



EU-CIRCLE

A pan-European framework
for strengthening Critical
Infrastructure resilience to
climate change

D8.6 Report on 2nd year dissemination activities

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Statement

Deliverable 8.6 presents a collective overview of the EU-CIRCLE dissemination and communication activities performed by all partners. It introduces the achieved KPIs and its impacts on the target audience groups as specified in the Dissemination and Exploitation Plan (D8.1) and subsequent annual updates in D8.2 and D8.3.

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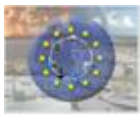
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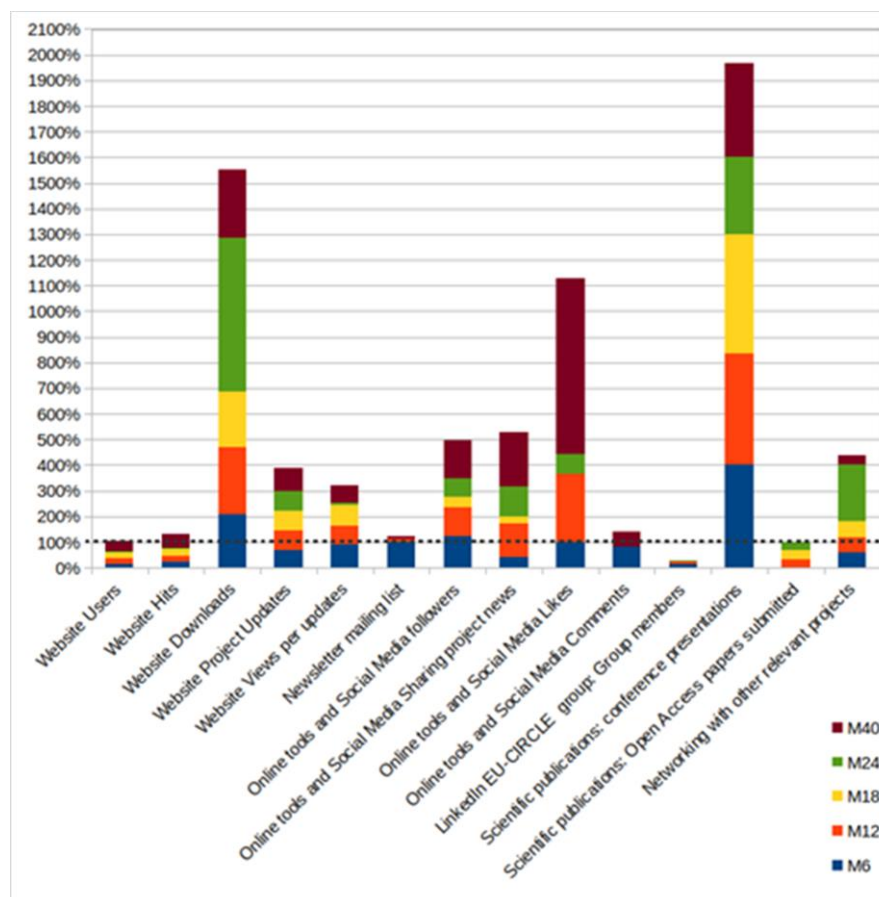


Executive Summary

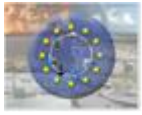
This report introduces an extended overview of the dissemination and exploitation activities performed by the EU-CIRCLE partners during the second reporting period of the project. A major change with respect to the Dissemination plan than occurred during this period is the participation of the EU-CIRCLE in the Common Dissemination Booster Service “CDB03-RESCCUE”. EU-CIRCLE joined the other three DRS 9 projects, namely RESIN, RESCCUE and BRIGAD in forming a coherent dissemination with respect to the highly important topic of urban and infrastructure resilience to climate change.

Additionally, The project partners have been engaged in multiple activities targeting diverse audiences that include the CI community (owners and operators), Critical Infrastructures Authorities and Civil Protection Agencies at different governmental levels (National, Regional and Local) and members of the climatology and meteorology community. The project partners have been engaged in multiple exchange of knowledge and discussions with similar funded projects both from the EU and internationally, during specifically organised events, scientific conferences and infodays. EU-CIRCLE showed a strong presence in the web and related social media though constantly publicizing the generated knowledge and results to the widest possible audience.

As such EU-CIRCLE reached the KPIs targeted during the first period of the project, as shown in the figure below. The lower boundary of the each KPI’s goal corresponds to the 100% completion.



EU-CIRCLE achieved KPI's M1-M40



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1 Introduction

Communication and dissemination have been identified as integral facets of EU-CIRCLE research activities; actions vital in raising awareness and promoting the impact and added value of the project. EU-CIRCLE in addition to the dissemination plan and dissemination activities described in D8.1 “Consolidated Dissemination, Communication and Exploitation Plan” and the two annual revisions D8.2 and D8.3, has also participated in the Common Dissemination Booster named “CDB03 RESCCUE” with the H2020-DRS 9 projects : RESCCUE, RESIN and BRIGAD.

The common dissemination Booster has been implemented in three phases / services

Service 1 Portfolio Identification

- Starting date: 26/02/2018 - End date: 12/03/2018

Service 3 Portfolio dissemination plan development

- Expected starting date: 16/4/2018 - End date:16/5/2018

Service 5 Dissemination campaign in practice

- Expected starting date: 17/5/2018 – Duration of 6 months

The participation of EU-CIRCLE in CDB brought some additions to the dissemination plan, not reflected to D8.3, as they occurred after its submission. Under CDB the dissemination activities also captured the synergistic – collaborative dimension with other projects and engagement in clustering activities. Chapter 2 of the present document describes the activities performed under the “CDB03 RESCCUE”.

During the project’s lifetime, partners have been actively engaged in dissemination activities, through multiple channels, to its target audience, with the appropriate degree of customization in order to make the EU-CIRCLE message more understandable and appropriate to the interests of each group. Section 4 presents a summative evaluation of the performed actions for each interest group, building on the extensive description of the dissemination activities introduced in sections 2, 3 and 4.

The dissemination activities are mostly categorised as **“Awareness-oriented”** as their main objective was to create visibility and raise awareness amongst all interested parties and audiences. In the second period of the project, relevant activities were minimal and focused on disseminating the project and achieved results towards the policy makers and members of the EU / DRMKC and the Community of Users.

Furthermore, the project partners had been gradually begin to communicating and disseminating the project’s achieved results - **“results – oriented” phase**, with emphasis on the derived methodology (WP1), processing of climate information (WP2), risk and resilience methodologies (WP3 and WP4 respectively) and the development of the computational tools (WP5). Activities within this phase include the publication of papers in journals, participation at related conferences and events, end user workshops and information days.

In this document, we present an overview of the dissemination results for :

- EU-CIRCLE Website (section 3.1)
- EU-CIRCLE Dissemination activities (section 3.2)
- Newsletters, Bulletins (section 3.5) and Social Media Presence (section 3.6)
- Key performance indicators of the primary communication tools (section 3.8)
- EU-CIRCLE Academic publications (section 4)

Section 5 assesses the impact of the described activities both quantitatively, in terms of the KPIs identified in D8.1 “Consolidated Dissemination, Communication and Exploitation Plan” and qualitatively related to the identified audiences.

2 Common Dissemination Booster

The participation of EU-CIRCLE in CDB has been performed for three services jointly selected with other DRS9 projects, introduced below and analysed in the next sections

Service 1 Portfolio Identification

Service 3 Portfolio dissemination plan development

Service 5 Dissemination campaign in practice

2.1 Service 1 - “Portfolio Identification”

The work of CDB was prepared during the first two months and resulted in a working document produced on 20th April 2018.



Figure 1. CDB Dissemination Portfolio Service Cover Page

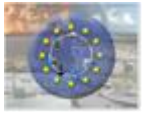
The Common Dissemination Portfolio for the Project Group, as derived, had the following objectives:

- Building more resilient cities against climate change threats
- Creating innovations in disaster resilience
- Deriving an innovative framework for supporting the interconnected European Infrastructure’s resilience to climate pressures

This “Dissemination Portfolio” document was delivered in 3 iterative versions at the end of each step of Service 1:

Step 1 Pre-analysis study: An effective “Pre-analysis study” is the first step of the dissemination cycle and it will be carried out through the completion by projects of a self-assessment questionnaire, which will then allow acquisition, in a semi-structured fashion, of the necessary information that lead to an objective positioning diagram.

Step 2 Technical debate: This revolves around a conference call with the Projects, where the findings of Version 1 can be discussed. The conference call involves discussion of the information acquired from the self-assessment questionnaire and possible additional findings based on desktop research.



Step 3: Portfolio delivery: This elaborates on the information gathered in the previous 2 steps, with the support of a-synchronous interactions with the various projects. The ultimate result is the identification of the Project Group's dissemination Portfolio.

The four projects have the same goal of reducing the impacts of climate change by increasing the resilience of cities and critical infrastructures. Despite this, each one of the projects takes a different approach in tackling this challenge. While some focus on cities and urban resilience, others have a broader scope tackling various critical infrastructures. The projects also use different strategies with some projects focusing on specific, concrete solutions, while others focusing and providing a wide range of plausible solutions. As a result, the projects are very complementary to each other as evidenced by joint events such as the Community of Users on Secure, Safe and Resilient Societies, their joint session in the European Climate Change Adaptation Conference and their clustering in the CDB.

