



Integrated Climate Adaptation Service Tools for Improving Resilience Measure Efficiency

<http://www.clarity-h2020.eu>



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Introduction of CLARITY

Goals, Outcome, Stakeholder, Services

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*Urban areas and transport infrastructures linking such areas are **highly vulnerable to climate change**. Smart use of existing climate intelligence can **increase general infrastructures resilience** and **generate added value for businesses and society at large**.*

- Develop an integrated **Climate Services Information System (CSIS)** for resilience assessments, climate proofing of large scale infrastructure projects.
- Maximise **re-use and tailoring** of existing data, technologies, services.
- **Co-creation** with suppliers, purveyors and end-users.
- Demonstrate and validate added value in **4 pilots**.
- Create a **CLARITY community** and make fit for **exploitation**.

- CSIS as an ecosystem of **cloud-based climate services**.
- Increase and enrich **application of existing** data, models and research results in the field.
- **Enable planning** of climate-proof infrastructure on European scale.
- Provide decision makers and project managers with **highly usable tools and services** for their work – enable “resilience by design”.
- Strong **multi-disciplinary community** to implement climate change resilience in urban areas.

Past EU projects developed by CLARITY partners - main references:

ENVIROFI (The Environmental Observation Web and its Service Applications within the Future Internet, FP7-284898, 2011-2013, www.envirofi.eu)

CLOUD BASED ARCHITECTURE

CRISMA project (Modelling crisis management for improved action and preparedness, FP7-284552, 2012-2015, www.crismaproject.eu)

INTEGRATION OF HAZARD/IMPACT MODELS

SUDPLAN (Sustainable Urban Development Planner for Climate Change Adaptation, FP7-247708, 2010-2012, www.sudplan.eu)

INTEGRATION OF CC IN URBAN PLANNING

TaToo project (Tagging Tools based on a Semantic Discovery Framework, FP7-247893, 2010-01-01)

