responses across the centuries, Christof Mauch observes:

“Lately it seems that every Borders bookshop and Blockbuster videostore is filled with titles such as Nature on the Rampage, Killer Flood, Devil Winds, Tidal Wave: No Escape, Dante’s Peak, Aftershock: Earthquake in New York, and Storm of the Century. Hollywood provides a steady stream of disaster movies featuring erupting volcanoes, earthquakes, tornadoes, and even menacing asteroids. In 2004, The Day After Tomorrow—a rollercoaster drama about a superstorm that devastates New York City at the start of a new Ice Age—was among the top grossing movies worldwide” (Mauch, 2009, p. 1)

While not entirely new, this fascination with natural and man-made disaster and crisis situations that populates popular culture and the collective imagination globally speaks of violence and suffering in pleasurable forms that invite the human being to assess the way in which suffering tests human dignity, courage and the ability to address forces that are beyond his/her power to shape. At the same time, it speaks of a more disturbing entertaining nature of death, of violence as a constitutive possibility. Now a famous study, Slavoj Zizek’s On Violence chapter on the 9/11 terrorist attack analyses exactly the way in which the cultural schemata populating the Hollywood movies has channeled the public towards expecting the unexpected and rendering to the real the surreal character of an alternative, virtual reality (Zizek, 2008). More than a decade before, a famous study signed this time by Jean Baudrillard attracted attention to the televisual character that the first Gulf War had in the collective imaginary. Framed by television renderings of a clean and game-like warzone, it created expectations of a war in which violence remained abstract and almost pleasurable, entertaining. It voided disaster of its fleshy character and created expectations of abstract realms where terror was manageable and remote (Baudrillard, 1995).

More into our times, there have been speculations that suggested the 11/13 attacks in Paris were plotted while using the Sony’s PS4 game platform for communication, either through audio messages or by using the network of the gaming facility. (Rawal, 2015) (Titcomb, 2015) Furthermore, the similarity of actionable patterns between war video games and the actual terrorist acts create concerns as to how the virtual reality gets to emulate into real life situations whenever motivation occurs. Research so far proved inconclusive results, some studies arguing for, other against an existing connection between players of violent video games and heightened levels of aggression in young adults. (Amini, 2013)

Nevertheless, all of the examples above illustrate the way in which cultural frames encourage a fictional presence of crisis and disaster into our everyday lives and facilitate the transfer of meaning between the virtual towards the real and not the other way round as we have generally been used to in cultural receptions of the 20th century. Furthermore, we can argue that this cultural fascination for doom like scenarios has had its role in creating negative expectations and readings of violence and disaster, both natural and manmade, as a constitutive part of our
collective imaginary. Should this be considered a threat to how the public models the unexpected and the incomprehensible of a disaster situation? Contradictory results recorded by researchers in this field prevent us from reaching a direct and unequivocal conclusion. However, one cannot refrain from wondering whether the pleasurable, narcissistic quality of violence and the entertaining nature of disaster, combined with all the more frequent dramatic climactic changes and upsurge of terrorism in real life won’t affect the collective imaginary we share so much so as to create passive expectations of suchlike events. Recent propaganda materials put forward, for instance, by the terrorist organization DAESH seem to suggest a clear attempt to exploit what it must be sensed by the terrorist propaganda disseminators as a very fluid interaction between the real and the virtual models of reality. As the George Washington University’s School of Media and Public Affairs scholar Javier Lesaca concludes after analyzing some 845 videos put forward by the terrorist organization, propaganda “nods and sometimes directly copies—memes, characters, and scenes contained in Hollywood movies, video games, and music videos.” (Khan, 2015)

All of the above in mind, we believe communicators should be advised to create strategies to share information especially with youth by integrating game-like, interactive features of a ‘learn how to help yourself and others’ culture, simply as a way to disseminate information and know*-how according to patterns .

2.6. Cultures of Disaster, Cultures of Resilience

There are frequent examples in the literature on disaster and disaster management that show cultures which are often exposed to extreme phenomena to create coping mechanisms so as to include the abnormal character of disaster into a routine, and, therefore, into the normalcy of everyday life. According to Bankoff, for instance,

> For Filipinos, hazard and disaster are simply accepted aspects of daily life, what can be termed a frequent life experience.(...) It is so ordinary that Filipino cultures are partly the product of adaptation by communities to these phenomena through processes that permit the incorporation of threat into daily life, or what can be called the “normalization of threat” (Bankoff, 2009, p. 265).

As Bankoff discovered, normalization of threat by the, for example, Filipino, implied the creation of distinctive patterns of activity as well as behavior, and that, despite the dissimilarities between various ethnic communities. From materials used in architecture to agricultural patterns or seasonal migration patterns, cultural norms and every day practices seem to have been regulated so as to avoid and contain the effects of seismic and meteorological disasters that frequently affect the country. Material culture practice may or may not be of relevance to other countries in other climates. They belong to the local and maintain across the centuries local value as long as they are still integrated by modern communities. Psychological and emotional adaptation
strategies integrated into cultural norms may, on the other hand, bear greater relevance and importance for cultures across the world as they can always be trained and exercised through education, preparation and training. Cognitive and behavioral responses designed to reduce psychological distress, passed on from one generation to the next with the help of collective memory represent one of the cultural mechanisms that must be correctly assessed and benefitted from. In the Philippines, migration and relocation can be regarded as preventative coping practices, as they attempt to prevent the same set of circumstances from recurring (Bankoff, 2009, 265).

In the same way, a sociological survey shows that the refusal of part of the Afro-American population in New Orleans before Hurricane Katrina to leave home and incapacitated family members behind can also be said to represent a cultural model constructed though past experiences of Hurricanes that as often as they appeared, never created destructions of such magnitude and threat to human lives and therefore did not recommend extreme measures and especially the symbolic destructuring of the family nucleum (Eisenman, Cordasco, Asch, Golden and Glik, 2007). Thus we see how opposite behaviors in the face of danger both are apparently motivated by the same recourse to the collective memory of similar events and the way they have remained imprinted in the imaginary of the community. Therefore, one has to emphasize the fundamental importance of determining expectations and collective representations of specific types of disaster within the community where policy is being drafted. Without a correct assessment, a policy maker may not have the measure of what needs to be corrected in the pattern of behavior so as to create successful adaptation strategies and integrate them into recommended cultural norms.

In the case of the Philippines, Bankoff illustrates, the feeling that life is essentially a game of change (bahala na), that one is indelibly united with the other and community good is also the good of the individual (pakikipagkapwa) and the particular sense of humor which allows Filipinos laugh in the face of any adversity (Bankoff, 2009, p. 269-270), represent cultural variables that allow and foster the creation of strong social support networks and self-generated community actions. Bankoff (2009) identifies as efficient coping strategies developed within the Filipino cultural framework the storytelling practice and the swapping jokes with friends:

Reports of the aftermath of the Mayon eruption of June 23, 1897, describe how survivors were heard to tell jokes while collecting the grotesquely disfigured bodies of the dead, comparing the separation of body and soul to a “slow” husband being left by his “fast” wife, or the remains of a dead coconut farmer to the oil he used to make: “They told all sorts of jokes and so instead of being sad while gathering the dead, they were all laughing. The pain in their hearts was great but the jokes were comparable to the water that extinguishes a fire. The jokes were made to defend one from getting weak, and so to be able to go on gathering the dead without shedding too many tears” (Bankoff, 2009, p. 270)
Finally, Bankoff’s research shows that constant exposure to hazards has created in the case of the Filipinos

“hazard as a frequent life experience manifests itself in a history of formal and informal associations committed to individual and community welfare that stretches as far back in time as the earliest written record” (Bankoff, 2009, p. 270). His conclusions are mirrored by research carried out by anthropologists elsewhere in regions that are also highly exposed to disaster and crisis situations due to natural disasters.

The cases discussed show that one of the particularities of the less developed countries in coping with natural disasters is not so much the appeal to technology (as is the case with the highly developed urban societies in the West) as the appeal to cultural values that can help both individual and the community build resilience in the face of adverse situations. In all the studies quoted above, perhaps the most important trait identified was the recourse to self-generated help within communities, to enlisting people’s participation as an essential element in disaster management through the formation or support of grassroots organizations (Bankoff, 2009, p. 279).

2.7. From Glocal to Local. Grassroots Movements and the Empowering of the Citizen

Some studies in disaster mitigation and relief, especially those dealing with the psychological effects of crisis and disaster situations and their aftermath, have insisted on the importance of acknowledging, understanding and integration into the intervention strategy of structured knowledge of ethnic, gender, local community and/or professional cultures. Ethnic community especially has repeatedly been invoked as one key factor for the successful mitigation of crisis and disaster situations as well as its containment and limitation. In an interesting study dedicated to Ethno-Cultural Perspectives on Disaster and Trauma, editors Anthony J. Marsella, Jeannette L. Johnson, Patricia Watson and Jan Gryczynski insist on the importance of adapting the universals of Western science to the specificities of the local communities, if experts and intervention teams are to have a positive effect in the disaster preparation and mitigation:

Local communities have specific methods and tools for healing such as rituals, ceremonies, and practices of remembrance. Since they are grounded in the beliefs, values, and traditions of the local culture, they are both culturally appropriate and more sustainable than methods brought in from the outside (Wessells, 1999pp. 274-275)

They also state that the dynamics of response to a crisis or disaster situation is often generated in the interaction of the following types of cultures:
As a result, when adopting the socio-cultural perspective on crisis and disaster mitigation, one cannot overlook the importance of a productive dialogue and interaction between the cultures of the victims and those of the responders. The major topics invoked by Marsella et al, and which can be found more or less comprehensive in similar studies (by e.g. Andreatta & Ferraro, 2013; Bankoff, 2009; Bennet, 2012; Meiner & Veel, 2012), include:
All authors insist on the need to support cultural specificities in designing adaptive responses and communication strategies.

2.8. Cultural Dimensions Influencing Communication

The specificities of cultural factors that influence communication in a crisis or disaster situation can be divided in two main fields: cultural dominants/dimensions and cultural variables. Cultural dominants are those traits, shared by more than one specific national culture and that determine the frame under which events and life situations will be read by the majority of its members. Cultural variables, on the other hand, have been generally agreed to represent the differences in social behaviors beliefs and practices that different cultures exhibit. While social constructionist models “generally focus on the particulars of individual cultures”, nativist theories focus on the dominants (Gangestad, Martie, & Buss, 2006). However, if we are to decode and integrate into risk communication practices as much knowledge as possible about how and when and what something should be communicated in order to minimize and contain damage in risk and crisis situations, both should be taken into consideration. First of all, it must be stated that cultural dominants will not program individual readings of a crisis or disaster situation but will offer intervention teams a general flavor on the tendencies shared by the respective community members in interpreting events and contextualizing their actions.

Extensive research in the most important six dimensions that national cultures share has been undertaken by a team of researchers lead by the worldwide renowned professor Geert Hofstede. According to Hofstede,

*the model of national culture consists of six dimensions. The cultural dimensions represent independent preferences for one state of affairs over another that distinguish countries (rather than individuals) from each other. The country scores on the dimensions are relative, as we are all human and simultaneously we are all unique. In other words, culture can be only used meaningfully by comparison” (Hofstede, 2016).*

<table>
<thead>
<tr>
<th>Cultural dominant (1)</th>
<th>Communication pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Distance</td>
<td></td>
</tr>
<tr>
<td>High power distance</td>
<td>Focuses communication on the respect for authority, strict hierarchy. Do not invite to criticism and contestation as this is likely to be perceived as a lack of professionalism and a chaotic intervention.</td>
</tr>
</tbody>
</table>

Recommendation: center communication on a display of authority and competence, give direct instructions and provide simple, targeted information not strategic orientation.
Low power distance | Focuses on equality between individuals, both in rights and in responsibilities, people have a right to contest authority if this is perceived as illegitimate, to take part in decisions and display autonomy.

Recommendation: center communication on encouraging people to take the right measures for their own safety, participate in collective preparation or relief initiatives, display a friendly attitude and peer collaboration whenever possible and without undermining the authority of the competent authorities.