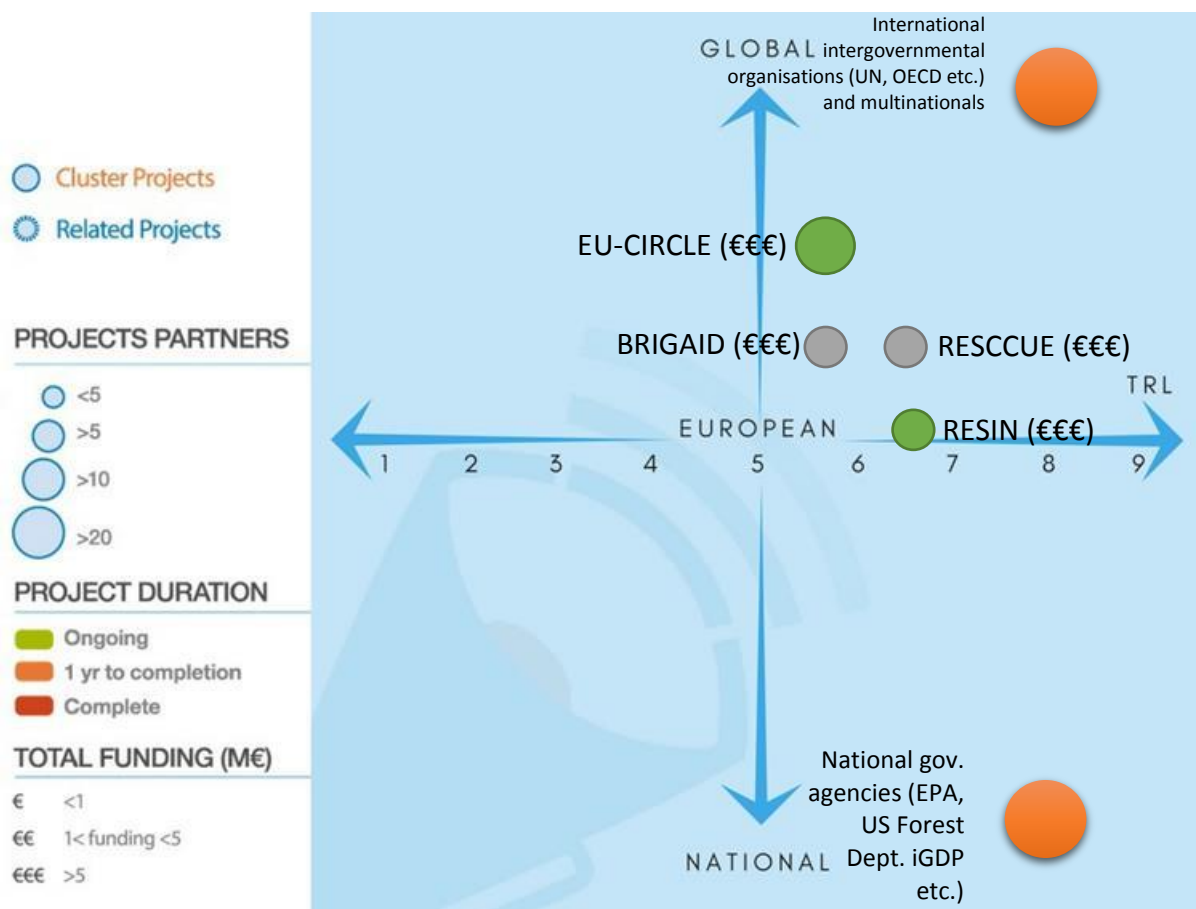
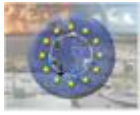
An output of Service 1 was the identification of the results grid that is presented in Table 1. It presents the main expected results, TRL and indicative availability date. The ones reported to the service by EU-CIRCLE are presented.

Table 1. Results Grid – EU-CIRCLE only

Id	Result	Result type ¹	Project(s)	TRL
R2	Climate modelling & hazard models	Model	EU – CIRCLE	8
R5	Case Studies: methodology	Case Study	EU - CIRCLE	7
R11	Resilience Framework	Framework	EU – CIRCLE	4
R12	Risk Management and impact assessment	Risk Model	EU – CIRCLE	3
R13	CIRP & SimICI	Software	EU - CIRCLE	3

The project group positioning in specific the field was assessed taking into consideration: a) Current geographical visibility of each project, b) Technology readiness (TRL) of each research project, c) Status of each project, d) Investment size of each project and e) Size of the Research Team.

¹ Results types are: Blueprint; Commercial solution; Data set / data pool; Demonstrator; Feasibility study; Framework (e.g. software environment, policy document, legal framework); Hardware (e.g. chip, appliance, drone, sensor, system); Infrastructure (e.g. IT infrastructure, transport infrastructure, energy infrastructure, water infrastructure, building etc.); Methodology; Model (e.g. risk model, mathematical model, data model, physical model, business model etc.); Patent (e.g. utility, design patents and plant patents); Policy report; Prototype; Proxy/broker service; Research and/or virtual environment; Scientific publication (Refereed); Scientific publication (Non-refereed); Software (e.g. routine, integrated platform, library, plugins); Standard (e.g. norms, policies); Taxonomy / Ontology; Tool / Toolkit / toolbox; Training (e.g. learning tools, services, modules); White paper or similar publication; *Other – please specify.*

Figure 2 – Multi-dimensional market positioning diagram²

The figure below summarizes the SWOT analysis of the market positioning diagram

Figure 3 – SWOT Analysis for the Project Group²

² CDB03 RESCCUE, CDB Service 1 – "Dissemination Portfolio" report, Date: 20/04/2018

The service came to completion with recommendations for joint activities that are summarised below:

- **Recommendation #1:** Build a joint website or mini-site
- **Recommendation #2:** Create joint dissemination items
- **Recommendation #3:** Participate in, and organize events as a group
- **Recommendation #4:** Rely on advocates from the general public
- **Recommendation #5:** Leverage the societal and economic benefits.
- **Recommendation #6:** Produce and highlight strong messages to be conveyed to the relevant stakeholders about the usefulness of the Resilience framework/Database/Climate indicators to better deal with natural threats.

2.2 Service 3 - “Dissemination Plan”

The 2nd phase of the CDB was Service 3 “Portfolio Dissemination Plan” (PDP) that lasted until 1st June 2018.



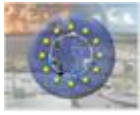
Figure 4 – Cover Page of Portfolio Dissemination Pan

The dissemination plan was conducted in four steps which entail the following:

- **Step 1 Assessment:** Assessment and desk research.
- **Step 2 Planning:** Portfolio Dissemination planning and development.
- **Step 3 Convergence:** Convergence through discussion and validation, including a virtual meeting.
- **Step 4 Dissemination Plan Delivery:** Delivery of a ready-for-action dissemination plan and synthesis report.

Initially stakeholders were mapped according to : their description, potential benefits, engagement up to 1st June 2018, and challenges that CDB projects could support. A dissemination toolkit outlines the different methods used to disseminate the project results. These may include website pages, social media activities, or events. The table below describes when and how common dissemination practices can be utilized by the project group as a common toolkit. The main activities for the PDP are identified as:

- Set-up joint LinkedIn Group
- Infographics - Get Published in Urban Resilience Hub
- Press Release for DRS9



- Hold DRS9 Joint Conference
- Joint dissemination in Lisbon ECCA Conference
- Joint press release on Lisbon ECCA participation
- Joint PG dissemination during RESCCUE / Bristol workshop
- Joint dissemination during final conference

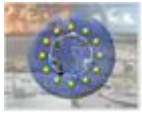
2.3 Performed activities until 10th October 2018

The following activities have been performed by the projects during the initial implantation phase, that are of relevance to EU-CIRCLE.

EU-CIRCLE final workshop. The activities are described in D8.7 “EU-CIRCLE final Workshop”.

RESIN final workshop. The workshop took place in Brussels on 9th October 2018, with the participation of all CDB projects. Speakers from RESIN, RESCCUE, EU-CIRCLE and BRIGAD and subject matter experts provided a comprehensive insight into the state of the art in climate urban adaptation.





3 2nd Period Dissemination Activities

This section provides an overview of the Dissemination results produced in the EU-CIRCLE project. It presents the EU-CIRCLE Website (paragraph 3.1), the Partners' dissemination activities (paragraph 3.2), EU-CIRCLE Social Media Presence (paragraph 0), and the Key Performance Indicators for all these actions (paragraph 3.8).

3.1 EU-CIRCLE Website

One of the first EU-CIRCLE communication tools to be set up was the dedicated EU-CIRCLE Website, which was online in M3. The picture illustrates the Website's Home page and structure. The technical details and the structure of the Website are explained in more detail in Deliverable D8.4 ³.

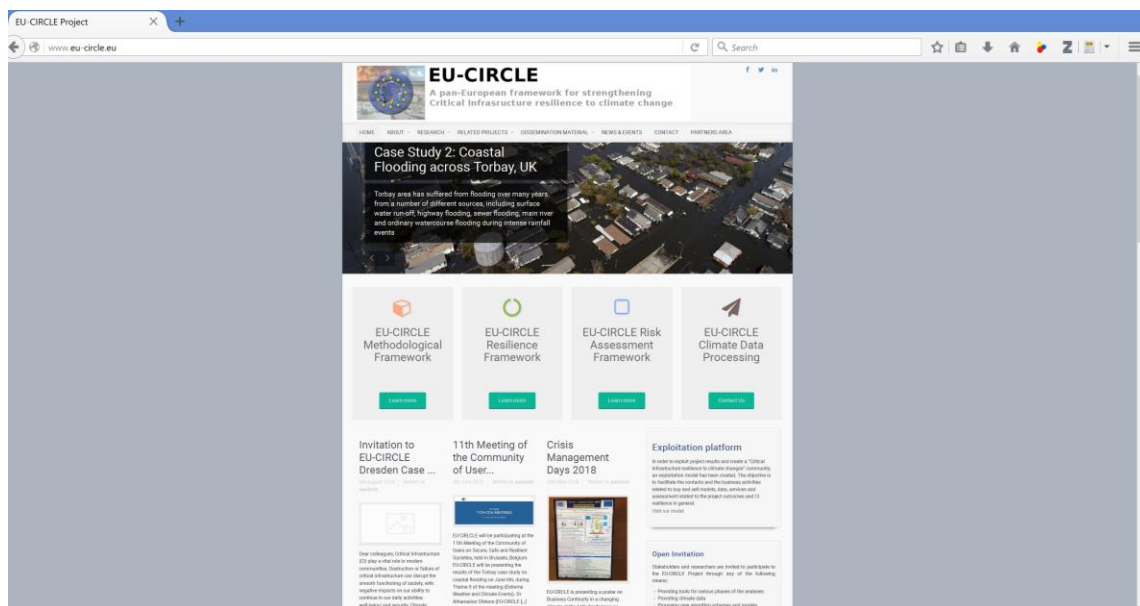


Figure 5: EU-CIRCLE Website Homepage

Currently the Website structure is as follows:

- Home
- About
 - What is EU-CIRCLE
 - The consortium
 - Global Initiatives
- Research
 - Case studies
 - Key findings
 - Deliverables
 - Stakeholder area
- Related Projects
 - Global initiatives

³ <http://www.eu-circle.eu/research/deliverables/>



- EU funded projects
 - Other projects
- Dissemination material
 - Exploitation Platform
 - Cyprus Workshop
 - Scientific Publications
 - Newsletters
 - Press releases
 - Presentations
 - Archive
- News & Events
- Contact
- Partner Area (which is a link to Partner's Intranet)

The main dissemination tool of the project is the EU-CIRCLE website. All the deliverables and other relevant information of the EU-CIRCLE project are made available to all interested parties through the EU-CIRCLE website which also acts as the project's mutual memory.

Integrated in the EU-CIRCLE website is a one-click access to the project's LinkedIn, Facebook and Twitter pages and a live feed from the EU-CIRCLE Twitter account.

In section 3.8 of this Update the Key performance indicators of the EU-CIRCLE Website in M6, M12 and M18, M24 and M40 are presented.



3.2 Dissemination activities

EU-CIRCLE Partners are expected to be as active as they can in terms of disseminating information about the EU-CIRCLE project. In this paragraph the Dissemination activities in the last 22 months of EU-CIRCLE are listed (see Table 2). Dissemination activities in this context are any structured and registered type of communication about the project's characteristics and output, directed at various target groups (press, stakeholders, general public, science, etc.). Partners describe their activities in a specifically designed input form, indicating the Type of activity, the Partner, the Date, Location, Name of Event and Target group. On the form they are also asked to provide any other material about the event (pictures, links to websites, etc.). Academic dissemination in the form of papers and presentations at academic conferences and workshops will be described in paragraph 4.

