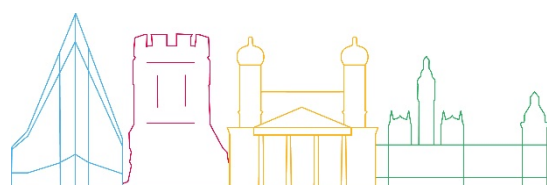




ARCH D6.3

Inventory & Characterization Report of funding measures



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Executive Summary

Deliverable D6.3 “Inventory and Characterization Report of funding measures” is the outcome of “Task 6.3” and contains an inventory of funding measures available from the public and private sectors and also from some of the most important financial and public institutions at the European and national levels. D6.3 is part of WP6 “Resilience Options and Pathway”, which gives insights into how to select the best available resilience options to prepare historic areas and their nature-based resources against potential damages, complementing these insights with the most appropriate funding measures.

Starting from the broad range of resilience options contained in the Resilience Measures Inventory (RMI) developed by Tecnia (D6.1), SOGESCA worked with ARCH pilot (or “Foundation City”) representatives from Bratislava, Camerino, Hamburg and Valencia, as well as the technical partners Tecnia and ENEA to select a few specific measures as being the most appropriate and urgent for the needs of each pilot to make the target historic areas more resilient.

Following an in-depth period of research on funding measures for resilience options in historic areas (chapter 3), SOGESCA developed a methodology for the selection of the most appropriate funding measures for the selected resilience options in ARCH pilot cities. The funding measures are analysed according to a set of parameters resulting in a SWOT analysis for each funding measure.

The funding measures are analysed as applied to the specific case of each pilot. This context-sensitive lens is the result of a SWOT analysis that takes into account the details of each funding measure in combination with the information gathered from the pilots during the interviews conducted by SOGESCA, better described in chapter 4.

For the selected resilience options applicable to each pilot, three funding measures and their applicability to the pilot cities have been part of a deeper analysis. The “applicability” is tested considering the environmental, technological, economic, social and institutional characteristics of each pilot, underlying the value added of the selected options.

The result is a “scoring” of the selected funding measures’ applicability, resulting from matching the characteristics of the funding measures with those of the pilot cities (chapter 5).

Although the analysis results in a score of separate funding measures’ applicability, in view of the resilience options appropriate for a specific pilot city, most of the time a combination of more than one fund is the solution to address the funding needs. In fact, combining multiple funding sources is the most appropriate solution for most of the identified resilience measures, as it provides efficiency gains by exploiting synergies with EU Structural and Investment Funds (ESIF) and mobilising a wider range of actors and resources (JRC, 2020).

The results of D6.3 will be the basis for D6.4 (resilience pathway design).

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List of abbreviations

Abbreviation	Meaning
CAP	Common Agricultural Policy
CINEA	European Climate, Infrastructure and Environment Executive Agency
CLLD	Community-Led Local Development
CSA	Coordination and support actions
DEFRA	UK Department for Environment, Food and Rural Affairs
DEPT	Department
EAFRD	European Agricultural Fund for Rural Development
EC	European Commission
ECN	European Crowdfunding Network AISBL
EIB	European Investment Bank
ENEA	Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile
ENRD	European Network for Rural Development
ESIF	European structural and investment funds
ERDF	European Regional Development Fund
EUROSIF	Europe-based national Sustainable Investment Fora
ESF	European Social Fund
EU	European Union
IA	Innovation Action
ICCROM	International Centre for the Study of the Preservation and Restoration of Cultural Property
JTF	Just Transition Fund
LAG	Local Action Group
MS	Member State
NRRP	National Recovery and Resilience Plan
PPP	Public-Private Partnership
RMI	Resilience Measures Inventory
PA	Public Administration
NOP	National Operational Programme
ROP	Regional Operational Programme
RDP	Regional Development Plan
R&I	Research and Innovation
RIA	Research and Innovation Action
RMI	Resilience Measures Inventory
RRF	Recovery and Resilience Facility
RRP	Recovery and Resilience Plan
SECAP	Sustainable Energy and Climate Action Plan
SEDIA	Single Electronic Data Interchange Area
SWOT	Strength Weaknesses Opportunities Threats
TRL	Technology Readiness Level
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization

1. Introduction

ARCH is a European-funded research project that aims to enhance the resilience of areas of cultural heritage to climate change-related and other hazards. Tools and methodologies are developed with the pilot cities of Bratislava, Camerino, Hamburg, and Valencia, in a co-creative approach with local policy makers, practitioners, and community members. The results will be combined into a collaborative disaster risk management platform for local authorities, practitioners, the urban population, and international expert communities. A range of models and methods will be developed to support decision-making at appropriate stages of the management cycle. The results of the co-creation processes with the pilot cities will be disseminated to a broader circle of other European municipalities and practitioners and promoted through European standardization.

This report is part of WP6 “Resilience Options and Pathway”, which gives insights into how to select the best available options to prepare historic areas and their nature-based resources against potential damages. The Pathway takes into account the risks of the sites, alongside options to safeguard the sites once evidence of potential damages emerges, and techniques for conservation & management. At every step, the Pathway takes future climate projections into account. Moreover, recovery options are analysed to tackle response & recovery once damage has occurred.

In the framework of WP6, D6.3 is the outcome of Task 6.3 and contains an inventory of funding measures available from the public and private sectors and also from some of the most important financial and public institutions at the international, European, and national levels.

In particular, D6.3 provides a broad overview of funding measures for resilience options in historic areas, in the form of an excel spreadsheet divided into sections pertaining to “categories” of funding (see Annex 1) and a more in-depth analysis of the funding measures available for specific resilience options to be implemented in pilot cities. Starting from the broad range of resilience options contained in the Resilience Measures Inventory (RMI) developed by TecNALIA “D6.1 “Inventory of resilience options”, SOGESCA worked with the pilot cities representatives and the technical partners TecNALIA and ENEA to select a few specific resilience options as being the most appropriate and urgent for the needs of each pilot to make the target historic areas more resilient.

To create a resource useful for all the four pilots of the ARCH project, D6.3 “Inventory and characterisation of funding measures” was developed engaging pilot staff involved in climate adaptation, disaster risk reduction, urban planning and cultural heritage management. These partners were considered a valuable part of applied research to find the most appropriate funding measures for their chosen resilience options.

This report classifies the funding measures according to their “applicability” considering the foreseen environmental, technologic, economic, social and institutional characteristics of each pilot.

Innovative financing solutions like crowdfunding and funding through Public Private Partnerships (PPP) were investigated in combination with other funding measures.

Following the categorization and applicability analysis of the selected funding measures, carried out thanks to the involvement of the pilot cities representatives and their local research partners, a SWOT analysis of each funding measure and of its applicability to the pilot is reported. Eventually, for each selected resilience option, the three most suitable financing measures are selected, giving a “rating” of the most suitable ones.

For the purpose of the analysis, telephone interviews were conducted with important funding bodies like Eurosif and the European Crowdfunding Network AISBL (ECN). For Eurosif, the Italian Eurosif Member “Forum per la Finanza Sostenibile” was interviewed and provided useful insights for the research of the most suitable funding opportunities for the selected resilience actions. Regarding ECN, the interview with an Italian member provided extremely useful insights on crowdfunding applied to cultural heritage financing. The example of successful crowdfunding and match funding initiatives provided us a useful guideline for application to some of the selected resilience options. Moreover, a “preparedness” tool developed by Kick-er, the Emilia Romagna Region supporting service for crowdfunding, was used to test the capacity of the pilots to attract funds from crowdfunding for the selected resilience measure of building back better selected buildings in the historic centre of Camerino that were severely damaged by the earthquake in October 2016.

1.1. Gender statement

This document has been developed taking into consideration the guidance on gender in research provided in the Project Handbook (D1.2) as well as State-of-the-Art report number 5 of deliverable D7.1 on “Gender aspects in conservation and regulation of historic areas, disaster risk management, emergency protocols, post-disaster response techniques, and techniques for building back better”.

Following these guidelines, all needs and requirements have been screened for the potential to address gender aspects (i.e. if a requirement might differ due to possible gender differences). In addition, specific initial requirements covering gender aspects have been added (e.g. the need for gender-differentiated population data when conducting risk analyses).

Building from this premise, gender mainstreaming has been approached in three different ways throughout the completion of this report:

- Ensuring gender balance within the internal team involved in the current analysis, with a 1:1 ratio of men and women as authors/co-authors of the report. Considering reviewers, the team includes three men and three women
- Interviewees have been given equal opportunity to participate, regarding their gender, religion or culture. Experts interviewed include both men and women

1.2. Relation to other deliverables

The identification of funding measures will take into account the state-of-the-art reports D7.1 “State of the art reports of concepts, approaches, standards, and technologies” and the established good practices report D7.2 “Mapping and characterisation of experiences and good practices” to make sure that funding measures fit with existing practices.

D6.1 “Inventory of resilience options” provides a whole range of resilience options that served as basis to select the most suitable ones for ARCH pilots, and D6.2 “Assessment of long-term implementation options” served as the basis to narrow down the selection of the pilots’ resilience options to investigate funding measures.

D3.2 “Local partnership and work plan” and D3.3 “City Baseline reports” were analysed as they establish the baseline for each pilot city in terms of needs and identification of local stakeholders.

Findings from D6.3 will feed D6.4 “Resilience pathway visualisation tool”.

1.3. Structure of this report

This deliverable is structured in six main parts.

Chapter 1 is an introductory chapter containing some basic information on the ARCH project and a broad overview of WP6 and D6.3.

Chapter 2 contains the methodology adopted to investigate the funding measures.

Chapter 3 is dedicated to illustrating the results of the research and screening conducted by SOGESCA to derive the available funding measures for resilience options, with special focus on financing opportunities for climate adaptation measures to be applied to Historic Areas (HA). The research was conducted both through desk research and interviews with selected actors to receive advice for suitable categorization criteria and get information about ongoing development of new funding measures. The results of the screening are reported in an Excel file attached in Appendix 1 (provided as separate file).

Chapter 4 is dedicated to the categorization of the following:

- Resilience options related to each pilot (Annex 2 contains the technical data sheets of the selected resilience **options** from D6.1 briefly reported in chapter 4);
- Pilots’ structure (based on a set of indicators: social, technical, economical, institutional and organizational);
- SWOT analysis of identified funding measures for selected resilience options.

Chapter 4 illustrates how to follow the identification process of the most suitable funding measures.

Chapter 5. This chapter contains the applicability of the identified funding measures for the selected resilience options resulting from the crossing analysis of chapter 4 findings. This is represented by a set of SWOT tables containing the points of Strength, Weakness, Threats and Opportunities associated with each funding measure for the selected resilience options

applied to the characteristics of each pilot and a score table of the most suitable funding measures.

Chapter 6 contains the conclusions of D6.3 Inventory and categorization of funding measures.

2. Methodology

The inventory and categorisation of funding measures is a crucial part of the pathway for improving the resilience of historic areas to climate change-related and other hazards. The inventory of funding measures, categorised according to their applicability in different contexts of the ARCH pilots will be one of the tools to support decision-making at appropriate stages of the management of pilot climate change resilience options.

The report consists of an inventory of funding measures available from the public and private finance sectors. In addition, the report classifies the funding measures according to a set of indicators signifying the value added of the selected options in terms of effectiveness, value creation, optimised opportunities and minimised risk, as discussed with the target pilot cities.

The screening of the funding measures was conducted both via desk research and interviews to create an inventory that is reported in Annex 1.

The categorization chapter was written following these steps:

- Identification of resilience options related to each pilot (Annex 2 contains the technical data sheets of the selected resilience options from D6.1)
- Analysis of pilots' structure (based on a set of indicators: social, technical, economical, institutional and organizational)
- SWOT analysis for identified funding measures for selected resilience options

The applicability of the selected funding measures to the pilots is represented with a SWOT table and a score table of the most suitable funding measures.

The findings of D6.3 will feed the Pathway Visualisation Tool D6.4.

The image (Figure 1) below summarizes the main phases of the inventory, which include screening, categorization and applicability of funding opportunities.

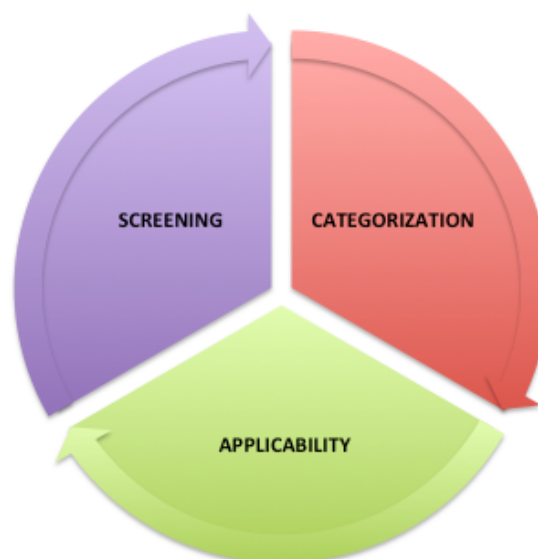


Figure 1: D6.3 Methodology

2.1. Background research and investigation structures

As a first methodological step, a literature review was conducted, including research of grey and scientific literature, EU and international projects websites and other sources like articles and scientific publications, bank foundations, private foundations, donors and foundations networks in Europe (e.i. DAFNE, ENEL, TIM, BOCELLI, Rockefeller, Fashion sector etc.) EU institutions (ECB, EIB, EBRD, EEA), International Organisations (UNESCO, Global Heritage Fund, ICCROM, World Bank, EU Crowdfunding Network, IKOSOM platform for civic Crowdfunding), results of EU funded projects on adaptation and resilience: H2020, LIFE, INTERREG, etc.)

ARCH state-of-the-art reports (D7.1) and established good practices (D7.2) were taken into account to make sure that the selected funding measures fit with existing practices. In addition, ARCH D3.2 “Local partnership and work plan” and D3.3 “City Baseline reports” were analysed as they contain the description of the baseline context for each pilot city.

Meanwhile, direct contacts were activated with EUROSIF (European sustainable and responsible investment association/Forum Finanza Sostenibile), FEBEA (European federation of ethical and alternative banks), ECN (European crowdfunding network), pilot cities municipal officers and their technical advisors.

The background research and the analysis of the ARCH deliverables above was conducted in order to:

- Extract key information for drafting the D6.3 report and outline key concepts and terms that are used throughout the following pages and are necessary to understand the resulting categorization and applicability of financing measures and the SWOT analysis;
- Review main existing financing tools and mechanisms (including non-traditional financing sources like crowdfunding) that contribute to funding resilience measures in HA, with a special focus on the intersections across the fields of cultural heritage conservation, disaster risk management and adaptation to climate change;
- Identify European funding programmes and projects in the fields of cultural heritage resilience; and
- Understand the concept of replication/replicability of good practices and transfer to other settings and contexts.

The results of the research contributed to the identification of a set of funding measures for cultural heritage resilience options. Priority was given to those funds relating to urban or peri-urban settings (or funds otherwise interesting from an urban perspective) and featuring tangible cultural assets – which better respond to ARCH’s scope of work. For each selected resilience option, applicable to each pilot, three funding measures are analysed more in the details to come to a “scoring” resulting from matching the characteristics of the funding measures with those of pilots.

3. Screening of funding measures

3.1. Types of EU funding

The EC official website contains extensive information on available funding. This information has been screened, selected and partly reported in D6.3 for ease of reference. In the EC webpage dedicated to guiding applicants on available funding, the main types of available funding are described: grants, financial instruments (loans, guarantees and equity), subsidies, trust funds prizes and procurements (public contracts).

For the purpose of ARCH resilience options financing, only grants and financial instruments were investigated.

“Grants are direct financial contributions from the European Union budget awarded by way of a donation to third-party beneficiaries (usually non-profit-making organisations) engaged in activities that serve EU policies. This expenditure is mostly subject to centralised management by the European Commission, either directly by its own departments or indirectly through EU agencies, executive agencies or national agencies. Grants are based on the costs actually incurred by the beneficiaries for carrying out the activities in question, and the results of the action remain the property of the beneficiaries”.

Financial instruments are measures of financial support provided on a complementary basis from the budget in order to address specific policy objectives of the European Union”¹.

3.2. The EU 2021-2027 long-term Budget and next Generation EU

The EU defines its budget in the multiannual financial framework, representing the EU long-term budget for the next 7 years².

For the seven years from 2021 to 2027, the multiannual financial framework (MFFR) has a budget of EUR 1.211 trillion to support the recovery from the Covid pandemic and invest in the EU's regions, farmers, companies, researchers, students and citizens in general, as well as neighbouring countries. On top of this, additional budget is provided by NextGenerationEU, the temporary instrument created to support the recovery of the EU from the Covid pandemic, with a budget of EUR 806.9 billion. The total budget is therefore EUR 2.018 trillion in current prices³.

NextGenerationEU is a new temporary recovery instrument with a budget of EUR 806.9 billion (in current prices) created to support the recovery from the COVID-19 pandemic. The fund is managed directly by the EC although it is implemented by the EU Member States (MS). Most of the available funds under NextGenerationEU are allocated to the Recovery

¹ https://ec.europa.eu/info/funding-tenders/how-apply/you-apply-eu-funding-beginners_en

² https://ec.europa.eu/info/funding-tenders/how-apply/eligibility-who-can-get-funding/funding-opportunities-public-bodies_it

³ where not otherwise stated all amounts are intended in current prices

and Resilience Facility (RRF). The RRF has a budget of EUR723.8 billion to be disbursed by grants and loans⁴.

Member States are working on their recovery and resilience plans (RRP) to access the funds under the RRF. The RRF follows new specific procedures. More detailed information on the implementation of the RRF and the implementation of the RRP in the EU MS is available on the official website⁵. Details on national implementation regarding the ARCH countries are reported in paragraph 3.3.2 below.

More than 50% of the 2021–2027 long-term budget are dedicated to the following priorities:

- research and innovation, with the Horizon Europe programme;
- fair climate and digital transitions, with the Just Transition Fund and the Digital Europe programme;
- preparedness, recovery and resilience, with the Recovery and Resilience Facility, the EU's Civil Protection Mechanism (rescEU), and the health programme, EU4Health.

30% of the long-term budget and NextGenerationEU is dedicated to address the issue of climate change, in line with the European Green Deal and the EU target of climate neutrality by 2050⁶.

20% of the Recovery and Resilience Facility funds are dedicated to the EU's digital transformation.

In 2026 and 2027, 10% of the annual spending under the long-term budget will be dedicated to contrast the decline of biodiversity with projects in the field of restoring forests, soils and wetlands and creating green spaces in cities.

The EU budget is divided in the following headings – or spending categories – and programmes:

1. Single Market, Innovation and Digital
2. Cohesion Resilience and Values
3. Migration and Border Management
4. Natural Resources and Environment
5. Security and Defence
6. Neighbourhood and the World
7. European Public Administration

The present chapter analyses the EU funding for adaptation, special focus on HA adaptation to CC, and the geographical area of interest for the ARCH pilots: only the funding sources

⁴ https://ec.europa.eu/info/funding-tenders/find-funding/financial-instruments-equity-guarantees-and-loans_en#funding-under-nextgenerationeu

⁵ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en#documents

⁶ https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy_en

that could be of interest for the resilience options selected in the framework of the ARCH RMI and with special emphasis on ARCH pilot cities are reported⁷.

Three types of implementation modes

EU funds managed by the EC can be provided either directly, indirectly or jointly between the EC and National Authorities:

- direct management: EU funding is managed directly by the European Commission
- shared management: the European Commission and national authorities jointly manage the funding
- indirect management: funding is managed by partner organisations or other authorities inside or outside the EU⁸

3.3. Direct management

In direct management, representing 20% of the EU Budget 2021-2027, the European Commission departments or the EU executive agencies are directly responsible for the following steps in the implementation of a programme:

- launching the calls for proposals
- evaluating submitted proposals
- signing grant agreements
- monitoring project implementation
- assessing the results
- making payments

Calls for proposals in direct management are published on the Funding and Tenders Portal (Single Electronic Data Interchange Area –SEDIA⁹).

3.3.1. Recovery and Resilience Facility

The largest part of the funds from NextGenerationEU will be implemented in direct management. The Recovery and Resilience Facility (RRF) is structured around six pillars: green transition; digital transformation; economic cohesion, productivity and competitiveness; social and territorial cohesion; health, economic, social and institutional resilience; policies for the next generation (Figure 2)¹⁰

⁷ <https://climate-adapt.eea.europa.eu/eu-adaptation-policy/funding>

⁸ https://ec.europa.eu/info/funding-tenders/find-funding/funding-management-mode_en

⁹ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>

¹⁰ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_it#the-recovery-and-resilience-facility

"Six pillars of the Recovery and Resilience Facility"

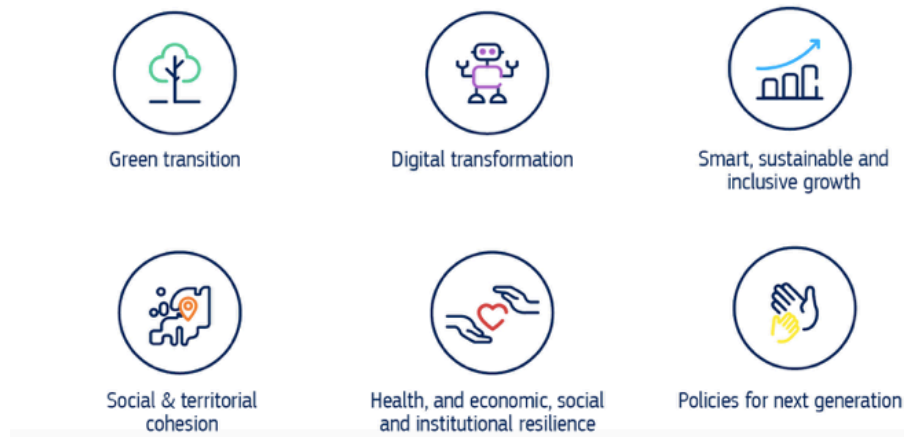


Figure 2: Six pillars of the Recovery and Resilience Facility. Source: EC RRF webpage¹¹

3.3.2. National Recovery and Resilience Plans - NRRP

Funds from the RRF are disbursed directly to the Member States based on their National Recovery and Resilience Plans (NRRP) that must be approved by the European Commission also following the country-specific recommendations adopted by the European Council (Figure 3).

Each NRRP contains the set of reforms and investments to be implemented in the respective MS by end-2026 with an agreed financing allocation.

Payments under the Recovery and Resilience Facility are based on MS achieving agreed milestones and targets (Figure 4).

"From plans to implementation. The Recovery and Resilience Facility (RRF) – How does it work?"



Figure 3 RRF Assessment. Source: EC RRF webpage¹¹

¹¹ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en

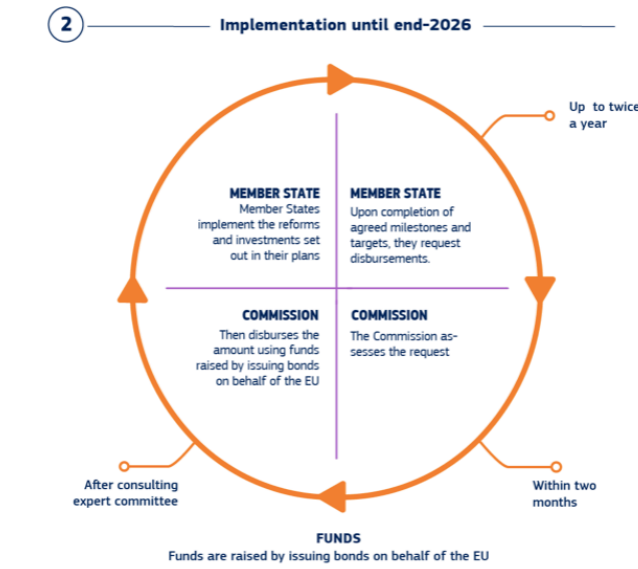


Figure 4 The Recovery and Resilience Facility Implementation until end-2026. Source: EC RRF webpage¹¹

To follow the implementation of RRF by Member States the Commission has made available a dedicated webpage mapping the funds allocation by country: the Recovery and Resilience Scoreboard, which gives an overview of how the implementation of the RRF and the national RRFs is progressing.

Regarding ARCH pilots and their countries, the RRF funds are allocated as follows:

Italy	EUR 191.48billion (10.67% share of GDP) ¹²
Germany	EUR 25.61billion (0.74% share of GDP) ¹³
Spain	EUR 69.51billion (5.59% share of GDP) ¹⁴
Slovakia	EUR 6.33billion (6.74% share of GDP) ¹⁵

For the purpose of searching suitable funding measure for the ARCH pilots' selected resilience options, it is important to underline that it is foreseen that each MS dedicates at least 37% of the expenditure under its RRF to measures contributing to climate objectives and at least 20% to digital objectives and these targets have already been exceeded by MS.

The following paragraphs contain more details on the NRRP for the ARCH pilot cities countries: Italy, Germany, Spain and Slovakia

¹² Italy: https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/italys-recovery-and-resilience-plan_en

¹³ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/germanys-recovery-and-resilience-plan_en

¹⁴ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/spains-recovery-and-resilience-plan_en

¹⁵ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/slovakias-recovery-and-resilience-plan_en

Italy NRRP

In Italy the plan contains 132 investments and 58 reforms¹⁶ to be financed with EUR 68.9 billion in grants and EUR122.6 billion in loans. 37.5% of the plan is dedicated to climate objectives and 25.1% to the digital transition. All reforms and investments have to be implemented by August 2026. The chart below illustrates the Italian NRRP percentage allocation to climate objectives and the digital transition. This is of interest for the financing of ARCH project resilience options (Figure 5).

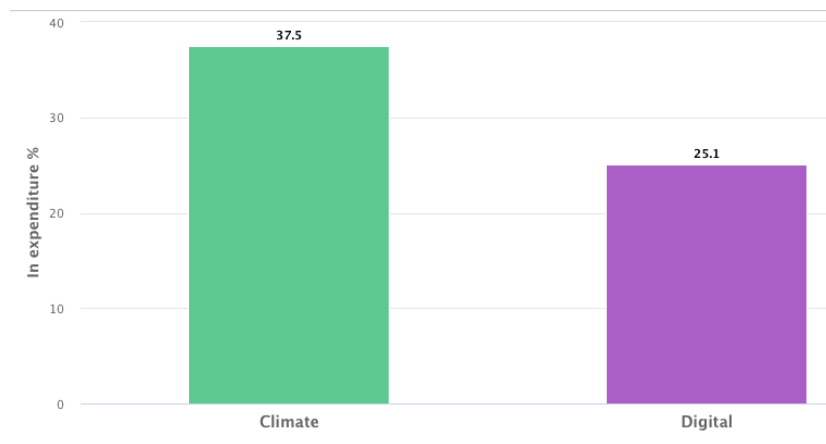


Figure 5: Italy NRRP - % allocation to climate objectives and digital transition. Source: RRF Scoreboard¹⁷

In Italy, www.italiadomani.gov.it is the official website of 'Italia Domani', the National Recovery and Resilience Plan. The portal explains the contents and describes the implementation process of the NRRP. On top of the official site above, the main Italian newspaper on economic and financial matters, "Il Sole 24 Ore" offers an observatory of NRRP call for proposals and spending¹⁸. Under measure M2C4-2.2 EUR 3 billion are set aside for Italian municipalities for the realization of public works for energy efficiency and sustainable territorial development (interventions for resilience, enhancement of the territory and energy efficiency)¹⁹.

Germany NRRP

In Germany the NRRP consists of 40 measures that will be supported by EUR 25.6 billion in grants and that have to be completed by August 2026. At least 42% of the funds will be dedicated to support climate objectives and at least 52% to the digital transition as illustrated in the chart below (Figure 6).

¹⁶ https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/italys-recovery-and-resilience-plan_en

¹⁷ https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html

¹⁸ https://www.ilssole24ore.com/superdossier/pnrr_12012022-AEDNUY7.

¹⁹ <https://dait.interno.gov.it/documenti/comunicato-fl-17-12-2021-all-1.pdf>

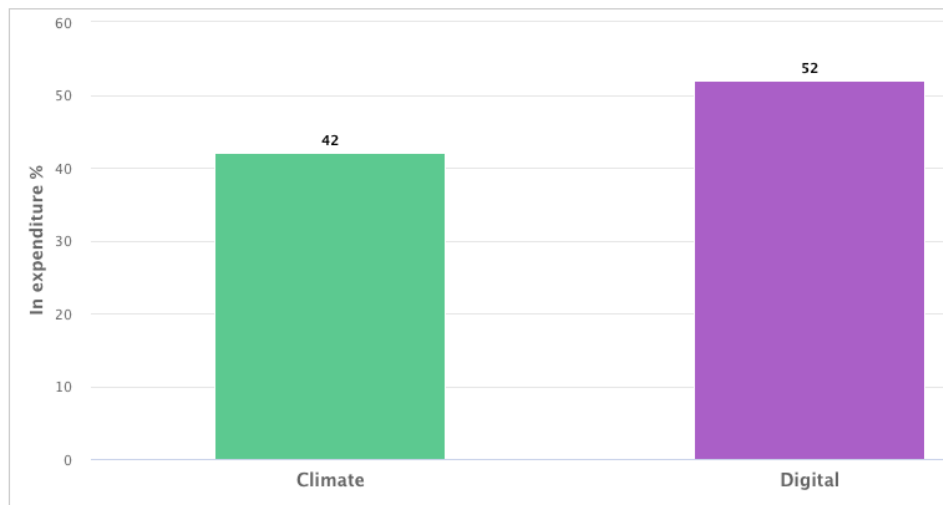


Figure 6: Germany NRRP - % allocation to climate objectives and digital transition. Source: RRF Scoreboard¹⁷

Spain NRRP

Spain's NRRP consists of 112 investments and 102 reforms that will be supported by EUR 69.5 billion in grants. As illustrated in the graph below, 40% of the plan will support the climate objectives and 28% of the plan will foster the digital transition (Figure 7). All reforms and investments must be completed by August 2026.