<table>
<thead>
<tr>
<th>Cultural dominant (2)</th>
<th>Communication pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualism</td>
<td>Individualism</td>
</tr>
<tr>
<td></td>
<td>Focuses on the well-being of the individual, generates a preference for a loosely knit social framework in which individuals are expected to take care of only themselves and their immediate families (Hofstede, 2016).</td>
</tr>
<tr>
<td>Recommendation: center communication on objectives designed to increase self-governance, autonomy and safety of the individual and close family members.</td>
<td></td>
</tr>
<tr>
<td>Collectivism</td>
<td>Collectivism</td>
</tr>
<tr>
<td></td>
<td>Focuses on the well-being of the community and generates a preference for a tightly-knit framework in society in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioning loyalty” (Hofstede, 2016).</td>
</tr>
<tr>
<td>Recommendation: center communication on objectives designed to increase the efficient management of community needs and how the individual can help in insuring extended family and community survival and immediate needs.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cultural dominant (3)</th>
<th>Communication pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masculinity</td>
<td>Masculinity</td>
</tr>
<tr>
<td></td>
<td>Focuses on the kind of traditional values that are promoted. In a masculine culture, ambition, performance, achievement, heroism, assertiveness and obtaining material goods are highly valorized.</td>
</tr>
<tr>
<td>Recommendation: center communication on direct display and encouragement of competence and pragmatic measures to be taken in order to insure avoidance of human lives loss and minimization of damage.</td>
<td></td>
</tr>
<tr>
<td>Femininity</td>
<td>Femininity</td>
</tr>
<tr>
<td></td>
<td>Focuses on assistance offered to others and generates a preference for “cooperation, modesty, caring for the weak and quality of life” (Hofstede, 2016).</td>
</tr>
<tr>
<td>Recommendation: center communication towards consensus and the ways to assist vulnerable individuals, to cooperate for common good and maintain the quality of life of the community.</td>
<td></td>
</tr>
<tr>
<td>Cultural dominant (4)</td>
<td>Communication pattern</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td><strong>Contextual</strong></td>
<td></td>
</tr>
<tr>
<td>Contextualized</td>
<td>focuses on discreetness, suggesting rather than requesting and stating</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Center communication, whenever possible (e.g. in preparation for crisis situations, not in the actual crisis occurrence), on suggesting and recommending steps to be taken, providing context, reasons, logical explanations, pay attention to subtle hints, facial expressions, tone of voice as these are likely to be observed and interpreted by the listener</td>
</tr>
<tr>
<td><strong>Non-contextualized</strong></td>
<td>focuses on pragmatic communication, sharing of opinion</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Center communication directly expressed, pragmatic messages and eloquence</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Cultural dominant (5)</th>
<th>Communication pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uncertainty avoidance</strong></td>
<td></td>
</tr>
<tr>
<td>Strong uncertainty avoidance</td>
<td>Focuses on efforts to know and control the future, maintains rather strict codes of belief and behavior, is intolerant to unorthodox behavior and ideas (Hofstede, 2016)</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Focus communication on principles to be followed, accepted code of conduct, norms and procedures. Show respect to tradition, prior - established rigors and give prominence in communication to role-models and community elders. Structure your key messages starting with a valorization of rules and norms that confer security.</td>
</tr>
<tr>
<td>Weak uncertainty avoidance</td>
<td>Is tolerant to change, accepts that the future cannot be known, and displays a more relaxed attitude towards rules and rigors.</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Center communication on practical solutions and upgrade information and recommendations as much as possible, integrating new insights as they emerge.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cultural dominant (6)</th>
<th>Communication pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time-orientation</strong></td>
<td></td>
</tr>
<tr>
<td>Long term orientation</td>
<td>Maintains time-honored traditions and norms while viewing societal change with suspicion.</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Emphasize in communication efforts to respect tradition and norms and integrate necessary changes to prepare and manage crisis and disaster situation at the level of society within an already accepted framework and code of conduct. Introduce innovation gradually.</td>
</tr>
<tr>
<td>Short-term orientation</td>
<td>Focuses on pragmatic solutions, encourages efforts in modern education and technology as improvements and building the future.</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Center communication on the integration of new technology for crisis and disaster management, valorize innovations and the overall orientation towards innovative solutions.</td>
</tr>
</tbody>
</table>
Note: cultural dimensions presented above are a synthesis of the various alternatives presented in the field literature by: Geert Hofstede, Michael Harris Bond, Michael Minkow etc.

Another model of analyzing cultures, this time focused specifically on organizations and hence with relevance for the cultural aspects generated within intervention and relief entities, was proposed and applied by Mary Douglas in several of her works (Tansey and Rayner, 2009). She proposes two different axes according to which the organizational culture of a group can be analyzed. These are called ‘group’ and ‘grid’. The first dimension, group relates to whether a collection of individuals represents a tight-knit group or alternatively a loose grouping. For example some groups such as sects require a life-time, full-term commitment, while others, such as a reading group, assemble only sometimes. The second dimension, the ‘grid’ refers to the ‘extent of regulation’ within the group. Thus, some groups maintain a strict discipline inside while other are far looser. For example, a military regiment organizes its’ members’ daily schedules to the minutest details (Tansey and Rayner, 2009, p. 65). Alternatively, examples of low regulation groups are families that allow children far greater freedom or democratically organized production cooperatives.

By combining the two dimensions, four possibilities emerge: Individualists (low group and low grid), hierarchies (high-group and high grid), isolates (low group and high grid) and egalitarians (high group and low grid). The first ones are people who do not belong to a group and set their own rules. The archetypal example is the explorer community. Secondly, Isolates refers to situations such as those of prisoners that are controlled but not part of a meaningful group. Hierarchies are highly regulated and close together. Bureaucracies and military institutions fit this pattern well. Egalitarians are groups that are tight-knit, but that prefer to decide on the basis of consensus. Some isolated religious communities fit this pattern (Douglas, p. 2007).

2.9. Cultural Variables Influencing Communication

In communicating, apart from the general cultural dominants/dimensions, one also has to take into account the specific local cultural variables that inform a positive or negative communication process between authorities, intervention team, NGO personnel and the general public. Interestingly, field studies have shown that the most important cultural variable that needs to be taken into consideration is the ethnic belonging. Ethnicity is the one characteristic under the umbrella of which gender dynamics, religious faith and practice, profession, social status and relational patterns, for example, need to be framed so as to offer insight into a positive communication process.
The importance of integrating cultural variables into the communication process during crisis and disaster situations cannot be overstated. Marsella, for instance, when referring to contextualized cultures, observes that

*in some cultures (e.g., embedded, contextualized, field dependent), communication is based on relational negotiation in which there are presumptions of interpersonal sensitivities, hierarchy, and roles. There is a strong emphasis on reading non-verbal cues and “what is not said,” as much as what is said. Indeed, the very nature of the self in this cultural milieu can be considered unindividuated (e.g., relational, collateral, diffuse) in which self as process and self as object become fused* (Marsella, 2008, p. 6)

Many experts in the field have also noted that ethnic background, especially in the case of minorities is an important factor for establishing vulnerability during crisis and disaster situations (Bankoff, 2009; Coppola, 2009; Eisenman, Cordasco, Asch, Golden, & Glik, 2007; Marsella, 2008). Furthermore, it must also be noted that case studies have repeatedly shown that isolation, small levels of acculturation and high levels of ethnic identification to be indicators of difficulties in relating and communicating in the absence of an acute cultural competence on the part of communicating authorities and field intervention teams. Success and/or failure of the efforts to assist victim populations have been linked to the intervention teams’ availability and skill in not trespassing local norms and taboos and channeling cultural beliefs into adequate survival practices.

In assessing cultural variables that need to be embedded for successful communication, one also needs to take into account the various layers of knowledge created at the junction of visible practices, deeply embedded beliefs and accredited procedures and norms embraced by the said community in communicating.

![Fig. 9 Layers of culture](image-url)
James Lull (2001), for instance, proposes a determination of cultural manifestations that can be operationalized for a better understanding of those elements that impact risk, crisis and disaster understanding in different cultural milieus:

1. **Surface culture variables**: observable behavior - facial expressions, actions, artefacts etc. Level of analysis - first hand reactions to risk communicators messages

2. **Deep culture variables**: ethical values, systems of knowledge; Level of analysis – cultural models – nationality, ethnicity, religion, gender, youth vs. old, professional, of class, region etc.

3. **Procedural culture**: performance and communication; Level of analysis – pattern of decision making, self –help, autonomy vs. dependency, trust vs. disbelief, pragmatic vs. inertial behavior patterns, speech

Cultural competence displayed in communication comes as a direct result of acquiring proper insight into both surface, deep and procedural culture variables. Most of the times, competence is achieved through direct exposure, learning and practice. However, as interventions during a crisis/disaster situation have to be quick and precisely targeted in order to be effective, structured learning, preparation and rehearsal of the essentials of the cultures into which one needs to intervene become essential. As a result,

*the adoption of cultural competence” has become “as an overriding principle of services for minority populations”, based in the premise that caregiver’s or agencies’ understanding of a person’s cultural background and experience facilitates a better match of services and thus more effective care and improved client outcomes* (Norris & Alegria, 2008)

Failure in acquiring the right package of essential knowledge of the people towards whom the intervention is targeted leaves room to errors in assessment, unsatisfactory communication and the mistreatment of objectives. Therefore, cross-cultural training has been claimed by many specialists as a must for disaster workers (Marsella and Cristopher, 2004). Among the most cited cultural competences that have relevance for communication processes in crisis and disaster situations we can list:
### Cultural Variables Relevant During Communication Processes In Crisis And Disaster Situations

<table>
<thead>
<tr>
<th>Deep culture awareness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ local history: instances of oppression, prejudice, marginalization, sharp class divisions</td>
</tr>
<tr>
<td>✓ family structure: close vs. extended</td>
</tr>
<tr>
<td>✓ gender roles: patriarchal vs. modern</td>
</tr>
<tr>
<td>✓ perceived self-autonomy +/-</td>
</tr>
<tr>
<td>✓ values and world views with regard to uncertainty, integration, disaster, self-help, high or low power distance etc.</td>
</tr>
<tr>
<td>✓ initial confidence in government and authority</td>
</tr>
<tr>
<td>✓ initial (lack of) fear for security</td>
</tr>
<tr>
<td>✓ level of trust in community’s ability to overcome adversity</td>
</tr>
<tr>
<td>✓ level of collective dissatisfaction and anger towards authorities, social status, status quo prior to disaster</td>
</tr>
<tr>
<td>✓ accepted help seeking norms within the community</td>
</tr>
<tr>
<td>✓ taboos (if any)</td>
</tr>
<tr>
<td>✓ culture specific disorders</td>
</tr>
<tr>
<td>✓ level of fatalism (fate driven life events)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surface culture awareness:</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ contextual vs. non-contextual practices in communication</td>
</tr>
<tr>
<td>✓ verbal and non-verbal language</td>
</tr>
<tr>
<td>✓ symbolic gestures</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procedural culture:</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ competency in understanding messages transmitted by authorities (language skills, understanding of vocabulary, access to media channels)</td>
</tr>
<tr>
<td>✓ ability to mobilize</td>
</tr>
<tr>
<td>✓ ability to understand and follow instructions</td>
</tr>
<tr>
<td>✓ self-help skills</td>
</tr>
<tr>
<td>✓ mastering of technology</td>
</tr>
<tr>
<td>✓ competency in “how to react in case of crisis and disaster”</td>
</tr>
</tbody>
</table>

A close look at the table above showing cultural variables that play an important role in crisis and disaster communication also shows that knowledge of deep culture facilitates understanding of surface culture, while both deep and surface culture variables inform and
shape effective procedural culture understanding and empowerment. Sharp class divisions, for example, are predictors of low capacity and resources for self-governing and therefore predict higher levels of job disruption and homelessness during crisis and post-disaster. Both these stressors, in their turn, increase vulnerability and inability to react proactively for own and community recovery. In this case, communication, in order to be successful, should integrate key messages with clear instructions to follow for the accomplishment of basic needs and reintegration.

Another element that needs to be taken into account is the inter-relationship established between various cultural variables. Ethnic or religious background have a direct impact on the way gender and age are valorized. Studies show for instance that in Hispanic and Asian cultures “communication in the absence of a relationship is not accepted and proper”. (Castaneda cited in Norris & Allegria, 2008: 20). Other studies cited by Norris and Allegria have shown the different effects ethnicity bears on gender and age: being of Mexican culture, for instance, exacerbates gender differences while African American culture attenuates them. Also, when age is concerned, the most vulnerable categories of population in times of crisis or disaster have been also found to vary: for Americans, the middle aged were indicated as most vulnerable, while among Mexicans, it was the young people and for the South Eastern Europeans the old. These differences have been placed in direct connection with the different life-cycles and empowerment granted by culture to a specific age category. In conclusion we can say that both cultural dominants and cultural variables need to be taken into account, assessed and acknowledged for successful communication between authorities, intervention teams and the victim community.

2.10. Organizational Cultures and Their Impact on Efficient Communication with Victim Populations

The organizational culture of disaster managers is also a highly important aspect of the way communication during disasters is organized. Each disaster - response organization has its own internal codes, rules and informal expectations. Hofstede (1990) illustrates two types of organizational culture in two different organizations: TKB, a 60 – year old production unit in the chemical industry is governed through a paternalistic management style, a benefactor-style approach to its employee’s needs and to the local community and a solidarity-based approach to one’s colleagues. Alternatively, DLM, a European airline has suffered significant changes from a culture based on strict discipline and rule-following to one of individual responsibility and risk-taking, as well as participatory management. The company now relies on collegiality rather than hierarchy and a problem-solving approach rather than mere standardization.