Table 2: EU-CIRCLE Dissemination activities (M19-40, 1/12/2016-30/9/2018)/Sorted by Date

Type activity	Partner	Date	Location	Name of event	Target group
Display/Stall – Exhibition Space	Artelia	29.11.2016 – 2.12.2016	Lyon, France	Pollutec – 27th international trade fair on environmental equipment, technology and services.	Conference participants
Presentation	NCSRD, EUC	26.01.2017	Nicosia, Cyprus	Energy Critical Infrastructure Protection Symposium: The Challenges of Energy Critical Infrastructure Protection. Current situation and future research work	Conference participants
Presentation	UNEXE	9-10.02.2017	Jakarta, Indonesia	APCC-ASEAN Disaster Management Symposium	National disaster management agencies in ASEAN countries
Presentation	NCSRD, DHMZ	20-22.02.2017		Joint Congress of the 6th International Conference on Meteorology and Climatology of the Mediterranean (MetMed) & Challenges in Meteorology 5 (MIS)	
Presentation	NCSRD, UNEXE	16-17.03.2017	Brussels, Belgium	DRMKC workshop on Critical Infrastructure Protection	Participants from other projects, the EU and national organisations
Presentation	CEREN	06.04.2017	Valabre, France	State of the art in RTD for wildfire prevention and suppression Conference	Researchers involved in forest fires, professional fire fighters, local authorities
Presentation	HUD, UNEXE, Torbay Council	06.04.2017	Huddersfield, UK	Symposium on Resilience to Climate Change and Flooding	Academics, practitioners, local authority representatives and



					consultants in the field climate change and flooding
Presentation	HUD	20.04.2017	Liverpool, UK	Annual Conference of Defence Resilience Practitioners attached to the Ministry of Defence (MOD), UK	90 Officers of the Ministry of Defence, UK
Presentation	EUC	10-11.05.2017	Hague, Netherlands	Critical Infrastructure Protection & Resilience Europe 2017	Conference Participants
Presentation	IVI	02.06.2017	Sofia, Bulgaria	5th Annual Conference "Interagency Interaction in Crisis Management and Disaster Response"	Conference Participants
Presentation	USAL	06.07.2017	Salford, UK	Measuring Disaster Resilience: EU -CIRCLE approach a Presentation at "Building resilient cities through System Dynamics simulation" Workshop at the University of Salford	Researchers/Academics, disaster management professionals, students, local government representatives
Presentation	USAL	22.08.2017	Brussels, Belgium	Measuring Disaster Resilience: EU -CIRCLE approach- A presentation to project partners of EPRC funded 'Collaborative Multi-agency Platform for Building Resilient Communities' project	International Researchers/Academics, Critical Infrastructure operators, public sector, International disaster management professionals, UK Cabinet Office
Presentation	KEMEA	12-14.9.2017	Brussels, Belgium	Networking and outreach at Community of Users Workshop (DG Home)	Policy makers, Academic, Scientific Community, Industry, Research, SME
Presentation	DHMZ, UVG, NPRD	20.9.2017	web/media	TV report on national television: HTV4- "Guide through EU funds"	general public
Presentation	ARTELIA	20-23.9.2017	Dublin IRELAND	Presentation of EU CIRCLE project at the INBO Conference (International Network of Basin Organisations), session Adaptation to Climate Change: Pressures, Priorities, Insurances, Impacts and Resilience of Government Agencies and Economic Sectors, Dublin IRELAND	Academic, Scientific Community, Research
Presentation	UNEXE	27-28.9.2017	London UK	Keynote Presentation at FloodExpo 2017, London, UK	Policy makers, Academic,



					Scientific Community, Industry, Research
Presentation	NCSR	29.9.2017	Athens Greece	EU-CIRCLE presentation at Athens International Airport	Policy makers, Academic, Scientific Community, Industry, Research
Presentation	UNEXE	27-29.11.2017	Bangkok, Thailand	Presentation at 7th International Conference on Building Resilience	Academic, Scientific Community, Research
Presentation	Torbay	6.10.2017	Torbay UK	SDADCAG (South Devon and Dorset Coastal Authorities Group) - Presentation on the EU Circle Project and the Torbay Case Study	Academics, Industry Practitioners, Local Authorities, Government Bodies
Presentation	ARTELIA / CEREN	10-11.10.2017	Paris, France	EU CIRCLE presentation (oral/ poster/ paper) at the Risk and Resilience of the Territories 2017, RDT conference, Paris	Academic, Scientific Community, Research
Presentation	KEMEA, NCSR	10-12.10.2017	LUCCA - Italy	Networking presentation and outreach at CRITIS International Conference 2017	Academic, Scientific Community, Research
Presentation	KEMEA	12.10.2017	Brussels, Belgium	Networking and outreach at 2EISAC -1st european scientific community workshop	Academic, Scientific Community, Research
Presentation	ADITESS	21.10.2017	Nicosia, Cyprus	Risk Assessment and Management in Critical Infrastructures International Conference, Nicosia Cyprus	Academic, Scientific Community, Research
Presentation	ADITESS	21.10.2017	Nicosia, Cyprus	Presentation of the project on different Cypriot stakeholders, Nicosia Cyprus	Policy makers, Academic, Scientific Community, Industry, Research
Presentation	Torbay/UNEXE	31.10.2017	Exeter UK	Torbay Case Study stakeholder meeting at Exeter University. Presentations given by Torbay Council and Exeter University	Project Partners, Stakeholders, Local Authorities, Government Bodies
Presentation	EUC	10.11.2017	Nicosia, Cyprus	Presentation of EU-CIRCLE at EPICURO project meeting-twinning activities	Researchers and resilience practitioners from various municipalities including Strovolos, Veijle, Vicenza, Venice, Skopje, Alba



					Ioulia, Riga
Presentation	EUC	2017	web/media	Article on EU -CIRCLE in Critical Infrastructure Protection Review magazine	general public
Presentation	Fraunhofer IVI	17.- 18.10.2017	Dresden, Germany	Presentation of EU-CIRCLE approach at VDI info day	Academic, Scientific Community, Research
Presentation	Fraunhofer IVI	30.11.- 1.12.2017	Dresden, Germany	Presentation of EU-CIRCLE approach at ECTRI TG Security and Risk Analysis	Academic, Scientific Community, Research
Presentation	UNEXE	11.2017	Exeter UK	Lectures given at University of Exeter	Academic, Scientific Community, Research
Presentation	NCSRD, IVI, EUC, ARTELIA, UVG, USAL, KEMEA	14- 16.12.2017	Ispira, Italy	How interconnected critical infrastructures can support societal resilience under future climate: The EU-CIRCLE approach, JRC workshop	Academics, Industry Practitioners, Local Authorities, Government Bodies
Presentation	KEMEA	11- 12.12.2017	Brussels, Belgium	Networking and outreach at EARTO meeting	Research and Technology organisations
Presentation	NCSRD, KEMEA	19- 20.12.2017	Athens Greece	2nd Annual Conference for CIP in Greece	CI operators and owners, Emergency Management Services, Researchers, Public Bodies
Presentation	UVG	01/2018- 09/2018	web/media	News about project published on behalf of UVG project team on UVG website and portal	general public
Presentation	UVG	01/2018- 09/2018	web/media	Publication in the UVG newspaper Gaudeamus	general public
Presentation	Torbay	11.1.2018	Okehampton, UK	South West Regional Flood and Coastal Committee - Updated report on the EU Circle project and the Torbay Case Study following stakeholders meeting	Government Bodies, Local Authorities, Elected Members
Presentation	ADITESS	17/1/2018	Nicosia, Cyprus	Presentation of the project at Office of Electronic Communications & Postal Regulations (OCECPR), Nicosia Cyprus	Researchers/A cademics, Critical Infrastructure operators, public sector, disaster management professionals
Presentation	USAL, EUC, NCSRD, UVG	14.2.2018	Zurich, Switzerland	Presentation of Paper on "Strengthening Critical Infrastructure Resilience to impacts of Climate Change: EU CIRCLE Approach" International Conference on Infrastructure Resilience, ETH Zurich, Switzerland	Researchers/A cademics, Critical Infrastructure operators, public sector, disaster management



					professionals
Presentation	USAL, EUC, NCSRD, UVG, ARTELIA	15.2.2018	Zurich, Switzerland	Delivered Tutorial on "Resilience of Interdependent Critical Infrastructure Networks to the impacts of Climate Change:Tutorial" International Conference on Infrastructure Resilience, ETH Zurich, Switzerland	Researchers/A academics, Critical Infrastructure operators, public sector, disaster management professionals
Presentation	UNEXE	22-25.7.2018	Ontario, Canada	International Conference CCWI/WDSA Kingston, Ontario Canada. Paper presentation on Flood Modelling, CIRP and Case Study#3	Researchers/A academics, Critical Infrastructure operators, public sector, disaster management professionals
Presentation	UNEXE	1-6.7.2018	Palermo, Italy	International Conference HIC2018, Palermo Sicily. Two papers presented on high visualisation and flood modelling	Researchers/A academics, Critical Infrastructure operators, public sector, disaster management professionals
Presentation	TORBAY, UNEXE, NCSRD, KEMEA	6.6.2018	Brussels, Belgium	Participation, presentation and demonstration of Case Study #3 at the 11th CoU, Brussels	EU Organisations, Academics, Industry Practitioners, Local Authorities, Government Bodies, Researchers, CI Managers, Project Partners
Presentation	TORBAY, UNEXE, NCSRD	23.3.2018	Exeter, UK	EU-CIRCLE seminar presentation at University of Exeter	Researchers/A academics/Stu dents
Presentation	TORBAY, UNEXE, Satways	2.2.2018	Exeter, UK	CIRP seminar presentation at University of Exeter	Researchers/A academics/Stu dents
Presentation	USAL	28.2.2018	Sri Lanka	Presentation on Measuring Disaster Resilience and Challenges: EU-CIRCLE approach during Conference on Digital Technologies for Enhancing Disaster Resilience in Sri Lanka	Researchers/A academics, Critical Infrastructure operators, public sector, disaster management professionals, decision makers, elected officials, members of the public



Presentation	UNEXE	16.5.2018	Torbay, UK	Presentation at UK Water Control Room Forum	Water companies
Presentation	All	27-28.3.2018	Torbay, UK	EU-CIRCLE Case Study 3 workshop, Torquay, UK	Government officers/Industry practitioners/stakeholders/CI managers
Presentation	UNEXE	20-24.8.2018	Suzhou, China	Presentations at ESSPRIT workshop, Suzhou, China	Government officers/Industry practitioners/Researchers/Academics/Students
Presentation	UNEXE, TORBAY	28.9. 2018	Exeter, UK	EU-CIRCLE Torbay case study presentation at University of Exeter	Researchers/Academics/Students
Presentation	KEMEA, Fraunhofer	1-2.2.2018	Brussels, Belgium	Networking and outreach at SMIG annual workshop 2018	Academic, Scientific Community, Industry, Research, SME
Presentation	KEMEA	8.3.2018	Guadalajara, Spain	Presentation at ZONeSEC project workshop	Research, Technological Providers, SME, CIP operators, Scientific Community
Presentation	Fraunhofer	12-13.3.2018	Brussels, Belgium	Networking and outreach at SEREN 3 workshop 2018	Academic, Scientific Community, Industry, Research, SME
Presentation	ADITESS	3.2018	Nicosia, Cyprus	Presentation of the project at Cyprus CSIRT, Nicosia Cyprus	Research, Industry
Presentation	ADITESS	3.2018	Nicosia, Cyprus	Presentation of the project at Cyprus Fire Service, Nicosia Cyprus	Research, Industry
Presentation	ADITESS	3.2018	Nicosia, Cyprus	Presentation of the project at Cyprus Civil Defence, Nicosia Cyprus	Research, Industry
Presentation	MRK	04.04.2018	web/media	Publication/Presentation of EU-CIRCLE at the Homepage of ITS Saxonia e.V.	general public
Presentation	MRK	5.2018	web/media	Publication/Presentation of EU-CIRCLE at the Homepage of ITS Bavaria e.V.	general public
Presentation	ADITESS	16-19.5.2018	Nicosia, Cyprus	Presentation of the project to different Cypriot & International delegates of Summit-Conference "Climate Change in the Mediterranean and Middle East"	Research, Industry
Presentation	KEMEA	23-24.5.2018	Lisbon, Portugal	Presentation in the 3rd Workshop of IMPROVER project	RTOs, Academic, Scientific Community, Industry,



