

Legacy and innovation in Coastal Climate Adaptation

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WP2

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European Network of Living Labs



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How can the SCORE CCLL approach empower coastal cities to adapt to evolving climate risk, replicable tools/strategies in addressing diverse regional challenges.

TODAY'S OPENING TALK

- ◆ Living Labs, Living what?
- ◆ The Coastal Cities Living Lab Methodology
- ◆ Facilitating innovation for climate change

European
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Living Labs



Smart Control of the Climate Resilience in European Coastal Cities

Living Labs, Living what?

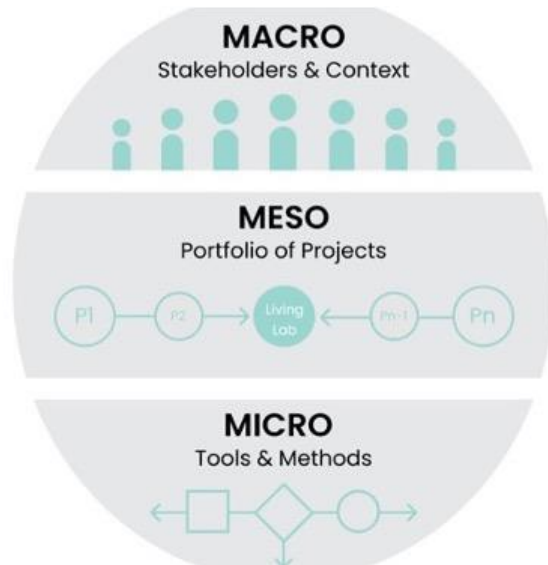


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A Living Lab is more than a project

The concept 'Living Lab' is used for **the organisation** that innovates according to these principles but also refers to **the innovation projects** that follow these guidelines and also links with **specific activities, methods and tools** within these innovation projects.

Therefore, a distinction can be made between a Living Lab organization, a Living Lab project and Living Lab activities, methods and tools.



LEVEL	DEFINITION	RESEARCH PARADIGM
MACRO	Living Lab constellation consisting of organized stakeholders (PPP-partnership)	Open innovation: knowledge transfers between organisations
MESO	Living Lab Innovation Project	Open & User Innovation: real-life experimentation, active user involvement, multi-method and multi-stakeholder
MICRO	Living Lab methodology consisting of different research steps	User Innovation: user involvement & contribution for innovation

Definition and characteristics of a Living Lab

Living Labs are **open innovation ecosystems** in **real-life environments** based on a **systematic user co-creation** approach that integrates research and innovation activities in communities, **placing users at the center of innovation.**

Living Labs are **problem driven**, not solution driven.

In this context, Living Labs operate as **intermediaries/orchestrators** among citizens, research organizations, companies and government agencies/levels, focusing on **interdisciplinary collaboration.**

Within a wide variety of Living Labs, they all have **common characteristics**, but multiple different implementations, combining **tools and methods** from different fields or providing new ones according to **specific contexts.**