In the case of disaster response organizations, a hierarchical, high power distance culture is depicted in the 2005 Romanian movie The Death of Mr. Lăzărescu, by director Cristi Puiu. In the
movie, a patient is carried by ambulance through the Bucharest night, reaching three hospitals before finally being admitted in the fourth. His only support throughout this journey is the ambulance nurse, who, because of her lowly position in the medical hierarchy, is constantly being verbally abused by doctors refusing to admit Mr. Lăzărescu. When Mioara, the nurse, urges a doctor to treat the patient and tells him she knows he is sick as “We are all medical professionals”, the reply quickly comes “But of different qualifications”.

A case of **conflict between the culture of disaster managers and that of local culture** could be observed during the government intervention to stop the Botswana HIV epidemic. Disaster responders were part of the state bureaucracy, based on a hierarchical culture inside and imparting a form of scientific knowledge when offering anti-retroviral treatment. This is labeled by the Red Cross as a ‘biomedical’ culture. Alternatively, traditional culture relied on alternative healing practices, delivered by healers and based on specific rituals. The campaign to eradicate the HIV epidemic created an opportunity for a conflict between the two cultures: the official communication of the state demanded that people test themselves for HIV and not pass the disease on, while somehow blaming those who were infected. This pushed people further into traditional medicine practices, while also labeling these practices as primitive. A better approach was found when trying to convince people to accept anti-retroviral medicine through the mediation of traditional healers who could serve as **mediators between different understandings of disease, health and healing** (IFRC, 2014).

Furthermore, a **bureaucratic culture of disaster response authorities** was also a factor in the delayed action during Hurricane Katrina. The on-the-line responders were used to receiving orders from state capitals or Washington, D.C., and acting according to established procedures. It took a significant amount of time until state officials began overruling established procedures and acting independently. Moreover, “these decisions to switch from a “pull” to a “push” system were made individually, over several days, and in an uncoordinated fashion as circumstances required” (US Congress, 2006). The head of the Department of Homeland Security, Michael Chertoff, was not an expert in disaster and was not able to initiate correct response procedures at the proper time, while on-the-line managers were waiting for a top-level decision. Finally, at the level of the White House Homeland Security Council, there was confusion about the amount of damage that the affected areas had taken (US Congress, 2006).

The questionnaires administered to project partners aimed to evaluate the organizational culture of disaster responders. They allowed for drawing several conclusions about the organization and organizational culture these institutions in different countries. Overall, disaster response organizations are at the same time both hierarchical and bureaucratic (in the relationships between different tiers of authority), on the one hand, and solidaristic and communitarian, on the other. A constant feature of the replies provided by project partners has been that co-workers generally spend time outside of work and that this fosters bonds of solidarity, but that work is hierarchically organized. One can conclude that among immediate colleagues, power distances
are relatively low, but that after a particular level in the hierarchy, power distances increase dramatically.

Regarding organization and subordination, all disaster responders are state institutions, are hierarchically organized, and responsible to different executive state authorities, which, in turn, are accountable before elected officials. Throughout the cases surveyed, the disaster response authorities are subordinated to the elected or appointed executive branch (Ministry, prefect, mayor), who is in turn accountable to the local or national assembly (local council, county council). However, significant differences can be observed in what concerns operational procedures. On the one hand, West European states act according to a subsidiarity principle, whereby disaster responders are subordinated to different levels of authority depending on the extent of the emergency. Thus, according to the report provided by the EMSC, the French rescue operations are coordinated by different levels, according to whether the emergency extends in one city, department or across several departments (Report by EMSC). The same is done in Spain, where local authorities are autonomous, and disaster responders are responsible to them. However, in case of emergency, one authority takes the lead and others have to contribute information and resources, according to law. Furthermore, in Spain, the Minister of Interior is responsible to the Parliament, ministers in autonomous communes are accountable before regional parliaments while mayors to city councils (Report by Valencia police). Alternatively, Eastern European states such as Serbia and Romania work on a highly centralized model, where disaster response intervention is organized by territorial representatives of the central authority (Ministry of Interior, Special Telecommunications Service – which is regulated by the Supreme Council of National Defense). For example, in Serbia, the local disaster response authorities are subordinated to the central Ministry of Internal Affairs and not to the locally elected authorities (Report by the University of Novi Sad).

According to Hofstede’s model, disaster response organization generally share a collectivist culture, where team work is prized above brave but potentially rash individual action. Thus, basically all the replies received focus on the fact that disaster responders who arrive first at the scene are trained to follow procedures and call for back-up, as opposed to taking matters into their own hands. Generally, if the latter happens, a person doing this might be reprimanded for it by his or her colleagues, whose work he or she has made even more difficult. According to the report provided by the Valencia police “Colleagues normally don’t like individual interventions” (Report by Valencia police).

Finally, given that disaster response organization are bureaucratic and hierarchical, disobedience to superior orders is to be considered an exception and to be done only in extreme cases. Some small differences have been observed between Western European states, where a slightly higher level of disobedience is accepted and Eastern European states. Thus, according to the report by the EMSC “a civil servant is ordered something that dangerously goes against the public interest, he is required to disobey” (Report by EMSC). Alternatively, according to the University of Novi
Sad, in the Serbian disaster response authorities “the subordinates have no possibility to influence the decisions of the superiors. Only in the case of orders that constitute criminal offenses the subordinates are not obliged to obey them” (Report by the University of Novi Sad).

The bureaucratic and hierarchical culture of disaster response organization can significantly influence the way disaster risk communication is done. While very efficient in actual disaster response, hierarchical organizations might be less so when emitting messages to culturally different target groups. When centralized decision-making is required, the views and conceptions of the central authority are propagated to the lower levels. Thus, a lack of culturally-specific knowledge by the central command might determine the authority to employ apparently general and universalistic messages, which, however, do not say much to some of the target groups.

2.11. Recommendations for the Successful Integration of Cultural Variables in Risk and Disaster Communication and Response Strategies

<table>
<thead>
<tr>
<th>List of recommendations to integrate cultural variables in communication</th>
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</thead>
<tbody>
<tr>
<td><strong>Population group: African</strong></td>
</tr>
<tr>
<td><strong>Communication style</strong></td>
</tr>
<tr>
<td>✓ Open and honest communication</td>
</tr>
<tr>
<td>✓ Acute sensitivity of mistreatment and inconsideration</td>
</tr>
<tr>
<td>✓ Less forthcoming in seeking help outside community</td>
</tr>
<tr>
<td>✓ Consider the importance that faith, religion and religious organizations play within the community (psycho-social strength derived from it)</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
</tr>
<tr>
<td>✓ Provide better education to increase knowledge of programs and best methods to access and obtain help in case of crisis/disaster situation</td>
</tr>
<tr>
<td>✓ Provide culturally appropriate training though the use of community based organizations</td>
</tr>
<tr>
<td>✓ Make use of support mechanisms offered by religious organizations</td>
</tr>
<tr>
<td>✓ Make use of the informal support networks established between extended family members, neighbors, co-workers, church members</td>
</tr>
</tbody>
</table>
## Population group: Arab Americans and Arab Europeans

| Communication style | ✓ Building warm and trustworthy relationships prior to any successful communication  
| ✓ Total individuation seen as leading to fragmentation, isolation and loneliness  
| ✓ General positive valorization of community, religion, hospitality, gratitude, dignity, honor  
| ✓ Relatively general expectation for distinct male/female roles (breadwinner vs. caregiver); more fluid dynamics of gender roles in urban large communities  
| ✓ Tend to conform to norms and cultural traditions of the extended family  
| ✓ Women and girls seen as more vulnerable, in need of protection; boys are favored in terms of freedom and lack of restrictions, status, decision  
| ✓ Strong code of honor and need to avoid public shame  
| ✓ Preserving dignity and saving face is often viewed as more important than preserving projects or saving deals  
| ✓ the group is more important than the individual, relationships are more important than tasks, and honor is more important than efficiency |

| Recommendation | ✓ no standard approach  
| ✓ use less personal space and physical closeness to interlocutors (unless of different gender)  
| ✓ foster affiliative behavior and discourse, cordial and no-hurried relations  
| ✓ need to adapt communication to mood, comfort level, setting, pressures and influences surrounding them  
| ✓ use word pictures and imagery  
| ✓ use of metaphors, proverbs, sayings, symbolic and poetic language is appreciated in traditional, conservative environments  
| ✓ respect for figures of accepted authority, the elderly and the wise  
| ✓ respect social status and social divisions |

| Tips for intercultural communication (Abi-Hashem, 2008) | ✓ Do not use your left hand when greeting, eating, or handling precious items. It is considered personally disrespectful, and a poor manner of conduct in general. Make sure that you use your right hand (not the left) when greeting others and when giving or receiving gifts. Using both hands, however, is even better – this gesture implies warmth and respect.  
| ✓ When sitting among others, keep both of your feet on the floor. Never cross your legs or display the sole of your shoes towards others. |
✔ Exposing the bottom of your shoe is considered very offensive.

✔ Outsiders who are visiting among conservative groups are expected to abide by the local standards of behavior, act in modesty, and respect their customs and code of morality.

✔ Friday is the Muslim Holy Day or office weekend holiday in the Arabic Islamic countries (except for Lebanon). Sunday is a regular working business day.

✔ Dedicated Muslims do not eat pork, drink alcohol, or discuss the female members of their group or clan in public. So, kindly ask before offering any potentially questionable items.

✔ Do not eat or drink in front of Muslims during the month of Ramadan.

✔ The vast majority of Muslims of all persuasions observe the mandate of fasting. It is their special month of prayer, alms giving, and purification.

✔ Business hours are also shortened during Ramadan to facilitate religious preparations and social activities.

✔ Never interrupt devout Muslims during their prayer rituals even if they engage in it five times a day, the required amount of the faithful.

✔ Do not be offended if they have to stop whatever they are doing and seek a quiet place (even in public) to recite their daily ritual prayer.

✔ Westerners, both males and females, should always wear modest clothing when entering Arab Muslim homes, communities, or countries.

✔ Women business travelers are expected to dress modestly at all times...While a hat or scarf is not always required, it is wise to keep a scarf on hand.

✔ Business attire is important when having formal meetings or counseling sessions. This shows respect to the clients and their families, generates trust, and reflects professionalism on the part of the caregiver.

✔ Interruption of meetings is normal. Do not expect rigid formalities or undivided focus when dealing with Arab Middle Easterners, especially in large settings like training sessions, classrooms, home gatherings, etc.

✔ Body language and hand gestures are important. They have different meanings in different societies. Some common American gestures, for instance, have an entirely different meaning in many Arab societies. For example, pointing with one finger toward someone in a meeting is considered impolite. The thumbs up can also be considered offensive.

✔ Some Muslims feel it is inappropriate for unrelated men and women to shake hands. Wait until the other person extends his or her hand before you extend your own.

✔ Before important visits or meetings, it is best to learn the names of people in English that you are going to be with, speak to, or introduce,
so you know how to properly address them. Mispronouncing names or making fun of them because they are different is very inconsiderate and disrespectful. In many parts of the world, names have precise meanings and they do represent the character of persons and families.

- When visiting a traditional community, refrain from wearing their local costume or their traditional clothes right away. People may feel that you are not genuine or authentic, perhaps taking them lightly or making fun of their traditions.

- Do not make jokes about Arab Americans’ way of life or countries of origin, even when they themselves are joking about their culture, politicians, heritage, or lifestyle.

- Avoid discussing hot controversial topics with Arab Muslims and Middle Easterners, like sensitive and core religious values of fundamentalism and radical Islam, Israel, and U.S. policies in the region. Such polarizing subjects can affect your smooth relationship with them, as many Arab-Muslims are highly critical of e.g. U.S. policies in the region and of what they perceive to be “America’s bias and support to Israel”).

- Avoid discussing women with men, especially during early encounters with them. Realize that information about the female members of the family may be considered an internal matter.

- Most Middle Easterners ought to be addressed using a label, title, or surname, but never by their first name alone. If there is no clear label or connotation, like sheikh, uncle, elder, reverend, master, umm (mother of...), about (father of...), etc., then use generic titles like Mr., Mrs., Miss., etc., exactly as Westerners would like to be called when they are overseas. It is common to call the Easterner with a title and their first name as well. This reflects both due respect and personal endearment.