					Research, SME
Presentation	UVG, KEMEA, NCSRD	23-24.5.2018	Brijuni, Croatia	11th International Conference «CRISIS MANAGEMENT DAYS», Brijuni, Croatia (3 oral presentation and 2 poster presentation)	RTOs, Academic, Scientific Community, Research
Presentation	KEMEA	23.5.2018	Dresden, Germany	Networking and outreach at EPCIP meeting for NCPs of CIP	NCPs for CIP
Presentation	ADITESS	5.2018		Dissemination during the SSEE project (http://www.ssee-project.eu/)	Academic, Scientific Community, Research
Presentation	KEMEA	28-30.6.2018	Isprea, Italy	Dissemination and collaboration with CIP unit of JRC Ispra	EU Organisation
Presentation	KEMEA	11-12.10.2018	Vienna, Austria	DRMKC Risk Data Hub Workshop	Policy makers, Academic, Scientific Community, Industry, Research, SME
Presentation	KEMEA	24-25.9.2018	Paris, France	Networking and outreach in Joint OECD-JRC Workshop "System thinking for critical infrastructure resilience and security"	Policy makers, Academic, Scientific Community, Industry, Research, SME, EU Organisations
Presentation	DAPP/RINA-C	10.2.2018	Genoa, Italy	Seminar within IANUA- ISSUGE program ""Disaster Risk Reduction & Climate Change Adaptation as opportunities for sustainable business""	Scientific Community
Presentation	Torbay	7.3.2018	Newton Abbot, UK	South West Coastal Group Meeting - Presentation on EU Circle Project and the Torbay Case Study	Government Bodies, Local Authorities, Industry Practitioners
Presentation	HNMS/NCSRD/Satways/UNEXE/Torbay	26.3. 2018	Exeter, UK	Met Office Exeter - Presentation to Met Office staff on the EU Circle Project and the Case Studies	Scientific Community, Government Bodies, Project Partners
Presentation	All	29.8.2018	Dresden, Germany	EU-CIRCLE Case Study 4 workshop, Dresden, Germany	Policy makers, Academic, Scientific Community, Industry, Research
Presentation	USAL	30.8.2018	Manchester, UK	Presentation on "Developing Indicators and Measures of Critical Infrastructure Resilience: EU CIRCLE Approach" at Greater Manchester Resilience	Greater Manchester Resilience Forum members, disaster



				Forum, Manchester UK	management officials, academics/researchers
Presentation	ADITESS	11.9.2018	Nicosia, Cyprus	Climate Kic 2018 Cyprus & Greece Competition, Nicosia Cyprus	Scientific Community, Government Bodies, Project Partners
Presentation	ADITESS	24.9.2018	Kaunas, Lithuania	CRITIS 2018 -International Conference on Critical Information Infrastructures Security,Kaunas, Lithuania.	Scientific Community, Government Bodies, Project Partners
Presentation	DHMZ	26.9.2018	Zagreb, Croatia	Department of Geophysics, University of Zagreb - Presentation of the EU-CIRCLE project to meteorology and geophysics community in Zagreb	Experts (geophysical community), general public
Presentation	ADITESS	2-3.11. 2018	Edinburgh, Scotland	Climate Kic 2018 Global Competition, Edimburg, Scotland	Scientific Community, Government Bodies, Project Partners
Presentation	NCSRD / HNMS	9.7.2018	Athens, Greece	Region of Attica Workshop : "Climate Change Impacts on Attica"	Government Bodies, Local Authorities, Industry Practitioners
Presentation	KEMEA/NCSRD	18-22.6.2018	Athens, Greece	"Addressing the climate change dimension of CI protection within the CSDP framework" : pilot-course on Critical Infrastructures Protection in CSDP Environment- - Athens	LEAs, Policy Makers, EU Organisations, Public Bodies, Security Managers, Military Agencies
Presentation	Fraunhofer IVI	10-13.9. 2018	Dresden, Germany	Discussions with crises protection stakeholders from Vietnam and Germany at TU on EU-CIRCLE methodology and capabilities	LEAs, Researchers
Presentation	Fraunhofer IVI	22.5.2018	Leipzig, Germany	Poster presentation during ITF Pre-summit research day in Leipzig, organised by ECTRI	Policy makers, researchers
Presentation	UVG	25.9.2018	web/media	EU-CIRCLE press conference and the presentation of project results	general public



Figure 6 Sample of dissemination activities photos of EU-CIRCLE project

3.3 Workshop on Critical Infrastructure Protection and Climate Change, Cyprus March 2017

On 7-8 March 2017 EU-CIRCLE organised a workshop on the topic of Critical Infrastructure Protection and Climate Change in Cyprus.

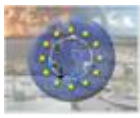
The workshop was organised by the European University Cyprus, and co-organised with the Cyprus Civil Defence (Cyprus's national contact point for EU CI), with the participation of the Joint Research Centre and local Critical Infrastructure Operators from the energy, ICT, water and public sectors.

In total, 50 stakeholders participated in the workshop, which included presentations on the potential impacts of hydro-meteorological hazards on CI, the changing climate in Cyprus and future climate change predictions as well as the EU-CIRCLE risk assessment and resilience frameworks.

The second day of the workshop included a table top exercise, where participants engaged in discussions on the predicted impacts of climate change exacerbated forest fires, on climate change risk assessment and on potential response options in interconnected national infrastructures.

Presentations and other relevant material may be found at:

<http://www.eu-circle.eu/documented-material/cyprus-workshop/>



3.4 Participation in EU events

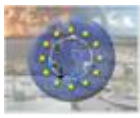
EU-CIRCLE participated in the following events that were linked to EU actions, and included in a separate section as they provided a unique opportunity to present the work and achieved results to national, EU and international policy makers:

3.4.1 DRMKC – Brussels

EU-CIRCLE (NCSRD and UNEXE) participated in the DRMKC event held on 16-17th March 2017 at Belraymont building in Brussels. Representatives of 14 FP7 and H2020 research projects that focus on geophysical hazards, cascade effects and extreme weather will present how their results can be used in practice, collect feedback from participants and propose common recommendations for the follow-up as well as for the implementation of European policies in the areas of disaster risk reduction, critical infrastructure protection and societal resilience. The workshop provided an inter-disciplinary forum for researchers, European and national policy-makers and risk management authorities, as well as owners/managers of critical infrastructures to review the current state of knowledge and the needs of different stakeholders.

The digital posters presented during this meeting are shown below



**EU-CIRCLE****Workshop on Critical Infrastructure Protection and Climate Change**

European University Cyprus
7-8 March 2017



European University Cyprus
LAUREATE INTERNATIONAL UNIVERSITIES

Co-Organizers

- European University Cyprus
- Cyprus Civil Defence
- EU-CIRCLE project
- JRC

Participants

Approx. 50 persons

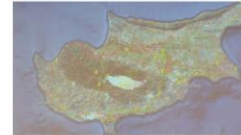
- ✓ National Authorities
- ✓ CI operators

Understanding of risks

- ❖ CI operators are aware of natural hazards
- ❖ Do not consider climate change
- ❖ Important to validate if current procedures will be adapted under future climate scenarios

Interconnections

- ❖ Electricity and ICT are the two most important sectors
- ❖ Long term disruptions, port becomes critical

Responding to hazards

- ❖ ICT and electricity sector are more prepared
- ❖ CI have become resilient to electricity disruptions due to recent events
- ❖ Interdependencies during disasters need further elaboration

<http://www.eu-circle.eu/documented-material/cyprus-workshop/>

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EU-CIRCLE has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 653824



Disaster Risk Management Knowledge Centre

<http://drmkc.jrc.ec.europa.eu/>



European Commission

3.4.2 Community of Users – May 2017

EU-CIRCLE participated in the workshop on Climate Clustering during the 7th CoU meeting that brought together project's coordinators, practitioners, policy makers and industry/SME representatives to boost possible synergies among projects and different actors. The twelve projects invited to the workshop are projects awarded under the Horizon 2020 DRS call 2014-2015 and initially identified as projects with potential synergies. Identified collaboration opportunities are focused around sharing and learning from each other's processes, developing a common tool to measure efficiency, developing a shared message towards policy makers and exploring joint actions, such as workshops and case studies.



EUROPEAN COMMISSION
DIRECTORATE-GENERAL INNOVATION AND MORE AFFAIRS
Innovation and Mobility
Innovation and Industry for Security

**7th COMMUNITY OF USERS ON SECURE, SAFE AND RESILIENT SOCIETIES
CLIMATE CLUSTERING WORKSHOP**

16th May 2017
Brussels, BAO Congress Centre (Vue Fella Hap 11, 1040 Brussels)
DRAFT AGENDA

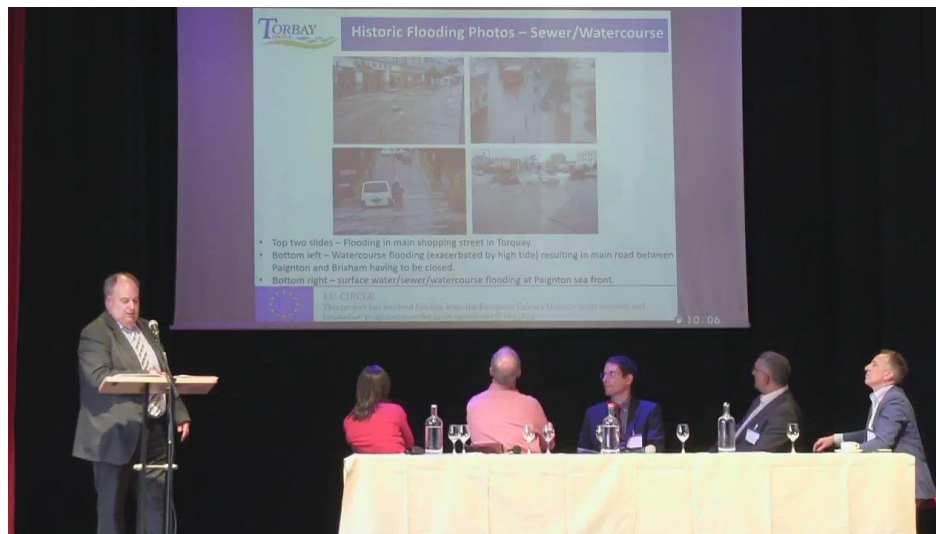
- 09:30 – 09:40 Welcome speeches
- 09:40 – 10:00 Tour de table to introduce everybody. Presentation of the meeting structure. Objectives and expected outcomes highlighted.
- 10:00 – 10:20 Presentation of the DRS calls and projects clustered (EASME REA)
- 10:20 – 12:30 First thematic discussion: *Tools and strategies for enhancing adaptation/prevention/preparedness and response to climate related events* - Moderator tbd
- 12:30 – 14:00 Lunch break
- 14:00 – 16:00 Second thematic discussion: *Strategies for stakeholder engagement and user uptake* - Moderator tbd
- 16:00 – 16:30 Conclusions of the event
- 17:00 5-minutes filming of conclusions