Active User
Involvement



Co-creation &
Co-design



Real Life
Context



Multi Stakeholder
Participation



Multi Methods
Approach



Orchestration

The 6 key building blocks of a stable Living Lab



Strategy

- Governance
- Business Model
- Ecosystem & collaboration

Operations

- Human Resources
- Projects
- Equipment & Infrastructure

Openness

- Innovation partnerships & processes
- Ownership of results

Users & Reality

- User-centricity
- Lifecycle & real-life
- Tools & Methods

Impact & Value

- Co-created values
- Monitoring

Stability & scale-up

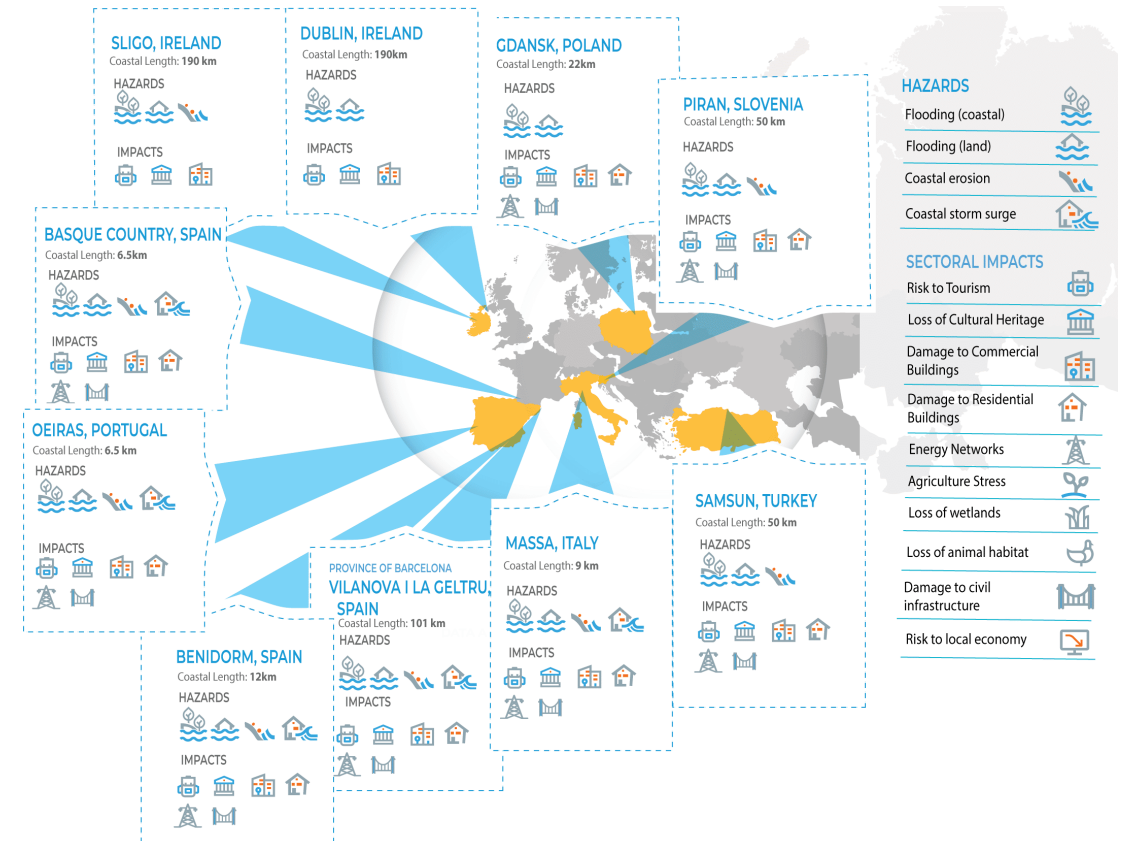
- (Financial) stability
- Scale-up & harmonization

A Coastal City Living Lab

CCLLs are based on the Living Labs concept but **focus on co-designing and co-developing coastal city interventions and activities** through novel **Ecosystems Based Approaches (EBAs)**, involving all relevant stakeholders in the development of it.

A CCLL is an **innovation intermediary**, which orchestrates an ecosystem of actors in a specific region **to tackle specific challenges related to sea level rise, coastal erosion and extreme events**.

SCORE established 10 CCLLs that involve citizens, scientists, policy makers and other stakeholders in providing prototype coastal city early-warning systems. These CCLLs learn from each other in different frontrunner and follower roles, ensuring engagement, empowerment and learning throughout the process.