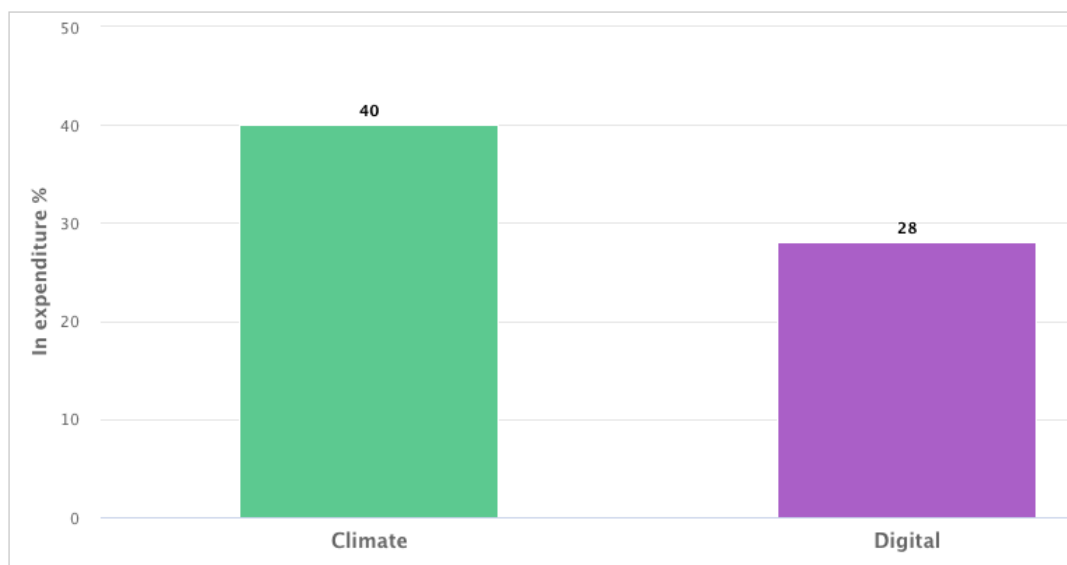


Figure 7: Spain NRRP - % allocation to climate objectives and digital transition. Source: RRF Scoreboard¹⁷

Spain also faces challenges in the area of biodiversity (including transformation of the agri-food and fishing systems and preservation of ecosystems integrating climate change adaptation) and the need to enhance water and waste management and the NRRP also includes measures to help mitigate the adverse effects of climate change by preserving coastal spaces, ecosystems and biodiversity. The plan includes a Law on climate change

and energy transition establishing into law the renewable targets for 2030 and the objective of climate neutrality by 2050, including a 100% renewable electricity system.

Slovakia NRRP

Slovakia's NRRP consists of 196 qualitative milestones and quantitative targets to be achieved by August 2026 supported by EUR 6.3billion in grants. 43% of the plan will support climate objectives and 21% of the plan will support the digital transition (Figure 8).

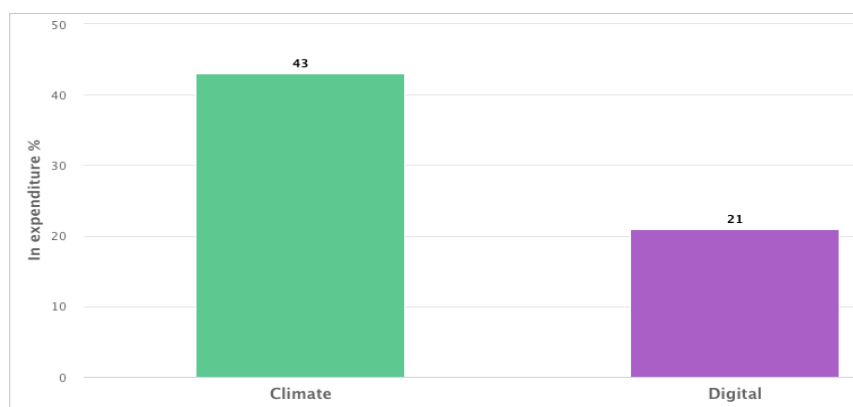


Figure 8: Slovakia NRRP - % allocation to climate objectives and digital transition. Source: RRF Scoreboard¹⁷

In the area of climate and environmental policies, Slovakia faces the challenge of the transition towards a greener energy mix, more sustainable mobility, better energy and environmental performance of buildings, increased biodiversity protection, adaptation to climate change and development of the circular economy.

Measures for climate change adaptation will combine investments of EUR 150million with reforms in the area of nature protection, water management and landscape planning to preserve biodiversity. The table below illustrates the main positive and negative aspects of the NRRP funding.

3.3.3. REACT EU

The Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU)²⁰ programme is funded from EUR 47.5 billion from the NextGenerationEU funds and provides additional resources for the recovery in the framework of the Cohesion Policy (Figure 9)²¹.

²⁰ <https://cohesiondata.ec.europa.eu/stories/s/REACT-EU-Fostering-crisis-repair-and-resilience/26d9-dqzy/>

²¹ <https://www.circularcityfundingguide.eu/funding-types-and-their-applicability/grants-and-subsidies/european-structural-investment-funds/react-eu/>

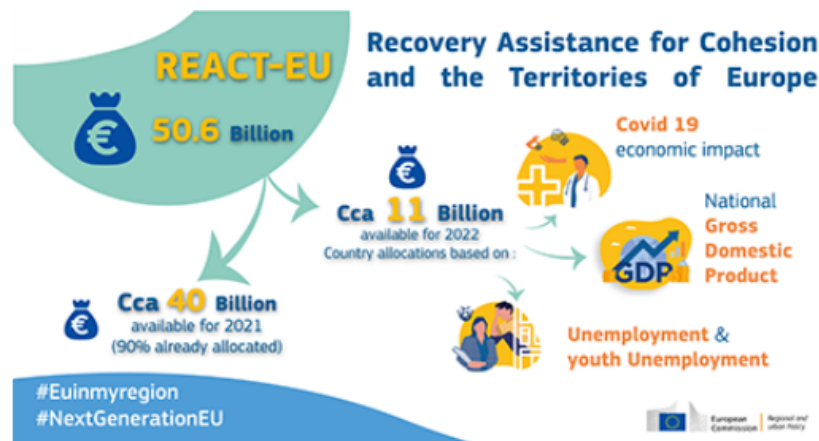


Figure 9: REACT EU Scheme. Source: EC REACT-EU webpage²⁰

REACT-EU has been the first instrument to be used under NextGenerationEU. It was adopted on 23 December 2020²² and the first payments to 16 MS, amounting to EUR 800 million were made on 28 June 2021. REACT-EU provides additional resources to the cohesion allocations for 2021-2027 with special implementing conditions as follows:

- National co-financing is not obligatory
- Financing can cover 100% of the costs
- 11% pre-financing can be activated.
- No ex-ante conditionality
- No thematic concentration
- No allocation by category of region
- Wide scope of support and possible transfers between the ERDF and ESF
- Projects dating back to 1 February 2020 can be retroactively reimbursed.

These additional resources will be distributed to Member States in 2021 and 2022 mainly from the European Regional Development Fund (ERDF) and the European Social Fund (ESF).

The majority of REACT-EU funds were available for programming in 2021 (EUR 39.6 billion) and the rest for 2022 (EUR 10.8 billion). Funds must be spent by the end of 2023.

REACT-EU has a wide thematic scope which makes it interesting for different types of initiatives and, on top of contributing to the recovery from the pandemic, it is also expected to contribute 25% to financing actions for the achievement of climate objectives.

REACT-EU is an instrument that is apt to financing Circular City initiatives that focus on sectors like tourism and that can be eligible for funding via the ESF. These funds could also be used for HA resilience options financing, in fact the main goals of REACT-EU are to render the economic recovery green and digital, with a concrete contribution to climate

²² <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R2221&qid=1611824380100>

objectives. The "green economy" and "digital economy" are the main themes of REACT-EU. The REACT-EU webpage offers a comprehensive and detailed country by country and areas of intervention of the fund²³.

The chart below (Figure 10) is available in the EC dedicated fund webpage and shows the cumulative amount available per country (2021 and 2022 tranches) and the amount so far decided (the data is updated daily to reflect the most recent decisions).



Figure 10: REACT EU Cumulative and decide amounts (EUR). EC REACT-EU webpage²⁰

Four Member States, including Germany, are receiving additional resources amounting to EUR206 million to be spent in the health sectors and for the green and digital transitions.

In the case of ARCH pilots, for example, from mid-2021, REACT EU funding is expected to increase Hamburg's current ERDF programme by around EUR 30 m from 2014 to 2020. The funds must be invested in the follow-up period until 2023. The focus is on projects in the areas of innovation, digitization and climate protection.

For the ARCH pilot city of Valencia, EUR 790.64 m of its EUR 1,254 m REACT-EU funds will be used for growth, employment and ecological, digital and resilient recovery.

Application for REACT-EU funding is only possible via national or regional authorities. At this stage REACT EU has not been considered for financing the selected resilience options for ARCH pilots because other funds were deemed more suitable and no open calls were found available on the specific topics of interest.

3.3.4. Horizon Europe

Horizon Europe (HE) is the EU main programme for research and innovation and the largest R&I programme in the world with a budget of EUR 95.5billion. The main goals of HE are to fight climate change, and to support the achievement of the UN's Sustainable Development Goals (SDG) as well as the EU's competitiveness and growth. The programme is mainly based on collaborations to enhance the impact of research and innovation to develop, support and implement the EU policies.

²³ <https://cohesiondata.ec.europa.eu/stories/s/REACT-EU-Fostering-crisis-repair-and-resilience/26d9-dqzy/>

The “new” Horizon programme differs from the previous Horizon (Horizon2020), because it goes from “activity-driven” (Horizon 2020) to “impact-driven” (Horizon Europe). The new programme structure and logic is still based on the Technology Readiness Levels (TRL), securing funding instrument for each stage of development of the research/innovation and these are also reflected in the program segmentation in the 3 core “Pillars”, corresponding to its main priorities. The picture below (Figure 11) summarizes the specific programme implementing HE and European Institute of Innovation and Technology (which is not part of the Specific Programme)²⁴.

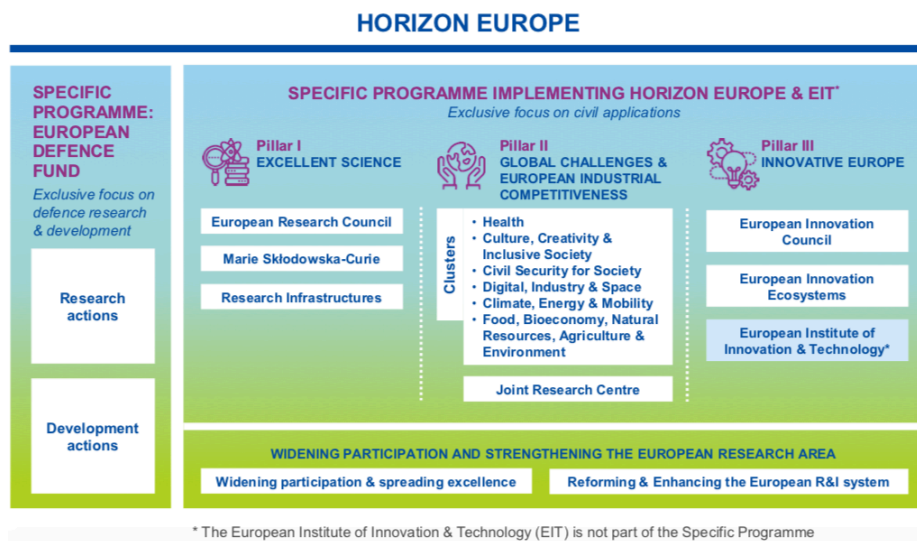


Figure 11: HE- Programme overview. Source: Horizon Europe Programme Guide, Version 1.5, 01 Feb 2022

With more than EUR53 billion, the second pillar of Horizon Europe aims to turn the results of excellent research into innovative solutions to improve citizens daily lives by tackling global challenges. This pillar will be key to accelerate the twin green and digital transitions and helps to achieve the UN’s Sustainable Development Goals²⁵. Pillar II provides funds for the technological development of projects, enabling the TRL to move from research toward the market. The Pillar is divided into 6 “clusters” and 5 “missions” and funding is provided for Research and Innovation Actions (RIA), Innovation Actions (IA) and Coordination & Support Actions (CSA). The projects must be implemented by a consortium of beneficiaries according to the traditional model adopted in Horizon2020. Pillar II contains the “Missions”. These are actions carried out in those areas where a single EU project cannot achieve the expected impact. Therefore, the main characteristic of the Missions implementation model is the “portfolio” approach (the success of project proposals is largely influenced by their relevance with the topic, but also by their complementarity with other projects in the same portfolio).

HE funds research and innovation projects and strongly supports the recovery and the green and digital transitions. The programme is open to any type of organisation, including individuals (for specific actions only).

Regarding HE, it must be kept in mind that the financial aspects (budget) of the research

²⁴ https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf

²⁵ <https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/af30723e-f4ce-11eb-aeb9-01aa75ed71a1>

Framework Programmes are among the most complex to manage. The estimated budget included in the proposal should reflect the results of an analytical budget construction, in order to avoid major problems in budget shifting during the project implementation.

HE projects require a partnership and to build a sound project proposal partners should be involved from the very beginning in the proposal preparation. It may take from six months to one year to prepare a competitive proposal, and it takes time to brainstorm with them and extract the best from each partner.

Funding opportunities to support projects of adaptation to climate change in the framework of HE are also included in the EU Mission “Adaptation to Climate Change”, a novelty of the Horizon Europe research and innovation programme for the years 2021-2027. The main goal of the Mission Adaptation to Climate Change is to support at least 150 European regions and communities towards climate resilience by 2030. The mission focuses on innovative solutions for cities and communities to adapt to climate change and on the participation of Member States, regions and cities. The Mission will also encourage citizens’ participation by funding projects facilitating their involvement²⁶.

In the framework of HE, the new Work Programme WP12 “Missions”, contains interesting calls for ARCH pilots’ resilience options financing. However, these calls are either expired or have a deadline that is too close to be addressed by ARCH pilots. These calls were analysed as, if they will be replicated by the Programme in the future, they could be of interest for ARCH pilots. Moreover, approved projects under these calls could become projects to capitalize or peer-learning projects. For example, regarding the awareness raising campaign, in the HE WP 2021-2022, WP12 “Missions”, the call HORIZON-MISS-2021-CLIMA-02-05 “Local engagement of citizens in the co-creation of societal transformational change for climate resilience” expects to contribute to (non-exhaustive list) “well established mechanisms to meaningfully involve and engage citizens and stakeholders in the transformation to climate resilience in the regions and communities participating in the Mission on Adaptation to Climate Change”; Innovative problem-oriented climate adaptation solutions are co-designed and co-created through solid approaches to engage citizens, civil society, academics, experts, social partners, policy-makers, entrepreneurs and other relevant actors; Empowerment of citizens in contributing to the Mission in their region and community, including by enabling them to collect and analyse relevant data, to act on reducing the effects of climate change, and by limiting the impact of disinformation campaigns perpetrated to contrast citizens’ engagement for climate resilience; The total indicative budget for the topic is EUR 5.00 million. The Commission estimates that an EU contribution of around EUR 3.00 to 5.00 million would allow these outcomes to be addressed appropriately. Deadline 22 Apr 2022.

²⁶https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/adaptation-climate-change-including-societal-transformation_en

3.3.5. EU Programme for environment and climate action (LIFE)

The EU Programme for environment and climate action (LIFE), has an allocated budget of EUR 5.43 billion. LIFE supports projects that help the shift towards a sustainable, circular, energy-efficient, renewable-energy-based, climate neutral and resilient economy. Moreover, LIFE finances projects actions to protect, restore and improve the quality of the environment, including the air, water and soil and to halt and reverse biodiversity loss and to tackle the degradation of ecosystems.

The new LIFE programme 2021-2027 is divided into four sub-programmes: Nature and biodiversity, Circular economy and quality of life, Climate change mitigation and adaptation and Clean energy transition. The screenshot below is taken from the official home page of the EU LIFE Portal (Figure 12).

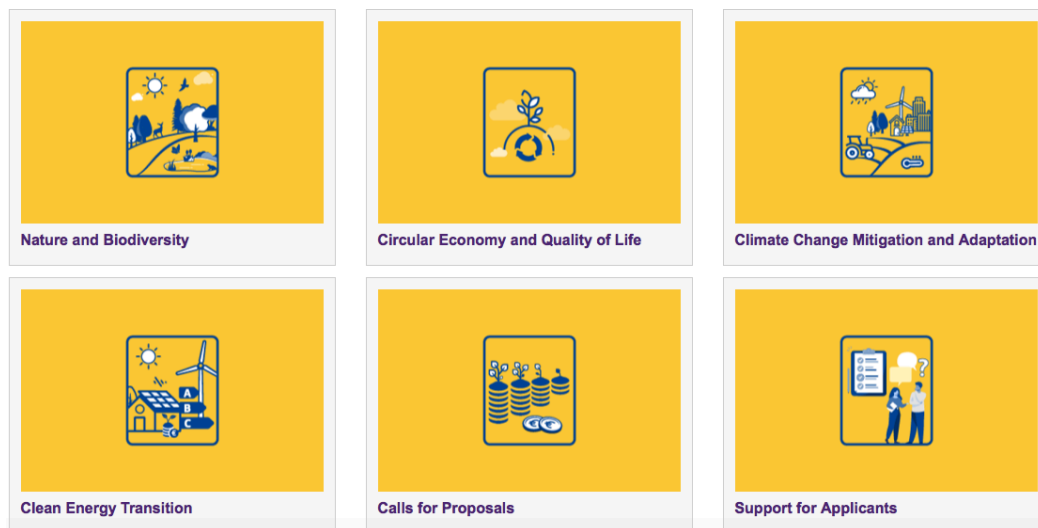


Figure 12: EU Life portal. Source: EC, LIFE Programme official webpage²⁷

Type of projects supported include: Actions aimed at nature conservation, the development of circular economy, clean energy transition and fighting against climate change; support for innovative technologies; development of best practices; coordination and capacity building; support for the implementation of environmental and climate plans developed at regional, multiregional or national levels.

In the framework of LIFE, the most interesting sub-programmes for ARCH resilience options financing are the Climate Change Mitigation and Adaptation and Nature and Biodiversity sub-programmes.

The Climate Change Mitigation and Adaptation sub-programme aims at supporting the shift towards a sustainable, energy-efficient, renewable energy-based, climate-neutral and resilient economy, thereby contributing to sustainable development. The LIFE Climate

²⁷ https://cinea.ec.europa.eu/life_en

change adaptation programme co-finance projects in the areas of urban adaptation and land-use planning, resilience of infrastructure, sustainable management of water in drought-prone areas, flood and coastal management, resilience of the agricultural, forestry and tourism sectors, and/or support to the EU's outermost regions: preparedness for extreme weather events, notably in coastal areas. It provides action grants for best practice, pilot and demonstration projects that contribute to increase resilience to climate change.

Amongst the Climate Change Adaptation areas of intervention of the LIFE sub-programme "Climate Change Mitigation and Adaptation" the following foreseen actions are of interest for financing the ARCH awareness raising campaign on HA adaptation to CC. The actions could be part of a larger project on CC adaptation:

- *Approaches and solutions for adapting cities and regions to climate change, notably in support of the EU and Global Covenant of Mayors and of the European Climate Pact;*
- *Support preparedness for extreme weather events, notably at a local level and in the outermost regions;*

This sub-programme also promotes integrated projects that implement EU policy and strategy on climate change adaptation.

The LIFE Climate Change Governance and Information, part of the Climate Change Mitigation and Adaptation sub-programme, co-funds projects supporting the operation of the European Climate Pact, sustainable finance activities, awareness raising, training and capacity building, knowledge development and stakeholder participation in climate change mitigation and adaptation areas.

LIFE provides action grants for information, awareness and dissemination projects on climate matters. This includes public and stakeholder support for EU policy-making, supporting communication, management and dissemination of information to facilitate knowledge sharing and cooperation platforms, providing training and fostering the development and dissemination of best practices and policy approaches.

For the duration of the 2021-2024 MAWP, a budget of EUR 1.801 billion is allocated to the Environment field, a budget of EUR 1.032,5 billion is allocated to the Climate Action field²⁸. For the sub-programme Climate Change Mitigation and Climate Change adaptation for the period 2021-2024 the indicative budget is EUR 505.5 million.

The Nature and Biodiversity sub-programme focuses on the protection and restoration of Europe's nature and on halting and reversing biodiversity loss. Thus, the LIFE Nature and Biodiversity sub-programme funds projects on nature conservation, in particular in the areas of biodiversity, habitats and species.

All LIFE Calls for proposals 2022 are expected to be published on the Funding & tender opportunities portal on 17 May 2022²⁹.

Anticipated submission deadlines are the following:

- Standard Action Projects (SAPs) for circular economy and quality of life, nature and

28 ANNEX to the Commission Implementing Decision on the adoption of the multiannual work programme for the years 2021-2024 for the LIFE programme. Brussels, 9.7.2021, C(2021)4997 final, Annex 1

- biodiversity, climate change mitigation and adaptation sub-programmes: 4 October 2022
- LIFE Action Grants for clean energy transition sub-programme: 16 November 2022
- Strategic Integrated Projects (SIPs) and Strategic Nature Projects (SNAPs):
- Concept notes: 8 September 2022
- Full proposals: 7 March 2023
- Technical Assistance preparation for SIPs and SNAPs: 8 September 2022
- Specific Operating Grant Agreements (SGA OG) for non-profit making entities: 21 September 2022

The LIFE Programme EC webpage contains exhaustive information of the different type of grants financed: Standard Action Projects (SAP) Projects, Strategic Nature Projects (SNAP) Strategic Integrated Projects (SIP), Technical Assistance Projects (TA), Other Action Grants (OAG) and Operating Grants (OG).

Applicants eligible to submit a proposal under the LIFE Programme are both public and private legal entities. Natural persons cannot apply for LIFE funds.

LIFE will publish two Multi-Annual Work Programmes (MAWP) for the 2021-2024 and 2025-2027 timeframes and the calls for proposals are published every year. The MAWP will include details on:

- the four sub-programmes
- funding allocation
- types of projects and co-financing rates
- submission and selection procedures, including award criteria
- Calls for Proposals timelines

From 1 April 2021, the LIFE programme is managed by the European Climate, Infrastructure and Environment Executive Agency (CINEA).

The Topic LIFE-2021-SAP-CLIMA-GOV-Climate Governance and Information supports the development, implementation, monitoring and enforcement of EU legislation and policy on climate change, contributing to climate change mitigation and/or adaptation also through awareness raising activities. Scope and areas of intervention include:

1. Support to the operation of the European Climate Pact
2. Incentivizing behavioural change, mainstream emission reduction and resource and energy efficiency actions
3. Awareness raising activities addressing adaptation and mitigation needs
4. Activities linked to the development and implementation of the Sustainable Finance actions
5. Greenhouse gas emission monitoring and reporting
6. Implementation/further development of national 2030 climate and energy strategies plans and/or long term strategies
7. Development and implementation of greenhouse gas accounting and climate change mitigation in the land use sector
8. Assessment of the functioning of the EU ETS
9. Building capacity, raising awareness among end users and the equipment distribution chain of fluorinated greenhouse gases

10. Climate policy monitoring, assessment and ex post evaluation³⁰

When analysing the LIFE programme in terms of funds accessibility, budget construction is easier than for HE projects application as the support documentation is less complex. However, LIFE projects can be follow-up projects of existing projects (also from other funding instruments) or want to generate follow-up projects themselves. In this case budget writing can be more complex as it must take the other projects into account. Budget of a project usually goes from EUR0.5m mil up to EUR 5m. Project duration is on average 3–5 years.

Co-financing in traditional LIFE projects is up to 55% of the total eligible project costs (an exception are nature and biodiversity projects under the environment sub-programme: these can receive up to 60%, or 75% in specific cases)

3.3.6. Digital Europe

The digital Europe programme (DIGITAL) has a allocated budget of EUR7.59billion to be spent in projects aiming at strengthening digital capacities for high-performance computing, artificial intelligence and cyber security, advancing digital skills and accelerating the adoption and best use of digital technologies. Type of projects include deployment of a network of European digital innovation hubs, offering public and private organisations support in their digital transformations; support for interoperability, in particular for public administrations; and more. The fund has not been selected to fund ARCH pilots resilience options. Although the programme could be of interest for the transformation of ARCH pilots in smart cities to enhance their resilience to CC it has not been considered for financing the selected resilience options as the topic is not focused on these objectives. Nonetheless the programme is of interest for smart and sustainable cities and communities³¹. The table below summarises the main features of DIGITAL.

³⁰ LIFE Infoday of July 2021 by the LIFE EC Clima Team Sub programme Climate Action – Call priorities, application and selection of proposals.

³¹ <https://digital-strategy.ec.europa.eu/en/events/info-day-smart-and-sustainable-cities-and-communities-topics-digital-europe-programme-digital>

BUDGET
EUR 7.59 billion.
OBJECTIVES
To accelerate the recovery and drive the EU's digital transformation, to build the EU's strategic digital capacities and facilitate the wide deployment of digital technologies, to be used by EU citizens, businesses and public administrations.
WHAT DOES IT DO?
The digital Europe programme supports the strengthening of digital capacities for high-performance computing, artificial intelligence and cybersecurity, along with advanced digital skills and accelerating the adoption and best use of digital technologies.
TYPE OF PROJECTS
Acquisition of exa-scale machines related to high-performance computing, set-up of data spaces and testing and experimentation facilities for artificial intelligence; setting-up of cybersecurity centres; master courses on use of advanced digital technologies; deployment of a network of European digital innovation hubs, offering public and private organisations support in their digital transformations; support for interoperability, in particular for public administrations; and more.
BENEFICIARIES
Public and private organisations, industry and small and medium-sized enterprises, scientists and academics, universities, etc.
BUDGET IMPLEMENTATION
Funding is disbursed in the form of grants and procurements, directly managed by the Commission, under the direct management scheme, or under indirect management for the high-performance computing and cybersecurity actions, by the European High-Performance Computing Joint Undertaking and the European Cybersecurity Competence Centre.
MORE INFO
https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes_en https://digital-strategy.ec.europa.eu/en/activities/digital-programme

3.3.7. Union Civil Protection Mechanism and RescEU

The Union Civil Protection Mechanism intervenes in all phases of disaster risk management. RescEU funds have been created to protect the EU citizens from disasters and manage emerging risks. The focus is on human protection but it also entails dealing with the negative effects in the environmental, property and natural heritage sectors. The programme finances are disbursed both in the forms of grants and procurements. The fund has not been selected to fund ARCH pilots' resilience options.

3.4. Indirect and shared management funds

Some EU funding programmes are partly or fully implemented with the support of other implementing parties like national authorities or international organisations to which the Commission delegates budget execution tasks. Around 80% of EU programmes are run in indirect or shared management.

These funds, named European Structural and Investment Funds (ESIF funds), financed by the European Commission to implement the EU Cohesion Policy, are managed by local or national authorities, such as ministries (which implement them through the NOP, National Operational Programs), or regional authorities (which implement them through the ROP, Regional Operational Programs) with the purpose of reducing the economic, social and territorial disparities between the various European regions. The ESIF/indirect funds are often subdivided into "Funds for the implementation of cohesion policy" and "funds for the implementation of agricultural and fisheries policy".

The Member States' administrations (at national, regional and local level) choose which projects to finance and take responsibility for day-to-day management. Working together with the Member States, the Commission makes sure that the projects are successfully concluded, and the money is well spent.

The ESIF funds predominantly national and regional projects, with or without local partners, to promote the structural adjustment of specific sectors and regions. The management and administration are not centralised at the EU or its institutions in Brussels, as these funds are also primarily intended to have a national and regional impact.

The main characteristics of the ESIF funds are the following:

- 1) Managed in the regions
- 2) Have as objective the implementation of EU Cohesion policy
- 3) Operate in clearly delimited regions
- 4) Allow investments (more "brick" than "brains")
- 5) Allow smaller funding volumes per project
- 6) Mostly no transnational partners needed (exception Interreg)
- 7) Simplified application process
- 8) Target groups all (public bodies less)
- 9) Application language is almost always national language

For the financing of the resilience options selected in the framework of the ARCH project, the most interesting funds could in fact fall in the "**shared management**" category. The EU Cohesion Policy³² does in fact contribute to strengthening economic, social and territorial cohesion in the European Union, it aims to correct imbalances between countries and regions and delivers on the Union's political priorities, especially the green and digital transition as better summarized in the following points.