Project represented at the workshop:

- ❖ DRS1 – ANYWHERE (IA): Daniel Sempere (CRAH, ES)
- ❖ DRS1 – REACT (IA): Fabrizio Dominici (Int. Sup. Mario Bosella, IT)
- ❖ DRS1 – BeAWARE (IA): Anastasio Karakostas (CERTH, GR)
- ❖ DRS9a – PLACARD (CSA): tbc
- ❖ DRS9b – RESIN (RIA): Peter Bosch (TNO, NL)
- ❖ DRS9b – EU-CIRCLE (RIA): Athanasios Menon (National Centre for Scientific Research "Demokritos", GR)
- ❖ DRS9c – RESCUE (IA): Marc Velasco (Suez Environment, ES)
- ❖ DRS9c – BRIGAD (IA): Rochel Moll (Delft University of Technology, NL)
- ❖ DRS10 – EXPRESSO (CSA): tbc
- ❖ DRS11 – HERACLES (RIA): Giuseppina Padelloni (CNR, IT)
- ❖ DRS11 – STORM (RIA): tbc
- ❖ DRS22 – CLISEL (CSA): Elisa Fonale (WTL, CH)

3.4.3 Community of Users – June 2018

During the 11th CoU meeting, EU-CIRCLE participated at the Thematic Workshop – Theme 9: Extreme Weather and Climate Events - Afternoon session. Dave Stewart from TORBAY presented the project's 3rd Case Study focusing on how stakeholder may benefit from EU research projects. University of Exeter and Satways provided live demonstrations of CADDIES and the CIRP platform.



The full video of the presentation is available at:

https://www.youtube.com/watch?list=PLMuWJk6gpCgDOQUubXjkDm5G35_LEKaNU&v=BXP8l_8vQjM

3.5 EU-CIRCLE Newsletter & Bulletins

Newsletters and bulletins are distributed (as digital documents only) following important occasions in the course of the EU-CIRCLE project (Workshops, et cetera). The newsletters are emailed to a dedicated email list, to which website visitors can subscribe, and can also be downloaded from the EU-CIRCLE Website. The reader is invited to follow the link to the remainder of the article on the EU-CIRCLE Website and gain access to information about the EU-CIRCLE project and the Partners involved. These feature articles either deal with certain aspects of the project, or describe the activities during the workshops and other relevant events.



Figure 7: Front page EU-CIRCLE Newsletter#1,2,3

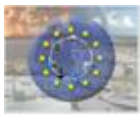


Figure 8: EU-CIRCLE Bulletins for M19-M36 period

3.6 Social media presence

EU-CIRCLE uses social media like LinkedIn, Facebook and Twitter to inform the community of upcoming events and during its workshops. We have chosen these three because they address different target groups, although they have many features in common. In addition to providing direct and up to date information, the aim is for the social media tools to encourage followers to visit the EU-CIRCLE website.

Figure 9: The home page of EU-CIRCLE's Twitter account. (accessed on 10th October 2018)

Indicators on the use of the Social Media tools are presented in paragraph 3.8.

3.7 Miscellaneous dissemination results

During the EU-CIRCLE project a series of actions were taken in order to increase the impact of dissemination activities. For that purpose a poster and banner were created for general use, during M25 and were being updated until the end of the project (M40). The poster and banner illustrates the key points of EU-CIRCLE project, such as the goals of the project and the methodology used, alongside the five case studies in a comprehensive and easy to understand manner. The material is shown in Figure 10 and Figure 11.

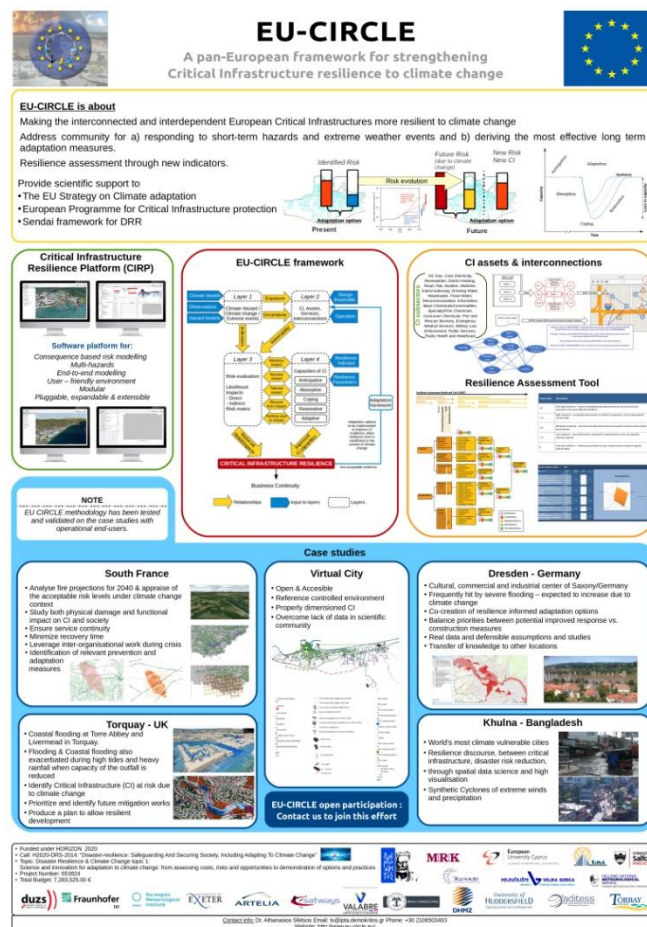


Figure 10: EU-CIRCLE common poster

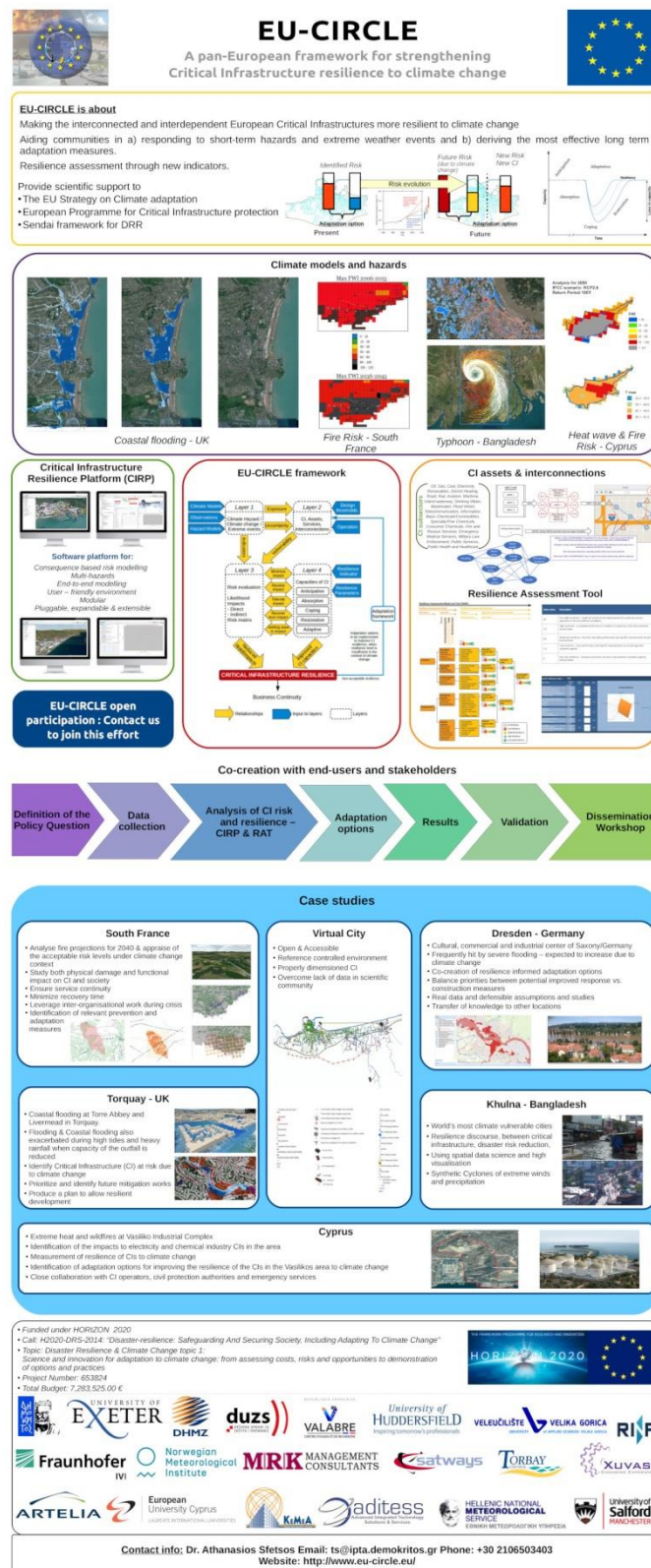
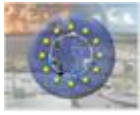


Figure 11: EU-CIRCLE final banner

Moreover, a USB hum-drive (see Figure 12) was distributed in different occasion, with the EU-CIRCLE logo imprinted and relevant material compiled inside. The latter consisted of:

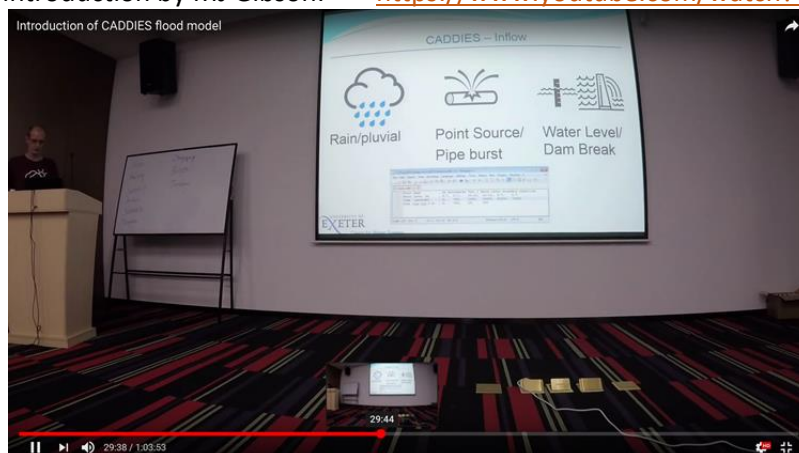
- Presentations about the EU-CIRCLE project and its scope
- Demonstration videos of CIRP tool
- Reports about the case studies etc.