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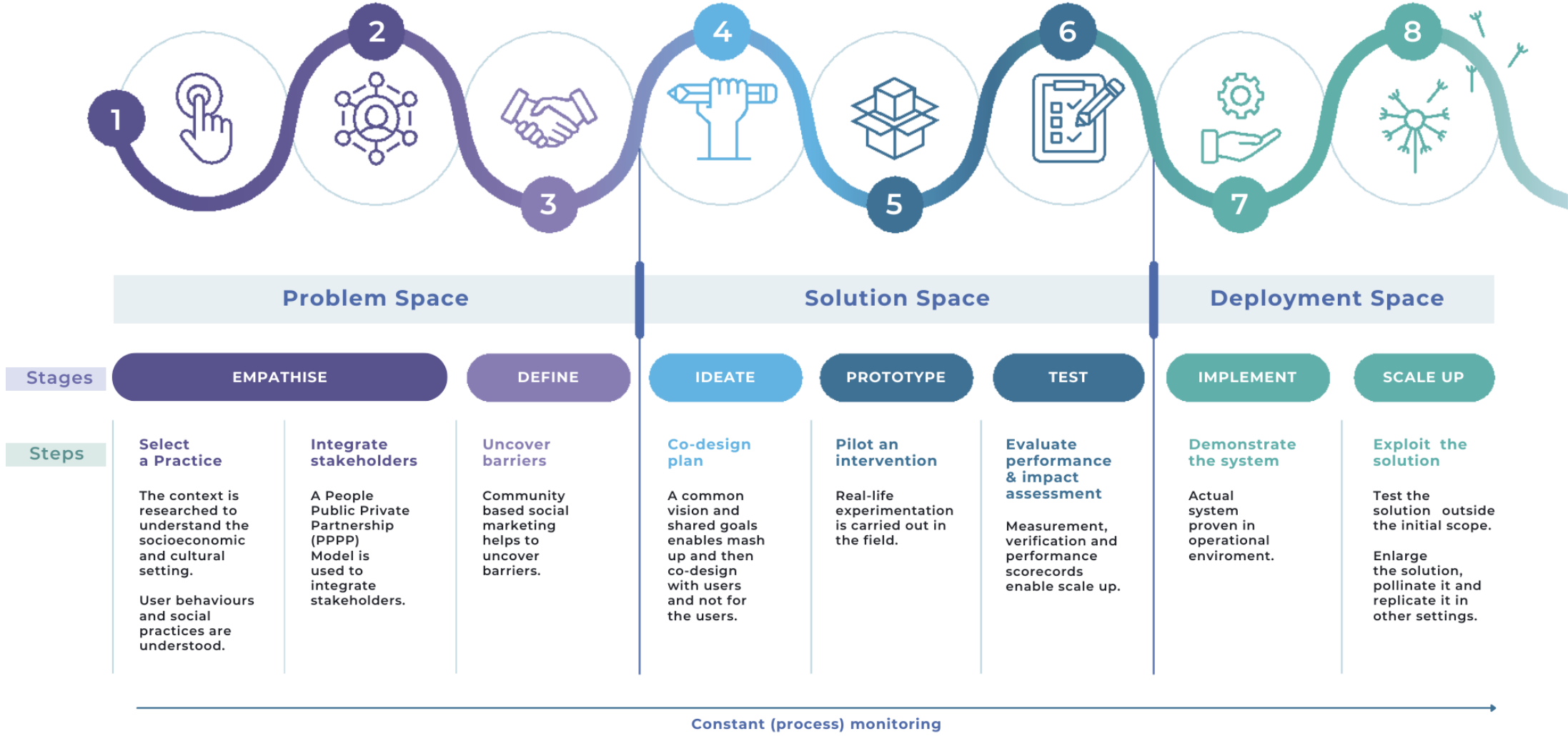
Smart Control of the Climate Resilience in European Coastal Cities

The Coastal Cities Living Lab Methodology



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The CCLL methodology based on the Living Lab Integrative Process



Facilitating innovation for climate change



When to use Living Labs

Living labs are particularly effective for **innovation, co-creation, and evaluation in real-world contexts**. They provide valuable insights into how people interact with new ideas, products, and services, informing further development.

Living labs are well-suited for **addressing wicked problems**, which are complex and difficult to solve. They offer a **participatory and holistic approach to problem-solving**, involving stakeholders and users in the design and evaluation process.

Living labs can be applied to a wide range of wicked problems, such as **climate change, social justice, health and well-being, and education and learning**.

In summary, living labs provide **a flexible and adaptable innovation approach that can help create positive change in society by addressing wicked problems through collaborative and participatory processes**.

Living Labs are here to stay



Adaptation to climate change

Cancer

Climate neutral and Smart Cities

Restore our oceans and waters (Starfish mission)

A soil deal for Europe



NET
ZERO
CITIES



SOILL
S T A R T U P



CIRSEAU
Building a water-smart economy and society



European Network of Living Labs

Water & Oceans

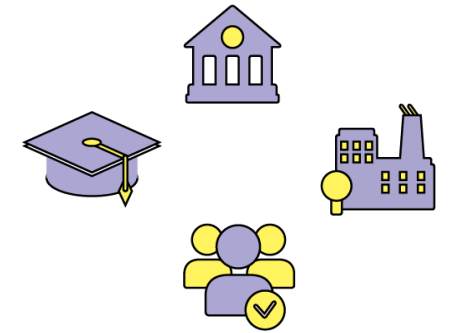
Aims to:

- Drive systemic transition towards a water-smart society
- Unite water-oriented Living Labs and Island Living Labs
- Exchange best practices for coastal and inland water solutions
- Position Living Labs as regulatory sandboxes within the Water nexus

Kick-off February 19: <https://forms.office.com/e/wPhB9vFGWp>

Living Lab offers to stakeholders

- *testing and validation services* (e.g., end-user engagement, rapid prototyping, experimentation, usability, real-life testing...)
- *innovation network orchestration* (e.g., community and network building, stakeholder mapping, stakeholder events...)
- *Living Lab project planning and management* (Living Lab as a service)
- *co-creation services* (e.g., idea selection, facilitation workshops, focus groups, co-design...)
- *capacity building services* (e.g., trainings, mentoring, awareness raising...)
- *advisory services* (e.g., analytical/research services, benchmarking, foresight, regulation support...)
- *market and sales support* (e.g., deployment services, scaling up solutions to other Living Labs...)
- *infrastructure and data management services* (e.g., equipment and facility rental, Living Lab as research/technology infrastructure)