³² https://ec.europa.eu/regional_policy/en/2021_2027/#4

1. more competitive and smarter Europe by promoting innovative and smart economic transformation and regional ICT connectivity;
2. greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate change mitigation and adaptation, risk prevention and management, and sustainable urban mobility;
3. more connected Europe by enhancing mobility;
4. more social and inclusive Europe implementing the European Pillar of Social Rights;
5. Europe closer to citizens by fostering the sustainable and integrated development of all types of territories and local initiatives.

In 2021-2027 EU funds allocated to Cohesion Policy amount to EUR 392 billion, an investment in national and regional programmes, including those to drive growth, jobs, social integration and better cooperation. With the national co-financing, about half a trillion euro will be available to finance the programmes in the EU regions and countries.

The Cohesion Policy is delivered through specific funds:

- The European Regional Development Fund (ERDF), to invest in the social and economic development of all EU regions and cities (will support investments all 5 policy objectives, but 1 and 2 are the main priorities);
- The Cohesion Fund (CF), to invest in environment and transport in the less prosperous EU countries (supports policy objectives 2 and 3);
- The European Social Fund Plus (ESF+), to support jobs and create a fair and socially inclusive society in EU countries (main priority 4);
- The Just Transition Fund (JTF) to support the regions most affected by the transition towards climate neutrality (provides support under dedicated specific objectives (art. 8 of JTF regulation). The Policy is implemented by national and regional bodies in partnership with the European Commission, through a process of consultation:
 - each Member State produces a draft Partnership Agreement, which outlines the country's strategy and priorities and proposes a list of multi-annual programmes. In addition to this, Member States also present draft Operational Programmes [OPs], detailed plans for the implementation of concrete actions based on the Partnership Agreement, which cover entire Member States and/or regions;
 - the Commission negotiates and approves the final content of the Partnership Agreement, as well as each Programme proposed and allocates resources;
 - for each Operational Programme, a managing authority is appointed, i.e. a national, regional or local public authority or public/private body that manages the Programme, implements it by selecting, monitoring and evaluating projects and finally controls and assesses it.

Beneficiaries of the funding can be public bodies, some private sector organisations, universities, associations, NGOs and voluntary organisations.

Most countries have not yet completed the definition of the national and regional operational programmes and it is therefore not possible to exactly define the budget available for the resilience options of interest for ARCH pilots.

3.4.1. European Regional Development Fund

The European Regional Development Fund (ERDF) aims to strengthen economic, social and territorial cohesion in the European Union by correcting imbalances between its regions with investments in a smarter, greener, more connected and more social Europe that is closer to its citizens (Figure 13).

Funding priorities are:

- (PO1) More competitive and smarter, through innovation and support to small and medium-sized businesses, as well as digitisation and digital connectivity;
- (PO2) Greener, low-carbon and resilient;
- (PO3) More connected by enhancing mobility;
- (PO4) More social, supporting effective and inclusive employment, education, skills, social inclusion and equal access to healthcare, as well as enhancing the role of culture and sustainable tourism;
- (PO5) Closer to citizens, supporting locally-led development and sustainable urban development across the EU.

On the basis of the 'thematic concentration' mechanism, all regions and Member States will focus the support on a more competitive and smarter Europe (policy objective – PO 1), as well as greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe (PO2). All regions and Member States (MSs) will concentrate at least 30% of their allocation to PO 2 and:

- More developed regions or MSs will dedicate at least 85% of their allocation to PO1 and PO2;
- Transition regions or MSs at least 40% to PO1;
- Less developed regions or MSs at least 25% to PO1.

The ERDF also gives particular attention to specific territorial characteristics. ERDF action is designed to reduce economic, environmental and social problems in urban areas, with a special focus on sustainable urban development. At least 8 % of the ERDF resources are set aside for this field through territorial or local development strategies, i.e. Integrated Territorial Investment (ITI), Community-led Local Development (CLLD) but also tools supporting similar initiatives designed by Member States. This is of special interest for the purpose of financing the ARCH resilience options selected for the ARCH pilot cities.

Most of the options of interest for ARCH pilots should find a possibility to finance through the ERDF funds once these have been declined in national and regional OP.

National allocations are as follows:

- Italy: EUR 26.6 billion

- Germany: EUR 10.9 billion
- Slovakia: EUR 8.1 billion
- Spain: EUR 23.5 billion

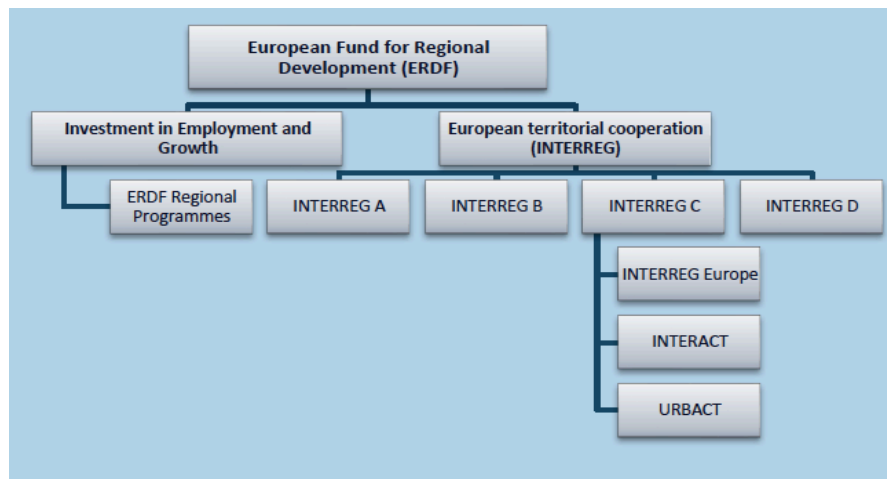


Figure 13: ERDF structure. Source “EU Learning- EU-Funding Opportunities 2021-2027 A practical Guide V. 5 - September 2021

3.4.2. European Agricultural Fund for Rural Development (EAFRD)

In the agricultural sector, EU countries implement national and regional rural development programmes (RDPs), co-financed by the European fund for rural development (EAFRD) and national budgets that contribute to the EU-wide objectives of:

- improving the competitiveness of agriculture;
- encouraging sustainable management of natural resources and climate action; and
- achieving a balanced territorial development of rural economies and communities.

The EAFRD is financed with EUR87.4 billion (plus 8.1 billion from Next generation EU). For the years 2021-2022, RDPs will be funded with EUR26.9 billion from the EAFRD budget for 2021-27 and the extra EUR8.1 billion from the Next Generation EU fund. From 2023 onwards, all new rural development actions will be incorporated into national CAP strategic plans that will be built around key social, environmental and economic objectives for EU agriculture, forestry, and rural areas. The total CAP budget is 378.5billion of which 291billion go to the European Agricultural Guarantee Fund (EAGF).

Programmes are prepared on a national or regional basis and must work towards specific targets relating to the EU’s rural development objectives. In the framework of ARCH and its pilots this program is of interest for the city of Valencia and the surrounding rural area of Albufera. The budget for Spain for 2021-2027 is EUR 7.8 billion.

In the framework of EAFRD, The European Network for Rural Development (ENRD³³) serves as a hub for exchange of information on how Rural Development policy, programmes, projects and other initiatives are working in practice and how they can be improved. Its main stakeholders are:

- National Rural Networks (NRNs);
- RDP Managing Authorities and Paying Agencies;
- Local Action Groups (LAGs);
- European organisations;
- Agricultural advisory services;
- Agricultural and rural researchers; and
- Other interested rural development organisations and individuals.

ENRD offers support to implement the Rural Development Programmes (RDPs) by generating and sharing knowledge and supporting information exchange and cooperation for the European rural areas.

A Local Action Group (LAG) is a non profit-making body made up of public and private organisations from rural villages with representation from different socio-economic sectors. LAGs are important for supporting projects in the rural areas because, through the European Agricultural Fund for Rural Development (EAFRD), LAGs can apply for financial assistance in the form of grants to implement the local development strategies. LAGs support small-scale projects and are well suited to address needs and priorities of their territory being part of the territory³⁴.

In Spain, rural development is managed on a decentralised basis and there are various active LAGs that could be vehicle for fundraising and awareness raising campaigns. The ENRD LAG database allows Local Action Groups (LAGs) to get in touch, network and cooperate with each other³⁵. The table below summarizes the main EAFRD features.

³³ https://enrd.ec.europa.eu/about/brief_en

³⁴ https://enrd.ec.europa.eu/about/brief_en

³⁵ https://enrd.ec.europa.eu/leader-clld/lag-database/_en?f%5B0%5D=im_field_enrd_lag_country%3A19299

BUDGET
EUR 87.44 billion (before transfers between the common agricultural policy pillars), + EUR 8.07 billion from NextGenerationEU.
OBJECTIVES
To support the transition towards a fully sustainable agricultural sector and the development of vibrant rural areas.
WHAT DOES IT DO?
The European Agricultural Fund for Rural Development (EAFRD) finances the common agricultural policy's contribution to the EU's rural development objectives: improving the competitiveness of agriculture, encouraging sustainable management of natural resources and climate action, and achieving balanced socioeconomic development of rural areas and communities.
TYPE OF PROJECTS
The EAFRD provides assistance to farmers and inhabitants of rural areas to increase sustainability and competitiveness, including through the following: boosting the use of digital and technological tools; actions to improve the attractiveness of rural areas both for living and for job creation; support for innovation and diversification of on-farm activities; village revitalisation; protection of the environment and biodiversity; and actions aimed at restoring, preserving and enhancing ecosystems related to agriculture and forestry, with a positive impact on biodiversity, soil, water and air.
BENEFICIARIES
EU farmers and rural stakeholders.
BUDGET IMPLEMENTATION
The EAFRD is primarily implemented under shared management with the Member States.
MORE INFO
https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes_en ; https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/rural-development_en ; https://ec.europa.eu/info/food-farming-fisheries/sustainability_en

3.4.3. European Territorial Cooperation - Interreg

Interreg is the Union's instrument to support cooperation across regions and countries and funds projects between Member States, their outermost regions, the EU acceding countries and the neighbourhood countries³⁶.

Interreg are programs of interregional and cross-border cooperation, designed for border regions and structured by regional macro-areas. Interreg works like normal Direct financing programs but are different because they are managed in the territories by technical

³⁶ https://ec.europa.eu/regional_policy/en/policy/cooperation/european-territorial/

secretariats that work closely with the European Commission and with the participating Regions. Interreg budget is contained in the ERDF budget.

In 2021-2027, on top of the support to cross-border mobility, and efforts to develop environmental protection, emergency services, skilled jobs and access to public services for the next EU generation, two new objectives are added:

- Better cooperation governance
- A safer, more secure Europe.

Interreg supports cross-border cooperation along all EU land and maritime borders, transnational cooperation, including macro-regional strategies and sea basins; and interregional cooperation, which builds networks and lets leading regions share their successes and experience with other territories. In addition, **Interreg** does also finance projects beyond EU borders.

Interreg projects have a territorial component therefore not all Interreg are suitable for the areas of interest for ARCH. The Interreg types that could be considered for ARCH pilots resilience options financing are Interreg type B (transnational) and C (Interregional). Interreg initial allocations amount to EUR 9 billion. The allocations to specific Interreg programmes (of interest for ARCH) for the 2021 2027 programming phase are:

- Interreg Transnational ADRION: EUR 118m
- Interreg Transnational CENTRAL EUROPE: EUR 246m
- Interreg Transnational DANUBE: EUR 274.5m
- Interreg Transnational EURO-MED: EUR 281m
- Interreg Transnational NORTH SEA REGION: EUR 167m
- Interreg Transnational SUDOE: EUR 142.3m
- Interreg Interregional Europe: not yet defined (EUR 359 m in 2014—2020)
- Interreg Interregional URBACT IV: EUR 96.3m

Interreg Adrion

The transnational Interreg V-B Adriatic-Ionian programme (Interreg ADRION) supports cooperation and solidarity between these countries: Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, Serbia and Slovenia. ADRION is financed with EUR 83,5 millions from the European Regional Development Fund (ERDF); EUR 15,7 millions from the Instrument for Pre-accession Assistance (IPAI).

The latest call “4th restricted call for proposals” was closed on 31 October 2021 and the 2022 call has not yet been published.

For the future of Interreg ADRION, a taskforce has been set up to discuss with the Partner States the areas and topics of the future of the programme and the ways to involve stakeholders. The Task Force has identified programme priorities and specific objectives that are considered worth to be supported in the post-2020 transnational context as follows, which is in line with ARCH priorities:

- A more competitive and smarter Europe by promoting innovative and smart economic transformation and regional ICT connectivity (PO 1)
- A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate change mitigation and adaptation, risk prevention and management, and sustainable urban mobility (PO 2)
- A more connected Europe by enhancing mobility (PO 3)
- Better cooperation governance³⁷

Interreg Central Europe

The Interreg CE Programme focuses on Central Europe and promotes cooperation to become smarter, greener and better connected together. Based on shared needs and a common identity, the programme aims for a trustful culture of cooperation beyond borders.

The programme has four priorities and nine programme specific objectives (SOs) for regional development in innovation, carbon dioxide reduction, the protection of natural and cultural resources as well as transport and mobility.

The programme area covers regions and cities from nine EU Member States: Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia and Slovenia. In the current programme, the area was enlarged by Braunschweig region in Germany compared to the previous programme.

Funded actions include: to improve territorially based low-carbon energy planning strategies and policies supporting climate change mitigation; to improve integrated environmental management capacities for the protection and sustainable use of natural heritage and resources; to improve capacities for the sustainable use of cultural heritage and resources; to improve environmental management of functional urban areas to make them more liveable places.

The first call was issued in November 2021 with a budget of EUR 72 m. The first call for proposals aimed at selecting projects that have the following characteristics:

- Partnership ranging indicatively from 5 to 12 partners;
- Budget ranging indicatively from 1,2 to 2,4 m EUR ERDF;
- Indicative project duration up to 36 months. The deadline for project applications was 23 February 2022. The ERDF co-financing rate is 80%³⁸.

³⁷ <https://www.adrioninterreg.eu>

³⁸ <https://www.interreg-central.eu/Content.Node/home.html>

Interreg Danube

The Danube Transnational Programme promotes economic, social and territorial cohesion in the Danube Region through policy integration in selected fields.

The total programme budget is EUR 274.6Mm, including the EU support (EUR 231m) and the national counterpart (EUR 42m). Selected projects are financed up to 85% of their costs. The EU support comes from three different funds:

- European Regional Development Fund (ERDF) (202,095,405.00 EUR)
- Instrument for Pre-Accession Assistance II (IPA II) (19,829,192.00 EUR)
- European Neighbourhood Instrument (ENI) (10,000,000.00 EUR)

The Danube Transnational Programme does also finance small-scale pilot investments.

The projects supported by the Danube Transnational Programme (DTP) must form transnational partnerships to cooperate together in the following four thematic priorities and specific objectives:

- innovative and socially responsible Danube region (total budget for priority 1: EUR 59.3m)
- environment and culture responsible Danube region (total budget for priority 2: EUR 83m)
- better connected and energy responsible Danube region (total budget for priority 3 EUR 45m)
- well-governed Danube region (total budget for priority 4: EUR 38m)

The last call (third call) was issued in 2019. The second step of the Third call for proposals of the Danube Transnational Programme was open from 3rd October to 25th November 2019³⁹.

Interreg Euro-MED

The main goal of the Interreg Euro-MED 2021-2027 Programme is to contribute to the transition towards a climate-neutral and resilient society co-financing projects with a transnational dimension aiming at fighting the impact of global changes on the Mediterranean resources and ensuring for a sustainable growth. The Euro-MED Programme is in line with the UN sustainable goals, the 2030 Agenda for sustainable development and the EU Green Deal.

The latest draft of the Programme, of September 2021, contains 4 missions aiming at a smarter and greener Mediterranean area. They 4 complementary missions are:

³⁹ <https://www.interreg-danube.eu>

- Mission 1: Strengthen an innovative sustainable economy. This can be done more specifically by consolidating a competitive innovation ecosystem with the stakeholders of the 4 helix or by supporting the transition to a circular economy
- Mission 2: Protect, restore and valorise the natural environment and heritage
- Mission 3: Promote green living areas
- Mission 4: Enhancing sustainable tourism. This mission will concern all projects that fit into the 3 above mentioned missions.

The latest Programme, launched in December 2021, involves 14 countries, adding Bulgaria and Republic of North Macedonia (IPA country) and 3 new Spanish regions: Castilla-la-Mancha, Comunidad de Madrid and Extremadura (in total 9 Spanish autonomous regions are involved).

The final budget of the Interreg Euro-MED is EUR 294M EUR in total. The first call for proposal is open and the deadline for application is 24 May 2022⁴⁰.

Interreg NorthSEA REGION

The objective of the NorthSEA Interreg Programme is to support development and economic growth across the North Sea Region. The latest proposal for the Programme foresees the addition of nine new regions - three in France, two in Flanders and four in the Netherlands.

Interreg NORTH SEA REGION has four priorities including 10 specific objectives. Project proposals must address one specific objective.

Priority 1: Robust and smart economies in the North Sea Region. Specific objectives

- 1.1 Enhancing research & innovation capacities and the uptake of advanced technologies
- 1.2: Developing skills for smart specialisation, industrial transition and entrepreneurship

Priority 2: A green transition in the North Sea Region. Specific objectives

- 2.1: Promoting energy efficiency measures & reducing greenhouse gas emissions
- 2.2: Promoting renewable energy
- 2.3: Promoting smart energy systems, storage and grids
- 2.4: Promoting the transition to a circular economy
- 2.5: Promoting sustainable multimodal urban mobility

Priority 3: A climate resilient North Sea Region. Specific objectives

- 3.1 Promoting climate change adaptation, risk prevention and disaster resilience
- 3.2: Enhancing biodiversity, green infra-structure in the urban environment, and reducing pollution

Priority 4: Better governance. Specific objectives

- 4.1 Better cooperation governance

Interreg NORTH SEA REGION provides 60% of the total budget in ERDF funding, except for Norwegian partners. The Norwegian co-financing rate is 50%. Call 1 is open for proposals for

⁴⁰ <https://interreg-euro-med.eu/en/>

both regular projects and small-scale projects with two deadlines, one is expired and the second expires on 22 April 2022⁴¹.

Interreg SUDOE

The Interreg Sudoe Programme (abbreviation of Cooperation Programme Interreg V-B Southwest Europe) finances projects for regional development in Southwest Europe with a transnational dimension through the European Regional Development Fund (ERDF).

The European Commission approved the Interreg Sudoe Programme on 18th June 2015 with a total budget of EUR 141 m.

The projects approved must be organised by public or private partners from regions of different Southwest European countries. The eligible regions are all the Spanish Autonomous Communities (except Canary Islands), the six Southwestern regions of France, all continental regions of Portugal, United Kingdom (Gibraltar) and the Principality of Andorra.

The Sudoe Programme 4th axis is focused on combating climate change: Improving the coordination and effectiveness of prevention, disasters management and rehabilitation tools of damaged areas.

Types of projects include projects for the development of common emergency plans, implementation of early warning systems, development of transnational risk management tools and the creation of tools and methodologies for the regeneration of soil damaged by natural disasters. The last open call closed on 7th February 2018⁴².

Interreg Europe

The Interreg Europe Programme responds to one of the objectives of the cohesion policy “A greener, climate-neutral and resilient Europe”, and it finances collaboration between local and regional stakeholders, awareness and capacity building and knowledge exchange between professionals operating at different implementation stages and scales.

Interregional cooperation is key for the transition to a Europe closer to citizens as it supports key areas for the development of effective integrated place-based strategies and policies, for instance in financing actions for raising awareness and making HA more to climate change. The support could facilitate better spatially adapted governance, as governance for collective action requires capacity for consensus building and long-term commitment. Moreover, experimentation in terms of building governance networks and structures is an important aspect of efficient cooperation structures, and capacity building is a key precondition for efficient territorial policies. Interreg Europe could help to ensure that integrated territorial strategies are concretely implemented on the ground.

⁴¹ <https://northsearegion.eu>

⁴² <https://interreg.eu/programme/interreg-sudoe/>

The budget contained in the second draft of the Interreg Europe Work Programme 2021-2027 period is EUR 334 m for co-financing interregional cooperation projects implemented by EU partners. EUR 17 m is allocated to finance activities carried out by the Policy Learning Platform. EUR 28 m is allocated to technical assistance.

Based on the experience from previous programming periods, the total ERDF budget of a project usually goes from 1 mil up to 2 millions. Co-financing rate is 80% for public bodies governed by public law and 70% for private non-profit bodies

The programme budget allocation is 80% for the following policy objectives: 1. Smarter Europe; 2. Greener Europe; 4. More Social Europe; 3. More connected Europe. The remaining 20% for the following objectives: 4. More social Europe; 5. Europe closer to citizens. The awareness campaign on HA resilience to CC could fall into the last policy objective, specific objective “Sustainable Integrated territorial development, culture, natural heritage, sustainable tourism and security”⁴³.

The first call for proposals opens on 5 April 2022 and closes on 31 May 2022⁴⁴.

URBACT

URBACT is a European exchange and learning programme for sustainable urban development. URBACT supports cities networking to work together to develop solutions to major urban challenges. URBACT cities cooperate and exchange experiences, integrating economic, social and environmental dimensions, to develop new, pragmatic and sustainable solutions to major urban challenges. So far 7,000 people from 500 cities, in 29 countries, have participated in the URBACT programme.

The new regulatory framework for the period 2021 - 2027 is set out by the regulations for Cohesion Policy and focuses on sustainable urban development and territorial strategies.

The URBACT IV programme is an opportunity for cities to address their urban challenges in an integrated and participatory way through transnational knowledge exchange and capacity building.

The regulation that sets the rules for the URBACT IV programme specifically is the Regulation (EU) 2021/1059 on the European Territorial Cooperation goal (Interreg). Article 3 (3)b of this regulation defines the objectives of URBACT IV as follows: *interregional cooperation to reinforce the effectiveness of cohesion policy (Interreg C) by promoting exchange of experiences, innovative approaches and capacity building in relation to the identification, transfer and capitalisation of good practices on integrated and sustainable urban development, taking into account the linkages between urban and rural areas, supporting actions developed in the framework of Article 11 of Regulation (EU) 2021/1058*

⁴³ Interreg Europe first call for proposals – terms of reference (draft) and Programme Manual (draft version 2 February 2022)

⁴⁴ <https://www.interregeurope.eu>

and while also complementing in a coordinated way with the initiative outlined in Article 12 of that Regulation (the ‘URBACT programme’);

This regulation sets out three main tasks for URBACT IV:

- 1. exchange of experiences, innovative approaches and capacity building in relation to the identification, transfer and capitalisation of urban good practices on integrated and sustainable urban development, taking into account the linkages between urban and rural areas*
- 2. supporting actions developed in the framework Article 11 Regulation (EU) 2021/1058 for sustainable urban development.*
- 3. activities undertaken by the URBACT IV programme shall be developed to complement in a coordinated way the European Urban Initiative referred to in Article 12 Regulation (EU) 2021/1058⁴⁵.*

The URBACT IV programme area covers the EU 27 Member States, Norway, Switzerland, IPA countries Albania, Montenegro, Serbia, Republic of North Macedonia, Bosnia-Herzegovina and other countries (at own costs).

The programme is co-financed by the European Regional Development Fund (ERDF) with a budget of EUR 79,679m and by the Instrument for Pre-Accession Assistance with a budget for the period 2021-2027 that has not yet been defined.

URBACT and the European Urban Initiative are complementary instruments. URBACT contributes to the European Urban Initiative, which identifies urban challenges, deploys instruments for evidence building, analyses results and capitalisation, fosters dissemination and deployment and assesses the outcome. The EUI will consist of strands and workstreams. The figure below provides a visual overview of how URBACT relates to the different strands of the EUI and to the Urban Agenda for the EU (Figure 14).

URBACT is currently in its fourth edition (calls not yet opened)⁴⁶.

⁴⁵ Regulation (EU) 2021/1058 and Regulation (EU) 2021/1060 of the European Parliament and of the Council of 24 June 2021

⁴⁶ <https://urbact.eu>

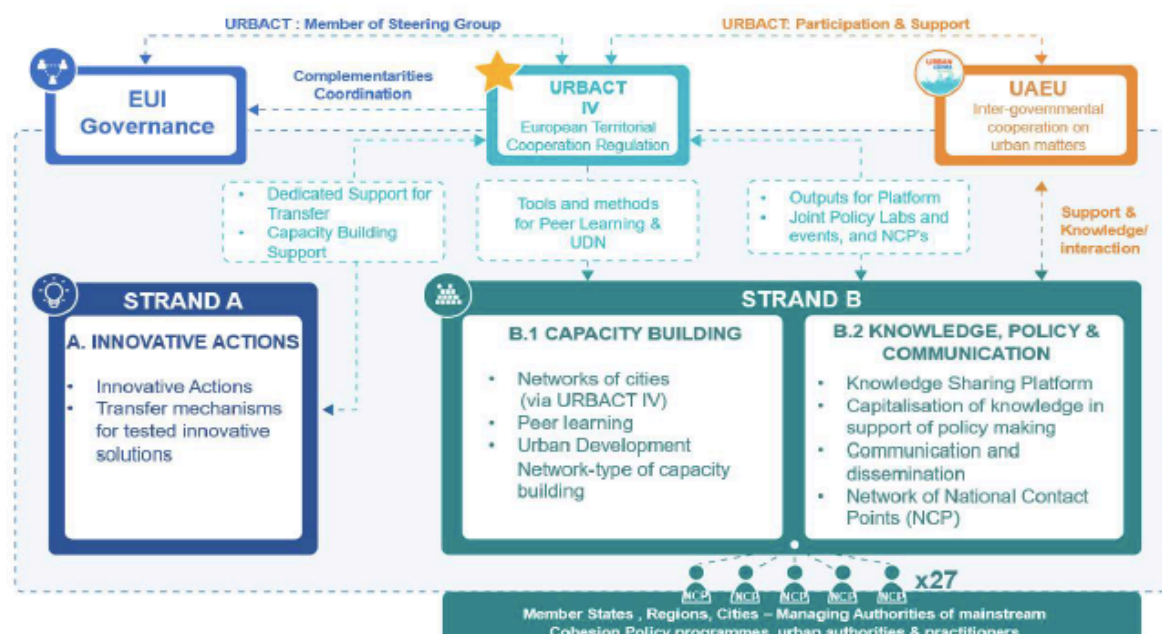


Figure SEQ Figure * ARABIC 1: EC (2020), Coordination between the European Urban Initiative & URBACT– URBACT Programming Committee, 9-10 November 2020

Figure 14: Coordination between EUI and URBACT. Source: URBACT IV 2021-2027 INTERREG Programme document Draft Version 2 July 2021⁴⁷

To summarise, the main characteristics of the direct and indirect funds are reported in the table below. The choice of either Direct or Indirect funds for the purpose of financing resilience measures is based both on the characteristics of the selected resilience measures and those of the applicant city as better explained in chapter 4 and 5 below.

EU Direct Funds	EU Indirect funds
Centrally managed	Managed indirectly in the regions
Objective: implement the EU sector strategies	Objective: implement the Cohesion Policy
Areas of implementation: EU 27 + candidate countries	Areas of implementation: selected regions
Low tangible investments (more brain than bricks)	Tangible investments are allowed as well
Larger funding volumes	Smaller funding amounts per project
Complex application form	Simplified application
Complex and detailed budget	Budget mainly based on lump sums
Target groups: all but especially public bodies	Target groups: all especially NGOs, SMEs (less public bodies)
Application language often English	Application language can be national language

47 https://urbact.eu/sites/default/files/1-_urbact_iv_cp_final_draft.pdf

3.5. Funds provided in partnership with the EIB - InvestEU

EU funds are also provided in partnership with the European Investment Bank (EIB)⁴⁸, that provides long-term project funding, guarantees and advice. The EIB Group is also in charge of implementing 75% of the InvestEU programme⁴⁹. The table below reports the main characteristics of the InvestEU fund.

BUDGET
EUR 3.07 billion, + EUR 1.14 billion under MFFR Article 5, + EUR 6.07 billion from NextGenerationEU.
OBJECTIVES
To carry out investments in sustainable infrastructure, research and innovation, digitisation, small and medium-sized enterprises and mid-caps; and social investment and skills, across the EU.
WHAT DOES IT DO?
The InvestEU fund provides a EU guarantee to support financing and investment operations, carried out by implementing partners that contribute to objectives of the EU's policies. Implementing partners and other financial intermediaries will provide finance as guarantees, loans, risk-sharing or equity. The InvestEU Advisory Hub provides advisory support for the development of investable projects and access to financing. The InvestEU Portal boosts the project's visibility to a large network of international investors.
TYPE OF PROJECTS
Economically viable projects, both public and private, in areas where there are market failures or investment gaps, in four policy areas – sustainable infrastructure; research, innovation and digitisation; small and medium-sized enterprises; and social investment and skills – along with higher risk projects in specific areas.
BENEFICIARIES
Public and private investors and project promoters, small and medium-sized enterprises and mid-caps, service providers and recipients of microfinance.
BUDGET IMPLEMENTATION
The funds are allocated under the indirect management scheme through the European Investment Bank and the other implementing partners. The programme may provide funding in the form of grants and loans.
MORE INFO
https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes_en https://europa.eu/investeu/home_en

⁴⁸ <https://www.eib.org/en/>

⁴⁹ https://investeu.europa.eu/index_en

3.6. Alternative funding measures

3.6.1. Crowdfunding

Crowdfunding is the practice of funding a project or venture by raising small amounts of money from a large number of people, in modern times typically via the Internet. Crowdfunding is a form of crowdsourcing and alternative finance.