- Most Arabs, Muslims, and Middle Easterners would welcome you at their home repeatedly. They will prepare all the entertainments and meals. Make sure to eat whatever food is presented to you without inappropriate questioning, wondering, or hesitation. Be polite and kind as you decline the many seconds they would keep putting on your plate. Also, during the first visit or two, you may hear a lot of repeated welcoming phrases, mainly the classical one, Ahlan Wa Sahlan. That is their tradition of showing hospitality and expressing their joy for having you. They would feel honored by your visit with them and in turn would like to honor you as their esteemed guest, even though they may be quite poor or live in a humble home. Such warmth should not be mistaken as superficial, flowery, insincere, or cheap talk. On the contrary, hosting you will give them a great source of warmth and satisfaction (Abi-Hashem, 2008, p. 126).
<table>
<thead>
<tr>
<th>Population group: Asian Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication style</strong></td>
</tr>
<tr>
<td><em>(Prashantham, 2008)</em></td>
</tr>
<tr>
<td>✓ Strong family ties (extended family)</td>
</tr>
<tr>
<td>✓ Downplaying of own accomplishments</td>
</tr>
<tr>
<td>✓ Respect for elders, teachers, parents, authorities</td>
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<tr>
<td>✓ Down play crisis possibilities to emerge</td>
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<tr>
<td>✓ Focus on actual experience and avoids taking action, prefers ad-hoc solutions</td>
</tr>
<tr>
<td>✓ Distrusts expert advice during crisis</td>
</tr>
<tr>
<td>✓ Holistic thinking and decision-making</td>
</tr>
<tr>
<td>✓ High diversity and multilinguals</td>
</tr>
<tr>
<td>✓ Diet – dominantly vegetarian</td>
</tr>
<tr>
<td>✓ Traditional patriarchal society</td>
</tr>
<tr>
<td>✓ Crossing one’s leg, exposing the soles of one’s shoes, or putting hands in one’s pockets are considered offensive and insulting.</td>
</tr>
<tr>
<td>✓ Handshake – mild to weak</td>
</tr>
<tr>
<td>✓ Laughter and giggling – sign of embarrassment and humility</td>
</tr>
<tr>
<td>✓ Asian Indians typically accept help from family and friends only</td>
</tr>
<tr>
<td>✓ Attitude when present can be an impediment and needs to be addressed</td>
</tr>
<tr>
<td>✓ Asian Indians are typically willing to take on responsibility for relatives outside the nuclear family. This can be a resiliency factor</td>
</tr>
<tr>
<td>✓ Elements of trust or distrust in the governmental machinery and bureaucracy can influence attitudes, expectations, and acceptance of help and responsibility</td>
</tr>
<tr>
<td>✓ Underlying belief in karma could lead to quicker acceptance of the inevitable and less desire to challenge and fight</td>
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<thead>
<tr>
<th><strong>Recommendation</strong></th>
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<tbody>
<tr>
<td>✓ Provide cultural immersion training before actual interventions <em>(Prashantham, 2008)</em></td>
</tr>
<tr>
<td>✓ Communication through family representatives is preferred</td>
</tr>
<tr>
<td>✓ Non-verbal communication, especially through eyes and face is an important characteristic (what words fail to convey is told through gestures and body movements)</td>
</tr>
<tr>
<td>✓ Physical touching - not so common</td>
</tr>
<tr>
<td>✓ When gesturing, make sure to use palms facing down as palms facing up are considered disrespectful</td>
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</tbody>
</table>
Avoid giving and receiving objects with left hand (used for cleaning body parts)
Not looking at the addressee – sign of respect
Amulets not to be removed

Population group: Chinese Americans and Chinese Europeans

Communication style
- Stress on family bonds and unity
- Control over strong emotions (possibly generating somatization of emotional problems during crisis and disaster situations)
- Low assertiveness is positively valued
- External locus of control
- The collectivistic culture promotes an interdependent construction of the self
- Task oriented approaches to solving problems
- Any disruption to the social harmony is considered a loss of face, a shame trigger
- Interpersonal relations tend to be hierarchical with very strong respect and loyalty toward elders and authority
- Prefer to receive instructions and recommendations from figures of authority rather than be invited to contribute to finding solutions

Recommendation
- Communicate with the help of acknowledged figures of authority within the community
- Focus messages on community resilience and wellbeing
- Use a restrained tone and style
- Use task oriented communication
### CHAPTER THREE: Case Studies

<table>
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<tr>
<th>Core research questions</th>
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<tr>
<td>Which are the key elements from a cultural and communicational point of view as seen through the case studies?</td>
<td>Which are the cultural particularities and vulnerabilities that have influenced each event presented in the case studies?</td>
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<tr>
<td></td>
<td>What was specific to the way in which the population was informed about the situation and the consequences and effects of the disaster?</td>
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<td></td>
<td>Which were the instruments used by managers (governments, NGOs and so on) to communicate the risks to population?</td>
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<td>Which were the significant mutations considered by the international environment to be lessons learned?</td>
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</table>
1. Analyzing Risk Communication via Case Studies

The case studies analyzed in this chapter, namely the Fukushima man-made disaster and the Haiti natural disaster, cannot be considered lessons learned in terms of communication systems in case of disaster, nor communication models to be followed, but one can consider, taking into consideration their causes, effects and amplitude, that they have the potential of offering an overall image of the complex communication patterns between different social, economic, geographic, historic variables, which can influence both the capacity to manage and prevent disasters. Even though the both examples are non-European, because Europe has not been stroke by a disaster of such magnitude in the recent years, one could consider them to be a point of reflection of what happened there and may be prevented from happening again, in a different area.

*It calls for more dedicated action to tackle underlying disaster risk drivers such as the consequences of poverty and inequality, climate change and variability, unplanned and rapid urbanization, poor land management and compounding factors such as demographic change, weak institutional arrangements, non-risk informed policies…* (Wahlström, 2015).

The literature review in this particular domain, focused on reports, research papers, analysis of a rich casuistry of international disasters has emphasized that there is no single model because a model is a simplification and an approximation of certain aspects of the world, but different models shaped by culture, geography and history, type of disaster and its magnitude.

The two disasters analyzed in the study case provide a different point of view, considering their different typology, magnitude and geographical positioning:

1. Haiti earthquake-2010
2. The collapse of the nuclear plant, Fukushima, Japan, 2011

As it is shown further in the paper, among the causes of these disasters, analyzed from the perspective of vulnerabilities, capacities, and way to adjust to hazardous events, we can mention the following, that may apply to all kinds of disasters, not only these two (in terms of typology):

- **Lack of leadership**: Those running organizations fail to give adequate direction to staff or set an example and instill an ethos and culture that emphasizes the importance of avoiding failure and learning from mistakes.

- **Inadequate training**: There is a reluctance to commit the necessary resources/time/cost to ensure response capacity and capability. Too many people have not been given the necessary skills to ensure an effective and competent response, to enable an organization to resource a protracted incident.
✓ **Failure to assume responsibility - at all levels**: The drive for multiagency teams can give rise to a lack of clarity as to individual and organizational roles.

✓ **Complexity of response structures**: There is a lack of understanding about where individuals and organizations outside the blue light services actually fit into the response structure. It is not just the structures that are the problem, but the lack of skills of the staff who work within those structures.

✓ **Inadequate communication between stakeholders**: Both within organizations and between organizations – from the very top to the bottom of the organization people need clarity about what they should be doing and why. They also need the appropriate means of communicating, and, during a response, the system must be capable of dealing with the surge of related activity.

✓ **Blame culture**: There is a tendency to look for fault. The absence of a ‘no blame’ culture discourages near miss reporting and candor regarding potential vulnerabilities and failings. This seriously diminishes the effectiveness of organizations and their ability to learn lessons from incidents.

✓ **Failure to learn lessons**: There are numerous examples of inquiry reports identifying previous incidents where lessons were identified and recommendations made but not acted upon. Reasons include the absence of monitoring and feedback mechanisms or there is no organizational incentive to seek out and implement necessary changes.

✓ **Monitoring and auditing**: There is a need to proactively monitor and audit recommendations and report on them, and there must be a mechanism to track them to conclusion.

✓ **New legislation**: There have been a number of recommendations in relation to enacting new legislation to deal with incidents. However, in almost every case the key issue was not a matter of law but poor working practices, inadequate organizational planning, a lack of proper training, which is exacerbated by ineffective communication, and the absence of a system to ensure that lessons were learned and staff taught. There is a lack of rigor in considering how policy should be turned into practice and, in many cases, bureaucratic processes have delayed implementation.

In an interview published in January, 2015, Margareta Wahlström, who served for over seven years as head of the United Nations Office for Disaster Risk Reduction (UNISDR) stated that *development is the key factor in how we create risks for ourselves* (Wahlström, 2015). This statement is the common denominator of the two cases analyzed: the harsh economic development and the PR campaigns in favor of nuclear plants in 70s Japan and over 300 years of
exploitation, slavery, poverty, internal conflicts in Haiti versus the desire for enrichment of the
new business elites.

A report of the Red Cross from January 2013 mentioned the fact that behavior of a few politically
or commercially powerful individuals frequently causes endangerment to or impoverishment of
many others, as is illustrated by seven categories incorporating bad and ugly behaviors and
consequent actions: environmental degradation, discrimination, displacement, impoverishment,
self-seeking public expenditure, denial of access to resources, corruption, siphoning of public
money (Lewis, 2012). A significant proportion of this type of behavior/attitude can be attributed
as causes of disasters in recent years.

It is to be mentioned the fact that the conclusions drawn and ideas expressed in this section of
the deliverable are based on the information provided by the Red Cross report entitled
Beneficiary Communications Evaluation Haiti Earthquake Operation, 2011 and by the report
entitled Lessons from Haiti: Media, Information System and Communities, founded by the Knight
Foundation.

1.1. HAITI Earthquake (Natural Disaster)

**The HAITI case**

<table>
<thead>
<tr>
<th>Main characteristics</th>
<th>Earthquake (natural disaster)</th>
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<tbody>
<tr>
<td>No one has been prepared for a disaster of this magnitude</td>
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<tr>
<th>Cultural Factors</th>
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<tbody>
<tr>
<td>✓ The existence of linguistic and cultural barriers</td>
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<tr>
<td>✓ Unknown social structure</td>
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<tr>
<td>✓ Extreme poverty</td>
</tr>
<tr>
<td>✓ Gender discrimination</td>
</tr>
<tr>
<td>✓ Major issues in political decision-making infrastructure</td>
</tr>
<tr>
<td>✓ Customs and religious norms, traditions of the cult voodoo</td>
</tr>
<tr>
<td>✓ Historical heritage (slavery, colonization, exploitation) and cognitive patterns and beliefs have multiplied the effort of efficiently managing the disaster, as well as impacted the process of vertical, horizontal and media communication</td>
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**Short Description**

The Haiti earthquake in 2010 had the catastrophic magnitude of 7.0 Mw earthquake, with an
epicenter near the town of Léogâne (Ouest Department), approximately 25 kilometers (16 mi)
west of Port-au-Prince, Haiti’s capital. The earthquake occurred at 16:53 local time (21:53 UTC)
on Tuesday, 12 January 2010. By 24 January, at least 52 aftershocks measuring 4.5 or greater had
been recorded. The International Federation of Red Cross and Red Crescent Societies estimated that as many as 3 million people had been affected by the quake. Death toll estimates range from 100,000 to about 160,000. Haitian government figures, which range from 220,000 to 316,000 have been widely characterized as deliberately inflated by the Haitian government. The government of Haiti estimated that 250,000 residences and 30,000 commercial buildings had collapsed or were severely damaged.

In September 2010 there were over one million refugees still living in tents, and the humanitarian situation was characterized as still being in the emergency phase, according to the Apostolic Nuncio to Haiti, Archbishop Bernard Auza. He went on to say that the number was rising instead of diminishing, and reported that the state had decided to first rebuild downtown Port-au-Prince and a new government center, but reconstruction had not yet begun.

In October 2010, Refugees International (independent humanitarian organization) characterized the aid agencies as dysfunctional and inexperienced saying, The people of Haiti are still living in a state of emergency, with a humanitarian response that appears paralyzed (Al Jazeera, 7 October, 2010). It was reported that gang leaders and land owners were intimidating the displaced and that sexual, domestic, and gang violence in and around the camps was rising. They claimed that rape of Haitian women and girls who had been living in camps since the January earthquake was increasing, in part, because the United Nations wasn't doing enough to protect them.

Also in October, according to the media sources (Al Jazeera, 31 December, 2010) a cholera epidemic broke out, probably introduced by foreign aid workers. By the end of 2010, the total number of cholera infections has soared to 150,000 (Al Jazeera, 31 December, 2010).

