

# Building Resilience Amongst Communities in Europe

## Reporting

### Project Information

EMBRACE

Grant agreement ID: 283201

[Project website](#) 

Status  
Closed project

Start date  
1 October 2011

End date  
30 September 2015

Funded under  
FP7-ENVIRONMENT

Overall budget  
€ 4 244 772,98

EU contribution  
€ 3 243 423

Coordinated by  
**UNIVERSITE CATHOLIQUE DE  
LOUVAIN**  
 Belgium

## Final Report Summary - EMBRACE (Building Resilience Amongst Communities in Europe)

### Executive Summary:

The overall aim of the emBRACE project was to build resilience to disasters amongst communities in Europe. To achieve this, it was vital to merge “forces into research knowledge, networking and practices” as “a prerequisite for more coherent scientific approaches”. The consortium involved 11 committed and reputable expert partners from Europe.

The development of the empirical foundations, required intense interdisciplinary collaboration. This process started with the initial identification of framework elements through a focussed, systematic literature review, which incorporated searches of both academic and grey literature. The elements were then integrated into a series of domain-based schematics which served to provide a structured understanding of how the process of community disaster resilience operates. The initial framework was then used to guide the project’s initial case-study based fieldwork. Repeated feedback cycles involving inputs from the on-going multi-site fieldwork and from the project’s External Advisory Group did lead to an understanding that this would not be the framework’s final iteration. In order to make best use of this

finding, additional meeting were held. This process reached its conclusion in March 2015 with the delivery of the final emBRACE framework for Community Disaster Resilience (Figure 1). Once finalised, the framework was integrated into all remaining outputs and formed a key focus of discussion at the project conference in London. At its most basic level the conceptual trinity of resources and capacities, learning and actions, operating within a disaster-risk governance context, were identified as being useful lenses through which explore, interpret and assess different communities' latent or expressed resilience against a range of hazard and disturbances.

More information on the project can be found on: [www.embrace-eu.org](http://www.embrace-eu.org)

#### Project Context and Objectives:

The overall aim of the emBRACE project was to build resilience to disasters amongst communities in Europe. To achieve this, it was vital to merge “forces into research knowledge, networking and practices” as “a prerequisite for more coherent scientific approaches”. This we aimed to do in the most collaborative way possible.

The relatively recent study of disaster resilience has already produced many definitions and conceptualisations but they often betray their disciplinary origins or only bridge disciplinary boundaries in limited ways. The major contribution of emBRACE is to build on the considerable range of backgrounds within the Consortium, to extend this by means of a large external consultative group, and attempt to cross disciplinary frontiers to produce a functional framework that is flexible and ultimately unidentifiable with respect to discipline. The aim was to truly embrace interdisciplinary and in doing so communicate to the widest user group. Resilience is a highly dynamic process and not a static status; we aimed to develop a framework which allows us to capture this dynamic in a way that is grounded in real communities, and yet is firmly based in academic practice.

To do so, our specific objectives were to:

- Identify the key dimensions of resilience across a range of disciplines and domains
- Develop indicators and indicator systems to measure resilience concerning natural disaster events
- Model societal resilience through simulation experiments
- Provide a general conceptual framework of resilience, ‘tested’ and grounded in cross-cultural contexts
- Build networks and share knowledge across a range of stakeholders
- Tailor communication products and project outputs and outcomes effectively to multiple collaborators, stakeholders and user groups

The research process began with a systematic review and synthesis across a broad spectrum of the literature, which led to an initial framing of resilience for subsequent application.

The emBRACE project was set in the context of increasing, but unequal and discontinuous, disaster risk and impacts. A key stage in assessing resilience is to estimate the impact of past and future hazards, disasters, contingencies and crises in a multidisciplinary way. A ‘disaster footprint’ for selected European countries and a local ‘disaster footprint’ focusing on landslide in South Tyrol were produced using EMDAT data and others sources. While EMDAT data may be the current ‘industry standard’, the project aimed to critically analyse data provision and moved this work ‘beyond the state of the art’ through informed interaction with data providers and users. While considerable effort has gone into measuring and mapping

interaction with data providers and users. While considerable effort has gone into measuring and mapping impacts and vulnerability in recent years relatively less attention has been given to understanding the links to resilience. We still know little, in a systematic, scientifically robust way, about who is resilient, where, why and how. This is partly due to the extreme complexity of the concept and thus the difficulties deciding on measurement parameters. We addressed the measurement issue, not only with a focus on quantitative disaster data, but by modelling resilience with a combined quantitative-qualitative approach, using a range of techniques and methods, innovative in their combination.