European Crowdfunding Network (2012): «Crowdfunding is a collective effort of many individuals who network and pool their resources to support efforts initiated by other people or organizations».

Although similar concepts can also be executed through mail-order subscriptions, benefit events, and other methods, the term crowdfunding refers to Internet-mediated registries. This model is generally based on three types of actors:

1. the project initiator who proposes the idea or project to be funded
2. individuals or groups who support the idea
3. a moderating organization (the "platform") that brings the parties together to launch the idea.

Crowdfunding has been used to fund a wide range of for-profit, entrepreneurial ventures such as artistic and creative projects, medical expenses, travel, and community-oriented social entrepreneurship projects.

Classical Types of Crowdfunding:

Reward-based

Reward-based crowdfunding has been used for a wide range of purposes, including album recording and motion-picture promotion, free software development, inventions development, scientific research, and civic projects.

Many characteristics of rewards-based crowdfunding, also called non-equity crowdfunding, have been identified by research studies. In rewards-based crowdfunding, funding does not rely on location. The funding for these projects is distributed unevenly, with a few projects accounting for the majority of overall funding. Additionally, funding increases as a project nears its goal, encouraging what is called "herding behaviour". Research also shows that friends and family account for a large, or even majority, portion of early fundraising. This capital may encourage subsequent funders to invest in the project. While funding does not depend on location, observation shows that funding is largely tied to the locations of traditional financing options. In reward-based crowdfunding, funders are often too hopeful about project returns and must revise expectations when returns are not met.

Digital security as reward

Another kind of crowdfunding is to raise funds for a project where a digital security is offered as a reward to funders which is known as Initial coin offering (abbreviated to ICO). Value

tokens are endogenously created by particular open decentralized networks that are used to incentivize client computers of the network to expend scarce computer resources on maintaining the protocol network. These value tokens may or may not exist at the time of the crowd-sale and may require substantial development effort and eventual software release before the token is live and establishes a market value. Although funds may be raised simply for the value token itself, funds raised on blockchain-based crowdfunding can also represent equity, bonds, or even "market-maker seats of governance" for the entity being funded. Examples of such crowdsales are Augur decentralized, distributed prediction market software which raised US\$4 million from more than 3500 participants; Ethereum blockchain; and "the Decentralized Autonomous Organization".

Litigation

Litigation crowdfunding allows plaintiffs or defendants to reach out to hundreds of their peers simultaneously in a semiprivate and confidential manner to obtain funding, either seeking donations or providing a reward in return for funding. It also allows investors to purchase a stake in a claim they have funded, which may allow them to get back more than their investment if the case succeeds (the reward is based on the compensation received by the litigant at the end of his or her case, known as a contingent fee in the United States, a success fee in the United Kingdom, or a pactum de quota litis in many civil law systems). LexShares is a platform that allows accredited investors to invest in lawsuits.

Equity-based

Equity crowdfunding is the collective effort of individuals to support efforts initiated by other people or organizations through the provision of finance in the form of equity. In the United States, legislation that is mentioned in the 2012 JOBS Act will allow for a wider pool of small investors with fewer restrictions following the implementation of the act. Unlike non-equity crowdfunding, equity crowdfunding contains heightened "information asymmetries". The creator must not only produce the product for which they are raising capital, but also create equity through the construction of a company. Equity crowdfunding, unlike donation and rewards-based crowdfunding, involves the offer of securities, which include the potential for a return on investment. Syndicates, which involve many investors following the strategy of a single lead investor, can be effective in reducing information asymmetry and in avoiding the outcome of market failure associated with equity crowdfunding.

Equity crowdfunding is the online offering of private company securities to a group of people for investment and therefore it is a part of the capital markets. Because equity crowdfunding involves investment into a commercial enterprise, it is often subject to securities and financial regulation. Equity crowdfunding is also referred to as crowd investing, investment crowdfunding, or crowd equity.

Equity crowdfunding is a mechanism that enables broad groups of investors to fund start-up companies and small businesses in return for equity. Investors give money to a business and receive ownership of a small piece of that business. If the business succeeds, then its value goes up, as well as the value of a share in that business—the converse is also true. Coverage of equity crowdfunding indicates that its potential is greatest with start-up businesses that are seeking smaller investments to achieve establishment, while follow-on funding (required for subsequent growth) may come from other sources.

Donation-based

Running alongside reward-based crowdfunding, donation-based is second another popular form of crowdfunding. Donation-based crowdfunding is the collective effort of individuals to help charitable causes. In donation-based crowdfunding, funds are raised for religious, social environmental, or other purposes. Donors come together to create an online community around a common cause to help fund services and programs to combat a variety of issues including healthcare and community development. The major aspect of donor-based crowdfunding is that there is no reward for donating; rather, it is based on the donor's altruistic reasoning. Ethical concerns have been raised to the increasing popularity of donation-based crowdfunding, which can be affected by fraudulent campaigns and privacy issues.

Debt-based or Peer-to-peer lending or social lending

Peer-to-peer lending is the practice of lending money to individuals or businesses through online services that match lenders with borrowers. Peer-to-peer lending companies often offer their services online and attempt to operate with lower overhead and provide their services more cheaply than traditional financial institutions. As a result, lenders can earn higher returns compared to savings and investment products offered by banks, while borrowers can borrow money at lower interest rates, even after the P2P lending company has taken a fee for providing the match-making platform and credit checking the borrower. There is the risk of the borrower defaulting on the loans taken out from peer-lending websites.

Peer-to-peer fundraising encourages supporters of a charity or non-profit organisations to individually raise money. It's a bit subcategory of crowdfunding. Instead of having one main crowdfunding page where everybody donates, people can have multiple individual fundraising pages with peer-to-peer fundraising, which the individual people will share with their own networks.

Also known as crowd-lending, many peer-to-peer loans are unsecured personal loans, though some of the largest amounts are lent to businesses. Secured loans are sometimes offered by using luxury assets such as jewellery, watches, vintage cars, fine art, buildings, aircraft, and other business assets as collateral. They are made to an individual, company or charity. Other forms of peer-to-peer lending include student loans, commercial and real estate loans, payday loans, as well as secured business loans, leasing, and factoring.

The interest rates can be set by lenders who compete for the lowest rate on the reverse auction model or fixed by the intermediary company on the basis of an analysis of the borrower's credit. The lender's investment in the loan is not normally protected by any government guarantee. On some services, lenders mitigate the risk of bad debt by choosing which borrowers to lend to and mitigate total risk by diversifying their investments among different borrowers.

The lending intermediaries are for-profit businesses; they generate revenue by collecting a one-time fee on funded loans from borrowers and by assessing a loan servicing fee to investors (tax-disadvantaged in the UK versus charging borrowers) or borrowers (either a

fixed amount annually or a percentage of the loan amount). Compared to stock markets, peer-to-peer lending tends to have both less volatility and less liquidity.

Peer-to-peer lending does not fit cleanly into any of the three traditional types of financial institutions – deposit takers, investors, insurers – and is sometimes categorized as an alternative financial service.

Typical characteristics of peer-to-peer lending are:

- it is sometimes conducted for profit;
- no necessary common bond or prior relationship between lenders and borrowers;
- intermediation by a peer-to-peer lending company;
- transactions take place online;
- lenders may often choose which borrowers to invest in, if the P2P platform offers that facility;
- loans can be unsecured or secured and are not normally protected by government insurance;
- loans are securities that can be transferred to others, either for debt collection or profit, though not all P2P platforms provide transfer facilities or free pricing choices and costs can be very high, tens of per cent of the amount sold, or nil.

Early peer-to-peer lending was also characterized by disintermediation and reliance on social networks, but these features have started to disappear. While it is still true that the emergence of internet and e-commerce makes it possible to do away with traditional financial intermediaries and that people may be less likely to default to the members of their own social communities, the emergence of new intermediaries has proven to be time and cost saving. Extending crowdsourcing to unfamiliar lenders and borrowers opens up new opportunities.

Most peer-to-peer intermediaries provide the following services:

- online investment platform to enable borrowers to attract lenders and investors to identify and purchase loans that meet their investment criteria
- development of credit models for loan approvals and pricing
- verify borrower identity, bank account, employment and income
- performing borrower credit checks and filtering out the unqualified borrowers
- processing payments from borrowers and forwarding those payments to the lenders who invested in the loan
- servicing loans, providing customer service to borrowers and attempting to collect payments from borrowers who are delinquent or in default
- legal compliance and reporting
- finding new lenders and borrowers (marketing)

Donation-based

Running alongside reward-based crowdfunding, donation-based is second another popular form of crowdfunding. Donation-based crowdfunding is the collective effort of individuals to help charitable causes. In donation-based crowdfunding, funds are raised for religious, social environmental, or other purposes. Donors come together to create an online community around a common cause to help fund services and programs to combat a variety of issues including healthcare and community development. The major aspect of donor-based

crowdfunding is that there is no reward for donating; rather, it is based on the donor's altruistic reasoning. Ethical concerns have been raised to the increasing popularity of donation-based crowdfunding, which can be affected by fraudulent campaigns and privacy issues.

New Crowdfunding models are:

- Civic crowdfunding
- Corporate
- Do-it-yourself
- Invoice trading
- Real estate
- Recurring crowdfunding
- Energetic crowdfunding

Civic crowdfunding

With civic crowdfunding we resort to the use of crowdfunding for the financing of public works and projects by the citizens themselves. It is a bottom-up financing method, capable of actively involving citizens, allowing fundraising through flexible tools, able to promote the development of the territory and communities. This is also because crowdfunding itself is a fundraising system that allows anyone to launch a campaign and any person to support it. Therefore, both individuals and social organizations can create civic-based projects that benefit the entire community. It can be developed in a donation form, reward, or social lending form.

Main characteristics:

1. Civic crowdfunding increases the sense of belonging and the involvement of citizens for their territory, also favouring transparency through a *more effective allocation of funds*
2. Public Administrations and local authorities, with civic crowdfunding, can:
 - a. Leverage close relations with citizens and small and medium-sized enterprises
 - b. Test the interest of citizens for each new project, so as to be able to better define - thanks to the participation of the citizens themselves - the priorities of each territory
 - c. Invest your budget in those projects considered important by the citizens themselves and for which, often, state funds are lacking for their realization (as demonstrated, for example, by the case called "Un passo per san Luca";
 - d. Many crowdfunding platforms are active mainly at local level and, therefore, are excellent for launching projects for the community that lives in the territory.
3. Citizens can follow and access all the information, both (indirectly) online and (directly) offline (on the territory), relating to the projects they intend to support through civic crowdfunding, starting from the early stages of development up to their complete realization.

Civic crowdfunding also hides obstacles, namely:

- The lack of knowledge of what crowdfunding and civic crowdfunding are and how they work are a great brake on the growth of the phenomenon;
- The difficulty of developing knowledge on the subject of crowdfunding both at institutional level and at the level of individuals strongly slows down the spread of civic crowdfunding;
- Often public authorities are confronted with a bureaucracy that is too complex and sometimes difficult to overcome, often making some civic crowdfunding projects unfeasible;
- There are difficulties regarding payment systems, as many of the potential donors often find it difficult to pay sums through a crowdfunding campaign and seem to prefer traditional channels, such as - for example - bank transfer.

Recently, civic crowdfunding is becoming an increasingly useful tool for the realization of match-funding projects, which sell collaboration between public bodies and local communities. In this sense, it may be interesting to reflect on the state of the art of the sector and its possible future evolutions.

In this sense, in fact, "crowdfunding is an increasingly widespread online fundraising tool to carry out cultural, social, artistic, sports and environmental projects, and for public bodies it represents the opportunity to access new financial resources, but also to raise awareness in a community, enhance the tangible and intangible territorial heritage, promote a shared management of the common goods and start new forms of public-private collaboration". Finally, it can be recalled that, although this model could generate questions since such projects of public utility should be financed with taxes, however it would seem that giving the opportunity to citizens to choose whether to support cultural, social and or environmental projects useful to the whole community, it is possible to have a greater involvement of the same and a better impact on the community and on the territory. In this sense, for example, at the Italian level, according to 2018 data from Starteed, civic-based and match-funding projects have collected, in total, about 4 million Euros. The initiatives were mainly promoted by the public administrations (PA) themselves, also through "partnerships with local realities, which increasingly play the role of right arm of the Administrations in the operational implementation of the projects. The combination of Public and Crowdfunding is certainly an interesting phenomenon to monitor, given the commonality between the elements at the base of Crowdfunding and the values to which public administrations are increasingly called to respond community involvement, transparency of funding, ease of access and dissemination, innovation of systems, issues of collective interest, participation from below. In short, crowdfunding allows PAs to create a strategy to "generate a sense of appropriation of the common good". This is, moreover, the message launched during the 3rd ECN CrowdCamp12, held in Bologna at the end of June 2018.

3.6.2. Match-funding

Since crowdfunding first appeared, and with the proliferation of platforms in recent years, various systems and formulas of operation have appeared within the general crowdfunding model. One such system, still in its early days, is match-funding (co-funding between citizens and institutions), which permits public and private organisations to double the financial contributions for projects from individual users. After an analysis of the state-of-the-art match-funding practices, the results show that match-funding campaigns are more likely to be successful, significantly increase average donations, and generate new dynamics of

institutional cooperation and proximity in the support for initiatives than the simple crowdfunding,

Match-funding is a type of financing, often carried out through civic crowdfunding campaigns, in which cooperation between bottom-up funding portals and public authorities is envisaged for the benefit of all local communities.

In essence, these are co-financing initiatives aimed at supporting all those projects that may not be a priority for state bodies, but which - on the contrary - are of great value for citizens. Through match-funding we see, therefore, the cooperation between local and regional authorities with the citizens themselves, within the crowdfunding platforms.

Despite the undoubted opportunities it offers, to date, match-funding is not used to its full potential. For this reason, the European Crowdfunding Network (ECN) is inviting to the third ECN CrowdCamp various experts from the main civic crowdfunding portals to raise awareness of the success stories and start interesting discussions focusing on the ways in which these types of collaborations could be improved and disseminated at European level.

Ultimately, therefore, the goal - of the ECN and of the match-funding itself - is to show how crowdfunding, in particular the civic-based one, can represent a valid asset both for public authorities and for citizens.

A series of challenges and future lines of development for the model are finally discussed, especially how civic match-funding can become a powerful instrument for public participation and policy innovation, with many initiatives crossing boundaries between activism, advocacy, social entrepreneurship, and social innovation. In this sense, the novel concept of “crowdvocacy” could emerge as a distributed but coordinated process among different actors and platforms where civic initiatives increase their influence in public life, from citizens’ awareness and engagement to empowerment and wider participation in democratic life.

Cities such as London, Barcelona, Utrecht, Milan, and many more have set in place match-funding schemes through which citizens have the opportunity of staying actively involved throughout the decision-making process of regional development. In this context, crowdfunding as per its own open, inclusive, and participatory nature stands out as a reliable ally for public authorities, significantly increasing the opportunities for wider participation, stimulating citizens’ ownership and sense of belonging to a community, and offering concrete validation of the need for specific local actions as they are perceived by citizens. In this chapter, we collect and present seven existing best practices in match-funding in the EU, highlighting the different roles that public authorities can play in supporting and amplifying the impact of crowdfunding campaigns for territorial and social development in their jurisdictions. The presented best practices should also be considered as benchmarks, in terms of procedures, indicators, and outputs, for the replication of match-funding schemes in other European cities and regions.

To choose the proper match-funding campaign, in Italy, in particular Emilia Romagna region, it has been developed a service platform called “KICK-ER” for municipalities with a questionnaire that aims to identify the most appropriate role in the match funding and how to perform the campaign.

3.6.3. PPP-public private partnership

Public-Private Partnership (PPP) can be broadly defined as a contractual agreement between the Government and a private firm targeted towards financing, designing, implementing and operating infrastructure facilities and services that were traditionally provided by the public sector. It embodies optimal risk allocation between the parties – minimizing cost while realizing project developmental objectives. Thus, the project is to be structured in such a way that the private sector gets a reasonable rate of return on its investment.

PPP offers monetary and non-monetary advantages for the public sector. It addresses the limited funding resources for local infrastructure or development projects of the public sector thereby allowing the allocation of public funds for other local priorities. It is a mechanism to distribute project risks to both public and private sector. PPP is geared for both sectors to gain improved efficiency and project implementation processes in delivering services to the public. Most importantly, PPP emphasizes Value for Money (VfM) – focusing on reduced costs, better risk allocation, faster implementation, improved services and possible generation of additional revenue.

Elements of Public-Private Partnership

- Strategic mode of procurement
- A contractual agreement between the public sector and the private sector
- Shared risks and resources
- Value for Money (VfM)
- Outcome orientation
- Acceleration of infrastructure provision and faster implementation

Generally, there are two common forms of PPP structure: availability and concession-based PPPs. The two forms could be distinguished from each other based on what the public or private parties assume within the partnership, e.g. rights, obligations, and risks.

1. **Availability PPP:** a form of PPP wherein the public authority contracts with a private sector entity to provide a public good, service or product at a constant capacity to the implementing agency for a given fee (capacity fee) and a separate charge for usage of the public good, product or service (usage fee). Fees or tariffs are regulated by contract to provide for recovery of debt service, fixed costs of operation and a return on equity.
2. **Concession PPP:** a form of PPP wherein the government grants the private sector the right to build, operate and charge public users of the public good, infrastructure or service, a fee or tariff which is regulated by public regulators and the concession contract. Tariffs are structured to provide for recovery of debt service, fixed costs of operation, and return on equity.

The European Commission's Green Paper identifies two types of PPPs:

1. **Contractual partnership:** this is the public-private partnership based on cooperation. One of the best-known models is that of the **concession**, characterized by the direct link between the private partner and the end user under the control of the public entity.
2. **Institutionalized partnership:** it is the partnership that was born with the establishment of a new entity, a new entity held by the public partner and the private partner. Typically, a joint-venture or a project company. Public authorities use this category, in particular, for the management of public services at local level (such as waste collection or water management).

The most spread types of public private partnerships are the concession of public works PPP, the provision of services, the availability contract and the financial leasing of public works.

The **concession of public works** PPP, which is also the most widespread on the Italian territory for instance, is an agreement concerning the design, construction and management of a public work that can be entrusted through traditional procedures or through the project financing administrative procedure. Examples of public works carried out with the granting of public works are car parks and public lighting.

The **provision of services** is a public contract for the design and management of a public service.

The **availability contract**, on the other hand, is a contract between the public and private sectors with the aim of carrying out and managing a public work, the consideration for which consists in the payment by the contracting station of a periodic sum indexed as a fee. This system can, for example, finance and manage hospitals, car parks and schools.

The financial leasing of public works is a contract between public and private that provides for the design, construction and technical management or maintenance of a public or public utility work whose financing comes from an ATI (Temporary Business Association) formed, among other things, by a credit institution.

The Italian legislation, for example, provides for the form of public-private partnership both as a contractual PPP and as an institutionalized PPP.

The forms of contractual PPP in Italy are:

4. granting of construction and management
5. provision of services
6. sponsorship
7. financial lease
8. availability contracts

The PPP market in Europe

The EU PPP market is mostly concentrated in the United Kingdom, France, Spain, Portugal and Germany, which implemented projects worth 90 % of the entire market over the 1990-2016 period. While some Member States implemented numerous PPP projects, such as the United Kingdom with over 1 000 PPP projects worth almost 160 billion euro during the period

followed by France with 175 PPPs worth almost 40 billion euro, 13 of the 28 Member States implemented fewer than five PPP projects.

The Innovation Partnership

Introduced in 2014, the Innovation Partnership identifies a particular procurement method aimed at "developing innovative products and services" that are not yet available on the market and "subsequently purchasing the resulting supplies and services".

The innovation partnership allows Public Administrations to competitively choose one or more partners for the development of a product, service or innovative solution adapted to their needs and includes the following phases:

1. Defining the PA's innovation needs in terms of solutions, products and services and their minimum requirements
2. The selection of the most suitable partners in terms of skills and prices and their negotiation
3. The development of the new solution, service or product by the partners according to the needs of the PA, which includes the phases of conception, prototyping, validation and testing as well as experimentation through pilot projects
4. The supply of the final solution (commercial phase) and the purchase of the developed solutions.

Pre-commercial public procurement and the innovation partnership are two alternative approaches and respond to different situations. While the Innovation Partnership is a tendering procedure involving both research and development and the marketing of finished products, pre-commercial public procurement concerns only research and development services.

The European Innovation Partnership (EIP) is a similar concept introduced by the European Commission. Its aim is to address weaknesses and obstacles in the European research and innovation system to support the development of good ideas and their outlet to the international market.

Each European partnership is led by a group chaired by one or more European Commissioners responsible for the sector or area covered by the partnership. In addition, there are other actors and stakeholders from the institutional, business and research worlds.

Each European Partnership for Innovation tends to have a number of basic objectives:

- create a common platform for cooperation;
- build relationships between research, knowledge, technology and business;
- link research and activity by encouraging more innovation;
- promote a faster and wider dissemination of innovative solutions;
- inform the scientific community.

3.6.4. BID business improvement district

Business Improvement Districts (BID) are “a form of public/private partnership (PPP) in which property and business owners elect to make a collective contribution to the maintenance, development and promotion of their commercial district”⁵⁰.

Business Improvement Districts are created to provide various services in coordination with municipal services and invest in the long-term economic development of their districts. In most cases BIDs are created because the services provided by local governments are not satisfactory and BID add their services to those funded by tax revenues. These could include for example cleaning streets, providing security, making capital improvements and the construction of pedestrian and streetscape enhancements. BIDs finance their operation through revenues from a tax fee paid by commercial or residential property owners.

The New York City Department of Small Business Services has published a step-by-step guide to BIDs implementation process, which served as basis for this short summary on BIDs⁵¹ as one of the first examples was set up in the City of New York in the '60. In that case funds were collected by the City of New York and then disbursed to the BID, which in turn delivers the district's services.

The services provided by the BID are normally supplemental to the services provided to the district by the City. For example, if a BID provides street/sidewalk cleaning services, it will still receive the same level of service from the local public authority in charge of these services as it did before supplemental services were added.

BIDs are governed by a Board of Directors elected by its the members. The Board of Directors choses the management that administers the BID on a day-to-day basis.

BIDs are also called with different names: business improvement area (BIA), business revitalization zone (BRZ), community improvement district (CID), special services area (SSA), or special improvement district (SID).

UNESCO digital library makes available a guide on “Best practices on social sustainability in historic districts” where several case studies are illustrated that offer various examples of participatory approach to the restoration of urban cultural heritage⁵².

Another guide on best practices is provided by the Mayor of London in the booklet “Improving Places” Culture and Business Improvement Districts: Thriving Partnership⁵³.

All of these serve as examples of successful PPP that could be set up to respond to the needs to refurbish/maintain the buildings in the Speicherstadt and Kontordistrict in Hamburg or in the HA of Bratislava for implementing NBS like permeable pavement.

Certain conditions must be in place in order for a BID to be an appropriate tool to facilitate regeneration. Most critically, a designated area must have existing local property owners who

50 <https://urban-regeneration.worldbank.org/node/16>

51 https://www.nyc.gov/html/sbs/downloads/pdf/bid_guide_complete.pdf

52 <https://unesdoc.unesco.org/ark:/48223/pf0000178405>

53 <https://www.london.gov.uk/what-we-do/arts-and-culture/arts-and-culture-publications/improving-places-culture-business>

consider it a worthwhile endeavour to contribute additional funds toward the maintenance and investment in their district.

In London BIDs are growing in number and are involved in urban regeneration⁵⁴.

In Hamburg, on the basis of the urban planning practices from the USA, BIDs have been set up since 2005 as a tool for urban development. Since 2015, 25 BIDs have been initiated.

3.7. The Urban dimension of EU funding

In the framework of the inventory of funding measures SOGESCA analysed those resulting most appropriate for the selected resilience options for each ARCH pilot city. In order to understand which funds are most suitable for the selected resilience options, it is important to underline the importance of cities in driving the transition towards a sustainable way of living. This is recognised in the Urban Agenda for the EU and in global agendas, such as the Sustainable Development Goals and the New Urban Agenda^{55 56}.

The Urban Agenda for the EU focuses on concrete priority themes within dedicated Partnerships to improve the quality of life in urban areas⁵⁷. The Commission helps cities achieve EU objectives and has developed a platform where cities can get information on funding and other support. The platform is a “one-stop-shop” of EU policies for cities and it helps cities to grow sustainably through sharing of knowledge, funding, and other urban policies and initiatives⁵⁸.

Since October 2020, JRC is collaborating with a group of European cities that are testing the method developed in the URBAN2030 project⁵⁹.

For the 2021-27 period, the European Commission proposes a stronger urban and territorial dimension by introducing a new policy objective “Europe closer to citizens” supporting the engagement of local authorities, civil society and citizens in delivering on local challenges.

Cohesion Policy beyond 2020⁶⁰ will keep on investing in all regions to support integrated territorial and local development strategies and the European Commission has put forward a simpler and more flexible framework. The urban dimension of Cohesion Policy will be strengthened, with 6% of the European Regional Development Fund dedicated to sustainable urban development strategies.

The new European Urban Initiative⁶¹ supports cities to innovate, access knowledge and understand policy, and support networking and capacity building. In fact, the Cohesion policy supports new investments both in terms of funding but also in terms of fostering strategic, integrated and inclusive approach to address the above-mentioned challenges.

54 https://lep.london/sites/default/files/Evolution_of_Londons_BIDs_March2016_web_140316.pdf

55 https://ec.europa.eu/regional_policy/en/policy/themes/urban-development/agenda/

56 <https://urban.jrc.ec.europa.eu/sdgs/en>

57 (https://ec.europa.eu/regional_policy/en/policy/themes/urban-development/agenda/).

58 https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development_en

59 <https://cities2030.eu/project/>.

60 https://ec.europa.eu/regional_policy/en/2021_2027/

61 https://ec.europa.eu/regional_policy/sources/docgener/brochure/explanatory_memo_eui_post_2020_en.pdf

The various dimensions of urban life – environmental, economic, social and cultural – are interwoven and success in urban development can only be achieved through an integrated approach. Measures concerning physical urban renewal must be combined with those promoting education, economic development, social inclusion and environmental protection. It also calls for strong partnerships between local citizens, civil society, industry and various levels of government.

New forms of governance for better policy design and investments are already taking place in many cities, be it through fostering cooperation between urban and rural areas based on functional areas approach, as could be the case of Valencia in the framework of the ARCH project, long-term strategic planning, or involving citizens in all stages of policymaking.

Suitable funding and finance arrangements are a key pillar of Sustainable Urban Development (SUD) as promoted by the EU's cohesion policy. There are two long-established trends in delivering this policy:

- combination of multiple funding sources and, on a related note,
- increasing significance of ESIF financial instruments.

Financial instruments such as loans, bank guarantees, equity investments and venture capital can be co-funded by the European Structural and Investment Funds (ESIF). These financial instruments are an efficient way to invest in the growth and development of people and businesses across the EU⁶².

In the case of Cohesion Policy, the term financial instrument means a mechanism, which transforms EU resources into financial products such as loans, guarantees, equity etc. Financial instruments are foreseen in Article 37 of the Common Provisions Regulation⁶³.

The rationale behind the use of multiple funding sources is that these provide efficiency gains by exploiting synergies with European Structural and Investment Funds (ESIF), and that they mobilise a wider range of actors and resources. In this way, the added value of structural funding is optimised and cohesion policy's capacity to steer and to accelerate investment is enhanced.

When it comes to integrated Sustainable Urban Development⁶⁴ in particular, an additional justification for combining funding sources is that integrated Sustainable Urban Development concerns itself with a diverse range of complex urban issues. Therefore, a range of funding sources have to be deployed in order to secure full funding for a programme whose scope is to address interrelated social, economic and environmental issues in a strategic and integrated manner. Combining funding sources is not only a matter of doing more with less but also a matter of identifying the necessary resources and channelling them to projects that are best suited to address the policy issues at hand⁶⁵.

Finally, the “7 Most Endangered” Programme, launched in January 2013 by Europa Nostra with the European Investment Bank Institute and supported by the Creative Europe

62 <https://www.fi-compass.eu/video/implementing-financial-instruments-esif>

63 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013R1303>

64 Article 7, Regulation (EU) No 1301/2013: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R1301&from=EN>

65 Handbook of sustainable urban development strategies (JRC- EUR 29990 EN): <https://urban.jrc.ec.europa.eu/urbanstrategies/funding-and-finance#the-chapter>

Programme of the European Union as part of Europa Nostra networking project “Sharing Heritage – Sharing Values (2017-2020)” aims to attract the attention of governments, political and business leader for action and to promote “the power of example”⁶⁶. Multidisciplinary teams are identified to assess endangered heritage sites and to support the formulation of feasible action plans for each of them, in close cooperation with national and local public and private stakeholders.

In this framework, The Urban Development Network (UDN), made up of more than 500 cities/urban areas across the EU, is responsible for implementing integrated actions based on Sustainable Urban Development strategies financed by ERDF.