As mentioned before, the following section is based on the results of the Red Cross report and the report founded by the Knight Foundation, which examined how the Haitian society tried to manage the crisis generated by the 2010 earthquake, in terms of communication. Thus, after the population was interviewed post-disaster, it has resulted that in Haiti were mainly used the following communication instruments:

1. **Text message-communicating with millions of people by pressing just one button**

The SMS method was adopted in the early stages of the humanitarian operation, being considered the main channel for sharing information with the public. A partnership developed between the company Trilogy International Partners and the International Red Cross and Red Crescent Movement has enabled sending over 45 million text messages since January 2010.

In order to establish the efficiency of this communication method a survey regarding the methods used by the disaster managers to communicate with the public opinion was conducted after which almost 25% of respondents said that they have received text messages from humanitarian organizations. It is interesting the fact that only half of them really owned a Voila mobile phone.
(also known as a gsm terminal), which indicates that the text messages were sent further after they were received. In the same context, 95% of respondents agreed that the information provided was useful, and 90% said they had made changes after receiving information. Citizens have particularly appreciated information regarding climate conditions, saying that they do not receive this kind of information through the media and emphasizing, at the same time, the need for a partnership between the communication with beneficiaries program and the disaster management program. Even when coverage was down, messages could be queued and then sent when access returned. The first usage was informal, the Knight (2015) report states, with local journalists receiving pleas for help or reports from the ground. But local service provider Digicel, collaborating with non-profit InSTEDD, set up a dedicated, free short code service at the number 4636, which was up and running four days after the quake and allowed Haitians to text in reports and even requests for emergency help — even as the system was used by the Thomson Reuters Foundation to broadcast basic shelter, hygiene and security alerts to roughly 26,000 subscribers.

Across the Atlantic, SMS messages were also playing a very important relief role: raising money. SMS was widely used by the Red Cross and other organizations in the United States to spur convenient giving, helping raise $30 million in the 10 days after the earthquake. In fact, more people donated via text messaging (14 percent) than telephone (12 percent) or e-mail (5 percent).

2. Radio waves: Radyo Kwa Wouj

Globally, the radio is being recognized as one of the most accessible means of communication. It allows two-way dialogue (which means that the citizens have the possibility to directly address questions or issues to the beneficiaries and receive an answer in real time) and it can overcome problems regarding the level of literacy of the citizens. On July 14, 2010, the program Radyo Kwa Wouj, was been launched which transmitted from the IFCR base from Port-au-Prince, through the Radio 1 network. Since then, more than 60 such programs were launched, providing their listeners with practical and useful information, citizens being able to call and to receive answers to questions asked on air. The format of the show is familiar with the listeners, therefore it has generated a high number of loyal listeners.

3. A personal response: the implementation of a call center

A key point of the Haitian communication with beneficiaries program was and still is represented by granting them the opportunity to ask questions about the services available to them. For example, in 2010 was reached an agreement between the Red Cross and Noula, a call center in Haiti, to answer and record questions and complaints from the residents of the Annex camp, Marie, who received aid from the department of offering shelter. The assessment carried out
showed that 85% of the respondents were satisfied with the services provided by Noula and have greatly appreciated the opportunity to ask questions.

4. The free phone call *733 for more information

A free telephone line for information was established a few months after the earthquake, and at the end of 2010, the line *733 had received 877,000 calls from citizens who requested information regarding hygiene norms, cholera, preparations for a possible hurricane, gender-based violence and shelter. This service became operational after text messages were sent to citizens to inform them about the establishment of this line, thus the method via text message worked and proved to be effective. According to the authors of Humanitarian Innovation Fund. Case Study Mobile Technology: listening to the voice of Haitians (2015), due to the increased level of illiteracy, long text messages that requested feedback from the receiver were not a success. In this context, it was felt the need of developing a technology capable to transcend both the illiteracy barriers and the cultural difficulties regarding the use of text messages. Thus, there was developed “an IVR (Interactive Voice Response) system on a free phone line (Telefon Kwa Wouj/ short code *733) that both broadcasts information and receive feedback. Users were able to phone and select pre-recorded information using the mobile phone keypad, and/or give responses to an automated voice survey by selecting a multiple choice option via the keypad.

5. Visibility: the power of posters and information panels

One of the most traditional methods of engaging the community is the use of posters and information panels. These were used not only in the Haitian operation in order to provide important information on the status of the program implementation (for example, the selection criteria), but also in the case of cholera epidemic. However, only 5.5% of those surveyed said they received information through posters, therefore, they should be used for specific purposes and they must be linked to other media means.

6. Community mobilization and ads

Citizens appreciate most the oral and face-to-face communication. Over 44% of the citizens said that they have received information through the community workers, and 35% of them appreciated that this is the communication method they prefer. However, the method is quite expensive and covers a small group of citizens, thus it should be used along with other methods in order to cover larger areas, such as text messages or sound trucks. In Haiti three innovative practices were, in particular, tested: broadcasting crisis information with SMS, crowdsourcing data into actionable information, and using open mapping tools to meet humanitarian needs.
According to Michael Morisy who cites a Knight Report (A year later, lessons for the media from the Haiti earthquake response, Jan. 11, 2011) the use of crowdsourced emergency information hit a turning point, helping inform real-time decision-making, especially through the Haitian diaspora who acted as a cultural equalizer in the sense that all the data gathered from the Haitians, were translated from Creole, French, and Spanish into English and sent to the most appropriate aid organizations and U.S. Marine.

In most previous efforts, information was collected mostly to understand when, where and why events were occurring. It had been relatively rare for such information to be useful for actual response to a specific problem” the report states. “In Haiti, by contrast, limited numbers of humanitarian responders attempted to include crowdsourced information to help form their decisions about where to respond, to send search-and rescue teams, to identify collapsed structures and to deliver resources. While these efforts were not systemic in nature, they were nonetheless groundbreaking. (Knight Report, Authors: Anne Nelson, Ivan Sigal, Dean Zambrano Lessons from Haiti: Media, Information System and Communities, 2011). In fact one of the most powerful tool in disaster relief was the use of crowdsourcing Open Maps (see for more details Knight Report, 2011, p.18)

The weak link of this communication with beneficiaries program is represented by the way in which people use the information received. In other words, any communication model must be flexible and able to adapt to the necessities of the communication beneficiary. In the Haiti case, some cultural barriers, such as literacy, linguistic differences, technological culture, have determined for those who were involved in the post-disaster management activities a permanent need to adapt and improve the communication processes used. Within the communities characterized by an increased level of cohesion, information was shared and, in this way, the message sent proved its efficiency. Massive destructions have induced in the Haitians’ head a constant need for information and for someone to ensure that they are being protected. The need for practical, actualized information has been also translated by the fact that the dissemination of information by any other transmitter was perceived as a proof of respect and has caused a reciprocal reaction. On the other hand, the involvement of different entities, from NGOs, IGOs, armed forces to private companies, caused difficulties in knowing for sure which entity you may address in order to find out a specific information and which entity you can submit certain information, who has the responsibility to solve a reported situation. According to a study conducted by the Red Cross (Beneficiary Communications Evaluation Haiti Earthquake Operation 2011, http://www.ifrc.org/Global/Publications/disasters/reports/IFRC-Haiti-Beneficiary-Communications-Evaluation-EN.pdf) Haitians have reacted positively and the communication of vital information has been efficient through face-to-face methods. The presence of personnel with responsibilities in managing the crisis in ground zero areas induces confidence and trust, facilitating the communication processes and, at the same time, increasing the efficiency of the management disaster efforts.
In general, in all disaster cases is preferred a communication method based on two-way communication relationship between the beneficiaries and the citizens.

**Lessons Learned**

The management of the situation created by the Haiti earthquake has proven the need for implementing a two-way communication pattern, able to provide citizens with the possibility to communicate to those persons with responsibility to manage crisis situations, their purpose being to ensure that both the needs and opinions of the citizens are represented in the state-recovery process.

Taking into consideration the lessons learned from the operation conducted after the tsunami that hit Asia, taken as a reference for our example, the two-way communication has been improved in Haiti through the use of new instruments and technologies to open a dialogue between citizens and beneficiaries, covering in this manner an increased number of persons, faster communication and more efficient in terms of costs.

The program to communicate with beneficiaries gave a special importance to identifying new channels to inform citizens, traditionally carried out through posters. The communication with beneficiaries has multiple advantages for a humanitarian operation. The Red Cross report (Beneficiary Communications Evaluation Haiti Earthquake Operation 2011, [http://www.ifrc.org/Global/Publications/disasters/reports/IFRC-Haiti-Beneficiary-Communications-Evaluation-EN.pdf](http://www.ifrc.org/Global/Publications/disasters/reports/IFRC-Haiti-Beneficiary-Communications-Evaluation-EN.pdf)) has said that the operation assigned to the Haitian earthquake has changed the way in which the organization used to communicate with the beneficiaries by allocating resources to develop a communication with beneficiaries program, that uses the latest technology, taking into account the fact that the favorite methods used in Haiti to share information with the public are the radio and the speeches delivered by state representatives. In the areas where the level of social cohesion is high, information was widely transmitted and disseminated within a community, thereby increasing the possibility of spreading the messages.

In Haiti, women and people aged above 50 years had less access to information, therefore there was a need for an extra effort in order to spread the news within these groups through communication campaigns.

Those under 25 years are the main users of new technologies. However, there were some difficulties in terms of access to information, the main factors being represented by the level of literacy of each person or the location of each individual. The key in choosing the areas where to disseminate the information in the Haiti earthquake case was the access to electricity aspect (because is the main factor that influences the usefulness and efficiency of mobile phones and other technological devices), that must be understood and taken into consideration in the
planning process of any prevention or post disaster communication campaign. Depending on the level of access to electricity, there have been used different channels for disseminating vital information to the beneficiary population.

Citizens, regardless of their level of education or economic-social welfare status, want reliable information regarding the status quo, risks, dangers, what they are supposed to do, how they can protect themselves or how they can help, no matter if the news is good or bad. As the analysis conducted by the Red Cross and other institutions/organizations present in Haiti after the disaster has revealed, the lack of coherent information regarding humanitarian activities conducted in those areas struck by the disaster, provided by safe and reliable sources, leads to the spreading of rumors and, with it, to the establishment of a general sense of panic and confusion. In other words, as mentioned above, the large number of institutions, organizations, entities and nations involved in post-disaster activities, due to the incapacity of the Haitian authorities to assume the responsibility to manage the disaster (because many of the governmental representatives died in the disaster, the majority of the governmental buildings were destroyed, the governmental communication channels were disrupted, etc), Haitians have reacted positively and the communication of vital information has been efficient through face-to-face methods. The presence of personnel with responsibilities in managing the crisis in ground zero areas induces confidence and trust, facilitating the communication processes and, at the same time, increasing the efficiency of the management disaster efforts, that may, sometimes, propagate through social imitation.

The communication in case of disaster should take into consideration two key-factors: the increased importance of the principle regarding the responsibility of beneficiaries in providing humanitarian aid and the technological developments, that allowed information to travel faster and in more places at once. The communication between beneficiaries and the affected population requires complex communication capabilities.

Specific elements of Haiti lesson:

- empowering citizens by facilitating the opportunity to provide feedback. The process of redefining risk communication programs should be based on the feedback of beneficiaries, thus including in this programs policies and so on, not just opinions and needs, but also cultural specificities of the beneficiaries;
- the scarcity and inefficiency of the use of some communication channels that may seem, at first glance, especially from a Western perspective, effective - radio, posters, text message. Even though the message was considered to be an effective mean of communication, this was the case for certain social categories and certain communities,

Lots of disaster literature shows that panic is a myth and most people react in pro social ways during a disaster. See for eg: https://www.atsdr.cdc.gov/emergency_response/common_misconceptions.pdf
aspect that highlights the difficulty in establishing one unique communication model – what is effective in one area, may not be in another one. In Haiti, depending on the stage of the post-disaster management, the radio and mobile phone were as efficient as posters were. But when electricity is gone, any technological device is difficult to use because they all function on battery that is alimented by electricity. Thus, it can be said that the process of delivering information is affected by the lack of electricity in some areas, as well as by the low level of literacy of the population. These things emphasize the need to create campaigns that combine traditional methods with new technologies;

- a growing need for sharing strategic guidelines and good practices, for an innovative, flexible, out of the box approach, for developing cultural competences and intelligence of the personnel involved in managing conflicts and in elaborating post-conflict communication strategies.

In Haiti, before the disaster, radio was the main channel used for sharing information. But the Haiti earthquake served as a powerful reminder of the dual role — both documenting and aiding — that news organizations can play in a crisis. Journalists often played an important role in not just documenting the damage and recovery, but in connecting local communities with information when traditional lines of communication, as the main channel—radio, were severely disrupted.

Crisis communication management must take into consideration not only the contextualization of the needs, but also the availability of financial and material resources, as key-factors of the communication process.

Delivering information and communication can directly influence the living standards of citizens and can even save lives. They are a helpful tool as important as material goods, and this aspect is demonstrated by programs implemented to make preparations for disasters, to promote hygiene norms and to give psychological support.