The planned case studies allowed us to examine hazards of slow and fast onset with a range of scales and durations; and in contrasting socio-economic-cultural and governance contexts. With these we aimed to provide a requisite variety with which to articulate a resilience framework that has general utility. The overall objective of the project was to develop methods and knowledge for understanding resilience by transforming the many and varied disciplinary interpretations of resilience into a holistic concept; one, moreover, that has an operational basis, and one that has been co-produced and refined with users and stakeholders.

The project has been designed to contain within it an almost continuous external verification and validation. We aimed to move beyond mere tokenism in stakeholder involvement to a real partnership of ideas production. The project has been designed to build on many previous projects; not to simply re-use existing data but to build on the networks that all have developed, sometimes over periods of many years. Thus, we built on previous research and research networks to start the empirical process much further along the learning trajectory than is normally the case. Working within this integrated, collaborative and participatory frame, emBRACE produced new products and methodologies for building societal resilience to disasters in Europe.

#### Project Results:

In order to achieve the project aim of building resilience amongst communities in Europe, the emBRACE project consortium developed a set of objectives:

- Identify the key dimensions of resilience across a range of disciplines and domains
- Develop indicators and indicator systems to measure resilience concerning natural disaster events
- Model societal resilience through simulation experiments
- Provide a general conceptual framework of resilience, 'tested' and grounded in cross-cultural contexts
- Build networks and share knowledge across a range of stakeholders
- Tailor communication products and project outputs and outcomes effectively to multiple collaborators, stakeholders and user groups

In order to meet these objectives the research was split into a series of work-packages (WP), which over the course of the four years each fed the iterative research process. Key outputs of the project were always regarded as 1) the emBRACE Framework for Community Disaster Resilience (originally attributed as D6.6) and 2) the Guidelines for Indicators and Indicator Systems (D3.5). All other deliverables were designed to form the empirical foundations upon which these two deliverables would stand. As one of the consortium members stated during the project's final meeting in London, "These outputs have emerged from the engine room of our case studies".

The development of the empirical foundations, however, required intense interdisciplinary collaboration between the projects' eleven partner institutions. An example of this is the iterative process that underpinned the development of the emBRACE Framework (henceforth, the Framework). This process

underpinned the development of the emBRACE Framework (henceforth, the Framework). This process started with the initial identification of framework elements through a focussed, systematic literature review (WP1), which incorporated searches of both academic and grey literature (NB. the concept of assessing community resilience was found to have been most practically elaborated in the grey literature, rather than the academic). The elements were then integrated into a series of domain-based schematics (WP2), which served to provide a structured understanding (or testable hypothesis) of how the process of community disaster resilience operates. This initial rendition was then used to guide the project's initial case-study based fieldwork (WP5, supported by methods developed in WP4). This 'agreed' framework was delivered, part way through the fieldwork (D2.2) so it was able to integrate provisional findings from this work, which continued to support the frameworks' basic composition. However, as projected in the DoW, repeated feedback cycles involving inputs from the on-going multi-site fieldwork and from the project's External Advisory Groups (WP7), did lead to a clear understanding that this would not be the framework's final iteration. In order to make best use of this finding, an additional (to the DoW) meeting was held by a cadre of partners in Zurich in Jul 2014 to discuss the framework specifically. Into this discussion's outcome agreements were then integrated the recommendations from the project's three stakeholder group meetings in the UK, Turkey and Germany (WP6), with all this process synthesised into what had originally been envisaged as a final framework (D6.6). However, due to reflection on the timeframe apportioned in the DoW to the fieldwork analyses it was realised by the consortium that the delivery of a final framework concurrently with the delivery of the case-study reports had made it impossible to create a synthesis that integrated all the case studies' useful, empirically derived, knowledge into the D6.6 output. Accordingly, the consortium re-entered deliberations in relation to the framework's final format. This process reached its conclusion in March 2015, with the delivery of the final emBRACE framework for Community Disaster Resilience and with the closing negotiations and deliberations that underpinned this output reported in D7.2; which had been purposefully delayed for the task. Once finalised, the framework was integrated into all remaining outputs and formed a key focus of discussion at the project conference in London.