The figure below represents the main novelties in the 2021-2027 programming phase in the Commission Proposal for Urban and Territorial matters⁶⁷

Summary of main changes	
2014-2020	2021-2027
Focus on 11 thematic objectives, integrated territorial approach treated horizontally (specific chapter in programming documents)	5 policy objective breaking policy silos, integrated territorial approach got its own cross-cutting policy objective - Europe closer to citizens (PO5)
ITI and multi-thematic priority axis to break thematic silos	ITI tool remained to draw funding directly from other policy objectives
Different set of rules for ITI under sustainable urban development (ERDF Art. 7) and ITIs for other territorial strategies	Coherent minimum requirements for all territorial tools defined in the CPR (territorial strategies and duties of local/territorial bodies)
Designation of Intermediate bodies is obligatory for urban development	No intermediate body needed for the minimum scope of responsibilities
No specific monitoring arrangements , based on thematic operations, outputs and results	Indicators and categories for PO5 to improve flexibility and EU level monitoring

Figure 15: Main changes between 2014-2020 and 2021-2027 programming

66 A comparative analysis of risk management in the EU Safeguarding Cultural Heritage from Natural and Man-Made Disasters (EC, 2018):

67 https://ec.europa.eu/regional_policy/sources/conferences/udn_osijek/03_gallaga.pdf

4. Categorization

4.1. Identification of resilience measures

SOGESCA acted together with Tecnia and the ARCH pilot cities representatives, applying the co-creation methodology developed in the framework of WP3, in order to select the most significant resilience options applicable to the pilots and to perform the analysis of the most suitable funding measures. The resilience options were selected starting from the work carried out by Tecnia in WP6, that led to the design of the resilience measures inventory (D6.1).

D6.1 “ARCH Resilience Measures Inventory: Concept and user guide” is a supporting document to the key output of the task, the ARCH Resilience Measures Inventory (RMI).

The focus of the inventory is twofold: 1) built heritage as well as 2) cultural landscapes, with focus on agricultural heritage. The RMI is an inventory of suitable resilience measures for Historic Areas, gathered from good practices, literature review and stakeholders’ inputs which provides a general description as well as a general assessment of the implementation of these measures. It uses Microsoft’s software Power BI, a tool for visualising data and analytics reporting tool format, which is easy to use and makes it possible to explore, identify, and assess features of the resilience measures such as visual, physical or spatial impacts of the solutions as well as their co-benefits.

Starting from that basis, SOGESCA proceeded with a first round of interviews with the pilots in order to assess the resilience measures of greater interest amongst all those identified.

To narrow down even further the selection of measures, SOGESCA interviewed the pilots in a second round of interviews in order to select two measures per pilot city that would be investigated more in the details regarding the possible funding measures. ENEA was involved in the second round of interviews.

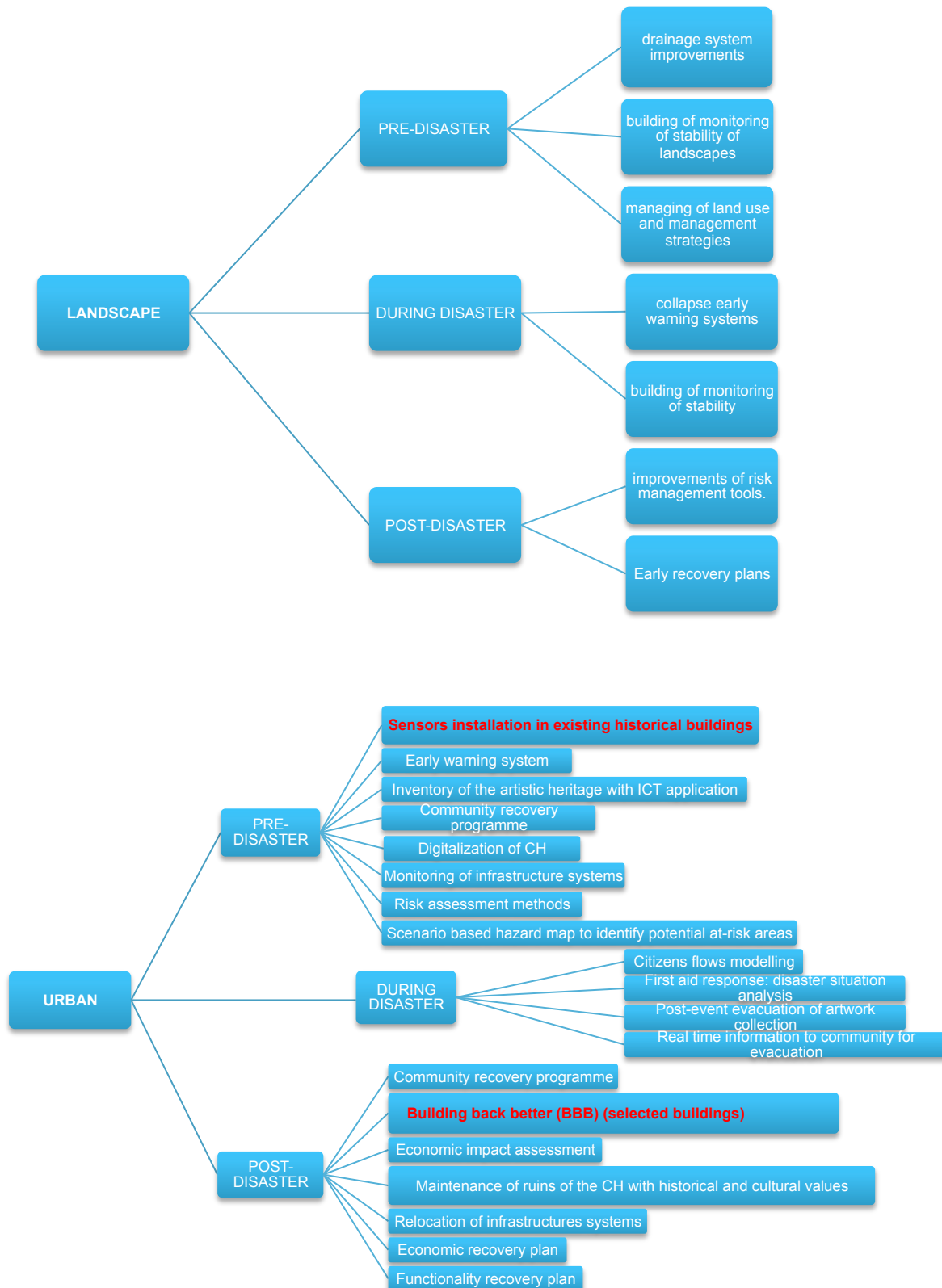
Moreover, on top of selecting two resilience measures per pilot city, a transversal action applicable to all the cities was selected. This centered on an awareness-raising campaign addressed to the community on hazards and risks for HA, an area of work selected as being an extremely important measure to undertake for all the pilots. The financing options for an awareness-raising campaign will therefore be analysed in chapter 5.

For each selected measure, the leaflet (a pdf file which can be downloaded from the Power BI platform) prepared by Tecnia (D6.2) is attached in Appendix 2.

The choice of these resilience options was agreed with the pilots’ representatives. Moreover meetings between Tecnia and the pilots are on-going regarding the social acceptability of the selected measures (see concept note Task 6.2)

4.1.1. Resilience measures for Camerino

The results of the first interview with Camerino are reported in the flow chart below



The two selected resilience measures for Camerino are:

1. Early Recovery plans for building back better (BBB): Planning for post-disaster reconstruction, following a disaster, not only reconstructing what was damaged and return the pre-disaster state but to seize the opportunity to improve overall community resilience
2. Infrastructure structural monitoring of stability: Technologies to provide information on the performance and condition of the infrastructure such as GPS systems through sensors

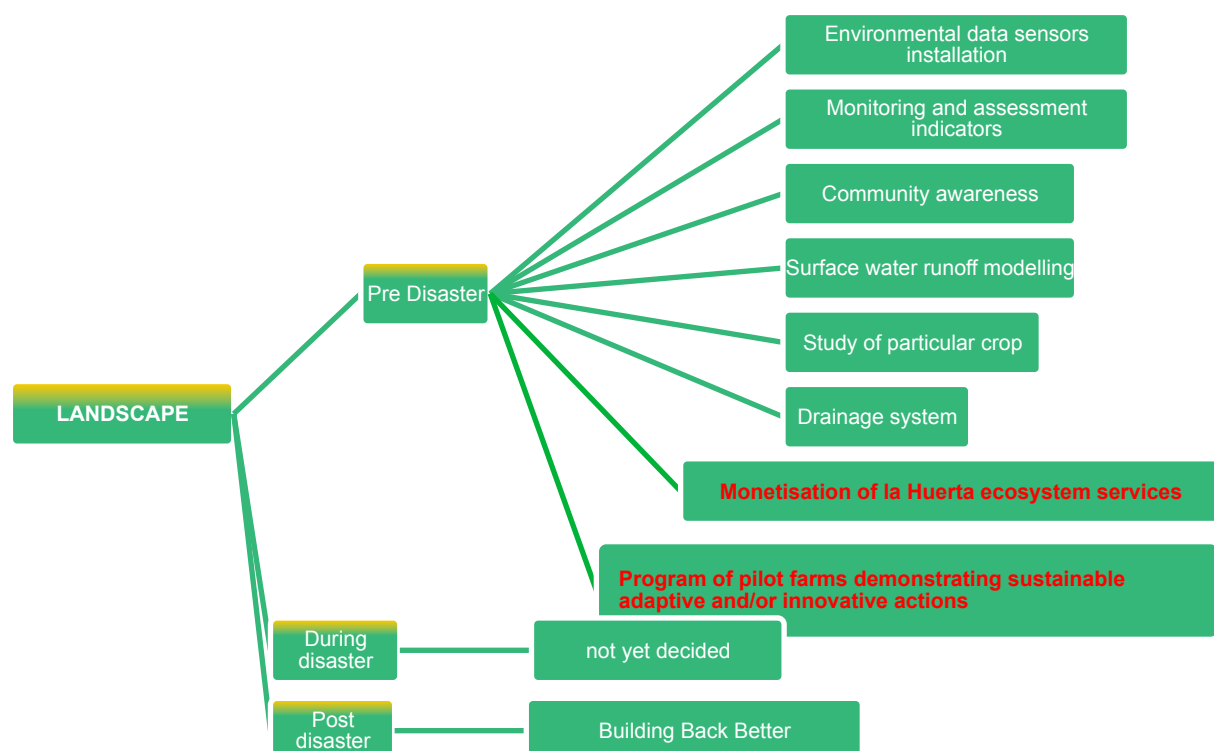
In the case of Camerino, due to the fact that the resilience options refer to building back better after the earthquake, it was also possible to identify the specific sites to be re-built after the disaster that largely devastated the historic centre of Camerino in October 2016.

The selected buildings are:

- A building which used to host a cinema (named Cinema Ugo Betti): the building was largely destroyed and must be re-built making it resilient
- A building which used to host a theatre (named theatre Marchetti)
- The building hosting the municipal offices and other shops were severely damaged (main walls, roofs)
- The building hosting the former “music hall”

4.1.2. Resilience measures for Valencia

The results of the first interview with Valencia are reported in the flow chart below



The two selected resilience measures for Valencia are:

1. Program of pilot farms demonstrating sustainable, adaptive and/or innovative actions: Pilot farm demonstration aims at building on technical capacity by 'learn by doing approach' with the co-benefit of bringing together participants from different contexts to facilitate knowledge exchange and learning amongst peers
2. Promotion and financial support for sustainable and innovative agricultural practices: Strengthen incentives such as fiscal reductions for agriculture system transformation or payments for ecosystem services in order to support food safety, agriculture sustainability and smart agriculture

It is important to underline that for the City of Valencia, the selected target historic areas are two large cultural landscapes: the Huerta irrigated peri-urban farmland, one of six remaining such landscapes in Europe and the Albufera, a large coastal lagoon, supporting a diverse range of species including birdlife and fish, and bordered by land for rice cultivation. These two geographic areas partly overlap with one another. Both are of high historic, cultural, natural and agricultural heritage significance. The Huerta in particular has been legally recognised as performing an important social function, supporting food sovereignty, human welfare, sustainable development and climate change mitigation and is included on a register of Globally Important Agricultural Heritage Systems (GIAHS), managed by the UN Food and Agriculture Organization (FAO).

Hazards faced by the Huerta include flooding, wave action in specific locations, convective storms, extreme temperature and drought, and insect infestation. The Albufera is also threatened by convective storms, as well as wildfire risk associated with extreme temperatures, water temperature rise, decrease in rainfall, heavy rains, sea level rise, and pollution. For the specific case of Valencia, therefore, the selected resilience measures are related to the monetization of La Huerta ecosystem services (and no specific measure is identified in D6.1 in this respect) and pilot farm demonstration aiming at building on technical capacity by “learn by doing” approach with the co-benefit of bringing together participants from different contexts to facilitate knowledge exchange and learning amongst peers. These measures, although not directly applicable to the urban historic area will also support the buffer role of the surrounding areas of La Huerta e Albufera. In fact, three priority objectives can be identified with respect to building resilience of both the Huerta and Albufera cultural landscapes: 1) to acknowledge and explore how the Huerta and Albufera help to mitigate the effects of climate change in the urban environment of València, 2) to understand and demonstrate in detail the impacts of possible climate change scenarios on the Huerta and Albufera, and 3) to design detailed resilience strategies in order to cope with these identified impacts.

This document provides insights on possible funding opportunities for preserving the Huerta area and making it more resilient to climate change both via monetizing the ecosystem services offered and by increasing the local farming activities preparedness against climate change hazards and their impacts and disaster management.

A brief explanation of the “Payment for Ecosystem Services” is reported below.

Payment for ecosystem services

According to the Millennium Ecosystem Assessment (MA), ecosystem services are “*the benefits people obtain from ecosystems*”⁶⁸. CIFOR, The Center for International Forestry Research defines ecosystem services as “*the diverse benefits that are derived from the natural environment. Examples include the supply of food, water and timber (provisioning services); the regulation of air quality, climate and flood risk (regulating services); opportunities for recreation, tourism and education (cultural services); and essential underlying functions such as soil formation and nutrient cycling (supporting services)*”. The picture below illustrates how PES works in watersheds⁶⁹ (Figure 16).

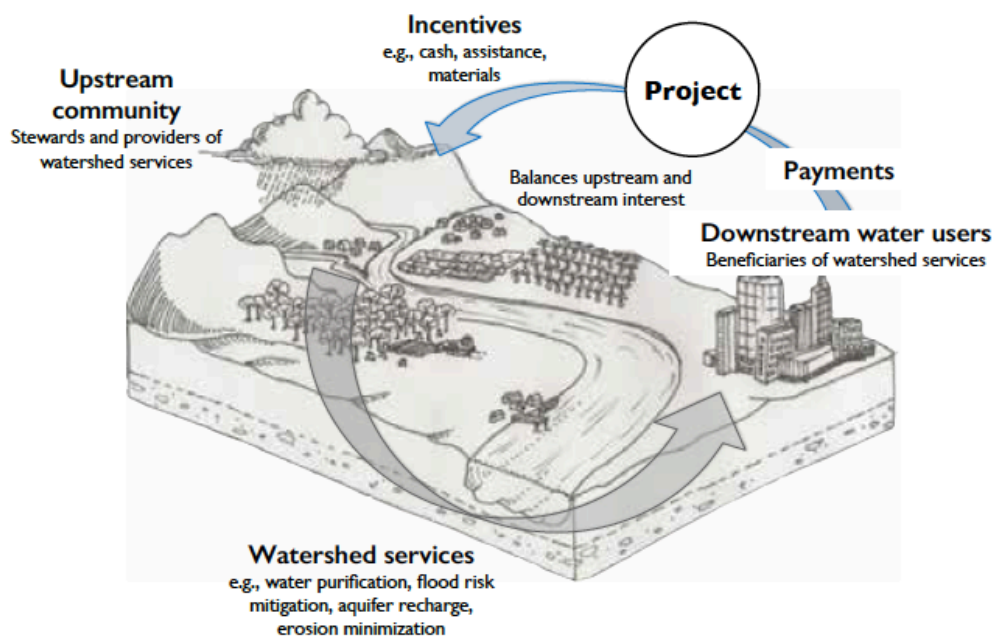


Figure 16: PES in watersheds. Source, Center for International forestry Research.

The challenge is “monetizing” the ecosystem services, which means giving an economic value to the services provided by natural ecosystems therefore also contributing to increase public awareness and support conservation efforts. Payments should be made by the beneficiaries of the ecosystem services to the land manager, who provides them.

According to the UK Department for Environment, Food & Rural Affairs (DEFRA), “Payment for Ecosystem Services: A Best Practice Guide”, the payments can be output- or input-based, depending on the intended action or state of the natural infrastructure.

⁶⁸ <https://www.millenniumassessment.org/documents/document.300.aspx.pdf>
⁶⁹ https://www.jstor.org/stable/resrep02149.5?seq=1#metadata_info_tab_contents

- *Input based ecosystem services payments: these are payments made on the basis of certain land or resource management practices being implemented, for example the creation of buffer strips along watercourses. These types of payments will eventuate only if buyers are willing to accept that specified inputs/activities will result in the provision of the desired ecosystem service.*
- *Output based ecosystem services: these payments depend on the achieved level of ecosystem service provision. Output-based payments are more difficult to implement, since they require an estimation of the level of service provision, including that under a baseline scenario if additionality is to be ensured⁷⁰.*

The funds derived from the monetization of ecosystem services can be used by farmers to finance the ecosystem services they provide and this can help supporting the sustainability of their activities. This is one of the main purposes for the monetization of the ecosystem services provided by the farmers in La Huerta that need to see the monetization of the services they provide as these would become an additional income for the economic sustainability of their farms.

The basic idea is that whoever provides a service should be paid for doing so.

According to DEFRA⁷⁰, there are three components of successful PES: demand, supply and the appropriate transaction infrastructure (i.e. marketplace).

In all cases, a robust scientific baseline and supporting information are basic requirements for setting up PES payments. The setting up of a monetization scheme could be financed through direct EU funds like those of the Horizon Europe, LIFE or Interreg programmes. Both programmes have in their scope halting the loss of biodiversity and valorisation of ecosystem services in Europe was clearly set as priority of the EU. The box below reports a focus on the Horizon, LIFE and Interreg programmes for financing the setting up of a PES for La Huerta.

The EU framework programmes (FPs) for research and innovation, including the Horizon2020 programme and Horizon Europe, have contributed to the knowledge base on ecosystems and their service with many EU-wide research projects. In recent years, research funding has been increasingly oriented to supporting the operationalization and uptake of ecosystem service knowledge in the context of different sectors.

From the perspective of integrating ecosystem services into different sectors, at the policy level and in practice, it is the EU instruments for agriculture and rural development, fisheries, aquaculture and marine policy, cohesion and regional development, and transport that are of key importance.

Given that the EU instruments are, first and foremost, focused on socio-economic sustainability of key sectors, being able to use and access these funds for conservation requires understanding of how biodiversity and well-functioning ecosystems support wider wellbeing and sector-specific policy objectives.

In the framework of monetizing the ecosystem services provided by La Huerta to the surrounding areas and the city of Valencia, all the above could be part of a research programme under Horizon

⁷⁰https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/200920/pb13_932-pes-bestpractice-20130522.pdf

Europe where La Huerta could be a pilot area.

In Valencia, the ecosystem services monetization was studied thanks to the GRETA project⁷¹, financed by ESPON 2020 cooperation project and ERDF, that investigated 12 case studies that represented different spatial, institutional and governance settings and that ranged from urban centres to rural countryside.

One of the policy objectives to be achieved by the LIFE projects is to improve the condition of ecosystems that are relevant to their area of intervention so as to increase their capacity to deliver ecosystem services. In the LIFE programme, all LIFE Nature and Biodiversity projects financed since 2011 are requested to include an action aimed at assessing the project's impact on ecosystems and their services. The assessment of ecosystems and their services is an added value of LIFE projects. The assessment results can help explain better to the general public and stakeholders the multiple benefits of LIFE projects in connection to society and the economy with which they interface. This understanding also supports the importance of investing in LIFE projects to society. This is also included in the LIFE programme list of priority topics for 2021-2024 (applicable to Standard Action Projects and Coordination and Support Actions): *"Therefore, project proposals that demonstrate innovative approaches to restoring high-biodiversity landscape features in agroecosystems that also bring benefits for farmers and communities (such as preventing soil erosion and depletion, filtering air and water, and supporting climate adaptation) and communicate such approaches, are given priority for LIFE support"*

LIFE environment and nature and biodiversity could be the right programme to finance the setting up of a PES scheme in La Huerta. The specific objectives of the sub-programme 'Nature and Biodiversity' include the following: *"to develop, demonstrate, promote and stimulate scale up of innovative techniques, methods and approaches (including nature-based solutions and ecosystem approach) for reaching the objectives of the EU legislation and policy on nature and biodiversity, and to contribute to the knowledge base and to the application of best practices, including through the support of the Natura 2000"*.

On the other hand, the issue is transversal and could be the focus of an Interreg project where the monetization of ecosystem services could be the focus of a project involving more countries that study the issue and share best practice. An example is the Interreg Europe PROGRESS project which gathers a selection of Good Practices and supports a network of Interreg projects related to ecosystem services⁷²

Three enabling factors for PES to succeed have been identified⁷³:

1. valuation (quantification of the impact and economic valuation)
2. legal and institutional frameworks
3. organization of stakeholders.

Amongst the case studies analysed in the framework of the H2020 project CLEVER Cities⁷⁴ there is the case of the UK private water company (South West Water) that, in 2008, partnered with an NGO (Westcountry Rivers Trust) to set up the 'Upstream Thinking' catchment management scheme. Farmers located in areas important for water quality will be provided advice in form of a water management plan and grants for up to 50 % of their investments. This scheme aims to improve water quality, lowering water treatment costs for South West Water (South West Water, undated).

⁷¹ <https://www.espon.eu/green-infrastructure>

⁷² <https://www.interreg-europe.eu/progress/news/news-article/11386/ecosystem-services-in-the-context-of-interreg-europe/>

⁷³ Savy CE and Turpie JK. 2004. Payments for Ecosystem Services: A Review of Existing Programmes and Payment Systems – Appendix. Rhodes Gift, South Africa: Anchor Environmental Consultants CC

⁷⁴ www.clevercities.eu

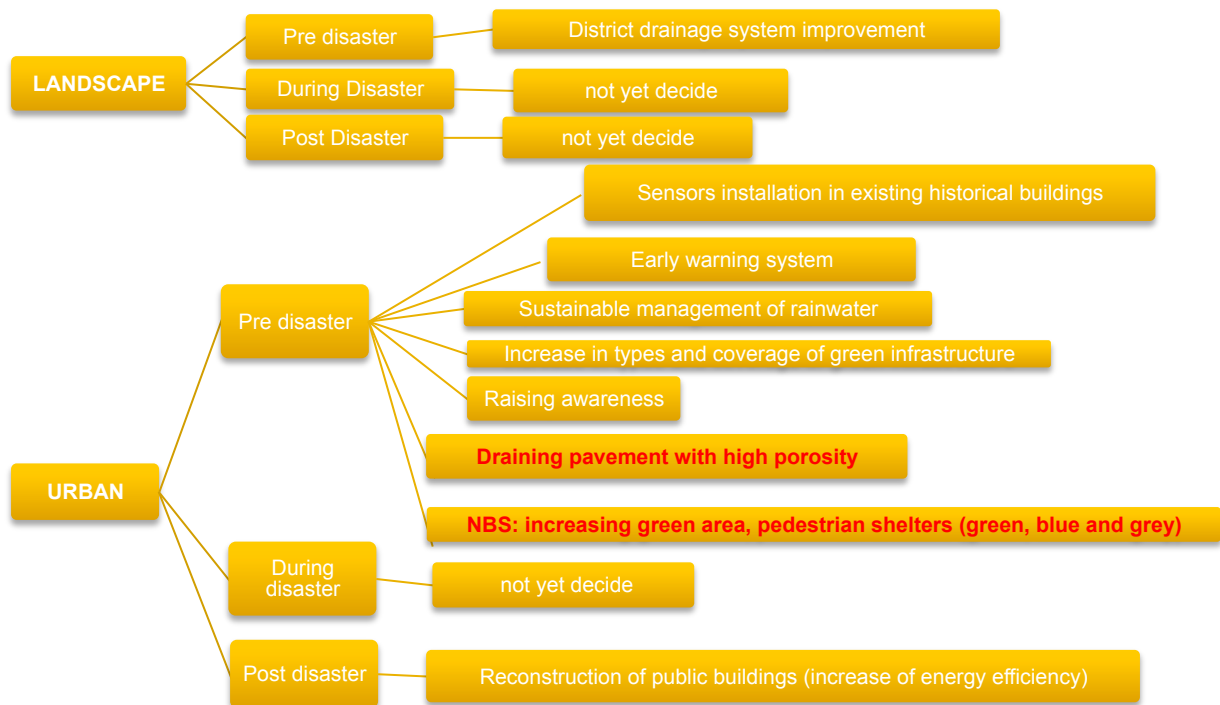
The H2020 GROW GREEN project⁷⁵ analyses market-based instruments, i.e. a range of instruments that use markets or price mechanisms to create incentives for private parties to invest in nature based solutions (NBS), and/or to ensure a more efficient allocation of resources.

The two examples reported in GROW GREEN are from the UK, where PES are widely applied: English Woodland Grant Scheme, UK – The scheme remunerates owners of woodland, leaseholders and tenants, as well as government departments and other public bodies owning forest land for various management activities or works delivering environmental or social benefits. Grants are delivered through the UK Rural Development Programme, with the Forestry Commission acting as intermediary. The South West Water's catchment management scheme 'Upstream Thinking', UK - Implemented by South West Water since 2008, the 'Upstream Thinking' scheme provides advice and grants to farmers whose land is connected to rivers above water abstraction points. As part of the scheme, farm advisers visit farms and carry out an assessment, which leads to a farm-wide plan. This includes a water management plan and future capital investment proposals aimed at improving water quality. These are funded up to 50% by Upstream Thinking. The water utility company benefits from the scheme by avoiding increased costs of water treatment (South West Water, undated).

⁷⁵ www.growgreenproject.eu

4.1.3. Resilience measures for Bratislava

The results of the first interview with Bratislava are reported in the flow chart below

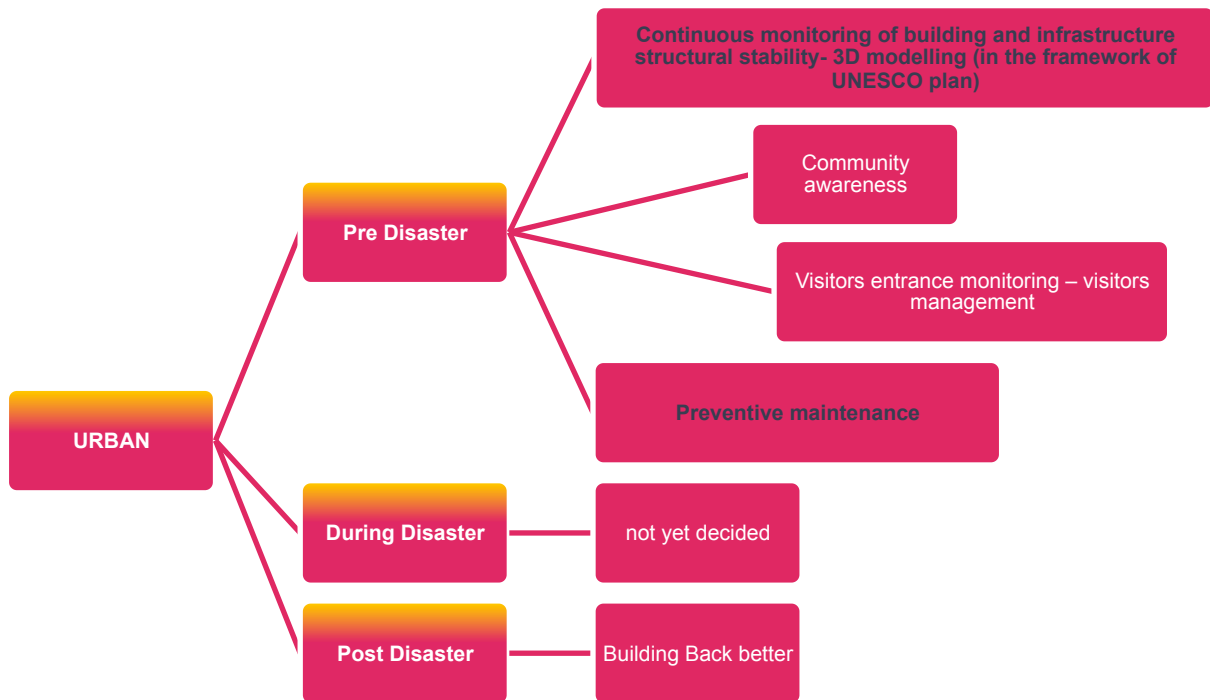


The two selected resilience measures for Bratislava are:

1. Permeable pavement: Specific type of pavement with a high porosity that allows rainwater to pass through it into the ground below
2. Shelters: heat or climate shelters are places where citizen will find cooler or more thermally comfortable areas where people can rest and protect from heat. This can be:
 - green (urban forest, areas with dense canopy trees, green pergolas, even pocket parks)
 - Blue (e.g. urban water spray, urban fountains)
 - Grey (Either buildings where people could rest and rephrase like libraries or elements that give shade like

4.1.4. Resilience measures for Hamburg

The results of the first interview with Hamburg are reported in the flow chart below



The two selected resilience measures for Hamburg are:

1. Building structural monitoring of stability: Installation of sensor systems to monitor the stability and/or structural damages evolution
2. Buildings' preventive maintenance

4.2. Identification of funding measures related to the selected resilience options

In order to instruct other cities in undertaking a similar analysis, the **pathway** for the identification of the most suitable EU funding measures once the selected resilience options are identified is described below.