Figure 12: EU-CIRCLE USB hum-drive

EU-CIRCLE Also produced two videos on **youtube** for :

CADDIES model introduction by MJ Gibson: <https://www.youtube.com/watch?v=hyBS9DUFJDw>



Flood impact to Paignton by AS Chen: https://www.youtube.com/watch?v=gMfZPVGnw_M





3.8 Key Performance Indicators

The success of the activities set out in the Dissemination Plan depends on their regular monitoring and evaluation, throughout the project's lifetime, so as to measure their impact in 'real-time' and adapt the Plan when needed to achieve its aim. As such the Dissemination Plan is a 'living document' and may be revised during the project's lifetime; this is expected to maximise success and visibility (the current document is the update in M40).

At the start of the project, Key Performance Indicators (KPIs) were defined per type of communication activity which are continually measured and monitored. The table below presents the KPIs at M6, M12, M24 and M40.

Table 3: Summary table Key Performance Indicators (Target, achieved M6, M12, M18, M24, M40)

	Target KPI (good) 40 Months	Achieved M1-M6	Achieved M7-M12	Achieved M13-M18	Achieved M19-M24	Achieved M25-M40	In Total
EU-CIRCLE Website Users ¹	5000-10000	661	1068	1214	256	2079	5278
EU-CIRCLE Website Hits ¹	5000-10000	1064	1307	1307	295	2582	6555
EU-CIRCLE Website Downloads	50-100	104	131	109	300	132	776
EU-CIRCLE Website Project updates	> 20	14	15	15	16	18	78
EU-CIRCLE Website Views per Update	> 3000 views	2665	2173	2429	282	2013	9562
EU-CIRCLE Newsletter Mailing list	>300	304	33	0	0	32	369
Online tools and Social Media: followers	50-100						
Twitter		25	20	15	28	71	159
Facebook		37	36	5	8	4	90
Online tools and Social Media: Sharing project news	>40 shares						
Twitter		8	45	12	47	84	196
Facebook		8	7	0	0	0	15
Online tools and Social Media: Likes	50 likes / share						
Twitter		5	73	0	15	320	413
Facebook		46	58	0	25	22	129
LinkedIn EU-CIRCLE group: Group members	200-300	26	17	5	4	7	59
Final Workshop	> 150 participants	n/a	n/a	n/a	n/a	100	100
Scientific publications: No of conference presentations	3-7	12	13	14	9	11	59
Scientific publications: No of papers submitted	3-5	0	1	1	1	6	9
Networking with other relevant projects	5 projects	3	3	3	11	2	22



The evolution of the KPI's is illustrated in Figure 13 where the lower boundary of the each KPI's goal corresponds to the 100% completion. The chart indicates that all KPI's, with the exception of LinkedIn members to the project's profile, have reached their target.

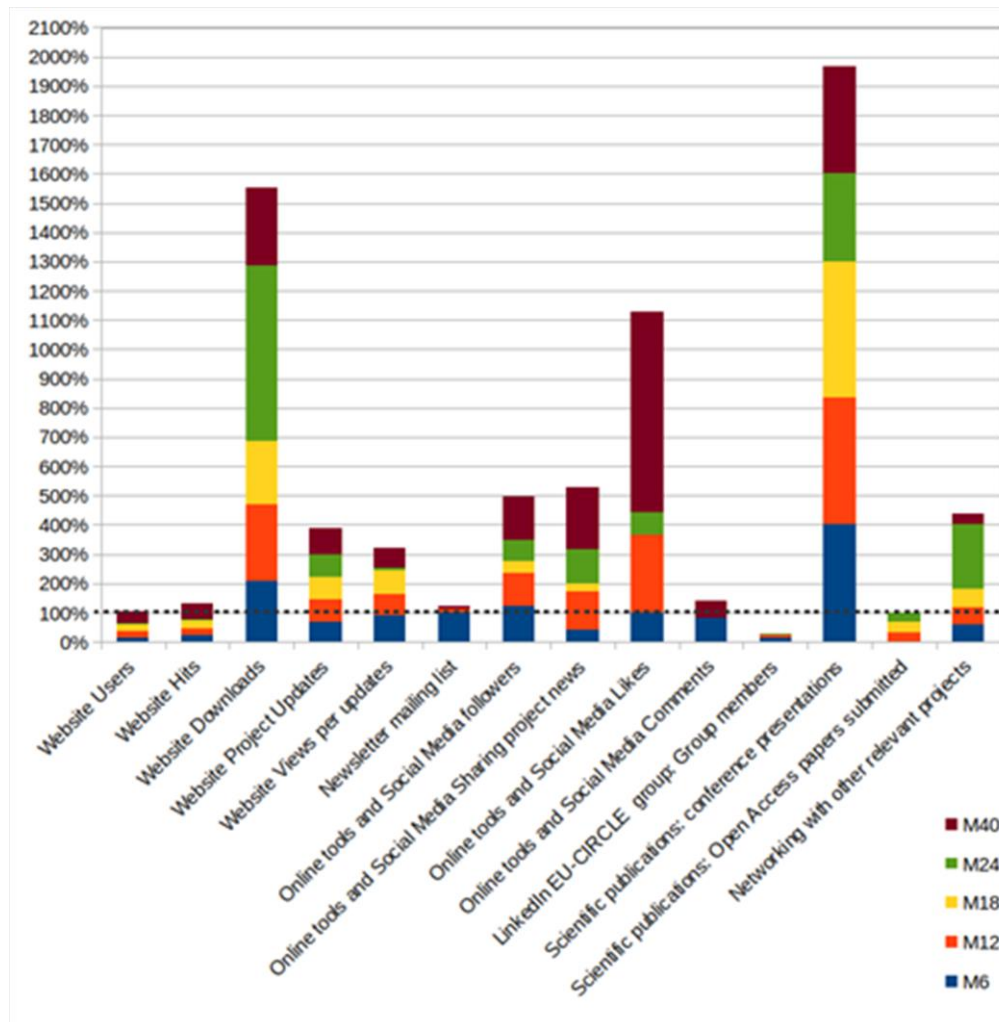


Figure 13: EU-CIRCLE achieved KPI's M1-M40



4 Academic Results

EU-CIRCLE aims to actively pursue scientific publications of its generated knowledge in Open Access scientific peer-reviewed outlets as agreed upon in the EU-CIRCLE grant agreement⁴. In the EU-CIRCLE Dissemination plan it is indicated that EU-CIRCLE will be following the anchoring principle of Horizon 2020, International Conferences and Thematic Workshops. Open access is defined by the EU as the practice of providing on-line access to scientific information that is free of charge to the end-user and that is re-usable. In the context of research and innovation, 'scientific information' can refer to (1) peer-reviewed scientific research articles (published in scholarly journals) or (2) research data (data underlying publications, curated data and/or raw data). Table 4 below lists the open access publications, as well as other academic publications, such as peer-reviewed academic conference papers (published in Proceedings or not) that were produced as part of EU-CIRCLE activities.

Table 4: EU-CIRCLE Academic Publications, and Open Access Publications (M1-M40)

Title of Publication	Type of Publication	Authors	Name of Journal/Conference
A Resilience Framework for Critical Infrastructure	Conference Paper	M.Thayaparan, B.I.Ingirige, C.P.Pathirage, U.Kulatunga and T.Fernando	Proceeding of 12th International Conference of the International Institute for infrastructure Resilience and Reconstruction (I3R2)
Integriranje upozorenja o vremenskim ekstremima u upravljanju rizikom od katastrofa.	Conference Paper	Ivančan-Picek, Branka; Bajić, Alica; Cindrić Kalin, Ksenija; Güttler, Ivan; Horvath, Kristian; Perčec Tadić, Melita	Crisis Management Days. 12-13 April 2016, Split, Croatia
Integration of warnings about weather extremes in disaster risk management			
Meteorološka podloga procjeni rizika od snijega i leda u Republici Hrvatskoj.	Conference Paper	Perčec Tadić M; Ivančan-Picek B; Bajić A.	12th HRO CIGRE Session (HRO CIGRE: national branch of Conseil International des Grands Réseaux Électriques), Šibenik, Croatia, 9-11 November 2015. ISSN 1849-5346
Meteorological basis for snow load and icing risk assessment in Croatia.			
The role of climate data in assessing critical infrastructure resilience to climate change	Conference Paper	Athanasios Sfetsos, Diamando Vlachogiannis, Ivan Guettler, Melita Perčec Tadić, Ksenija Cindrić Kalin, Nadia Politi	Joint Congress of the 6th International Conference on Meteorology and Climatology of the Mediterranean (MetMed) & Challenges in Meteorology 5 (MI5), Zagreb Croatia, 20-22 February 2017
Simple and approximate estimation of future precipitation return-values	Journal (impact factor 2.510)	Rasmus E. Benestad, Kajsa M. Parding, Abdelkader Mezghani, and Anita V. Dyrddal	Natural Hazards and Earth System Sciences (NHES)
Optimal resilience planning	Conference,	Dr. Ralf Hedel, Dr. Stefan	5th Annual Conference

⁴ Grant Agreement Number 653824 EU-CIRCLE. This is EU-CIRCLE Task 8.5 as identified in the Grant Agreement.