Any project in the field of two-way communication must take into account certain cultural and psychological aspects, such as personal interest, the credibility of the speaker and knowledge of the available communication channels.

Concluding the Haiti study case, rescue and assistance operations conducted after the Haiti earthquake have changed the way of communication with the beneficiaries of the assistance programs for natural disasters, as it can be seen in the table below, which presents the main results of the research conducted upon the Haitian earthquake.
Main findings derived from HAITI case

- One important element in the case of Haiti (which can be translated into a lesson learned) regards the institutional involvement at a multi-national level and the necessity for an integrated response management force.

- Furthermore, the post-disaster, post-relief and post-reconstruction reports of NGOs and governmental institutions have revealed the fact that there is a growing need for sharing strategic guidelines and good practices, for an innovative, flexible, out of the box approach, for developing cultural competencies and intelligence of the personnel involved in managing conflicts and in elaborating post-conflict communication strategies. Depending on the magnitude of the disaster and the cultural factors that influence the perception, attitudes and behavior of the community a fundamental element for successful communication is an efficient management of the emotional stress: of the disseminator, of the target audience and of those involved in the relief actions. In elaborating communication strategies post-crisis, the situational awareness of stressors must be maintained, as it affects responders in catastrophic events.

- Human dynamics affect how we respond to disasters. The importance of understanding the cultural environment that you are going into when responding to a disaster.

- The extent to which the public receives the communicated message and modifies its attitude and behavior toward the risk/disaster recovery periods is influenced by various factors that encompass a strong historical determinant:
  - Cultural factors, such as: culture, subculture, social class;
  - Social factors, which include: reference groups, family, role and status;
  - Personal factors, referring mainly to: age and stage in the social development, job, lifestyle, economic circumstances, personality and self-image;
  - Psychological factors: motivation, perception, learning, beliefs and attitudes (Koller and Armstrong, 2014).

- The communication means in crisis/disaster situation has dramatically changed in the last decade (mobile communications, eyewitnesses in the area posting photos and information from their cell phones, social networking channels, crowdsourced monitoring network, street-by-street mapping).

- Journalists no longer play the lead role in conveying information/communicating in crisis situations, as they have become rather the missing link between various communities, stakeholders, etc. **Journalists have shifted from their social role of**
informing the public opinion to the one of collecting feedback from the population and transforming it into an alert signal for the authorities.

- There has been **an increase in the level of trust people place into unverified sources**, but that can offer information in real-time. The need to be informed has exceeded the need for accuracy.
- **Bidirectional communication is preferred**: the feedback from the target audience is received and integrated in real time in policies and actions.
- The governmental and non-governmental institutions conceive their communication strategies by using **multiple channels**, taking into account potential technical issues, as well as cultural and economic particularities of the target audience (technological readiness, electric/IT/imagery infrastructure, rate of literacy, impact of written message versus impact of audio message, age structure, poverty rate, access to modern technology, etc.);
- **In post-disaster period, the culture of building trust is fundamental** in the process of communication, similar to how promoting safety culture is in preventing disasters.

### 1.2. Fukushima - Japan 2011 (Manmade Disaster)

**The Fukushima case**

<table>
<thead>
<tr>
<th>Main characteristics</th>
<th>Earthquake (natural disaster)</th>
<th>No one has been prepared for a disaster of this magnitude</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cultural Factors</strong></td>
<td></td>
<td>✅ different risk perceptions (in Japanese society)</td>
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<td></td>
<td></td>
<td>✅ an ideology of consumerism</td>
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<td></td>
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<td>✅ official narratives that tried to build confidence regardless of the realities of the risks and threats</td>
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<tr>
<td></td>
<td></td>
<td>✅ a profound specificity in the influence of cultural factors, cognitive patterns, axiological and behavioral schemata</td>
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<td></td>
<td></td>
<td>✅ an ancient culture of trust destroyed by the realities of the disaster</td>
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**Short Description**

The March 11, 2011, Great East Japan Earthquake and tsunami sparked a humanitarian disaster in northeastern Japan and initiated a severe nuclear accident at the Fukushima Daiichi nuclear plant. Three of the six reactors at the plant sustained severe core damage and released hydrogen and radioactive materials. The explosion of the released hydrogen, damaged three reactor buildings and impeded onsite emergency response efforts.
The accident at the Fukushima Daiichi nuclear plant was initiated by the March 11, 2011, Great East Japan Earthquake and tsunami. The earthquake knocked out offsite AC power to the plant and the tsunami inundated portions of the plant site. Flooding of critical plant equipment resulted in the extended loss of onsite AC and DC power with the consequent loss of reactor monitoring, control, and cooling functions in multiple units. Three reactors sustained severe core damage (Units 1, 2, and 3); three reactor buildings were damaged by hydrogen explosions (Units 1, 3, and 4); and offsite releases of radioactive materials contaminated land in Fukushima and several neighboring prefectures. The accident prompted widespread evacuations of local populations and distress of the Japanese citizenry, large economic losses, and the eventual shutdown of all nuclear power plants in Japan.

Personnel at the Fukushima Daiichi plant responded with courage and resilience during the accident in the face of harsh circumstances; their actions likely reduced the severity of the accident and the magnitude of offsite radioactive material releases.

After the nuclear accident three investigations were conducted - one led by the Japanese government (The National Diet’s Report- Report on the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission (NAIIC) Nuke Info Tokyo No. 150), one led by an independent group consisting of Japanese experts – Fukushima Nuclear Accident Independent Investigation Commission, and one led by the Carnegie Endowment for International Peace group in order to establish if this event could have been prevented or not.

It has been concluded that this disaster was caused by man (man-made disaster), even if the disaster occurred after some natural events – earthquake and tsunami.

The conclusions of the analysis conducted upon the reports of the previously mentioned investigations (The National Diet’s Report) showed that a crisis management has three essential pillars: emergency preparedness, how to lead/management style and communication. As an example for preparedness, following the earthquake of 1995, Japan had redesigned its whole rail system, so that after the 2011 earthquake, the system was turned off, saving lives.

The first mistake was that Japan had prepared for an earthquake similar to the one from 1995, without taking into consideration the possibility of a natural phenomenon of a higher intensity. The analysis of several disaster cases shows that, in general, the policies and action plans developed as a result of disasters tend to minimize the identified vulnerabilities, without taking into account the existence of other vulnerabilities that, by joining other hazard events, may increase the risk. Thus, the earthquake from 2011 did not only cause a tsunami that damaged one of the nuclear reactors of Daichii nuclear power plant, but also blocked the access of the entire power plant to the electricity sources needed to cool the reactors (the generators were damaged by the tsunami).
A study conducted by Professor J. Mark Ramseyer (Why Power Companies Build Nuclear Reactors on Fault Lines: The Case of Japan, 2011), Harvard Law School, highlights that this event could have been anticipated, due to the fact that earthquakes of high intensity hit the northeastern coast of Japan every 100 years, each causing a tsunami. The last tsunami, the one from 1993, was equally strong as the 2011 one. Robert Mayer (Lessons in Leadership from the Fukushima Nuclear Disaster, University of Pennsylvania), co-director of the Risk Management and Decision Processes Center, indicates that this pattern has been known since antiquity. The literature specific to disaster domain shows that, in general, the areas/states constantly affected by extreme natural phenomena develop well-established policies, networks and action plans. However, they tend to remain anchored in a classical pattern, and are traditionally implemented, without ensuring that they have also developed policies and plans for the worst case scenario, promoting an out-of-the-box way of thinking.

In the case of Japan, leaders were not prepared to manage the damages of a tsunami caused by an earthquake and they did not take into consideration the cumulative effects of these two natural phenomena on the nuclear power plant, as well as on the cooling system of reactors. In fact, all the disaster plans in case of an earthquake were built upon the Kobe (IGEL Special Report, Knowledge Wharton, 2013) case (a 7.2 magnitude on Richter scale earthquake, without any other natural or man-made variables that might have been affect the effects of the earthquake). Fukushima disaster fundamental causes are to be found in the ingrained conventions of Japanese culture: our reflexive obedience; our reluctance to question authority; our devotion to 'sticking with the program'; our groupism; and our insularity Kiyoshi Kurokawa (cited in IGEL, Knowledge Wharton, Special Report Disaster, Leadership and Rebuilding-Tough Lessons from Japan and the US).

Not only the disaster was a man-made but, as Kenichi Shimomura, former deputy director general for public relations and chief spokesman for Japan’s prime minister during the crises affirmed (Introduction to The official Report of the FNAIIC – Fukushima Nuclear Accident Independent Investigation Commission, The National Diet) it was a MADE in Japan disaster: “Its[Fukushima disaster ]fundamental causes are to be found in the ingrained conventions of Japanese culture. Our reflexive obedience, our reluctance to question authority our devotion to 'sticking with the program'; our groupism and our insularity.” The official Report of the FNAIIC : it was “a profoundly manmade disaster that could and should have been foreseen and prevented” (2011, p.9).The leaders of Tokyo Electric Power Company have built reactors in an area with high risk, then they used governmental regulations in order to avoid having to prepare for the inevitable. Moreover, political leaders did not have the training necessary to manage this kind of crisis and reduce the damages.

The ‘worst case scenario’ with regards to the functioning of the Fukushima Daichii nuclear power plant was not taken into consideration, because after the nuclear attacks on Hiroshima and Nagasaki, the Japanese leaders launched a campaign to persuade the public opinion that nuclear
power plants are safe and that there is no risk for a power plant not to function optimally. Thus, over the years, an entire culture was developed in this domain, the subject becoming a taboo. So, in order not to create panic among the population, leaders have ignored the ‘worst case scenarios’. Moreover, when the nuclear power station was built, the public opinion was against the use of nuclear energy, which is why the construction of the power plant was delayed. First commissioned in 1971, the plant consists of six boiling water reactors (BWR). These light water reactors drove electrical generators with a combined power of 4.7 GWe, making Fukushima Daiichi one of the 15 largest nuclear power stations in the world. Fukushima was the first nuclear plant to be designed, constructed and run in conjunction with General Electric, Boise, and Tokyo Electric Power Company (TEPCO). Due to the fact that political and economic decision-makers were supporters of nuclear power, this kind of scenario was not taken into account in order to avoid raising any suspicions among the opposition, who would certainly have opposed the construction of the reactors. The investments made by Japan in its nuclear infrastructure are rooted in the technological boom of the last century, when Japan’s need for energy sources increased proportionally to the technological development. In the same time, the oil crisis of the 1970s caused Japan, a hyper-industrialized country, to focus on other types of energy (FNAIIC Report 2012, The Fukushima Nuclear Accident and Crisis Management 2012, Report of the Independent Investigation Commission on the Fukushima Nuclear Accident 2012)

Japan’s investments in nuclear power were the result of three obsessions: the isolation of the 19th century, possibly due to its geographical position, the lack of natural and energy resources and the food security of the country. The National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission wrote in 2012 at page 12 of its report that the Fukushima disaster “was the result of collusion between the government, the regulators and TEPCO, and the lack of governance”

Japan, in its desire to make the transition from a state with a strong need for reconstruction and redefinition to an emergent world economic power, has ignored any alternative scenarios that could have slowed down or affected in one way or another its economic growth. In the case of Fukushima we can speak about a regulatory capture which (according to Dal Bó, 2006; Helm, 2006) refers to the processes by which regulated entities manipulate regulators to put their interests ahead of public interests.

Lessons learned

Even though, through the collective memory and previous historical experiences, the population of Japan was prepared to react in case of natural disaster, the fact that the prevention equations had not considered the man-made disaster variable (nuclear) and how this variable may influence the effects of any other type of disaster, caused an inadequate response of the authorities and the population. For example, the research found that the knowledge and
previous experience of tsunamis among the population did not always help save lives during the disaster. In the collective memory, the maximum height of the tsunami would be six meters, and that the wave would arrive 10–15 minutes after the earthquake. Thus, many were taken by surprise when the tsunami arrived: it had a 10–15 meters inundation height and arrived 30–40 minutes after the earthquake. This created many victims among those who had underestimated the height of the tsunami, or assumed that the wave would not come once 15 minutes had elapsed following the earthquake (Reiko Hasegawa 2013 p. 19).

It is commonly assumed that local knowledge and experience are a key factor in reducing the population’s vulnerability in the face of disasters. However, there is research (G. Wachinger, O. Renn, C., Begg, Ch. Kuhlicke 2013, National Research Council 2014) that shows that in the case of the Japanese disaster, previous experience proved to be the key factor in creating their vulnerability.