- ✓ *Check Programmes in the area of interest. The project application must meet the selection criteria and investment priorities of the regional programme.*

Project applicants should, as first step, look for a funding instrument that is suitable for their project. The priorities of the future funder must be considered from the very beginning of project planning. Successful project applications always have a high correspondence between the project goals and the funding goals of the funding instrument⁷⁶.

- ✓ *Use websites and databases for searching funding instruments*

Nowadays a lot of information is available on the internet. The following examples of databases represent a good start for searching amongst EU funds. National websites can be a very useful instrument to find digested information in each country language.

The following websites represent examples of useful information sources for EU funds:

- https://ec.europa.eu/info/overview-funding-programmes_en
- <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>
- <https://www.funds-navigator.eu/en>
- <https://euro-access.eu>
- www.welcomeurope.com/programs
- www.eucalls.net

The list below reports the headings of a brief guideline from the EC portal to support applicants to find a suitable call for EC proposals. More details can be found on the EC portal⁷⁷:

- 1) Start the search
- 2) Find project partners (optional for LIFE)
- 4) Register an organisation
- 5) Submit your grant proposal

Reading each funding program documentation

Reading each funding program documentation is essential to understand the strategy behind the funding instrument. In each subject area or sector, the EU sets annual or even long-term goals in so-called "work programs" that are to be achieved within a certain period. Through

⁷⁶ https://ec.europa.eu/info/funding-tenders/how-apply/eligibility-who-can-get-funding_en

⁷⁷ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/how-to-participate/1>

calls for tenders, the EU then looks for service providers who can help to translate these EU work program goals from theory into practice through the implementation of very specific projects. The programmes funded under the Multiannual Financial Framework MFF are grouped into seven headings or expenditure categories of the EU budget.

Each one is dedicated to a specific policy area as follows:

- Single market, innovation and digital
- Cohesion, resilience, and values
- Natural resources and environment
- Migration and border management
- Security and defence
- Neighbourhood and the world
- European public administration

The documents to read before applying are:

- Call documents
- Programme guide
- Financial guidelines and work program for the funding instrument
- Thematic/sectoral strategies)
- Best practice brochures (if available)
- Database of funded projects (if available)
- Award criteria
- Model grant agreement (MGA).

The six goals of the von der Leyen (vdL) Commission 2019 - 2024 (vdL strategy) for the years 2019 to 2024, that serve as guideline for projects application, are:

- A European Green Deal
- An economy that works for the people
- A Europe that is fit for the digital age
- Protection of our European way of life
- A stronger Europe in the world
- A new impetus for European democracy

In most cases, the project as described in the application form will be a compromise between the original project idea and the goals and requirements of the EU funding instrument, which must be considered in addition to the project goals. If the applicant's own interests are not aligned with those of the EU, it is unlikely that the project will be funded, even if it has a good project idea.

Matching EU interests (strategies and priorities) with interest of the applicant (statutes, self interest, ...) is pivotal for a successful project financing application proposal. Therefore, it is very important to deal very extensively and in detail with the basic strategies behind a funding instrument.

The following table lists the essential levels and dimensions of strategies and policies of the European Union and should serve as an incentive to deal with them in detail. Project proposals must have the greatest possible relevant intersection with the relevant strategies

and priorities. This is clearly asked for in the application under "Relevance of your project to the EU programme".

EU Strategies	Project proposal should contribute and be related to the guiding strategy
Cross-cutting objectives	Cross-cutting objectives should be taken into account wherever possible
Sector strategies/WP/Specific Objectives (SO)	Each thematic area (research, environment, education, culture, ...) has its individual sector strategies. These further differentiate the objectives and priorities of the subject area and are defined in work programs or white papers.
Macro/Regional strategies	Macro-regional strategies exist specifically in the INTERREG VB programmes (ETC). Regional strategies can be found, for example, in the state ESF according to city or regional districts.
Annual calls/priorities	The most important current priorities are then defined again in the respective (annual) calls.

The website of the local managing authority must be consulted in the details. The designated managing authority in fact provides information on the programme, selects projects and monitors implementation.

According to the JRC research resulting in a "Handbook of Sustainable Urban Strategies", *"There are a few key challenges that have arisen during the programming period 2014-2020 in terms of funding and financing sustainable urban development for local authorities (LA):*

- *The institutional and administrative capacity of local authorities (LA) and managing authorities (MA) to plan and manage sustainable urban development strategies*
- *The ability or willingness of LA to take on debt*
- *The capacity of LA to manage programmes which combine ESIF grants with products offered by financial instruments and other private and/or domestic sources".*

Negotiating with financial institutions and being able to understand and design financial strategies is often new and challenging for to LA.

When looking at the financial solutions for the resilience options selected for the ARCH pilot cities it is therefore important to:

- *Consider the integration of European Structural and Investment funds amongst themselves and with domestic funds.*
- *Involve private investors in funding strategies (PPP (with donation, sponsorship, etc..), Crowdfunding, Match-funding, BIDs,..)*
- *Use also financial instruments and financial products⁷⁸.*

⁷⁸ <https://urban.jrc.ec.europa.eu/urbanstrategies/funding-and-finance#the-chapter>

The Scheme below illustrates the CRITERIA that should be used from the cities stakeholder point of view to select the most suitable funds.



As reported above, there are some steps to follow when looking for funds. In the specific case of ARCH the search is focused on funds for public actors (municipalities) and only in one case funds for private actors (in the case of Hamburg and) with special emphasis on HA and cultural heritage resilience to climate change. The case of Valencia is more focused on the agricultural areas surrounding the city of Valencia, hence funds available from the EU Agricultural Fund for Rural Development (EAFRD) could be applied for.

As illustrated in the paragraphs above, the EU programmes are focused on clear individual themes, specialist sectors or specialist areas. Therefore, once the project idea is established, there is normally one main funding instrument per thematic sector. However, there is also the possibility to present cross-sectoral projects with cross-sectoral synergy effects.

It is important to bear in mind that, as a general rule, it is not allowed to apply for two different funding for the same project at the same time. However different types of funding can be grouped, for example private and public funds.

For financing the selected resilience options in the ARCH pilots the best solution is most likely to combine funding sources. For example a crowd funding campaign, therefore private funds, could be anticipated by a publicly funded awareness raising campaign financed through EU grants.

Municipalities are given preferential treatment in some funding instruments (6% of ERDF will be dedicated to sustainable urban development strategies), or projects with municipal participation are given preference by the EU. Sometimes municipal participation is even a mandatory prerequisite for the approval of funding. The new European Urban Initiative supports cities to innovate, access knowledge and understand policy, and support networking and capacity building.

Cooperation and exchange of experience between cities is financed mainly with URBACT and INTERREG.

Final table matching the pilots with the selected resilience options and their related funding measures.

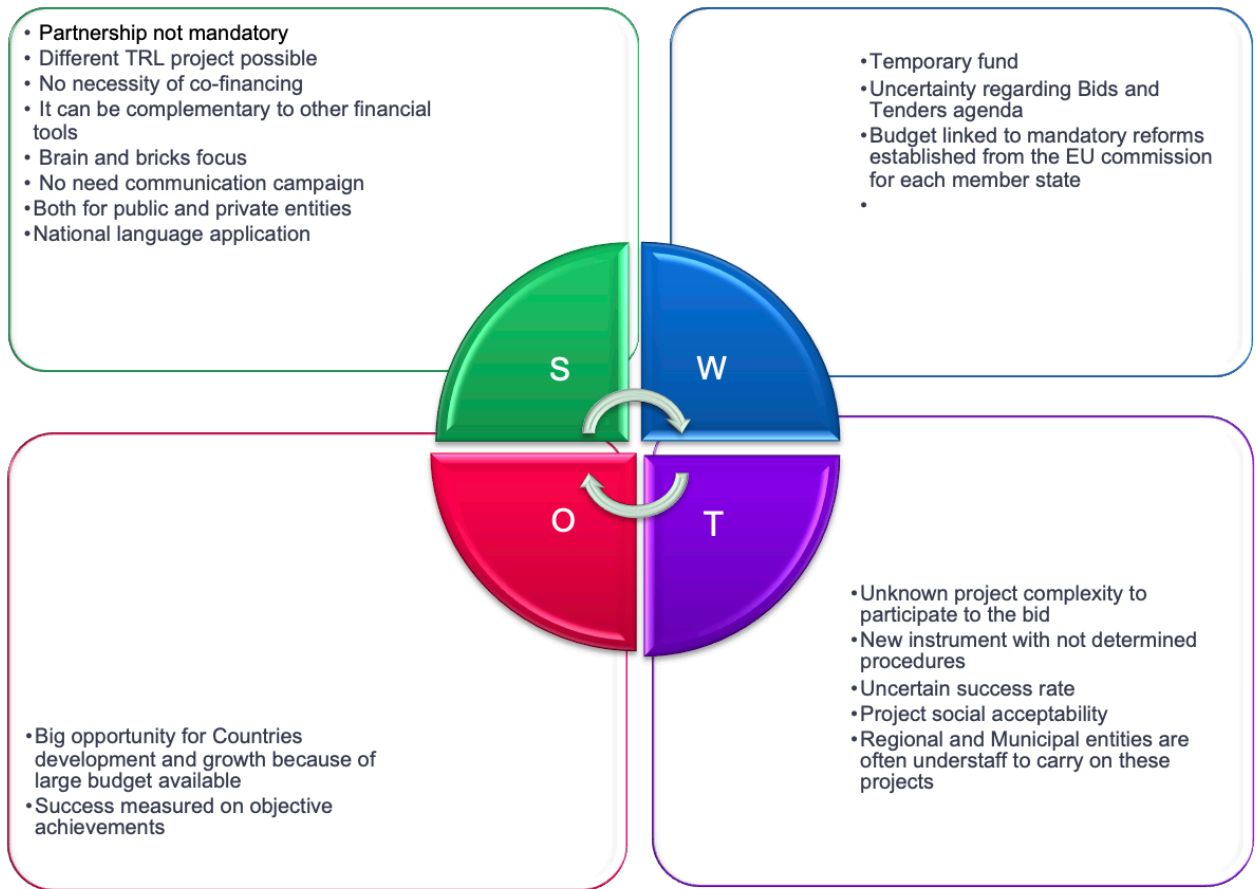
PILOT/ RESILIENT OPTION	BRATISLAVA	CAMERINO	HAMBURG	VALENCIA
BUILDING BACK BETTER		NRRP Match -funding Invest EU fund		
MONITORING SYSTEM (SENSORS)		NRRP Horizon EU Life climate change	Horizon EU Life climate change Interreg	
DRAINING PAVEMENT	Interreg Horizon EU NRRP			
SHELTERS	PPP w/ Sponsor ERDF Life climate change			
PREVENTIVE MAINTENANCE			BID PPP w/Invest EU ERDF	
MONETIZATION OF ECOSYSTEM SERVICES				Horizon EU Life climate change Interreg Europe
PILOT FARMS				Horizon EU ERDF Interreg Europe
AWARENESS RAISING CAMPAIGN	Interreg Life climate change PPP	Interreg Life climate change PPP	Interreg Life climate change PPP	Interreg Life climate change PPP

4.3. SWOT Analysis of the identified Funding Measures

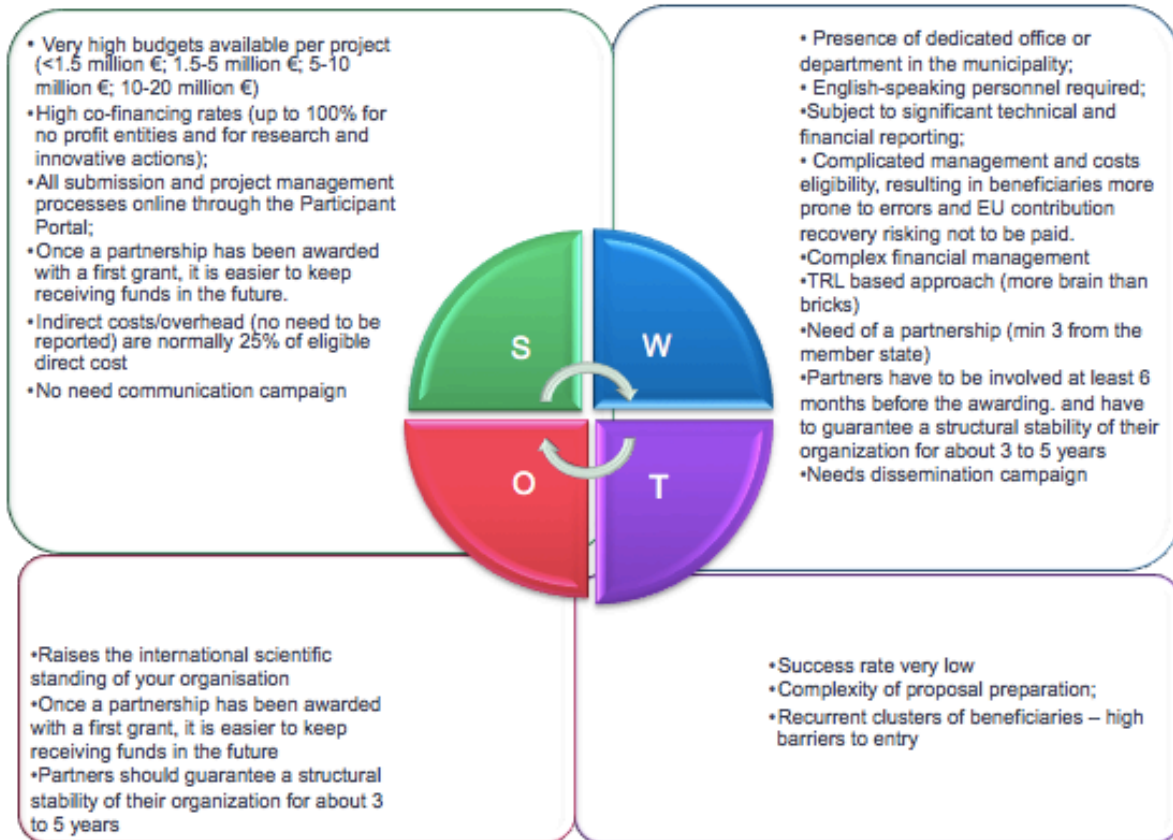
The parameters to carry out the SWOT analysis are the following:

1. Program budget
2. Project budget
3. Frequency
4. Partnership
5. Project TRL (technology readiness level)
6. Complexity of project preparation
7. Success rate
8. Necessity of co-financing
9. Project innovation rate
10. Project social acceptability
11. Combination with other financial instruments
12. “Brain or bricks” focus
13. Support rate of public or private entities
14. Project reporting complexity
15. Intellectual property issues
16. Need of fundraising web platforms
17. Territorial availability
18. Project duration
19. Communication campaign required
20. Private Stakeholders involvement

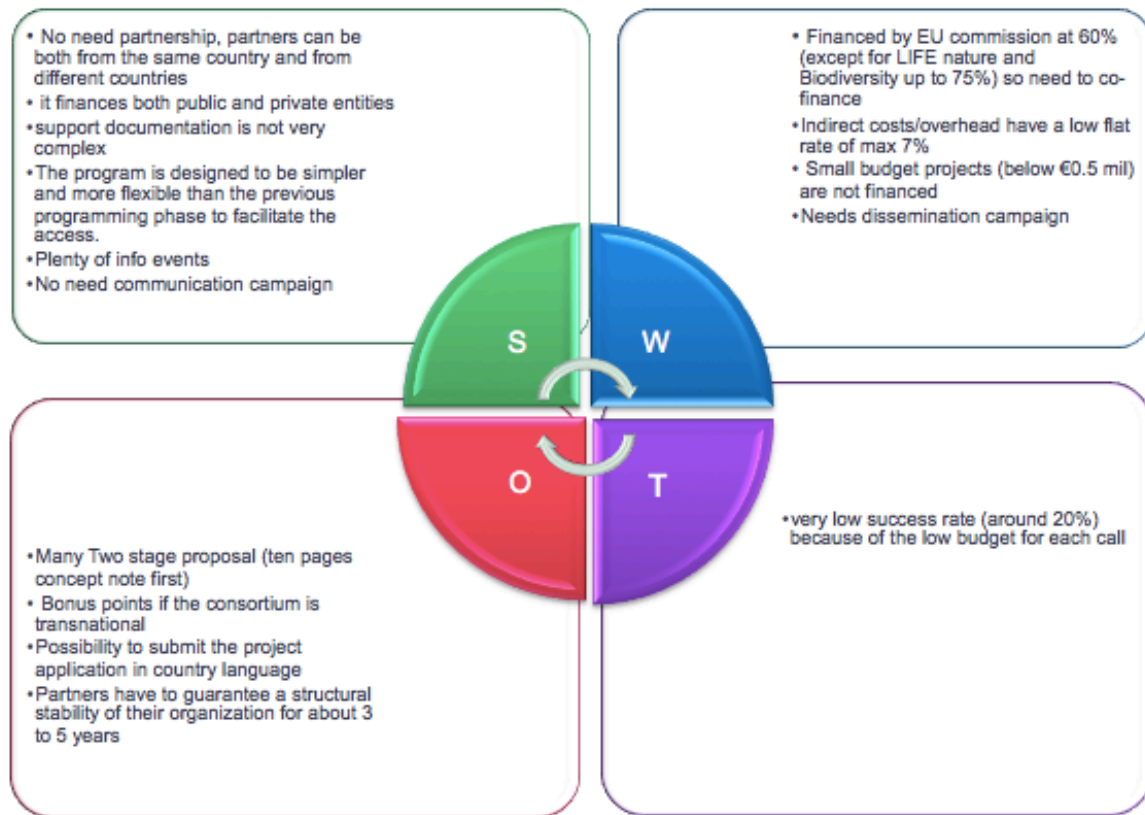
4.3.1. NRRP SWOT ANALYSIS



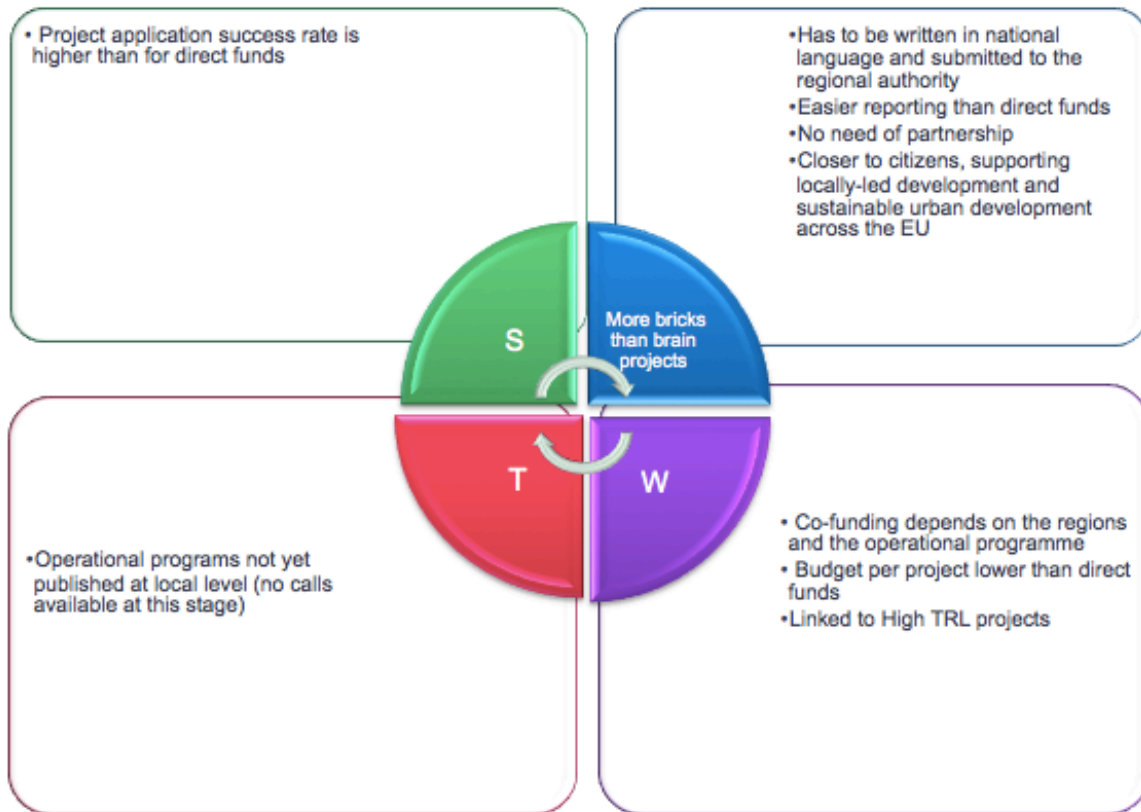
4.3.2. HORIZON EUROPE SWOT ANALYSIS



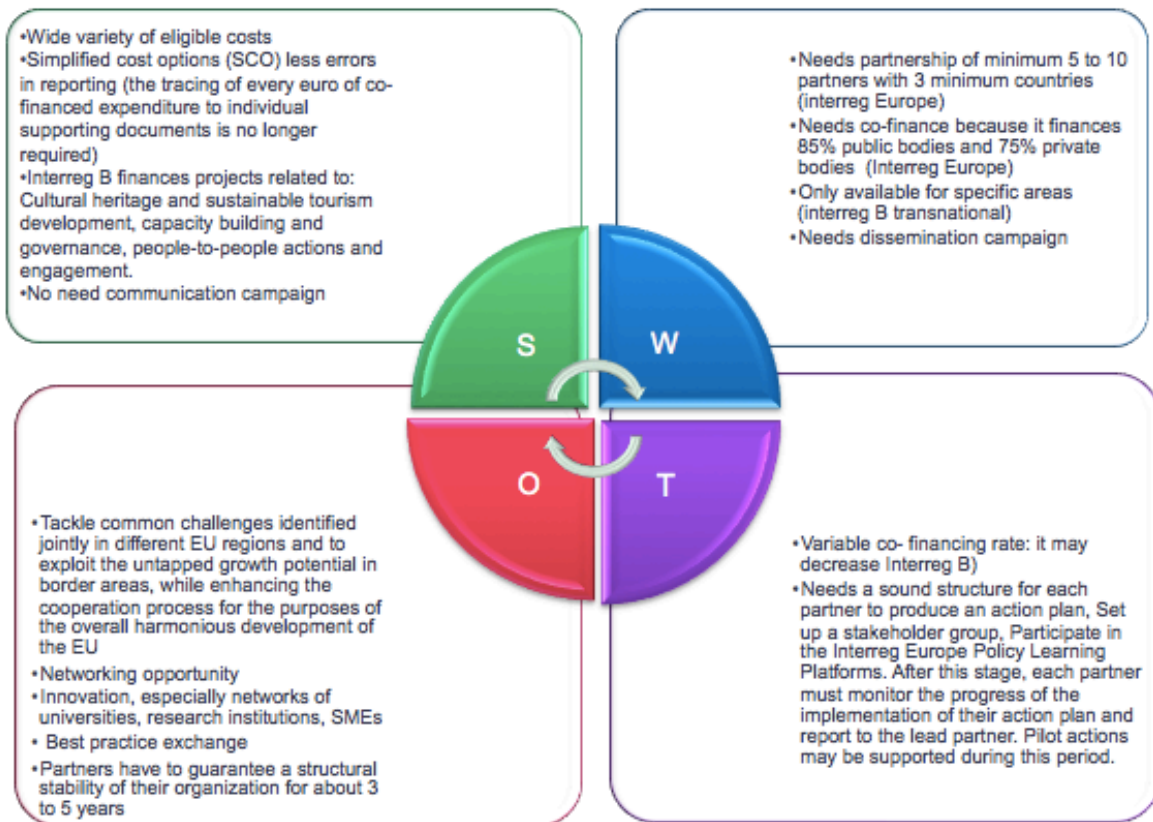
4.3.3. LIFE SWOT ANALYSIS



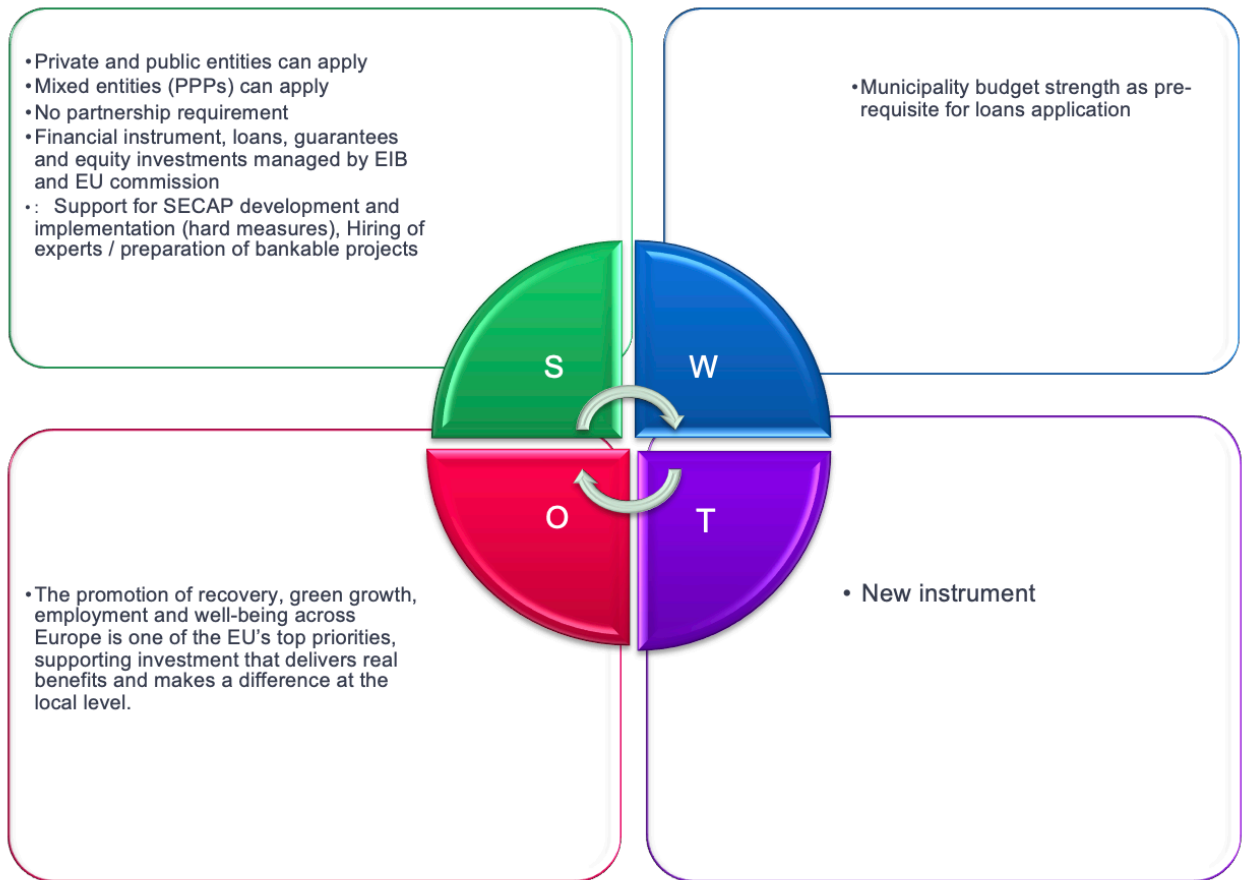
4.3.4. ERDF SWOT ANALYSIS



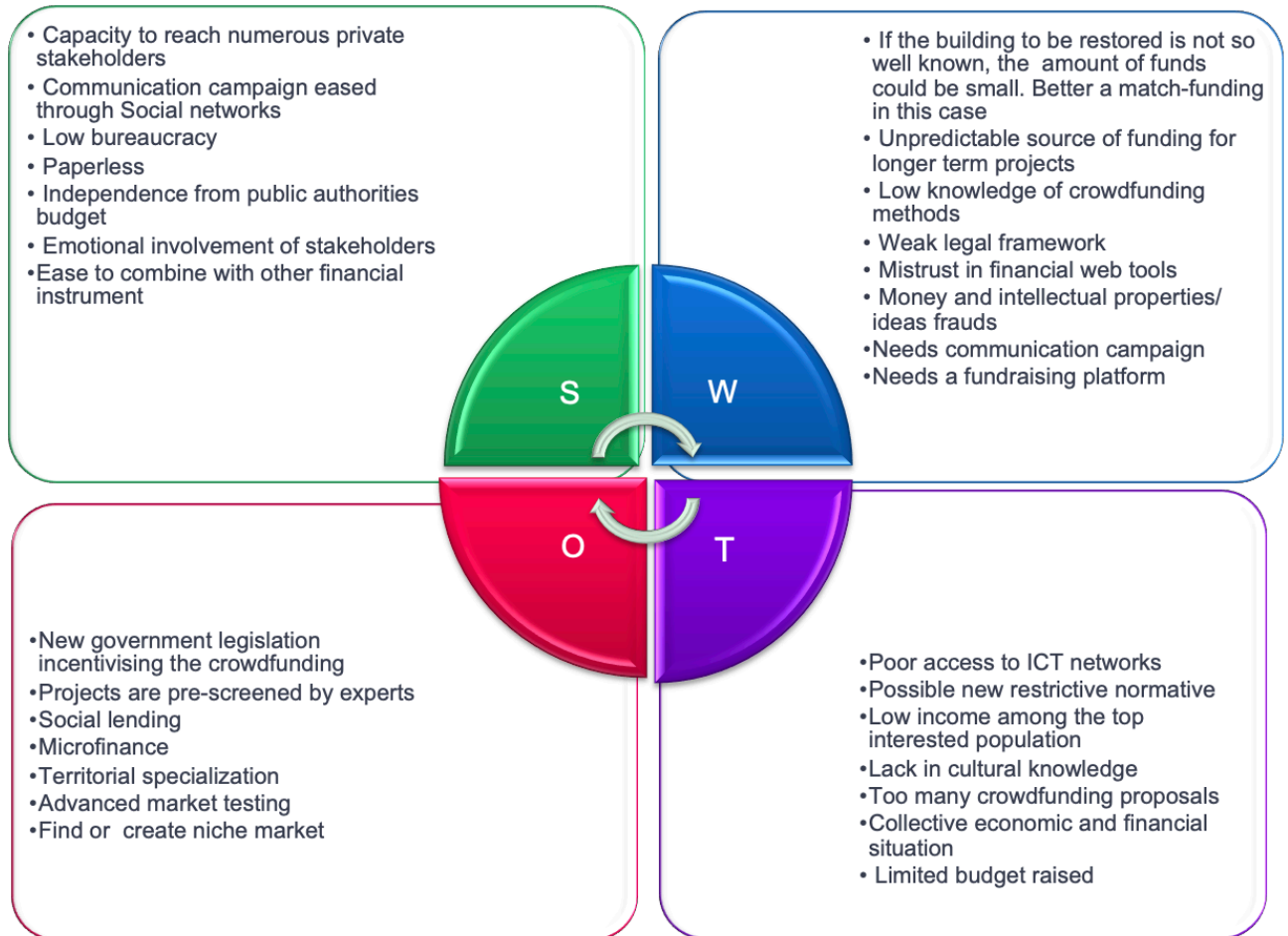
4.3.5. INTERREG (B TRANSNATIONAL AND EUROPE)