SCENARIO TRANSFERABILITY-CLIMATE TWINS

ESPRESSO--PLACARD-ERA4CS

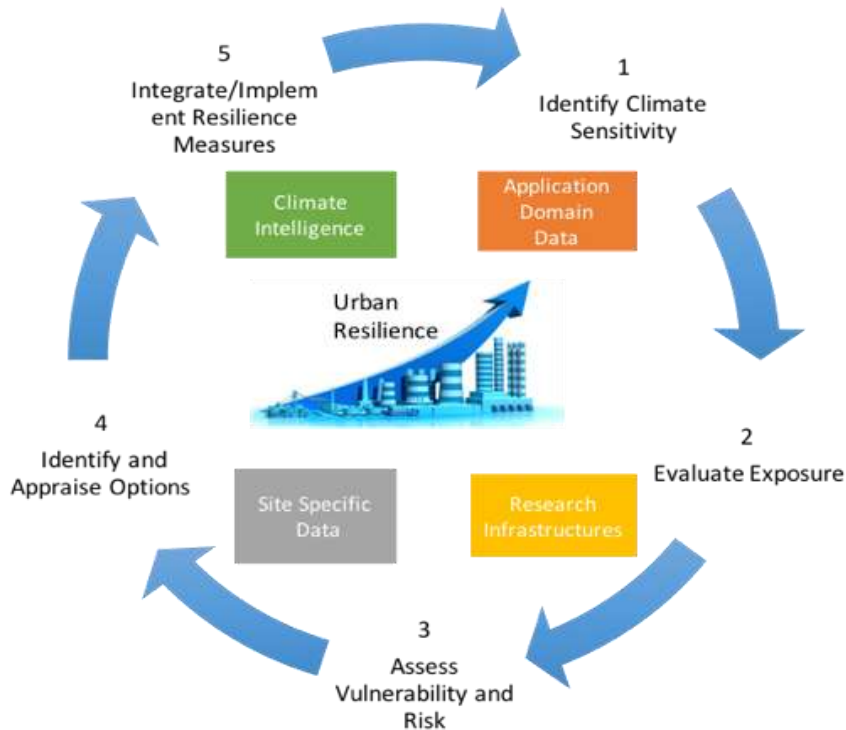
www.espressoproject.eu

COORDINATION AND SUPPORT

OTHER BACKGROUND PROJECTS

- Copernicus Climate Change Services (C3S)
- SWICCA
- Urban SIS
- CLIPC
- EURO-CORDEX
- UHI
- RESCCUE
- EUPORIAS
- SPECS
- CLIMATE-ADAPT
- SIGyM

Concepts and Methods



Modules for climate resilient investments

(EC working document “Non-paper Guidelines for Project Managers: Making vulnerable investments climate resilient”, chapter 2.3)

CLARITY climate services will allow end-users to explore alternative resilience scenarios considering:

1. variable **local context**
2. selection of **relevant climate intelligence**
3. varying hazard **intensities or frequencies**
4. flexible **exposure** scenarios
5. possible variations and alternative options
6. integration of data and simulation model **results**

Concepts and Methods

Implement 4 demonstration cases for showcasing and validating CSIS in different climatic, regional, infrastructure and hazard contexts

Spanish Transport Infrastructure

73 km highway section (A-2 Madrid-Barcelona highway) as a subset of the network of highways and railways:



- 26,038 km (15.7%) highway
- 3,143 km high-speed train network

Adaption Scenarios for Metropolitan Resilience Planning

Metropolitan City of Naples

- 92 municipalities, 1,171 km²
- Population 3 million, density 2.7k



Fostering adaption of large scale infra-structure in Sweden in urban and regional scale



Urban heat waves, urban heat islands, extreme precipitation

Linz, capital of province Upper Austria

- Population 772k in metropolitan area
- Danube valley, continental climate



Consortia

Complementary organizations, European spread



Stakeholder addressed by the partners:

Scientific Sector	Universities, Research Institutes, Applied Sciences, research networks like EUREKA, cooperative research projects on national and international level
Public Services, Government	Public Administrations (cities and communities), Legislative Bodies, Infrastructure Providers Transport, Providers other Infrastructure (Buildings)
Industrial Sectors	Real Estate, Facility Management, Construction, Plant Engineering, Insurances, Investment and Asset Management, Finance, Infrastructure Operators, Planners and Consultants

Value & Service Proposal for Target Sectors



*Make climate-proofing of infrastructure **easier and faster** at a **fraction of the cost** of **individual** climate sensitivity, vulnerability, impact and adaption strategy studies.*

CLARITY marketplace tools

- Public Service Provider Catalogue
 - service provider profiles
 - case studies (demonstrators)
- Public Expert Climate Services Catalogue
 - advisory, consulting, modeling, development, and local data
 - associated with a Service Provider Portfolio
- Customer Inquiries
- Expert Offer

Identified target sectors

- Organizations dealing with planning and risk assessment
- Service providers
- Infrastructure operators
- Cities
- Insurance companies
- Consultancy companies
- (Environmental) Information Agencies

State of the project – what is going on?



- Project kick-off June 2017 (3 year project)
- Co-Creation – gathering of Climate Services Requirements
- For the demonstrators:
 - Data requirements definition, data collection support, demonstration and result validation concept.
- Design of CSIS Architecture and Services:
 - Coordinated effort from the software developers, science teams, and infrastructure (urban & transport) experts.
- Development of an Exploitation Strategy and Business plan.
- Project Branding and communication.

Become part of the community,
help to build up CLARITY community!

Join our Social Media Groups

[@CLARITY_h2020](#)

Register on our web site

<http://clarity-h2020.eu/>

Like and share and comment on our content

Fill in our questionnaire, so we can know you better.



Thank you for your attention!

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Please visit our website for more detailed information:
www.clarity-h2020.eu