It can be said, however, that human nature played an important role in terms of lack of preparedness of the decision-makers to manage this kind of crisis. People often have a skeptical view of phenomena that have a low degree of occurring, without taking into consideration the possible devastating effects. From a cultural point of view, Japanese have certain features that can form a credible explanation of a particular behavioral pattern, both before and after the disaster. First, in Japan individual beliefs and values are insignificant in comparison with collective choices, with the community. The traditional ethics promotes self-denial for the good of the community. Moreover, they do not promote an open relationship, based on trust, between the individual and the community, in terms of decisions. Japan has valued for centuries obedience, restraint and sacrifice. Like any other paternalistic society and strongly-centralized state, Japan has always ignored what may be called ‘environmental crisis’, because these crisis always seemed to be less important than the good of the national economy. On the other hand, the increased resilience capacity of Japan comes also from the fact that the hierarchical structure of Japanese society can be a powerful instrument for the mobilization of the nation’s resources at time of national emergency (Ozaki, 1978).

In order to adequately prepare to manage unexpected situations, decision-makers need to overcome cultural prejudices, not to pursue a short-term financial gain and to surpass their own limits and limited experience. One solution to the above-mentioned problems would be to make forecasts not for one year or two, but for a longer period (20 years), because in this way it is easier to identify the developments of certain factors, based on previous records (in this case, factors that lead to earthquakes that may cause tsunamis, places where they hit, frequency, etc.). From a cultural point of view, with a focus on the crisis situation, the lesson learned from the Japanese disaster is that in the middle of chaos, leaders must seek answers, not control, and must seek for innovative and out-of-the box solutions not ‘red tape-ism’. One of the features of
the Japanese culture is the total dependence on authority, on those considered to be hierarchically or socially superior – obedience, as we have already mentioned.

In the case of the 2011 Fukushima nuclear accident, reports (Knowledge Wharton Special report 2013, The Sasakawa Peace Foundation, 2012) showed that the Prime Minister could not manage the situation effectively due to the fact that he did not have the necessary information to make the most reasonable decisions. Once the situation had worsened and the governmental system for answering incidents had not worked, the Prime Minister formed a committee consisting of politicians, advisers and the director of the NISA agency, which included 3 experts in the nuclear domain. However, the committee failed to provide the Prime Minister with the necessary information, thus the PM focused more on what was happening at the nuclear power plant and less on the damage caused by the tsunami to the population.

Moreover, the Prime Minister refused to cooperate with the representatives of TEPCO, an energy company, making decisions on his own. Even though he made the wrong decision, no one within his cabinet dared to challenge his decisions, to suggest proper courses of action or to act independently to manage the situation – this is why the nuclear accident is considered to be ‘made in Japan’ (it is about the Japanese culture, characterized by obedience, and reluctance in defying the authority, etc.).

Things must be considered beyond the details; critical thinking and direct communication should be encouraged and a group consisting of persons who have the most experience in this field should be developed, in order to ensure that the most effective decisions are being made.

In a crisis, leaders must prevent panic and maintain credibility, which requires not only an efficient and professional management of all communication channels, but also a pattern of building an interinstitutional/state networks.

In the Fukushima case, in each stage of the crisis, specialists provided the Prime Minister with various estimates regarding the affected area that needed to be evacuated within 48 hours (there have been given over 5 official evacuation orders from 2.3 km to 30 km). Using their estimates, the political decision-maker adopted a position, different according to each evaluation, and due to the fact that he was not coherent in his decisions and in what he said publicly, he caused citizens to lose their trust in the government, making them believe that the leader of the state is trying to cover up the effects of the accident.

The 11 March disaster shook the very foundation of Japanese society, shattering the idea of a safe and secure society guaranteed by the authorities.

It has been seen, however, that the response of the community varies, depending on the type of disaster: in case of nuclear disaster (technological disaster/man-made), the community is divided, while in the case of natural hazards, the community is united, cooperation becoming the key-word. As a consequence, communication strategies must be developed accordingly.
Apart from the studies and research conducted post-event, Sandman (2012) offers an explanation of this status quo: “A second outrage component is the distinction between risks that are natural and those that are industrial (...) A natural risk is “God’s coercion.” The public is more forgiving of God than it is of regulatory agencies or multinational corporations. We cut slack for God or nature in a way that we do not for agencies or corporations.”

After the first ‘shock waves of a disaster’ within the society, no matter the type and development degree of that society, innovative mechanisms for citizens’ involvement and adaptation were developed.

Developing Japanese NGOs, as a result of the inefficiency of the authorities in their efforts to ensure the security of their citizens meant not only a paradigm shift in the Japanese society, but also a lesson learned for the rest of the world. Normally, NGOs are not included in the standard process of official intervention in case of disaster, but one can consider that NGOs should be considered when developing a risk communication program.

It is quite important that national authorities, along with other institutions, non-governmental organizations and so on, provide citizens with a space for communication, so that they can express their concerns and opinions regarding disasters and their impact. Actually, the existence of these spaces of communication can reduce the OUTRAGE variable in the Sandman equation (2012 - Risk = Hazard + Outrage). The existence of alternative communication channels and especially the implementation of a bidirectional implementation system that includes feedback from beneficiaries can help to reduce certain frustrations of beneficiaries.

Due to the fact that information with regards to the situation generated by the explosion of the nuclear reactors, provided by TEPCO company and by the governmental officials, was not sufficient and comprehensive, groups of citizens formed what may be called civil organizations for measuring radiation, which strictly assessed the level of radiations and where citizens could measure by their own the level of contamination of food or drink, for example, if they considered that the information provided by the authorities were not enough.

These organizations are not regarded as risk communication programs, but rather they represent an example of citizens’ science: ordinary people who practice science and gather data. The main objective of risk communication is to provide the public opinion with information about the type and expected magnitude of the effects caused by a behavior or and exposure.

In the case of the Fukushima disaster, there were very few places where the citizens were able to measure the level of food contamination. Most detectors available at academic laboratories could not be used by the citizens. There were also commercial laboratories, but the costs of the analysis were very high. In this situation, citizens asked for help from charities to obtain funds in order to purchase detectors which they have learned to use by themselves, by participating in workshops organized by non-profit organizations, by reading books, websites and by consulting
detector producers or by cooperating with other CRMO (Citizen Radiation Measuring Organization).

Thus, some CRMOs developed spaces to encourage citizens to communicate with both the employees of the organizations and other citizens (there were also provided spaces for children, to enable parents to have conversations with others). The development of these spaces for communication is very important because people cannot express their own opinions and concerns within the society due to the hegemonic vision which considers that a simple concern about the level of radiations is an act of spreading false rumors. In order to disseminate the available information with the citizens, CRMOs use the media, social networks, websites and meetings.

These organizations use various tools, such as workshops, emails to share information and keep in touch with the public. For example, in the case of the Fukushima nuclear disaster, six such organizations have formed a network in the west of the country and have organized regular meetings (every two months) in order to discuss with citizens about their measurement skills and about those aspects they considered to be worrying in the last months. CRMOs aim to create a space for communication, rather than sharing information and, any such organization should not grant authority to an expert.

**Fukushima showed that citizens did not want to know things that were 100% sure, and could accept uncertainty, as long as things were explained carefully to them. Citizens only wanted to know.**

After the explosion in the first nuclear reactor, TV reporters could not explain what was happening, as the only thing that could be observed was a fine white cloud, which could also represent a cloud of steam. Uncertainty characterized the first 10 days after the tsunami strike caused by the earthquake: the government did not transmit any information, the representatives of TEPCO did not transmit anything, while the science community in Japan did not offer sufficient information to explain what was going on.

One of the journalists that broadcast the events on site contacted specialists from the United States, who explained to him that there had been a hydrogen explosion and that the affected reactors were melting. After broadcasting this information to the public, he was criticized by the public for using the word ‘melting’, as people refused to believe.

After this announcement, most of the channels were broadcasting images from the site of the reactors, in order to inform citizens about what was happening. Only after accessing YouTube, where foreign news channels broadcast images from the site of the reactors, citizens realized how serious the situation was and decided to evacuate the areas affected by the explosion. At the same time, there was a decrease of the trust of the population in the authorities.
Regarding the way in which the public was informed about the Fukushima nuclear accident, the problem was the lack of communication and the lack of information. A week and a half after the incident, the government sent a large volume of information to the mass media, without having a clear message. Thus, although receiving much information, the representatives of the mass media could not understand what the risk was, as few reports knew much on radiation issues. The government continued to send messages to the population that there was no risk, although the established safety limits had been overcome.

Although, at a governmental level, a system for Prediction of Environmental Emergency Dose Information (SPEEDI) existed, which predicted the extent of radiation generated by the explosion of the reactors immediately after it took place, information was transmitted to civil society only two weeks after the event. This led the inhabitants of the area to move towards the contaminated places as opposed to moving away from them.

Apparently, the political leaders in Japan did not know of the existence of this system, and did not send the data necessary to extend the evacuation area – which would have meant they informed about the gravity of the incident and admitted that they were initially wrong.

Whatever reasons politicians might have had to conceal this information, this led to the accentuated erosion of the trust of the population in the political class, as citizens were endangered. The unhappiness and frustrations were manifested also against the scientific community, as these were less than happy to offer information to the public. Moreover, the leaders of the local administration of the areas affected by the radiation argued that rice and fish can be consumed, although these had also been subject to radiation.

Nor was the mass media absolved of any guilt. Masakatsu Ota, a senior editorial writer for the Tokyo-based Kyodo News agency, identified (Science Symposium, University of Tokyo, Nov. 12 to 13, 2012, Panel 2: Communications: How does the media obtain scientific input and translate knowledge and risk to public?) several mistakes made by his colleagues, among which were: the lack of preparedness for covering a large-scale disaster, a certain level of deference in criticizing the information provided by the government and the tendency to repeat official statements when lacking appropriate expertise. Therefore, citizens chose to consult other sources of information: foreign websites and newspapers. In some cases, citizens learned by themselves about the effect of radiation on health. This was the case of Toshio Katsukawa, a management specialist in the fishing industry, who, worried of the effects of radiation on aquatic fauna, undertook documentation on this topic and broadcast the information obtained through social media.

He explained that scientists did not inform the public about things they were not sure about – and nothing was sure immediately after the accident. However, this approach by scientists and government representatives (of hiding important information) had a negative effect on the population. There is an enormous difference between the perception of the population and the
scientific information that is broadcast. Many people do not trust the information that is communicated to them.

According to the aid workers interviewed by the Child Fund Japan in Ofunato City and PBV in Ishinomaki City, both of which assisted evacuees in prefabricated housing units, *evacuees with financial means tended to move out of the temporary shelters quickly as they built their new home* without waiting for financial assistance from the government, whereas *the vulnerable and the marginalized were left behind*. Those with a *strong social network and personal connections also moved out rapidly* as they easily found new job opportunities. Information Technology (IT) literacy is also creating a new disparity. *Evacuees who know how to surf the Internet are able to find more information on the various forms of assistance* offered by the authorities, NGOs and individuals, while those *who are not IT-literate have little access to such information as they rely solely on written material*. In the absence of an effective public service during post-disaster recovery, this disparity is exacerbating the rifts in communities and leaving vulnerable populations in even greater destitution and a state of trauma.

If the trust of the population in officials has been eroded, it is necessary to appeal to foreign recognized experts for expertise and analysis in order to gradually induce the building of culture of trust. The *greatest mistake* made by scientists was that *they attempted to minimize the risks instead of analyzing the degree of general popular unhappiness*. Their main aim was to rebuild the trust of the population in the science community and the representatives of the Japanese state. One way to do so was to employ scientists from abroad. When the representatives of Greenpeace measured the level of radiation close to Fukushima, and their results matched those of the Japanese government, the credibility of the latter increased. Shimomura, former deputy director general for the public relation for the Japan’s prime minister cited in IGEL Knowledge Wharton Report (2013, p5) said “people accused the government of underestimating and playing down the gravity of the situation. It was far from the case. The public tough we were lying or hiding something but we didn’t have the luxury of any certain information to hide”. Shimomura shared a personal lesson driven from the Fukushima disaster, which show that is important “to share information about the whole iceberg, not only of the iceberg”

Moreover, it is important that in these kinds of situations, the scientific community does not attempt to influence the public opinion in order to persuade it to accept the ideas of experts. At the same time, scientists should find efficient ways to cooperate with the mass-media and to identify journalists who will not send a deformed message (a message that was not correctly understood due to the usage of technical terms, or a message that was rewritten in order to disseminate a specific information) to civil society. In the case of the Fukushima accident, both government representatives and scientists attempted to protect the public. They did not desire to cause panic or to let a general state of fear reign, but, in doing so, they sometimes concealed information which led to the spreading of fear to the whole population. In the case of Fukushima, the myth of absolute certainty dominated the policies of the Japanese state and stopped the
implementation of additional safety measures of nuclear power plants, which led to the
government not having any strategy to respond to a nuclear disaster.