#### Potential Impact:

The consortium worked hard to deliver science that was useful to and easily translatable into policy, practice and community relevant formats. The regular circulation of project ideas and thoughts to the various external advisory groups (e.g. the ≤460 Jiscmail list subscribers) meant that critique and ideas were always feeding into the iterative development process from outside the confines of the consortium. Throughout the project, partners also subjected their work to the crucible of review at a number of academic conferences and workshops, with two presentations winning awards:

- Thomas Abeling (UNU-EHS) 'Young researcher' award at the Deutsches Komitee Katastrophenvorsorge (DKKV) conference, Leipzig 2014;
- Sylvia Kruse and Sebastian Jülich (WSL), poster prize, "Resilience of buildings and settlements in climate change", Stuttgart 2015.

Partners also involved themselves in media presentations of their work, with METU and UFZ engaging in numerous radio and televised interviews where they discussed their fieldwork and their findings as well as the emBRACE project more generally.

Given the 'tail-loading' of the project, the majority of the impact is likely to be achieved in the future, as the project outputs become familiar to a wider audience and are disseminated more broadly. Accordingly, the fact that the consortium ensured, from an early stage, that all deliverables likely to attract wider interest

fact that the consortium ensured, from an early stage, that all deliverables likely to attract wider interest were always made available for download from the project website, has laid the ground for continued use of those resources. The fact that the website is based on the Googlesites™ platform is important from this perspective. This is because, unlike many other platforms, there is no subscription cost for web presence. Accordingly, even though emBRACE funding has now ceased, the main website and two linked websites (D8.1 & D8.10) will remain live for the foreseeable future, with updates and maintenance being continued by the project science coordinators (UoN).

As discussed briefly above, the project conference in London (9th Sept 2015) attracted a diverse delegation, including key policy advisors and practitioners from the UK civil protection community, as well as academics interested in hearing about emBRACE from across Europe. This conference had two early impacts:

- 1) The science coordinators were asked to liaise with the Nordic Centre of Excellence on Resilience and Societal Security (NORDRESS) consortium, in order to assess the feasibility of emBRACE partners running a workshop in Iceland, directly in order to share project findings with this nascent group.
- 2) The Environment Agency (England) made an express request that a policy brief was developed that was purely focussed on elaborating the detail of the emBRACE framework. This was requested, because

the EA were in the process of reviewing their use of the resilience concept and the emBRACE framework (and its framing of resilience) had attracted significant interest from various departments. The EA's sibling organisation, Natural Resources Wales, had also expressed an interest in learning more about the framework. The project's science technical officer (Hugh Deeming, UoN) was also invited to present emBRACE at the Cabinet Office facilitated 'Communities Prepared National Group' (CPNG) Conference in Jan 2016.

These latter developments led directly to the creation of two additional documents, a policy brief and a briefing note, which were each focussed directly on explaining the components and domain inter-relations in the framework. Both of these documents were sent directly to the EA and were also added to the outputs available for download from the project website ([www.embrace-eu.org](http://www.embrace-eu.org)).

List of Websites:

[www.embrace-eu.org](http://www.embrace-eu.org)

Main coordinator:

Université catholique de Louvain (UCL)

Institute for Health and Society

Centre for Research on the Epidemiology

30.15 Clos Chapelle-aux-Champs

1200 Brussels

Belgium

+32 2 764 33 27

[info@cred.be](mailto:info@cred.be)

Scientific coordinator:

Prof. Maureen Fordham

Northumbria University

Department of Geography

Department of Geography  
Newcastle upon Tyne NE1 8 ST  
UK  
+44 (0)191 227 3757  
[maureen.fordham@northumbria.ac.uk](mailto:maureen.fordham@northumbria.ac.uk)

## Related documents

 [final1-embrace\\_final\\_report\\_151126.pdf](#)

**Last update:** 25 February 2016

**Record number:** 177822