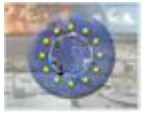
for interconnected critical infrastructures – developments of the EU-CIRCLE project	proceedings peer reviewed	Hahmann, Patrick Brausewetter, Dr. Athanasios Sfetsos, Dr. Antonis Kostaridis, George Eftychidis, Ilias Gkotsis, Alice Clemenceau	“Interagency Interaction in Crisis Management and Disaster Response”
Enhancing the resilience of interconnected critical infrastructures to climate hazards	Conference, proceedings peer reviewed	Sfetsos A., Vamvakeridou-Lyroudia L.S., Chen A.S., Khoury, M., Savic D.A., Djordjevic S., Eftychidis G., Leventakis G., Gkotsis I., Karavokyros G., Koutiva I., Makropoulos C.,	15th International Conference on Environmental Science and Technology, Rhodes, Greece, 31 August to 2 September 2017
Energy critical infrastructures at risk from climate change: A state of the art review.	Journal (Impact factor:2.835)	Mikellidou, C.V., Shakou, L.M., Boustras, G. and Dimopoulos, C.,	Safety Science, Volume 110, Part C, December 2018, Pages 110-120, DOI: 10.1016/j.ssci.2017.12.022
Human agency in disaster planning: a systems approach	Journal (Impact factor:2.898)	Powell JH, Hammond MJ, Chen AS, Mustafee N.	2018, Risk Analysis: an international journal, DOI:10.1111/risa.12958.
3D visualisation tool for improving the resilience to urban and coastal flooding in Torbay, UK	Journal (Impact factor:0.89)	Chen AS, Khoury M, Vamvakeridou-Lyroudia L, Stewart D, Wood M, Savic D, Djordjevic S.	2018, Procedia Engineering, 212, 809-815, DOI:10.1016/j.proeng.2018.01.104.
Interactive 3D visualisation of flood impact to critical infrastructure	Conference, proceedings peer reviewed	Chen AS, Khoury M, Savic DA, Vamvakeridou-Lyroudia L, Djordjevic S.	2017, 14th IWA/IAHR International Conference on Urban Drainage.
Generalised Pareto distribution: impact of rounding on parameter estimation	Journal (impact factor: 2.640)	Pasarić Z.; Cindrić Kalin K.	Theoretical and applied climatology
Intensive rainfall event in Croatia during September 2017	Journal (not peer reviewed)	Cvitan L., Renko T., Cindrić Kalin K., Kozarić T., Mikuš Jurković P.	Hrvatska vodoprivreda (Croatian Water Management journal)
Wind over the Adriatic Region in CORDEX Climate Change Scenarios	Journal (impact factor: 3.38)	Belušić A., Güttler I., Ahrens B., Obermann-Hellhund A., Telišman Prtenjak M.	September 2018: in the 2nd round of the review in Journal of Geophysical Research: Atmospheres
Procjena učestalosti uvjeta za zaleđivanje uslijed pojave niske temperature i oborine. (in Croatian) Frequency estimation of the icing conditions as a consequence of low air temperature and precipitation.	Conference, proceedings peer reviewed (accepted)	Perčec Tadić, M., Sokol Jurković, R.	7. konferencija Hrvatske platforme za smanjenje rizika od katastrofa, Zagreb (in Croatian). Seventh Croatian National Platform for disaster risk reduction conference 2018
EU-CIRCLE methodological approach for assessing the resilience of the interconnected critical infrastructures of the virtual city scenario to climate	journal - not peer review	Theodoros Katopodis, Athanasios Sfetsos, Vasiliki Varela, Stelios Karozis, Georgios Karavokyros, Georgios Eftychidis, Ilias Gkotsis, Georgios Leventakis, Ralf Hedel, Ifigenia	Energetika 64(1), pp 23–31, 2018



change,		Koutiva, Christos Makropoulos	
A methodological approach for assessing the resilience of the interconnected EU critical infrastructures to climate change	Conference Proceedings - peer review	Athanasios Sfetsos, Theodoros Katopodis, Stelios Karozis, Georgios Karavokyros, Georgios Eftychidis, Georgios Leventakis, Ralf Hedel, Ifigenia Koutiva, Christos Makropoulos	52nd ESReDA Seminar On Critical Infrastructures: Enhancing Preparedness & Resilience for the security of citizens and services supply continuity, 30-31 May 2017, Kaunas, Lithuania
Demonstrable EU-CIRCLE scenarios in SimICI based on the interconnected European Critical Infrastructure of a virtual city,	Conference Proceedings - peer review	T. Katopodis, A.Sfetsos, V. Varela, G. Karavokyros, Ifigenia Koutiva, C. Makropoulos, D.Prior,	SafeAthens 2017, 28-30 June 2017 Athens Greece
Stakeholders' engagement in assessing the impacts of future wildfires on interconnected critical infrastructures in Cyprus,	Conference Proceedings - peer review	L.M. Shakou, C. Varianou Mikelidou, G. Boustras, A. Sfetsos, V. Varela, George Eftychidis	SafeAthens 2017, 28-30 June 2017 Athens Greece
How interconnected critical infrastructures can support societal resilience under future climate: The EU-CIRCLE approach	Publications Office of the European Union ISBN: 978-92-79-74444-0	Athanasios Sfetsos, Theodoris Katopodis, Anastasia Eleftheriadou, George Eftychidis, Ilias Gkotsis, George Leventakis, Ralf Hedel, Stefan Hamman, Louisa M. Shakou, Cleo Varianou Mikellidou, George Boustras, Catherine Freissinet, Jean Lecroart, Midori Million, Tariq Hisham, Chaminda Pathirage, Nenad Petrovic, Alen Stranjik	2nd International Workshop on Modelling of Physical, Economic and Social Systems for Resilience Assessment in 14-16 of December 2017
A pan - European framework for strengthening Critical Infrastructure resilience to climate change EU-CIRCLE	Conference Proceedings - peer review	A. Sfetsos	7th International Conference on Building Resilience, Bangkok Thailand, 27-29 November 2018
Technologies and Actionable Knowledge for Disaster and Climate Change Resilience of Urban Environment	Conference Proceedings - peer review	W. David, B.A. Sarbu, I. Gkotsis, A. Sfetsos	6th Annual Interagency Interaction in Crisis Management and Disaster Response Conference, 5-6 JUN 2018 in Sofia
Damage functions for transport infrastructure	Journal (Scopus referenced)	N. Habermann and R. Hedel	International Journal of Disaster Resilience in the Built Environment
Climate Changes and Landslide Hazard	Journal review	Petrović, N., Božić, B., Lukić, I.	Ann. Disaster Risk Sci. 2018, 1, p.3-18
Generic Resilience Indicators of Critical Infrastructures	Journal review	Petrović, N., Stranjik, A., Peternel, R.	Ann. Disaster Risk Sci. 2018, 1, p.97-103



Strengthening Critical Infrastructure Resilience to impacts of Climate Change: EU CIRCLE Approach	Conference Paper	Hisham, T., Pathirage, C., Shakou, L.M., Sfetsos, A., Petrovic, N.	Infrastructure Resilience Conference 2018, 14 to 16 February, Zurich
Resilience of Interdependent Critical Infrastructure Networks to the impacts of Climate Change	Conference Paper	Shakou, L.M., Hisham, T., Sfetsos, A., Petrovic, N., Million, M.	Infrastructure Resilience Conference 2018, 14 to 16 February, Zurich
Methodology Framework for the Potential Loss of Life Estimation in Case of a Disaster	Conference Proceedings - peer review	Škanata, D., Magdalenić, I., Gašparić, A-M.	Proceedings on 11th International Conference Crisis Management Days, Brijuni, 2018, Abs. p.56-57
Social and Political Impact of Critical Infrastructure Inoperability caused by Climate Change	Conference Proceedings - peer review	Črnko, M., Magdalenić, I., Gašparić, A-M.	Proceedings on 11th International Conference Crisis Management Days, Brijuni, 2018, Abs. p.51-52
Impact of Precipitation on the Landslides Activation in the Context of Climate Changes	Conference Proceedings - peer review	Petrović, N., Božić, B., Lukić, I.	Proceedings on 11th International Conference Crisis Management Days, Brijuni, 2018, Abs. p.44-45 - Paper has been prepared for publication in the journal Ann. Disaster Risk Sci.
Resilience Assessment Model of Critical Infrastructure to Climate Change	Conference Proceedings - peer review	Petrović, N., Stranjik, A., Peternel, R.	Proceedings on 11th International Conference Crisis Management Days, Brijuni, 2018, Abs. p.61-62 - Paper has been prepared for publication in the journal Ann. Disaster Risk Sci.
Business continuity under climate pressure: The EU-CIRCLE approach	Conference Proceedings - peer review	Gkotsis, I., Eftychidis, G., Sfetsos, A.	Proceedings on 11th International Conference Crisis Management Days, Brijuni, 2018, Abs. p.75-76



5 Impact of the dissemination activities

During the 40 months of the project, EU-CIRCLE has been engaged in multiple dissemination activities targeting diverse audiences and interest groups and has managed, to an important extent, to reach the specified objectives of the D8.1 “Consolidated Dissemination, Communication and Exploitation Plan”.

O1. Raise awareness of the project’s aims and subsequent results at the local, national, European and international levels.

EU-CIRCLE has been engaged in different events as identified in Table 2, where all types of communities have been targeted and communicated. An analysis of the geographical distribution of the performed activities shows that:

- ✓ 20% (or 31 of the declared activities) have an international dimension, either performed outside the EU or had participants from outside the EU. This includes predominantly participants from the USA, China, S.E. Asia and the Americas.
- ✓ 58% (or 91 of the declared activities) reached a European audience that included members of the CI community and scientific world (meteorologists/climatologists, hydrologists, disaster reduction / resilience communities, safety, energy, transportation and water systems).
- ✓ 22% (or 34 of the declared activities) targeted national audiences in each partner’s country, which in addition to the above type of audience included the general public.

O2. Increase the reputation and visibility of the project and its constituent partners.

The project, through the performed dissemination actions described in Section 3&4, has achieved high visibility amongst large groups of the science and CI community. The electronic dissemination media reached more than 5000 persons (see KPIs – Section 3.8) and the collective number of participants in related events reached cumulatively the order of a few hundreds. This resulted in enhancing the visibility of the partner organizations and strengthening working relationships with leading scientific organizations and the CI stakeholders. Additionally, several partners have been engaged in outreach activities in international initiatives and academic communities that include similar research projects (the US funded NIST-CORE, Typhoon and Flood Research in Taipei) and international conferences on CI protection and disaster resilience in Thailand, China, Ontario, Sri Lanka and Taiwan.

O3. Promote the project’s results to CI stakeholders through the establishment of a bi-directional communication channel with them.

The EU-CIRCLE consortium has considered interaction with the CI and climatology stakeholders as an important element in producing meaningful and usable results that could be further exploited by the consortium. The consortium has identified a large and diverse CI stakeholder group that have been subject to targeted interaction. The consortium has been engaged in interaction with representatives of the above groups in order to discuss eventual climate change impacts to CIs, the methodological framework of the project and to familiarize end users with the approach adopted by the consortium for assessing climate change related risks to essential services as well as for considering resilience concepts and indicators within the operators security plans. These activities include:

- ✓ Participation in national events and specifically organised meetings with the CI operators in various countries (CY, DE, GR, FR, UK), and engagement in bilateral discussions of EU-CIRCLE partners which are National Contact Points (CNP) in accordance to the Directive 114/2008.



- ✓ Link to other projects, DRS 9 through CDB, CoU Climate Clustering workshop, DRMKC workshop, 2EISAAC, EPCIP community, ECTRI TG Security and Risk Analysis, EARTO, SW Regional Flood Committee.
- ✓ Active involvement of the CI operators in the case studies with direct communication with the project in FR, CY, UK, Bangladesh, DE. All participants were involved through genuine interest in the scope and objectives of EU-CIRCLE

Table 5. List of Involved organization in CS conduction

Case Study	Involved CI operators, Local/Regional/National Authorities
	Non-project partners
CS1	RTE, ENEDIS, ESCOTA, Forestry National Organization
CS2	AHK, VTTV, Petrolina, Vasilikos Cement Plant, CCD, Department of Meteorology
CS3	South West Water, Western Power Distribution, British Telecommunication, Torbay Council (Highways, Emergency Planning, Engineering), Wales and West Environment Agency, Network Rail
CS4	Khulna Power Company, Centre for Environment and Geographic Information Sciences (CEGIS), Khulna City Corporation, Khulna University, Khulna University of Engineering and Technology, Khulna Water and Sewerage Authority, Khulna Development Authority, West Zone Power Distribution Company Limited, Bangladesh Meteorological Department
CS5	City of Dresden - Department of environment, City Sewage system operator, DREWAG, Dresdner Verkehrsbetriebe

The cooperation between the consortium and the EU-CIRCLE stakeholders collectively led to a better understanding of what the CI community perceive as resilience, how they work as regards their preparedness to address threats and manage natural hazards related to climate change as well as how they believe that relevant information should to be delivered to them to improve their mitigation and adaptation plans.