After Fukushima the Japanese public has started to question the level of risk that they were
willing to accept and the model of society that they had aspired to prior to the disaster. Though
Japan certainly has both the technical and financial capacities to rebuild the towns affected by
the disaster, the social tensions and divisions created as a result will probably take much longer
to heal. The Fukushima accident fundamentally changed, on a global level, the paradigm of the
usefulness and safety of nuclear plants. Thus, projects meant to improve the nuclear safety
culture began to develop in all countries which possessed nuclear power plants. The term ‘safety
culture’ is generally understood to encompass a set of attitudes and practices that emphasize
safety over competing goals such as production or costs. There is universal acceptance by the
nuclear community that safety culture practices need to be adopted by regulatory bodies and
other organizations that set nuclear power policies; by senior management of organizations
operating nuclear power plants; and by individuals who work in those plants.

Main findings derived from FUKUSHIMA case

- The response of the community varies, depending on the type of disaster: in case of
  nuclear disaster (technological disaster/man-made), the community is divided, while
  in the case of natural hazards, the community is united, cooperation becoming the
  key-word. As a consequence, communication strategies must be developed
  accordingly. Apart from the studies and research conducted post-event, Sandman
  (2012) offers an explanation of this status quo: “A second outrage component is the
  distinction between risks that are natural and those that are industrial (...) A natural
  risk is “God’s coercion.” The public is more forgiving of God than it is of regulatory
  agencies or multinational corporations. We cut slack for God or nature in a way that
  we do not for agencies or corporations.”

- The variations in perceiving risk (between communities, families, age, gender,
  income/family, education) and the influence of official narratives, meant to build up
  these perception during crisis situations, have generated serious difficulties in
  identifying the most efficient strategies of communication post-disaster.

- Emitting, transmitting and especially, receiving messages have been influenced by:
cultural factors, cognitive patterns, axiological and behavioral schemes.

- In what regards the strategic communication, promoting an ideology of consumerism,
in which mass production and economic profit have minimized the level of
preoccupation for environment and individual security, has imposed the need of a revolutionary change.

- Cultural specificities have influenced the way both the population and the responsible institutions understand and relate to the elements necessary for ensuring transparency, dialogue, build social trust and enhance credibility, in order to reduce or even remove uncertainty and sustain the level of trust in the authorities.

- In order to reduce the effects of a natural disaster, societies must build a bidirectional culture of trust: on one hand, the population must invest trust in the state institutions and in all national and international structures with responsibilities in managing crisis and disaster situations, and on the other hand, the state must have trust in its own citizens, in the power of its communities and in the capacity of the population to mobilize itself.

- The dysfunctionalities existent within the institutions responsible with managing disaster situations and the refusal of the executive to appeal to the so-called ‘iron-triangle’ (Paul M. Johnson, 2005): the close and often shady relationships between business executives, bureaucrats, and politicians who use their networks to further their goals, at times circumventing rules and regulations, as well as the inflexibility of formal structure existent within the Japanese society have greatly influenced the development of the disaster. (Hannah Beech, Time, April 4, 2011)

### 2. Conclusions

Pursuant to analyzing the two cases, several interesting aspects were revealed. In case of a disaster, there is no major difference between the citizens of a developed country (welfare, high technology) and the citizens of a poor state. The disaster has the same impact on the individuals and communities, technology and economic resources being mere (fair to admit, very important) means to reduce the negative impact of a disaster and increase the national resilience.

Another important aspect for developing communication strategies pre and post disaster refers to the specificities of each disaster, depending on the perception and behavioral adaptation of the citizens to the disaster. The field research found that the displacements caused by the tsunami and by the nuclear accident had many dissimilar aspects. In particular, the evacuation process, the prospects of return and the related social impacts differ significantly as the displacements were induced by different causes: one is a natural disaster, while the other is an technological (man-made) disaster. It comes down to naturalness versus the ‘social causation’ of disasters: When disasters happen, popular and media interpretations tend to focus on their
naturalness, as in the phrase ‘natural disaster’. The natural hazards that trigger a disaster tend to appear overwhelming.

The **cultural variables**, meaning knowing and understanding the importance of cultural variables, **significantly influence both the prevention component as well as the response force component in case of a disaster**. People’s **exposure to risk** differs according to their education, their class (which affects their income, how they live and where), their access to information and technology, whether they are male or female, what their ethnicity is, what age group they belong to, whether they are disabled or not, their immigration status, and so forth. Disaster risk is a combination of the factors that determine the potential for people to be exposed to particular types of natural/man-made hazard. But it also depends fundamentally on how social systems and their associated power relations impact on different social groups (through their class, gender, ethnicity, etc.)

Concluding the two case studies, one has to mention that disaster managers do not have to be sociologists or anthropologists to understand and appreciate the cultural differences and to accommodate to the different environments in which they operate. A simple way to analyze the reason for which individuals and communities act and react the way they do is to consider the fact that they mostly rely on common sense. Thus, culture can be understood as common sense about what is to be done in each situation.

Cultural differences can exist and can cause problems between adjacent communities. Developing cultural competences in disaster management is a whole process. In order for it to be realized and operationalized, one needs time and sustained effort. Considering that both culture and the nature of a disaster are dynamic, the process of change must include efforts to satisfy the needs of the vulnerable and affected by the disaster.

The following problems, identified by the paper Developing Cultural Competence in Disaster Mental Health Programs: Guiding Principles and Recommendations (DHHS, 2003), can be helpful to understand the process:

- **Cultural competence presupposes the change of the entire system**: it needs to be manifested at each level of the organization, including at the decision-making, administrative and service delivery levels.
- **cultural competence presupposes understanding historical, social and political events**, which affect the mental and physical health of different cultural groups: issues such as racism, discrimination, war, trauma, migration and poverty (which strengthens cultural differences and separate a group from another) need to be considered;
- the precise definitions of the terms race, ethnicity, culture are evasive: as they are social concepts, these terms have multiple significance and these evolve with the passing of time. The definition of culture should be all-encompassing and should include the
concept of race and ethnicity, but also gender, age, language, socio-economic status, sexual orientation, disability, level of education, religious and spiritual practice, individual experiences and values.

- It is important to distinguish between a hazard and a disaster. Strictly speaking, there are no natural disasters, but natural hazards. A disaster represents a situation is affected by the hazard (defined as an event which outmatches the capacity of a community to handle it). In other words, **the impact of a disaster is determined by the degree of vulnerability of a community in front of a hazard. This vulnerability is not natural.** The human dimension of a disaster, which results from a wide range of economic, social, cultural, even psychological and institutional factors is very important, as it affects the living standard of the population and the environment in which they live.

Unfortunately, the level of education and the language are not the only elements of the formula for reducing risk. Understanding the varied conviction and cultural beliefs and the different ways of life inside the communities where each person lives and works is essential and is the key to success among disaster experts. **Concerning disaster preparedness and the attenuation of their effects, disaster managers can take advantage of the opportunity to change cultural convictions or the community’s common sense.** Ideally, this change will take place through the cooperation with respected community leaders. There is the possibility of convincing citizens that some forms of behavior can be modified in order to reduce the level of vulnerability. In contrast to this, help during a disaster is, through its very nature, faster while the main responsibility of the first responder is to act and not to change convictions. Given that local managers (either experienced or without any experience) are those that reach the disaster scene first, a closer attention needs to be paid to pre-disaster planning and training for appropriate response. These local managers can be culturally competent, as they are the representatives of the community, but this must not be left to chance. Still, no matter how professional they are, managers who are dislocated to other communities cannot adequately handle the situation if they do not know details concerning the culture of the communities where they have been temporarily placed.

An efficient management of a crisis situation depends on **anticipating the needs, identifying the problems as they emerge and having the right material and services at the right time.**

Even if each disaster is unique (given that each affects areas characterized by different social, economic and health-related conditions), there are similarities between disasters. If these are identified, these similarities can help optimize the management of the help provided and of the use of resources. Disaster response improves each year, considering the increase in the number of disasters. The lessons learned from the areas affected prove that a factor that can be considered a ‘root cause’ in one set of circumstances may be more of a ‘dynamic pressure’ under different conditions. Many studies in the field of Sociology of disaster focus on the link between social solidarity and the vulnerabilities exposed by disasters. Scholarship in this field has observed
how such events can produce both social solidarity (Barton, 1969; Drabek, 1986; Dynes, 1980) and collective response.

Last but not least, **the individual and collective answers to any kind of disaster are assumed to be rooted primarily in the way individuals think, behave, and interact in the environment.** Disasters that are unexpected, occur suddenly, causing widespread damage, and are understood to be traumatic and associated with a high degree of psychological disturbance (Bolin, 2003; Davidson, 1994; Thoits, 1983) so social, economic inequalities or any individual and social vulnerabilities exponentially exacerbate the effects of a disaster.
CHAPTER FOUR: Introducing D8.2

Considering the main goal of this deliverable (8.1), the authors have primarily focused on the impact of cultural factors on communication in a comprehensive and integrated manner, including various mass-media that currently have the potential of shaping perceptions, attitudes and behaviors in disaster situations. The deliverable has concluded that efficient communication needs to take into account both sociological and cultural factors of the target population and to adopt the most suited communication channel.

Having this conceptual framework as a theoretical reference, our next step, according to the stated aims of deliverable 8.2: *Report on the role of the media in disaster risk communication* is to analyze in a comparative and nuanced manner, the role and impact of different mass media as the main vehicles of transmitting information and handling emotions, perceptions and responses in situations that CARISMAND project addresses. Therefore, theoretical consideration in deliverable 8.1 will be detailed, applied and contextualized to different (old & new) media in an attempt to extract the best lessons learned.

Having the social and socializing role of mass media as the main reference, the deliverable will analyze the relationship between media and other relevant players, which need to be involved in any public interest communication situation. This will reflect itself both in the channel of communication chosen and in the messages that are selected to be transmitted. In addition, while keeping in focus the question “which mass media for which audience(s)?”, the deliverable will also employ relevant case-studies, which allow us to extract European-wide conclusions and recommendations. The following (Table of Contents of D8.2) reflects which the that discuss multiple media channels (including ‘other’ channels such as Youtube, Facebook etc.). D8.1 starts with a general taxonomy and a set of consideration on media and its roles, the subsequent chapter are dedicated exclusively to establishing the features, roles and impact of each category of media (mainstream and new), as they are referenced in the academic literature. The deliverable also focused on establishing through the case study the level of intertextuality between the two kind of media during disaster communication, the circulation of narratives and the impact they hold in setting a public and political agenda.

We recommend that the two deliverables (D8.1 and D8.2) are read together.
Table of Contents of D8.2 Report on the role of the media in disaster risk communication

1. Introduction
   1.1. Institutional framework
   1.2. Theoretical framework
   1.3. Methodology
   1.4. Building on the findings of previous EU financed projects

2. Executive Summary

3. The role of media and new media channels in communicating in case of disaster
   3.1 Taxonomy, state of the art & literature survey
      3.1.1. Mainstream media – TV, radio, news agencies, printed press
      3.1.2. New media – social media (Facebook, Twitter), bookmarking sites (Reddit.com, Dig.com), collaborative projects (Wikipedia), content communities (YouTube, Flickr), social review sites
   3.2 Best practices and lessons learnt in using media and social media for culturally informed communication

4. Media interaction with other actors involved in risk and disaster communication
   4.1 Media and institutions: an analysis of communication strategies and forms of interaction with the media and target population used by actors involved in disaster management
   4.2 Media and NGOs/CSOs communication in case of disaster
   4.3 Best practices and lessons learned

5. Case study – Colectiv
   5.1 Timeline
   5.2 Comparative analysis – functions and roles of media
   5.3 Emotional register of media contents
   5.4 Narratives and intertextuality in media contents
   5.5 Media content and its impact on citizens’ behavior

6. Way forward. Recommendations for the use of media in disaster situations. Which channels for which audience?
APPENDIX A: Annex

TOP DOWN PLANNING OF COMMUNICATION PROCESSES

<table>
<thead>
<tr>
<th>RISK</th>
<th>CRISIS</th>
<th>DISASTER</th>
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<tbody>
<tr>
<td>• available information formats</td>
<td>• organisational culture</td>
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<td>• risk literacy</td>
<td>• tools, capabilities</td>
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<td>• overall cultural context</td>
<td>• communication strategy</td>
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CULTURAL INFORMED COMMUNICATION

- Raising awareness
- Educating behavior
- Warning the public
- Guiding behavior
- Offering support
- Healing trauma

TARGET POPULATION

AGENCY, AUTHORITY, NGO

BOTTOM UP INVOLVEMENT IN COMMUNICATION

- AWARENESS
- PREPAREDNESS
- MITIGATION
- RESPONSE
- RECOVERY
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