Values created by Living Labs



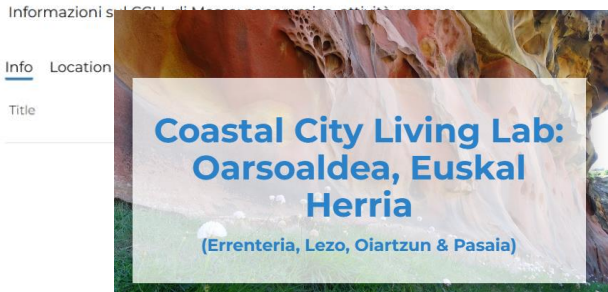
Innovation	Facilitation	Methods & Tools	Resources	Network
<ul style="list-style-type: none">• Innovation eco-system• Enterpreneuers•	<ul style="list-style-type: none">• Managing the ecosystem• Co-creating solutions• Project Management• Engaging Stakeholders<ul style="list-style-type: none">○ BLL Stakeholder dbase○ Municipality dbase○ Web site○ Monthly Newsletter○ Digital channels○ Surveys• Knowledge Transfer• Workshops• Hackathons• Meetings• Surveys• Communication• Reporting and monitoring• Trainings•	<ul style="list-style-type: none">• Project Management• Workshop Tools• Co-creation Models• Engagement Processes• Mentoring / Coaching• Development of methods and tools•	<ul style="list-style-type: none">• Work Facilities• Design support• Workshop & Meeting rooms• Laboratories• Experimentation spaces• Hardware & Software• ICT Infrastructure• Communication media• Knowledge• Expertise• Trainers• Facilitators• Developing facilities•	<ul style="list-style-type: none">• Other Living Labs• Funded Projects• Innovation Ecosystem<ul style="list-style-type: none">○ Accelerators○ TTOs○ Investors• Academia• Public Bodies• Enterpreneuers• Citizens / Users• Fund providers• Developing Network•

The SCORE CCLL Legacy and innovation



Massa Coastal City Livi... [View GeoStory](#)

a geostory from Massimo Perna / March 5th 2024



Oarsoaldea CCLL Geos... [View GeoStory](#)

a geostory from Xabier Sesn [Introduction to CCLL](#) [Identifying Hazards & Solutions](#) [Community GeoSur...](#)

overview

[Info](#) [Location](#)

Title



Piran Coastal City Livi... [View GeoStory](#)

a geostory from Cecil Meulenberg / February 1st 2024

Explore the latest activities of the Piran CCLL.

[Info](#) [Location](#)

Title Piran Coastal City Living Lab (slovenian)

Owner Cecil Meulenberg

The **CCLLs' co-created values**—such as ecosystem-based adaptations (EbAs), smart sensors, digital twins and ICT platforms played a **crucial role** in demonstrating **the network's technological advancements** while **driving societal and environmental impact** within coastal cities.



The SCORE CCLL Legacy and innovation

Climate Change in Oarsoaldea

Oarsoaldea's Environmental Hazards



River Flooding Heat Waves Coastal Flooding

How can Ecosystem-Based Approaches help?

Ecosystem-based approaches (EBAs) are green solutions to help restore ecosystems. EBAs help protect communities against environmental hazards.

Oarsoaldea's Coastal City Living Lab met with community members to prioritise the most relevant EBA's for our region.

Open Green Spaces

Improving and increasing green spaces (i.e., parks & green strips) to promote environmental regeneration, sustainable development and social cohesion.



Addressed Risks

Planting Trees

Planting trees to shade streets, sidewalks and building, protects communities during heatwaves, while promoting biodiversity in urban areas.

Addressed Risks

Reforestation of Riverbanks

Planting vegetation to slow runoff and limit flood damage, and protect our communities from landslides.



Addressed Risks

Climate Change in Piran

Piran's Main Environmental Hazards



Winter Coastal Flooding & Storm Surge Summer Drought & Heatwaves

How can Ecosystem-Based Approaches help?

Ecosystem-based approaches (EBAs) are green solutions to help restore ecosystems. EBAs help protect communities against environmental hazards.

Piran's Coastal City Living Lab met with community members to prioritise the most relevant EBA's for the historic town centre.

Planting Trees

Planting trees to shade streets, sidewalks and buildings, protects communities during heatwaves, while promoting biodiversity in urban areas.



