



sScience and human factOr for Resilient sociEty

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● Research Problem

CORE contributes to Horizon 2020's focus on secure societies where citizens are facing increasingly threatening situations. It is built on the activities and results of previous and on-going projects and is driven by end-users within the consortium and their wider stakeholder networks. CORE will develop a harmonized vision of crisis management awareness and overcoming, through a transdisciplinary collaboration involving the environmental science and social science communities. In this way, human factors, social, societal, and organizational aspects can be supported by the scientific results obtained in research on environmental and anthropogenic risks.

● How does the research address the problem?

CORE will identify and use best practice and knowledge/learning from certain countries with high levels of risk but where risk awareness is high and will provide optimized actions and solutions to help restructure and rebuild socio-economic structures after a disaster that is essential for the European society. CORE is a multidisciplinary consortium across, and outside Europe established to understand how to define common metrics with respect to the different natural and man-made disaster scenarios, and how to measure, control and mitigate the impact on the populations. Special attention will be given to vulnerable groups: disabled, elderly, poor, as well as women and children. CORE will lead to more efficient policies, governance structures and broad awareness and collaboration among citizens and rescue agencies. Best practices will be identified and reported to policymakers, end-users and disseminated to all stakeholders and NGOs. CORE will devote great attention to education in schools and the training activities are also intended to be an "awareness campaign" for young people about the vulnerability of the weak categories that cannot rely on advanced means of communication and of their importance. The young generation, used to the most advanced technologies, might become a sort of "prevention sentinels".

The overall ambition of the CORE project will be to develop a harmonized vision of DRR, crisis management awareness and capability. There is indeed a need to strengthen disaster resilience at the level of municipalities, Member States and EU agencies, which must consider the diversity of European society, and the variability of human factors.

● Who is involved in the research

	University of Salerno Italy		College of Law and Business Israel
	Institute for Sustainable Society and Innovation Italy		Mto Safety AB Sweden
	Eidgenössische Technische Hochschule Zürich Switzerland		Sixsense Engineering France
	International Institute for Applied Systems Analysis Austria		Euro-Mediterranean Seismological Centre, France
	University of Huddersfield UK		National Authority for Fire & Rescue Israel
	Hanken School of Economics Finland		Italian National Fire Corp Italy
	Saher (Europe) OU Estonia		Italian Red Cross- Branch of Vincenza Italy
	Public Safety Communication Europe Forum Belgium		Joint Office for Environmental sustainability, Italy
	Institut de Science et Ethique France		University of Applied sciences for public service in Bavaria, Germany
			Austrian Red Cross Austria

● Planned Activities

The overall objective of the CORE will be to develop a harmonized vision of crisis management awareness and capability.

The main outputs of the project are mentioned as below.

1. Comparative analysis of natural and manmade disaster case studies.

The project will analyze specific risk of natural and anthropogenic origin including cascade effects. In particular, the project will analyze different disaster scenarios including:

Earthquake

The inclusion of an earthquake scenario is particularly interesting due to the lack of reliable predictability and earthquakes are a prime example of a low probability but high impact disaster. Preparedness is a crucial point to population resilience.

Tsunami

Tsunamis are low probability events but with very high impact. There has been an increase in the occurrence of tsunamis in the recent past. We have included a case study from Japan, 2011 great Tsunami, from which much can be learned with Japan's high levels of risk awareness and associated early warning mechanisms.

Flash Flood

IPCC defines floods as: "the overflowing of the normal confines of a stream or other body of water or the accumulation of water over areas that are not normally submerged. Floods include river (fluvial) floods, flash floods, urban floods, pluvial floods, sewer floods, coastal floods, and glacial lake outburst floods¹³".

Terrorist attack

Terrorism can be defined as violent, criminal acts committed by individuals and/or groups who are inspired by, or associated with, designated foreign or domestic terrorist organizations or nations (state-sponsored).

Industrial accident

Industrial accidents may occur when industrial facilities malfunction during standard operation. They can impact the surrounding environment, also affecting the population and facilities.

2. Report with community resilience strategy.

This output will consist of a comparison of plans and procedures associated with past disaster events of different countries (Italy, Germany, Israel, Japan) to understand people response and identify possible protocols pitfalls. An inclusive approach will be used, taking particular care of typical vulnerable categories. Using the previously identified case studies from previous natural and manmade disasters, to conduct a thorough and in-depth analysis to extract lessons learnt from the perspective of community resilience.

To enable an effective response from affected populations to improve functional organisation in most fragile and vulnerable environments, and to increase the resilience of health services, social services, education, and governance, in line with target (d) of the Sendai Framework on critical infrastructure and disruption of basic services, a community resilience strategy will be developed. resilience strategy. Accordingly, a resilience building-up approach will be developed, a disaster will be simulated, and all phases of the disaster cycle will be considered.

3. Safety culture measurement toolkit

This output is aimed at designing and testing, with an in the field survey, a toolkit to measure how positive or negative safety culture is in the selected (CORE) disaster scenarios. The following groups will be investigated: professional rescuers, rescue managers, volunteering rescuer, public institutions indirectly involved in disasters' management and citizens, the latter will be furtherly categorized according to social vulnerability classifications resulting from previous outputs.

The survey toolkit will cover all factors and aspects informing the safety culture and, also involving practitioners indirectly involved in risk awareness and management, will support the understanding of the safety culture and behaviour related to the impact of management and decisions taken by government on sociopsychology of individuals. Once the toolkit is designed, testing activities will be conducted in demo sites, resulting in a survey whose gathered data will be analysed according to the methodology set in the toolkit, providing an insight of differences in safety culture with respect to different disaster scenarios, among the demo sites/regions, among addressed roles and groups, among the vulnerable categories identified by the project.

4. Tools to fight misinformation in social media on earthquakes

The objective of this work package is to develop and validate the methodological framework to deal with various kinds of relevant for disaster risk reduction information on social media also including disinformation, misinformation, fake news, and videos etc. about disaster risk reduction relevant issues in social media. The methodological framework will target public as users and actors and should be developed in a co-creation approach. The methodological framework will be validated by several communities for educational purposes on the problematic of misinformation, requirements on tools to deal with misinformation and readiness to apply these tools for critical evaluation of misinforming content in social media.

5. CORE legacy

The aim of this output is to develop best practice recommendations for policy makers and municipalities to improve risk perception, contingency planning, disaster preparedness and overall community resilience. These recommendations will be defined according to ethical principles considering the different dimensions of application such as societal, economic, cultural, environmental, and political. In addition to dissemination, the aim is to ensure that the legacy of the project is maintained through consolidated contributions to the project's short, medium, and long-term objectives.

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Funded by



European
Commission

The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

Horizon 2020
European Union funding
for Research & Innovation