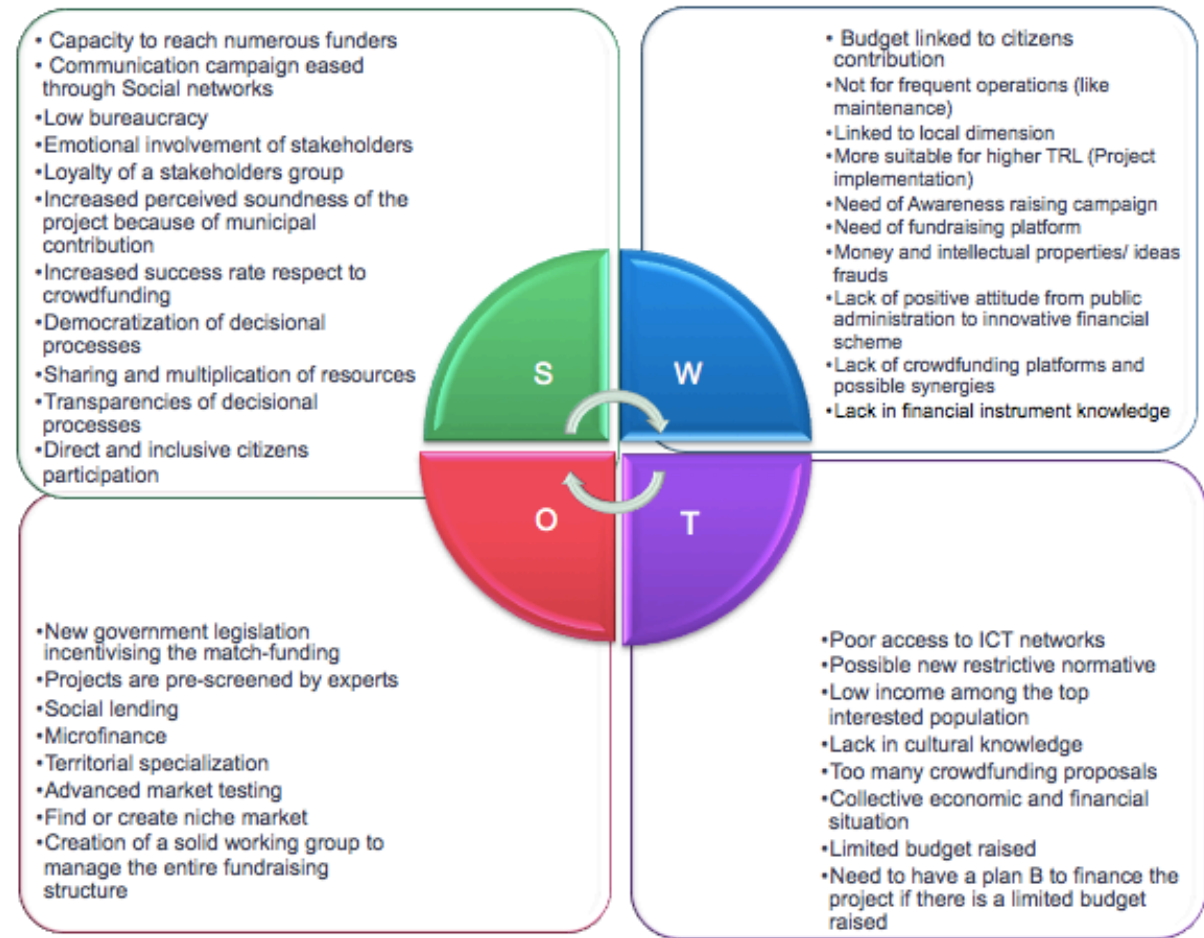
4.3.6. INVEST EU FUND SWOT ANALYSIS



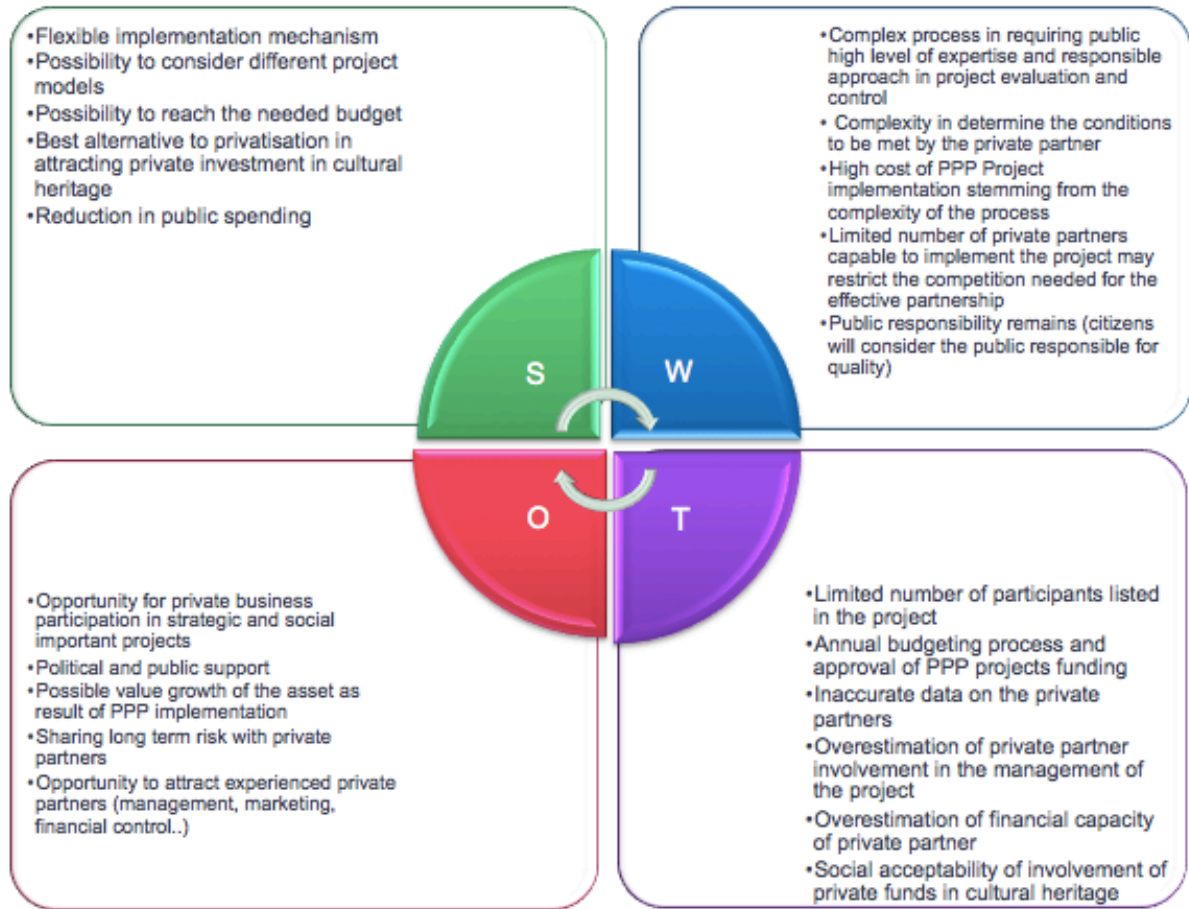
4.3.7. CROWDFUNDING SWOT ANALYSIS



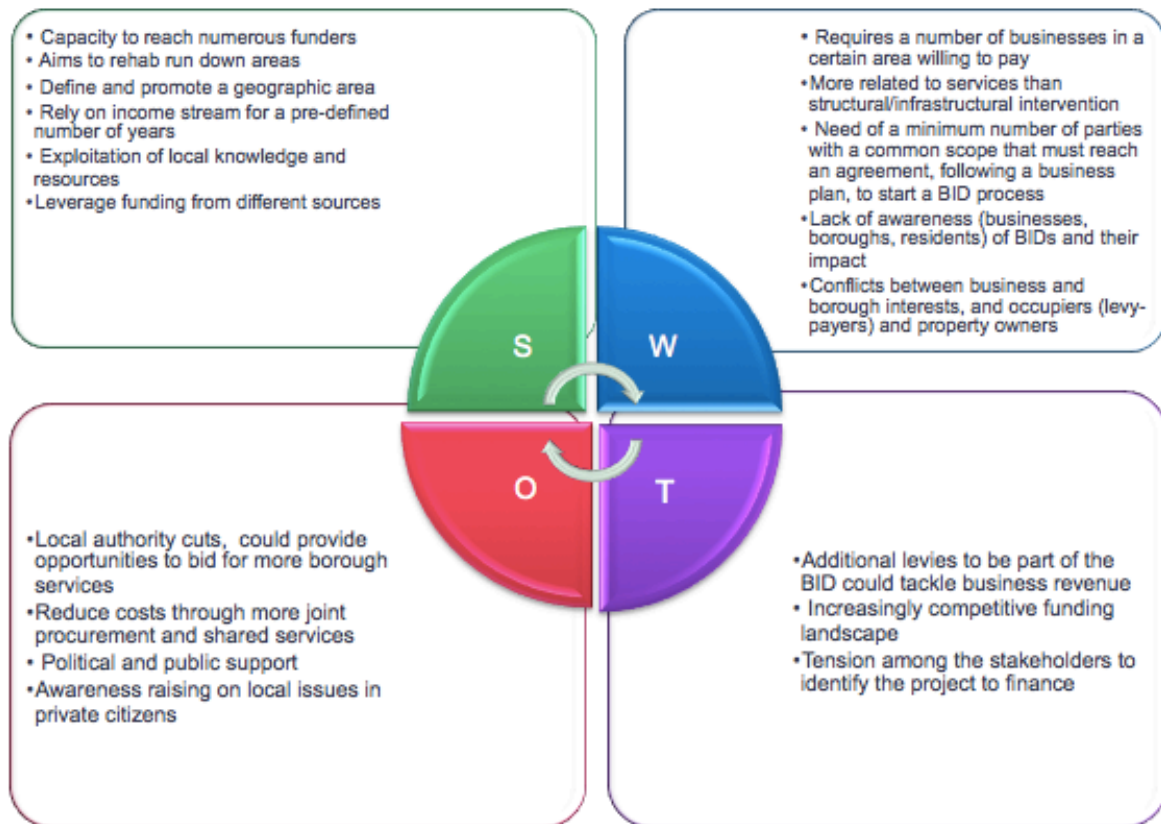
4.3.8. MATCH-FUNDING SWOT ANALYSIS



4.3.9. PPP SWOT ANALYSIS



4.3.10. BID SWOT ANALYSIS



4.4. Analysis of ARCH pilot cities structure based on indicators

The analysis of the pilot cities structure in order to assess the applicability of the selected financing measures was carried out keeping in mind the characteristics of the funding measures and financing mechanism in order to assess the capacity of the cities to access the funds based on technological, economic, institutional and organisational criteria.

A questionnaire was submitted to each pilot city to assess the applicability of funding measures.

Moreover, SOGESCA had the opportunity to dialogue with pilots during project meetings to gain some insights on their structure.

The picture below represents the indicators used to analyse the ARCH pilot cities structures and the following tables will summarize the main outcomes of the pilots' questionnaires and meetings (Figure 17).

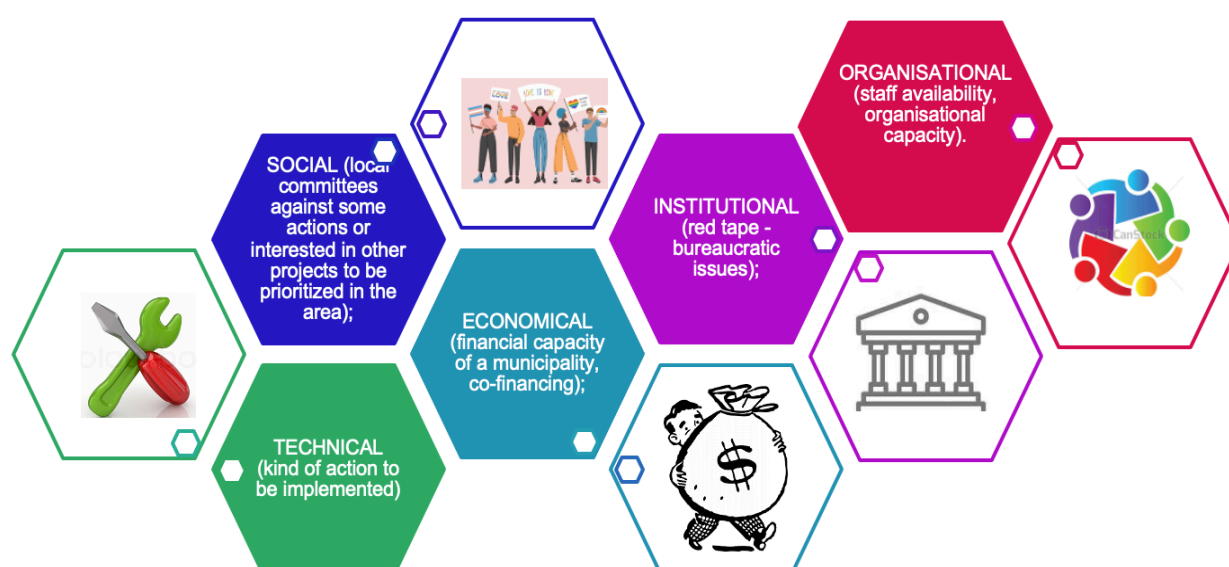


Figure 17: Cities structure Indicators

4.4.1. Social indicator

QUESTIONS	Camerino	Bratislava	Hamburg	Valencia
Stakeholders involved in financing options	SVIM-Sviluppo Marche Marche Innovazione Fondazione CARIMA Andrea Bocelli Foundation	Ministry of the Environment of the SR (European Structural Funds); European Investment Bank; Swiss Re (Park Blumentálska); VÚB Foundation; 10000 trees Initiative; CIVITTA (Bratislava Climathon Co-host); Pontis Foundation; Slovak Forests. the city provides grants through its foundation for revitalization of public space and there is a grant scheme for sustainable management of rainwater (applicants can be local citizens, companies, city boroughs, other legal entities than the city). Ministry of Culture Slovak Republic.	Ministry of environment and climate (BUKEA) Privates? Others?	València Clima i Enèrgia foundation, University of Valencia, EIT Climate-KIC Spain, Las Naves, Hortensia Herrero foundation Goteo (crowdfunding platform), Decidim VLC (municipal participatory budgeting initiative), GVA Participa (regional participatory budgeting initiative)
Average income of citizens	Gross Value Added per capita in the Marche Region in 2017 was 26,800 EUR	Between the working class the gross average income 1530 EUR per month	Overall GDP 118.9billion EUR in 2018	Gross Value Added per capita in Valencia city in 2017 was 24,090.69 EUR (from the baseline report D3.3)
Crowdfunding attitude of citizens	Present but to be developed in Climate change adaptation actions	Low	Present but to be developed in Climate change adaptation actions	Many associations involved in crowdfunding, match funding and participatory budget

4.4.2. Technical indicator

QUESTIONS	Camerino	Bratislava	Hamburg	Valencia
Resilience options	<p>Some of the identified resilience options:</p> <ul style="list-style-type: none"> - District drainage system improvement - Sensors installation in existing historical buildings - Inventory of the artistic heritage with ICT application - Early warning system <p>Building Back Better</p>	<p>Sensors installation in existing historical buildings</p> <p>Early warning system</p> <p>Sustainable management of rainwater</p> <p>Increase in types and coverage of green infrastructure</p> <p>Reconstruction of public buildings (increase of energy efficiency) although this is rather a mitigation option</p>	<p>Continuous monitoring - 3D modelling (in the framework of UNESCO plan)</p> <p>Community awareness</p> <p>Visitors entrance monitoring (sensing and visitor management)</p>	<p>Ecosystem-friendly drainage,</p> <p>Increase of fresh water availability,</p> <p>reduction of soil erosion and compaction (those measures related to NBS),</p> <p>green and foresting solutions,</p> <p>infiltration techniques,</p> <p>water contention system against floods;</p> <p>Monitoring based on environmental sensor data, crops studying.</p>
Presence of SECAP or other management plans for resilience options	Not at the moment	<p>Yes, SECAP is managed by the Office of Chief City Architect of Bratislava and the Department of Public Lighting, Networks and Energy. It is funded by EEA and Norway Grants managed by Department of Implementation of External Funding, Bratislava City</p>	<p>The climate change action plan for Hamburg is the Klimaplan Hamburg;</p> <p>Heritage protection act (2013) and the management plan (2013) and the UNDRR disaster resilience Scorecards (2020)</p>	<p>Presence of SECAP or other management plans for resilience options</p>

4.4.3. Organizational indicator

QUESTIONS	Camerino	Bratislava	Hamburg	Valencia
Presence of fundraising manager	The Head of financial department acts as fundraising manager as well	Department of programming and strategies, Bratislava City – head of dpt. Viera Slavikova, CSR Manager at department of programming and cooperation	Yes, Susanne Frischling (BKM Ministry of cultural media)	Councilor of Hisenda (Consell del la generalitat de Valencia) and Maria Dolores Furio Ortega General directol Model Economic, financing) (This is from the regional government, not the city of València)
EU projects/funds department	Not present a specific department and the available internal staff has low knowledge in writing and carrying on EU projects and difficulties in English language	Yes 12 staff members. Ing. Roman Čajka, head of Dept. of Implementation of External Funding, Bratislava City, PhD. Mgr. Viera Slavikova head of dpt. Og programming and cooperation 6 staff member	Yes, Mr. Thomas Jacob, international projects dpt.	Managed by València i Clima i Energia foundation, Las Naves, City EU Projects Office ⁷⁹
National/local	Yes, Dr.	Followed by dpt. Of	Ministry of	Consell

⁷⁹ <http://www.valencia.es/projectes-europeus/es>

funds department	Barbara Mastrocola	implementation of external funding	cultural media?	Agrari and other local departments which manage their own budget
Staff knowledge on resilience options in HA	Low-medium	Medium-high	High	High

4.4.4. Economic Indicator

QUESTIONS	Camerino	Bratislava	Hamburg	Valencia
Structure of Municipality budget (ring fenced budget for pre-during-post disaster resilience options in HA)	Not available	Not available	Not available	Not available
Budget for additional internal Staff or consultants for projects	Yes	Yes	Yes	Yes
Own financing capability	NRRP	Not available	Different for each department	Not available
Co-financing capability	Low	Medium-low	High	Medium

4.4.5. Institutional indicator

QUESTIONS	Camerino	Bratislava	Hamburg	Valencia
Average length of authorisation procedure	Depending on the kind of project	The Budget is approved by a multilevel decision-making system in Bratislava City. First it is the City Assembly (mayor, vice mayors, city borough mayors, etc.), the financial committee of the City Parliament (members of the parliament are directly elected by Bratislava's citizens in municipal elections every 4 years, some of the are the same as in the City assembly) and then finally approved and adopted by the members of the City Parliament.	From 2 hours to 2 years; from 2 steps to 20 steps (depending on project importance)	Depending on the kind of project

4.4.6. Obstacles

QUESTIONS	Camerino	Bratislava	Hamburg	Valencia
Presence of Obstacles in carrying on pasts/on-going adaptation projects	Yes	Not available	Yes	Yes
Kind of obstacles in carrying on past/on-going adaptation projects (no. of staff, specific knowledge, authorization procedure, etc...)	Difficulties in hiring external specialized staff	Not available	Technical problems (to be solved), financial problems (to be solved or: reduction of means, new focusing of means, identification of additional stakeholders/owners of means – private?)	Many applications to EU projects but only few awarded so a lot of time lost.

5. Applicability of funding measures to pilot cities

The applicability of opportunities is assessed by the stake- and the shareholders, supported by the administrative/technical staff of the pilot cities based on technological, economic, social institutional and organisational criteria.

These criteria will be employed to evaluate the added value of funding measures in terms of effectiveness, value creation and minimised risk.

The result will form part of D6.4 (resilience pathway visualisation tool)

The result of the analysed funding measures as applied to the specific case of each pilot will be described and illustrated with a SWOT analysis that will take into account the SWOT analysis of the funding measure (see chapter 4 above) and the information gathered from the pilots (and stake and shareholders) during the interviews as better described in chapter 4.

The applicability will therefore derive from both the SWOT analysis of the funding measure (see Chapter 4) and that of the cities and the specific type of intervention analysed.

For each pilot city two resilience options were selected in accordance with the cities representatives and Tecnalía.

This is the methodological approach that cities, facing the issue of financing resilience measures, should follow.

In the proposed pilots cases, it seems that the crossing SWOT are quite similar to the ones analysed for the funds themselves in the Categorization chapter (Chapter 4) because the resilience measures chosen are not yet shipyard projects (ready to go) with identified costs and the information about the cities structures collected are not so crucial to take the priority on the characteristics of the fund itself.

However the SWOT analysis crossing tables reported in this chapter are essential to create the final score tables related to each pilot cities.

5.1. CAMERINO

Crossing SWOT Analysis of **Match Funding** for **Building Back Better** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Low bureaucracy • Emotional involvement of stakeholders • Loyalty of a stakeholder group • Increased perceived soundness of the project because of municipal contribution • Increased success rate respect to crowdfunding • Democratization of decisional processes • Sharing and multiplication of resources • Transparencies of decisional processes • Direct and inclusive citizens participation 	<ul style="list-style-type: none"> • Budget linked to citizens contribution • Small local dimension • Need of Awareness raising campaign • Need of fundraising platform • Money and intellectual properties/ ideas frauds • Lack of positive attitude from public administration to innovative financial scheme • Lack in the public administration in experience the crowdfunding platforms and the possible synergies with municipal funds • Communication campaign through social networks required 	<ul style="list-style-type: none"> • New government legislation incentivising the match-funding • Projects are pre-screened by experts • Social lending • Microfinance • Territorial specialization • Advanced market testing • Creation of a solid working group to manage the entire fundraising structure • More suitable for higher TRL (Project implementation)– target building defined 	<ul style="list-style-type: none"> • Poor access to ICT networks • Low income among the top interested population • Lack in financial instrument knowledge • Creation of a Working group able to raise and manage municipality funds and fundraising campaign • Needs to raise funds for awareness raising campaign • Risk of limited budget raised therefore need to have additional financing sources

Crossing SWOT Analysis of **NRRP** fund for **Building Back Better** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> Partnership is not mandatory Different TRL projects possible No need of co-financing It can be complementary to other financial tools Brain and bricks focus Communication campaign not necessary Suitable for both public and private entities National language application 	<ul style="list-style-type: none"> Temporary fund Uncertainty regarding Bids and Tenders agenda Budget linked to mandatory reforms and targets established from the EU commission for each member state 	<ul style="list-style-type: none"> Big opportunity for Countries development and growth because of large budget available Success measured on objective achievements 	<ul style="list-style-type: none"> Unknown project complexity to participate to the bid New instrument with not determined procedures Uncertain success rate Project social acceptability Regional and Municipal entities are often understaffed to carry on these projects

Crossing SWOT Analysis of **Invest EU** fund for **Building Back Better** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> Private and public entities can apply Mixed entities (PPPs) can apply No partnership requirement Financial instrument, loans, guarantees and equity investments managed by EIB and EU commission Support for: SECAP development and implementation (hard measures), Hiring of experts / preparation of bankable projects 	<ul style="list-style-type: none"> Municipality budget strength as pre-requisite for loans application 	<ul style="list-style-type: none"> The promotion of recovery, green growth, employment and well-being across Europe is one of the EU's top priorities, supporting investment that delivers real benefits and makes a difference at the local level Invest portal and invest EU advisory hub presents the opportunity to have advisory support and technical assistance and look at the other financed projects 	<ul style="list-style-type: none"> New instrument

Crossing SWOT Analysis of **Horizon Europe** fund for **Monitoring System** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • High co-financing rates (up to 100% for no profit entities and for research and innovative actions) • All submission and project management processes online through the Participant Portal • Indirect costs/overhead (no need to be reported) are normally 25% of eligible direct cost • No need of communication campaign to apply 	<ul style="list-style-type: none"> • Lack of EU project dedicated office in the municipality • Limited number of English-speaking personnel • Project implementation subject to significant technical and financial reporting • Complicated management and costs eligibility, resulting in beneficiaries more prone to errors and EU contribution recovery risking not to be paid • Complex financial management • TRL based approach (more brain than bricks), chosen resilience action not so adapt • Partners have to be involved at least 6 months before the awarding and have to guarantee a structural stability of their organization for about 3 to 5 years • Needs dissemination campaign during the project 	<ul style="list-style-type: none"> • Raises the international scientific standing of your organisation • Once the partnership is awarded with the first grant, it is easier to keep receiving funds in the future • Opportunity to exploit an existing partnership • Opportunity to involve external consultants paid by the project 	<ul style="list-style-type: none"> • Success rate very low • Complexity of proposal preparation; • Very high budgets available per project (<1.5 million EUR; 1.5-5 million EUR; 5-10 million EUR; 10-20 million EUR) hence large structured project needed

Crossing SWOT Analysis of **NRRP** fund for **Monitoring System** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> Partnership is not mandatory Different TRL projects possible No need of co-financing It can be complementary to other financial tools Brain and bricks focus Communication campaign not necessary Suitable for both public and private entities National language application 	<ul style="list-style-type: none"> Temporary fund Uncertainty regarding Bids and Tenders agenda Budget linked to mandatory reforms and targets established from the EU commission for each member state 	<ul style="list-style-type: none"> Big opportunity for Countries development and growth because of large budget available Success measured on objective achievements 	<ul style="list-style-type: none"> Unknown project complexity to participate to the bid New instrument with not determined procedures Uncertain success rate Project social acceptability Regional and Municipal entities are often understaffed to carry on these projects

Crossing SWOT Analysis of **Life Climate Change** fund for **Monitoring System** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> it finances both public and private entities support documentation is not very complex The program is designed to be simpler and more flexible to facilitate the access Plenty of info events No need of a communication campaign Possibility to submit the project application in country language 	<ul style="list-style-type: none"> Financed by EU commission at 60% so need to co-finance and Camerino has limited staff available Indirect costs/overhead have a low flat rate of max 7% Small budget projects (below EUR0.5 mil) are not financed Needs dissemination campaign 	<ul style="list-style-type: none"> Many Two stage proposal (ten pages concept note first) Bonus points if the consortium is transnational Partners have to guarantee a structural stability of their organization for about 3 to 5 years Partnership is not necessary 	<ul style="list-style-type: none"> very low success rate (around 20%) because of the low budget for each call

Crossing SWOT Analysis of **Life Climate Change** fund for **Awareness Raising Campaign** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • No need partnership, partners can be both from the same country and from different countries • It finances both public and private entities • support documentation is not very complex • The program is designed to be simpler and more flexible than the previous programming phase to facilitate the access. • Plenty of info events and previous projects to referred to. 	<ul style="list-style-type: none"> • Financed by EU commission at 60% so need to co-finance and Camerino has a limited staff • Indirect costs/overhead have a low flat rate of max 7% • Small budget projects (below EUR0.5 mil) are not financed so it would be necessary to involve many countries in the campaign to increase the budget. • Local stakeholders' involvement is needed 	<ul style="list-style-type: none"> • Many Two stage proposal (ten pages concept note first) • Bonus points if the consortium is transnational • Possibility to submit the project application in country language • Partners have to guarantee a structural stability of their organization for about 3 to 5 years • Share in the civil population not common scientific topics • Capacity building action in target stakeholders groups • Create a critical mass in the population about different themes usually carried on by experts only to influence the social acceptability of certain actions and projects. 	<ul style="list-style-type: none"> • Very low success rate (around 20%) because of the low budget for each call • Need internal staff or external consultants to write the project application

Crossing SWOT Analysis of **PPP** fund for **Awareness Raising Campaign** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Flexible implementation mechanism: private companies, foundations, banks, associations and public authorities can be involved. • Possibility to consider different project models • Possibility to reach the needed budget • Reduction in public spending • Very high social involvement and visibility after the earthquake • High social awareness and key local actors interest 	<ul style="list-style-type: none"> • Complex process in requiring public high level of expertise and responsible approach in project evaluation and control • Limited number of private partners capable to implement the project may restrict the competition needed for the effective partnership • Public responsibility remains (citizens will consider the public responsible for quality) 	<ul style="list-style-type: none"> • Opportunity for private business participation in strategic and social important initiatives • Political and public support • Possible value growth of the campaign as result of PPP implementation • Sharing long term risk with private partners • Opportunity to attract experienced private partners (management, marketing, financial control..) • Share in the civil population not common scientific topics • Capacity building action in target stakeholder groups • Create a critical mass in the population about different themes usually carried on by experts only to influence the social acceptability of certain actions and projects. 	<ul style="list-style-type: none"> • Annual budgeting process and approval of PPP projects funding • Inaccurate data on the private partners • Overestimation of private partner involvement in the management of the project • Overestimation of financial capacity of private partner • Private companies' involvement brings the risk to jeopardize the campaign because of their public perception

Crossing SWOT Analysis of **Interreg** fund for **Awareness Raising Campaign** resilience option applied in Camerino.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Wide variety of eligible costs • Simplified cost options (SCO) less errors in reporting (the tracing of every euro of co-financed expenditure to individual supporting documents is no longer required) • Interreg B finances projects related to: Cultural heritage and sustainable tourism development, capacity building and governance, people-to-people actions and engagement. • No need communication campaign 	<ul style="list-style-type: none"> • Needs partnership 5 to 10 partners with 3 minimum countries (Interreg Europe) • Needs co-finance because it finances 85% public bodies and 75% private bodies (Interreg Europe) • Only available for specific areas (Interreg B transnational) • Needs dissemination campaign 	<ul style="list-style-type: none"> • Tackle common challenges identified jointly in different EU regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purposes of the overall harmonious development of the Union • Networking opportunity • Innovation, especially networks of universities, research institutions, SMEs • Best practice exchange • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • Variable co- financing rate: it may decrease Interreg B) • Needs a sound structure for each partner to produce an action plan, Set up a stakeholder group, Participate in the Interreg Europe Policy Learning Platforms. • After this stage, each partner must monitor the progress of the implementation of their action plan and report to the lead partner. Pilot actions may be supported during this period.