Addressed Risks

Renovation of water wells



Historic wells and reservoirs will retain rainwater and provide fresh water during the summer months, improving the quality and quantity of water.

Addressed Risks

Multi-Purpose EBA Area

Using multiple EBAs, such as planting trees, urban farming and rain gardens will increase green urban spaces and rainwater retention.



Addressed Risks

Climate Change in Sligo

Sligo's Main Environmental Hazards



Coastal & Riverine Flooding Erosion Storms

How can Ecosystem-Based Approaches help?

Ecosystem-based approaches (EBAs) are green solutions to help restore ecosystems. EBAs help protect communities against environmental hazards and provide co-benefits, including job opportunities, improved water quality and biodiversity.

Sligo's Coastal City Living Lab met with community members to prioritise the most relevant EBA's for our region.

Afforestation

Planting trees can reduce flood risk while providing recreational opportunities, supporting biodiversity, and capturing carbon.



Addressed Risks

Peatland Restoration

Peatland restoration in Sligo's Ox Mountains will support carbon capture and reduce flood risk, support biodiversity, and create job and tourism opportunities for the community.

Addressed Risks

Wetland Restoration

Wetlands and marshes play an important role in flood-prevention and provide opportunities for carbon capture, supporting biodiversity, and recreational activities.



Addressed Risks

Climate Change in Vilanova i la Geltrú

Vilanova's Environmental Hazards



Flooding Storm Surge Heatwaves

How can Ecosystem-Based Approaches help?

Ecosystem-based approaches (EBAs) are green solutions to help restore ecosystems. EBAs help protect communities against environmental hazards.

Vilanova's Coastal City Living Lab met with community members to prioritise the most relevant EBA's for our region.

Combination of EBAs

Using multiple EBAs, including the rehabilitation of riverbanks, river bed restoration and increased river bank height, will protect against flooding.



Addressed Risks

Riverbank Restoration



Planting stabilising and climate change-resistant vegetation along the riverbank will reduce runoff, limit flood damage and prevent landslides.

Addressed Risks

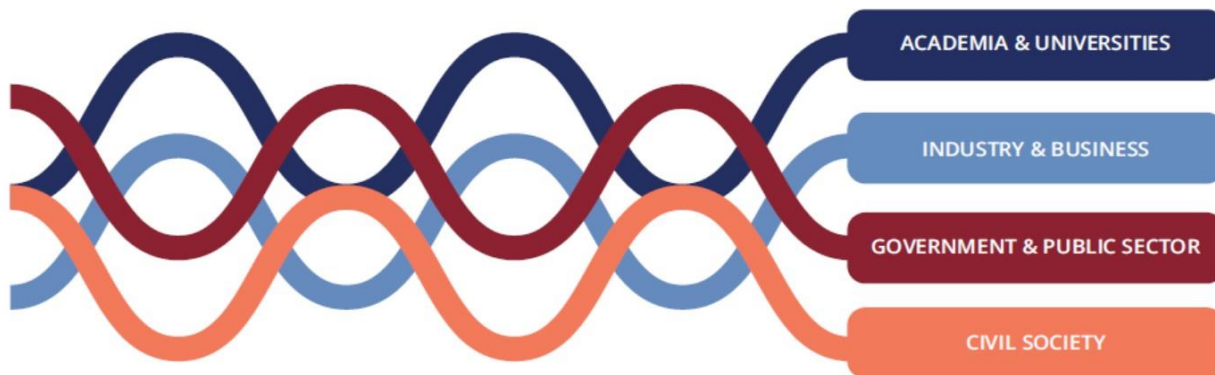
Riverbed Restoration

Restoring the original riverbed depth by removing concrete materials and vegetative debris will accommodate increased water flows and help avoid flooding.



Addressed Risks

The SCORE CCLL Legacy



The CCLLs' co-creation activities with four key actors—**government, academia, industry, and citizens**—have built a legacy of sustained engagement on climate issues while fostering innovation in coastal climate adaptation.



CCLLs Citizen Science Activities

- Empowered local communities to actively participate in data collection, making observations and analyzing information
- Enhanced research capacity, promoted public engagement, environmental awareness

The SCORE CCLL Legacy and innovation



Empowering communities thanks to the first SCORE Training School



Joint policy recommendations for climate adaptation in European coastal cities



Engaging the younger generation in designing our cities with Minecraft



Terraces site visit with students in Piran

The CCLLs' have achieved significant tangible and non-tangible project results linked to their efforts in fostering strong relationships with key partners and stakeholders allowing CCLLs to effectively mainstream results in the wider community.

Thank you!

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