O4. Promote and generate demand for CIRP and other project results to the CI and other relevant stakeholder communities.

The interaction with the CI stakeholder communities has been extensively pursued within the 2nd period of the project to promote the project work and achieved results and as a means to generate demand and expectation on the development of the CIRP. To that extent there have been presentations to different communities such as:

- i) the CI owners operators at an EU level within the framework of the ERNCIP and related training activities (CSDP presentation at KEMEA – June 2018)
- ii) climatology and meteorology community (DHMZ, MetNO, NCSRD) also including a presentation at the UK Met Office (March 2018)
- iii) the emergency management community through its involvement in the Cyprus Workshop Table Top Exercise, and also through the conduction of the project case studies
- iv) events targeting the insurance community (UNEXE, RINA-C)



O5. Seek industrial partners from the CI community for testing and capitalising the project's results.

The industrial sector partners of the project (ARTELIA, RINA-C) have been thus far the driving force in seeking industrial partners for capitalising on the project's results up to this point. Benefiting from their leading role as European consulting organizations, they have paved the way in identifying the market needs and requirements from the project's ongoing work. It contributed to the identification and screening of customised knowledge capitalization, inviting the CI community and the financial sector to use and/or evaluate the models, whereas consortium members may provide customised tools as service to interested parties. In order to exploit project results and create a "Critical Infrastructure resilience to climate changes" community, an exploitation model has been created. The objective is to facilitate the contacts and the business activities related to buy and sell models, data, services and assessment related to the project outcomes and CI resilience in general. The model is available at

http://www.dappolonia-innovation.com/eu_circle/

O6. Align the project's dissemination activities with calendar events of relevant EU programmes & other initiatives.

The project has been actively pursuing active collaboration with several other projects in the field (RESIN, RESCCUE, BRIGAD) during the CDB action, and also participating in joint events and workshops, pursuing the transfer of knowledge and best practices identified. Furthermore, NCSR and KEMEA participated in a meeting of FP7 and Horizon 2020 projects which possible synergies on climate research – CoU May 2017.

Also a joint session was co-organized at the ECCA 2017 Conference "2.10-Guidance for EU and national bodies in identifying options for innovative solutions to increase resilience". Furthermore, the project organized a specific CI Workshop on CI protection in Cyprus on 7-8th March 2017 to promote a better understanding of the climate change risks between the CI community and the project participants, with envisaged international participation.

O7. Share know-how and project outcomes with the relevant scientific communities.

The project partners have been actively participating in disseminating the project work to the scientific community through the participation in many events from the national to the international scale. In summary, the project partners have been present in 46 different events of academic relevance directly aimed at transfer of knowledge activities with the various communities that are relevant to the project. These include amongst others : ECCA-2017, MetMed 2017, CI Protection & Resilience 2017, INBO 2017, FloodExpo 2017, ICBR 2017, CRITIS 2017 & 2018, International Conference on Infrastructure Resilience, CCWI/WDSA, HIC 2018, IANUA-ISSUE 2018.

O8. Disseminate internally within the consortium through collaboration and information exchange between partners.

The project partners have been using different electronic information exchange platforms and social media to collaborate on how to enhance the dissemination of the project's outcome and strengthen the visibility of the project. The use of the electronic means significantly reduced the need for face to face meetings between the partners, according to the JPI "Climate Friendly Climate Research" initiative.

The consortium has been committed to the principles of Open Research Data Pilot, and uses either a CC-BY or CC-0 license for all of our project products in order to ensure that they are shared with minimal

restrictions, aside from attribution to the authors or creators. EU-CIRCLE is committed to participating in the EU Open Research Data Pilot. EU-CIRCLE adopted those objectives and in addition to this, the datasets generated in WP7 (the virtual SimICI) followed the EU policy and JPI approach guidelines. These were made available to the scientific community through the following link:

<https://dx.doi.org/10.5281/zenodo.1408743>

O9. Overall type of people reached during the dissemination activities and type of the latter, provide an indicator of the effort to commune the goals and the result of the project.

During the EU-CIRCLE, a great effort was made to diffuse the knowledge and experience gained to different groups of people. Figure 14 illustrates the amount of activities (a total of 156), categorized in types of dissemination actions. The methodology used in the case studies had to be evaluated and reviewed by peers in specialized meeting such as international conferences hence, the most “popular” type of dissemination action was the participation to conferences alongside the pitch events and workshop organisation.

On the other hand, Figure 15 demonstrates the categories of people that EU-CIRCLE achieved to commune the results of the project. More specific, the scientific community and general public hold the majority of people that reached, indicating an effort (a) to peer review the methodology used and create a feedback loop in order to create a more robust result, and (b) to announce the goals and scope of the project to the general public in a comprehensive way.

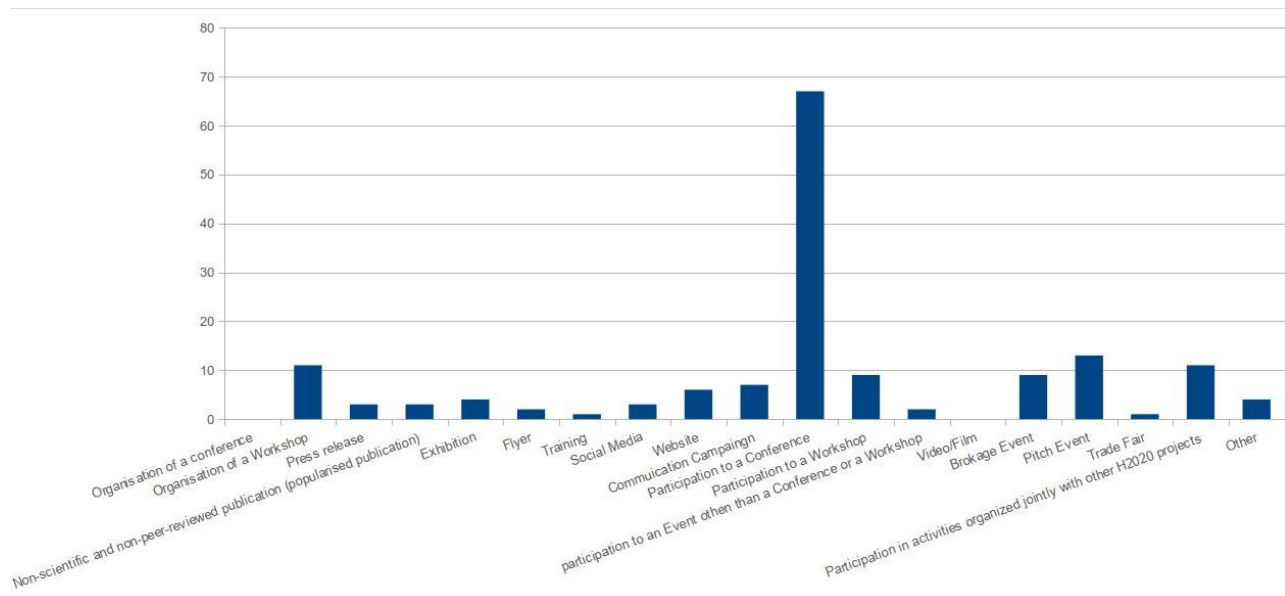


Figure 14: Amount of dissemination activities versus type of activity

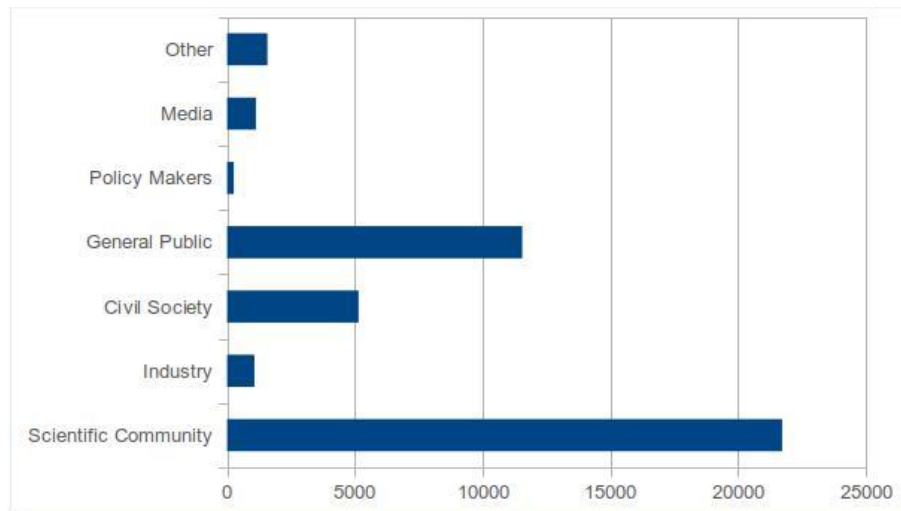
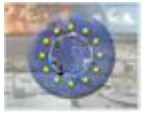


Figure 15: Type of groups reached versus amount of people



6 Conclusions

During the EU-CIRCLE project, all project partners have been actively involved in dissemination actions. Owing to the vast potential interest groups that have been identified and the diverse scientific domain that is of relevance to the EU-CIRCLE a multitude of dissemination activities have been registered by the partners aimed at the CI community, similar EU and International projects and the scientific /academic community. The events had a diverse attendance including from the national community as well as European and International representation which significantly expanded the potential for transferring the generated messages from the project to the widest possible interested parties.

Furthermore, the quantitative targets that have been set for the electronic dissemination of the project's outcome have been met to a large degree (as indicated in Table 3 and Figure 13).

Moreover, 5 case studies demonstrated the practical use of EU-CIRCLE from the CI community. The CIRP tool allowed users to define and thoroughly examine their individual infrastructure's resilience in their own unique manner, setting respective priorities and assessment of the final product. Two unique activities facilitated the dissemination and exploitation goal of the project: (1) the Simulating Interconnected (Critical) Infrastructures (SimICI), a reference virtual environment for assessing the resilience of infrastructures to climatic pressures, and (2) the Open Call for effective contribution to CIRP.

- EU-CIRCLE established a Simulating Interconnected (Critical) Infrastructures (SimICI): a reference virtual environment for assessing the resilience of infrastructures to climatic pressures (WP7)..
- Additionally, access to the CIRP and SimICI is facilitated to non-consortium members. The Final Workshop, there was an open announcement through the EU-CIRCLE project website, through the national NCP and related scientific societies with an invitation to populate the CIRP and participate with their own models in the final case study.

EU-CIRCLE also pursued the development of Climate Services as defined by the JPI Climate Strategic Research Agenda: user-driven development and provision of knowledge for understanding the climate, climate change and its impacts, as well as guidance in its use to researchers and decision-makers in policy and business (incl. regions, cities and economic sectors). The provision of specialized climate information towards the CI community improved the scientific expertise and technological excellence on extreme weather and climate change risks and adaptation options, but also connected the knowledge with decision makers.