5.1.1. CAMERINO applicability process RESULTS

The results are valued with a score from 1 to 5 (1= lowest applicability, 5= highest applicability) and a traffic light in which the green light stands for proceeding smoothly, with the yellow one you can proceed but paying attention and the red light means that, for Camerino, it is worth it to stop and think whether the fund can be effectively applied or not.

CAMERINO	LIFE Climate Change	Interreg	Private Public Partnership	NRRP	Invest EU Fund	Match Funding	Horizon Europe
Building Back Better				5	2	4	
Monitoring System	3			5			3
Awareness raising	2	3	4				

5.2. BRATISLAVA

Crossing SWOT Analysis of **Horizon Europe** fund for **Permeable Pavement** resilience option applied in Bratislava.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • High co-financing rates (up to 100% for no profit entities and for research and innovative actions) • All submission and project management processes online through the Participant Portal • Indirect costs/overhead (no need to be reported) are normally 25% of eligible direct cost • No need communication campaign to apply 	<ul style="list-style-type: none"> • Lack of EU project expert staff in the municipality • Project implementation subject to significant technical and financial reporting • Complicated management and costs eligibility, resulting in beneficiaries more prone to errors and EU contribution recovery risking not to be paid • Complex financial management • Partners have to be involved at least 6 months before the awarding and have to guarantee a structural stability of their organization for about 3 to 5 years • Needs dissemination campaign during the project 	<ul style="list-style-type: none"> • Raises the international scientific standing of your organisation • Once you are awarded with the first grant, it is easier to keep receiving funds in the future • Opportunity to exploit an existing partnership • Opportunity to involve external consultants paid by the project 	<ul style="list-style-type: none"> • Success rate very low • Slow approval internal procedure • Complexity of proposal preparation; • Very high budgets available per project (<1.5 million EUR; 1.5-5 million EUR; 5-10 million EUR; 10-20 million EUR) hence large structured project needed • Action to be implemented should fit the calls TRL requirements

Crossing SWOT Analysis of **NRRP** fund for **Permeable Pavement** resilience option applied in Bratislava.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> Partnership not mandatory Different TRL projects possible No need of co-financing It can be complementary to other financial tools Brain and bricks focus Communication campaign not necessary Suitable for both public and private entities National language application 	<ul style="list-style-type: none"> Temporary fund Uncertainty regarding Bids and Tenders agenda Budget linked to mandatory reforms and targets established from the EU commission for each member state 	<ul style="list-style-type: none"> Big opportunity for Countries development and growth because of large budget available Success measured on objective achievements 	<ul style="list-style-type: none"> Unknown project complexity to participate to the bid New instrument with not determined procedures Uncertain success rate Project social acceptability Regional and Municipal entities are often understaffed to carry on these projects

Crossing SWOT Analysis of **Interreg** fund for **Permeable Pavement** resilience option applied in Bratislava.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> Wide variety of eligible costs Simplified cost options (SCO) less errors in reporting (the tracing of every euro of co-financed expenditure to individual supporting documents is no longer required) No need communication campaign to apply 	<ul style="list-style-type: none"> Needs partnership 5 to 10 partners with 3 minimum countries (Interreg Europe) with similar issue to face Needs co-finance because it finances 85% public bodies (Interreg Europe) Needs dissemination campaign Need to choose an Interreg with the proper topic and area to be included 	<ul style="list-style-type: none"> Tackle common challenges identified jointly in different EU regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purposes of the overall harmonious development of the Union Resilience action chosen in common to many countries, ease to find partners Networking opportunity Innovation, especially networks of universities, research institutions, 	<ul style="list-style-type: none"> Variable co- financing rate (it may decrease Interreg B) Needs a sound structure to: produce an action plan, set up a stakeholder group, Participate in the Interreg Europe Policy Learning Platforms, monitor the progress of the implementation of their action plan and report to the lead partner

		<p>SMEs</p> <ul style="list-style-type: none"> • Best practice exchange • Pilot actions may be supported 	
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Crossing SWOT Analysis of **PPP w/ SPONSORSHIP** for **Shelters** resilience option applied in Bratislava.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Flexible implementation mechanism • Increased possibility to reach the needed budget • Best alternative to privatisation in attracting private investment in cultural heritage • Reduction in public spending 	<ul style="list-style-type: none"> • Lack of experience in alternative financing tools • Complex process in requiring public high level of expertise and responsible approach in project evaluation and control • Complexity in determine the conditions to be met by the private partner • High cost of PPP Project implementation stemming from the complexity of the process • Limited number of private partners capable to implement the project may restrict the competition needed for the effective partnership • Public responsibility remains (citizens will consider the public responsible for quality) 	<ul style="list-style-type: none"> • Opportunity for private business participation in strategic and social important projects • Political and public support • Possible value growth of the asset as result of PPP implementation • Sharing long term risk with private partners • Opportunity to attract experienced private partners (management, marketing, financial control..) 	<ul style="list-style-type: none"> • Limited number of participants • Annual budgeting process and approval of PPP projects funding • Inaccurate data on the private partners • Overestimation of financial capacity of private partner • Social acceptability of involvement of private funds in cultural heritage • Slow bureaucratic procedures may deter private participation

Crossing SWOT Analysis of **ERDF** for **Shelters** resilience option applied in Bratislava.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Success rate higher than direct funds • More bricks than brain projects • Has to be written in national language and submitted to the regional authority • Easier reporting than direct funds • No need partnership • Closer to citizens, supporting locally-led development and sustainable urban development across the EU 	<ul style="list-style-type: none"> • Co-funding depends on the regions and the operational program that may be very slow • Budget per project lower than direct funds 	<ul style="list-style-type: none"> • Directly applicable by the municipality • Support for SECAP development actions • At least 6% of the ERDF allocation for each Member State has to be earmarked for integrated actions for sustainable urban development • 	<ul style="list-style-type: none"> • Operational programs not yet published at local level (no calls available at this stage)

Crossing SWOT Analysis of **Life Climata Change** for **Shelters** resilience option applied in Bratislava.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • No need partnership, partners can be both from the same country and from different countries • Finances both public and private entities • support documentation is not very complex • The program is designed to be simpler and more flexible than the previous programming phase to facilitate the access. • Plenty of info events • No need communication campaign 	<ul style="list-style-type: none"> • Financed by EU commission at 60% so need to co-finance • Indirect costs/overhead have a low flat rate of max 7% • Small budget projects (below EUR0.5 mil) are not financed • Needs dissemination campaign 	<ul style="list-style-type: none"> • Many Two stage proposal (ten pages concept note first) • Bonus points if the consortium is transnational • Possibility to submit the project application in country language • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • Very low success rate (around 20%) because of the low budget for each call

Crossing SWOT Analysis of **Life Climate Change** fund for **Awareness Raising Campaign** resilience option applied in Bratislava

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • No need partnership, partners can be both from the same country and from different countries • Finances both public and private entities • support documentation is not very complex • The program is designed to be simpler and more flexible than the previous programming phase to facilitate the access. • Plenty of info events and previous projects to referred to. 	<ul style="list-style-type: none"> • Financed by EU commission at 60% so need to co-finance • Indirect costs/overhead have a low flat rate of max 7% • Small budget projects (below EUR0.5 mil) are not financed so it would be necessary to involve many countries in the campaign to raise the budget up. • Local stakeholders' involvement is needed 	<ul style="list-style-type: none"> • Many Two stage proposal (ten pages concept note first) • Bonus points if the consortium is transnational • Possibility to submit the project application in country language • Partners have to guarantee a structural stability of their organization for about 3 to 5 years • Share in the civil population not common scientific topics • Capacity building action in target stakeholders groups • Create a critical mass in the population about different themes usually carried on by experts only to influence the social acceptability of certain actions and projects. 	<ul style="list-style-type: none"> • Very low success rate (around 20%) because of the low budget for each call • Low impact in the community because of lack of knowledge or interest on the topic

Crossing SWOT Analysis of **PPP** fund for **Awareness Raising Campaign** resilience option applied in Bratislava.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Flexible implementation mechanism: private companies, foundations, banks, associations and public authorities can be involved. • Possibility to consider different project models • Possibility to reach the needed budget • Reduction in public spending 	<ul style="list-style-type: none"> • Complex process in requiring public high level of expertise and responsible approach in project evaluation and control • Limited number of private partners capable to implement the project may restrict the competition needed for the effective partnership • Public responsibility remains (citizens will consider the public responsible for quality) 	<ul style="list-style-type: none"> • Opportunity for private business participation in strategic and social important initiatives • Political and public support • Possible value growth of the campaign as result of PPP implementation • Sharing long term risk with private partners • Opportunity to attract experienced private partners (management, marketing, financial control..) • Share in the civil population not common scientific topics • Capacity building action in target stakeholder groups • Create a critical mass in the population about different themes usually carried on by experts only to influence the social acceptability of certain actions and projects. 	<ul style="list-style-type: none"> • Limited number of participants in the project • Annual budgeting process and approval of PPP projects funding • Inaccurate data on the private partners • Overestimation of private partner involvement in the management of the project • Overestimation of financial capacity of private partner • Private companies' involvement brings the risk to jeopardize the campaign because of their public perception

Crossing SWOT Analysis of **Interreg** fund for **Awareness Raising Campaign** resilience option applied in Bratislava.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Wide variety of eligible costs • Simplified cost options (SCO) less errors in reporting (the tracing of every euro of co-financed expenditure to individual supporting documents is no longer required) • Interreg B finances projects related to: Cultural heritage and sustainable tourism development, capacity building and governance, people-to-people actions and engagement. • No need communication campaign 	<ul style="list-style-type: none"> • Needs partnership of 5 to 10 partners with 3 minimum countries (Interreg Europe) • Needs co-finance because it finances 85% public bodies and 75% private bodies (Interreg Europe) • Only available for specific areas (Interreg B transnational) • Needs dissemination campaign 	<ul style="list-style-type: none"> • Tackle common challenges identified jointly in different EU regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purposes of the overall harmonious development of the Union • Networking opportunity • Innovation, especially networks of universities, research institutions, SMEs • Best practice exchange • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • Variable co- financing rate: it may decrease (Interreg B) • Needs a sound structure for each partner to produce an action plan, Set up a stakeholder group, Participate in the Interreg Europe Policy Learning Platforms. • After this stage, each partner must monitor the progress of the implementation of their action plan and report to the lead partner. Pilot actions may be supported during this period.

5.2.1. BRATISLAVA applicability process RESULTS

The results are valued with a score from 1 to 5 (1= lowest applicability, 5= highest applicability) and a traffic light in which the green light stand for proceeding smoothly, with the yellow one you can proceed but paying attention and the red light means it is worth it for Bratislava stakeholders to stop and think whether they can apply that fund or not.

BRATISLAVA	LIFE Climate Change	Interreg	Private Public Partnership	NRRP	Invest EU Fund	ERDF	Horizon Europe
Draining Pavement		3		4	2		3
Shelters	4		3			5	
Awareness raising	4	3	2				

5.3. HAMBURG

Crossing SWOT Analysis of **Horizon Europe** for **Monitoring System** resilience option applied in Hamburg.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Very high budgets available per project (<1.5 million EUR; 1.5-5 million EUR; 5-10 million EUR; 10-20 million EUR) • High co-financing rates (up to 100% for no profit entities and for research and innovative actions); • All submission and project management processes online through the Participant Portal; • Once you are awarded with the first grant, it is easier to keep receiving funds in the future. • Indirect costs/overhead (no need to be reported) are normally 25% of eligible direct cost • No need communication campaign • Presence of dedicated office or dept in the municipality; • Presence of English-speaking personnel; 	<ul style="list-style-type: none"> • TRL based approach (more brain than bricks) but it finances also SECAP implementation (hard measures) • Need of a partnership (min 3 from the member state) • Needs dissemination campaign 	<ul style="list-style-type: none"> • Raises the international scientific standing of your organisation • Hamburg municipality has been already awarded with a Horizon grant so it is easier to take part to similar project in the future • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • Very low success rate • Complexity of proposal preparation;

Crossing SWOT Analysis of **Life Climate Change** for **Monitoring System** resilience option applied in Hamburg.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • No need partnership, partners can be both from the same country and from different countries • it finances both public and private entities • support documentation is not very complex • The program is designed to be simpler and more flexible than the previous programming phase to facilitate the access. • Plenty of info events • No need communication campaign • Presence of dedicated office or dept in the municipality; • Presence of English-speaking personnel; 	<ul style="list-style-type: none"> • Financed by EU commission at 60% so need to co-finance • Indirect costs/overhead have a low flat rate of max 7% • Small budget projects (below EUR0.5 mil) are not financed • Needs dissemination campaign 	<ul style="list-style-type: none"> • Many Two stage proposal (ten pages concept note first) • Bonus points if the consortium is transnational • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • very low success rate (around 20%) because of the low budget for each call

Crossing SWOT Analysis of **Interreg** for **Monitoring System** resilience option applied in Hamburg.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Wide variety of eligible costs • Simplified cost options (SCO) less errors in reporting (the tracing of every euro of co-financed expenditure to individual supporting documents is no longer required) • No need communication campaign 	<ul style="list-style-type: none"> • Needs partnership 5 to 10 partners with 3 minimum countries (Interreg Europe) • Needs co-finance because it finances 85% public bodies and 75% private bodies (Interreg Europe) • If the application is for the Interreg North sea, a very innovative solution is required • Needs dissemination campaign 	<ul style="list-style-type: none"> • Tackle common challenges identified jointly in different EU regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purposes of the overall harmonious development of the Union • Networking opportunity • Innovation, especially networks of universities, research institutions, SMEs • Best practice exchange • Partners have to guarantee a structural stability of their organization for about 3 to 5 years • Exploit a typical common issue with portal /coastal cities 	<ul style="list-style-type: none"> • Needs a sound structure for each partner to produce an action plan, Set up a stakeholder group, Participate in the Interreg Europe Policy Learning Platforms. • After this stage, each partner must monitor the progress of the implementation of their action plan and report to the lead partner. Pilot actions may be supported during this period.

Crossing SWOT Analysis of **BID** for **Building Preventive Maintenance** resilience option applied in Hamburg.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> Capacity to reach numerous funders Define and promote a geographic area Rely on income stream for a pre-defined number of years Exploitation of local knowledge and resources Leverage funding from different sources UNESCO heritage site status is an incentive to create the Business Improvement District among the private stakeholders for its maintenance BID experiences have already been experimented in Hamburg 	<ul style="list-style-type: none"> Requires a number of businesses in a certain area willing to pay More related to services than structural/infrastructural intervention Need of a minimum number of parties with a common scope must reach an agreement, following a business plan, to start a BID process 	<ul style="list-style-type: none"> Reduce costs through more joint procurement and shared services Political and public support Awareness raising on local issues in private citizens Higher possibility to maintain UNESCO Site status with a constant and proper maintenance 	<ul style="list-style-type: none"> Additional levies to be part of the BID could tackle business revenue Increasingly competitive funding landscape

Crossing SWOT Analysis of **PPP with Invest EU Fund** for **Building Preventive Maintenance** resilience option applied in Hamburg.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • PPP is a flexible implementation mechanism • In PPP scheme there's the possibility to consider different project models and the possibility to reach the needed budget • Private, public and Mixed entities (PPPs) entities can apply to invest EU guarantee • It is a Financial instrument guaranteed by EU commission through EIB • PPP is a complex process in requiring public high level of expertise and responsible approach in project evaluation and control but in Hamburg it is not new 	<ul style="list-style-type: none"> • High cost of PPP Project implementation stemming from the complexity of the process • Limited number of private partners capable to implement the project may restrict the competition needed for the effective partnership • Public responsibility remains (citizens will consider the public responsible for quality) of the entire area 	<ul style="list-style-type: none"> • Opportunity for private business participation in strategic and social important projects • Political and public support • Bigger projects to valorise the asset as result of PPP implementation • Sharing long term risk between public and private partners • Opportunity to attract experienced partners (management, marketing, financial control..) • The promotion of recovery, green growth, employment and well-being across Europe is one of the EU's top priorities, supporting investment that delivers real benefits and makes a difference at the local level • Including private foundations in the PPP to share the public responsibility to a larger part of the civil society 	<ul style="list-style-type: none"> • Limited number of participants in the project • Overestimation of private partner involvement in the management of the project • Overestimation of financial capacity of private partner • Social acceptability of involvement of private funds in cultural heritage • Invest EU fund is a new financing instrument

Crossing SWOT Analysis of **ERDF** for **Building Preventive Maintenance** resilience option applied in Hamburg.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Success rate higher than direct funds • More bricks than brain projects • Has to be written in national language and submitted to the local authority, less complexity in project writing • Easier reporting than direct funds • No need partnership • Closer to citizens, supporting locally-led development and sustainable urban development across the EU 	<ul style="list-style-type: none"> • Co-funding depends on the regions and the operational program • Budget per project lower than direct funds • Linked to High TRL projects 	<ul style="list-style-type: none"> • Development opportunity for all municipalities • Support for SECAP development • At least 6% of the ERDF allocation for each Member State has to be earmarked for integrated actions for sustainable urban development 	<ul style="list-style-type: none"> • Operational programs not yet published at local level (no calls available at this stage) • Low budget available for Hamburg only (EUR 65 m for climate change mitigation actions)

Crossing SWOT Analysis of **Life Climate Change** fund for **Awareness Raising Campaign** resilience option applied in Hamburg

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • No need partnership, partners can be both from the same country and from different countries • it finances both public and private entities • support documentation is not very complex • The program is designed to be simpler and more flexible than the previous programming phase to facilitate the access. • Plenty of info events and previous projects to referred to. 	<ul style="list-style-type: none"> • Financed by EU commission at 60% so need to co-finance • Indirect costs/overhead have a low flat rate of max 7% • Small budget projects (below EUR0.5 mil) are not financed so it would be necessary to involve many countries in the campaign to raise the budget up. • Local stakeholders' involvement is needed 	<ul style="list-style-type: none"> • Many Two stage proposal (ten pages concept note first) • Bonus points if the consortium is transnational • Possibility to submit the project application in country language • Partners have to guarantee a structural stability of their organization for about 3 to 5 years • Share in the civil population not common scientific topics • Capacity building action in target stakeholders groups • Create a critical mass in the population about different themes usually carried on by experts only to influence the social acceptability of certain actions and projects. 	<ul style="list-style-type: none"> • Very low success rate (around 20%) because of the low budget for each call

Crossing SWOT Analysis of **PPP** fund for **Awareness Raising Campaign** resilience option applied in Hamburg.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Flexible implementation mechanism: private companies, foundations, banks, associations and public authorities can be involved. • Possibility to consider different project models • Possibility to reach the needed budget • Reduction in public spending 	<ul style="list-style-type: none"> • Complex process in requiring public high level of expertise and responsible approach in project evaluation and control • Limited number of private partners capable to implement the project may restrict the competition needed for the effective partnership • Public responsibility remains (citizens will consider the public responsible for quality) 	<ul style="list-style-type: none"> • Opportunity for private business participation in strategic and social important initiatives • Political and public support • Possible value growth of the campaign as result of PPP implementation • Sharing long term risk with private partners • Opportunity to attract experienced private partners (management, marketing, financial control..) • Share in the civil population not common scientific topics • Capacity building action in target stakeholder groups • Create a critical mass in the population about different themes usually carried on by experts only to influence the social acceptability of certain actions and projects. 	<ul style="list-style-type: none"> • Limited number of participants in the project • Annual budgeting process and approval of PPP projects funding • Inaccurate data on the private partners • Overestimation of private partner involvement in the management of the project • Overestimation of financial capacity of private partner • Private companies' involvement brings the risk to jeopardize the campaign because of their public perception

Crossing SWOT Analysis of **Interreg** fund for **Awareness Raising Campaign** resilience option applied in Hamburg.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Wide variety of eligible costs • Simplified cost options (SCO) less errors in reporting (the tracing of every euro of co-financed expenditure to individual supporting documents is no longer required) • Interreg B finances projects related to: Cultural heritage and sustainable tourism development, capacity building and governance, people-to-people actions and engagement. • No need of a communication campaign 	<ul style="list-style-type: none"> • Needs partnership 5 to 10 partners with 3 minimum countries (interreg Europe) • Needs co-finance because it finances 85% public bodies and 75% private bodies (Interreg Europe) • Only available for specific areas (Interreg B transnational) • Needs dissemination campaign 	<ul style="list-style-type: none"> • Tackle common challenges identified jointly in different EU regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purposes of the overall harmonious development of the Union • Networking opportunity • Innovation, especially networks of universities, research institutions, SMEs • Best practice exchange • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • Variable co- financing rate: it may decrease (Interreg B) • Needs a sound structure for each partner to produce an action plan, Set up a stakeholder group, Participate in the Interreg Europe Policy Learning Platforms. • After this stage, each partner must monitor the progress of the implementation of their action plan and report to the lead partner. Pilot actions may be supported during this period.

5.3.1. HAMBURG applicability process RESULTS

The results are valued with a score from 1 to 5 (1= lowest applicability, 5= highest applicability) and a traffic light in which the green light stand for proceeding smoothly, with the yellow one you can proceed but paying attention and the red light means it is worth it for Hamburg stakeholders to stop and think whether they can apply that fund or not.

HAMBURG	LIFE Climate Change	Interreg	Private Public Partnership	BID w/ Invest EU	Invest EU Fund	ERDF	Horizon Europe
Monitoring System	3	4					4
Preventive Maintenance				4	5	2	
Awareness raising	4	3	4				

5.4. VALENCIA

Crossing SWOT Analysis of **Horizon Europe** for **Monetization of ecosystem services** resilience option applied in Valencia.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Very high budgets available per project (<1.5 million EUR; 1.5-5 million EUR; 5-10 million EUR; 10-20 million EUR) • High co-financing rates (up to 100% for no profit entities and for research and innovative actions and 70% for profit entities) • All submission and project management processes online through the Participant Portal • Once you are awarded with the first grant, it is easier to keep receiving funds in the future • Indirect costs/overhead (no need to be reported) are normally 25% of eligible direct cost • Presence of external partners (LNV, University) working with the municipality • Presence of English-speaking personnel 	<ul style="list-style-type: none"> • Need of a partnership (min 3 from the member state) • Needs communication and dissemination campaign • Relatively new topic for the civil community, difficulties in estimating the positive externalities coming from rural/natural environment and activities and the maintenance of the area • Creation of network and a marketplace to monetize the services and features linked to ecosystem services 	<ul style="list-style-type: none"> • Raises the international scientific standing of the organisations participating to the consortium • Valencia municipality and their external partners have already been awarded a Horizon grant so it is easier to take part to similar project in the future • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • Very low success rate because of many applicants • Complexity of proposal preparation; • Difficulties of rural workers, entrepreneurs and farms in maintaining a profitable rural activity

Crossing SWOT Analysis of **Life Climate Change** for **Monetization of ecosystem services** resilience option applied in Valencia.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> No need partnership, partners can be both from the same country and from different countries finances both public and private entities support documentation is not very complex The program is designed to be simpler and more flexible than the previous programming phase to facilitate the access. Plenty of info events 	<ul style="list-style-type: none"> Financed by EU commission at 60% (except for LIFE nature and Biodiversity up to 75%) so need to co-finance Indirect costs/overhead have a low flat rate of max 7% Small budget projects (below EUR0.5 mil) are not financed Needs communication and dissemination campaign Relatively new topic for the civil community, difficulties in estimating the positive externalities coming from rural/natural environment and activities and the maintenance of the area Creation of network and a marketplace to monetize the services and features linked to ecosystem services 	<ul style="list-style-type: none"> Many Two stage proposal (ten pages concept note first) Bonus points if the consortium is transnational Possibility to submit the project application in country language Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> Very low success rate (around 20%) because of the low budget for each call Difficulties of rural workers, entrepreneurs and farms in maintaining a profitable rural activity

Crossing SWOT Analysis of **Interreg Europe** for **Building Monetization of ecosystem services** resilience option applied in Valencia.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Wide variety of eligible costs • Simplified cost options (SCO) less errors in reporting (the tracing of every euro of co-financed expenditure to individual supporting documents is no longer required). 	<ul style="list-style-type: none"> • Needs partnership 5 to 10 partners with 3 minimum countries (Interreg Europe) • Needs co-finance because it finances 85% public bodies and 75% private bodies (Interreg Europe) • Only available for specific areas (Interreg B transnational) • Needs communication and dissemination campaign • Relatively new topic for the civil community, difficulties in estimating the positive externalities coming from rural/natural environment and activities and the maintenance of the area • Creation of network and a marketplace to monetize the services and features linked to ecosystem services 	<ul style="list-style-type: none"> • Tackle common challenges identified jointly in different EU regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purposes of the overall harmonious development of the Union • Networking opportunity • Innovation, especially networks of universities, research institutions, SMEs • Best practice exchange • Partners have to guarantee a structural stability of their organization for about 3 to 5 years • Creation of a bigger network, with Interreg partners, and a marketplace to monetize the services and features linked to ecosystem services involving more countries. 	<ul style="list-style-type: none"> • Needs a sound structure for each partner to produce an action plan, Set up a stakeholder group, Participate in the Interreg Europe Policy Learning Platforms. • After this stage, each partner must monitor the progress of the implementation of their action plan and report to the lead partner. Pilot actions may be supported during this period. • Partners must have high knowledge to organize and manage an ecosystem service network capable to being profitable • Difficulties of rural workers, entrepreneurs and farms in maintaining a profitable rural activity

Crossing SWOT Analysis of **Horizon Europe** for **Pilot Farms** resilience option applied in Valencia.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Very high budgets available per project (<1.5 million EUR; 1.5-5 million EUR; 5-10 million EUR; 10-20 million EUR) • High co-financing rates (up to 100% for no profit entities and for research and innovative actions and 70% for profit entities) • All submission and project management processes online through the Participant Portal • Once you are awarded with the first grant, it is easier to keep receiving funds in the future • Indirect costs/overhead (no need to be reported) are normally 25% of eligible direct cost • Presence of external partners (LNV, University) working with the municipality 	<ul style="list-style-type: none"> • Need of a partnership (min 3 from the member state) • Needs dissemination campaign • Farmers involvement in pilot project 	<ul style="list-style-type: none"> • Raises the international scientific standing of the organisations participating to the consortium • Valencia municipality and their external partners have already been awarded a Horizon grant so it is easier to take part to similar project in the future • Partners have to guarantee a structural stability of their organization for about 3 to 5 years • Enhance and improve agricultural sector sustainability, productivity, economic viability. 	<ul style="list-style-type: none"> • Very low success rate because of many applicants • Complexity of proposal preparation; • Difficulties of rural workers, entrepreneurs and farms in maintaining a profitable rural activity

Crossing SWOT Analysis of **Interreg B (EURO MED)** for **Pilot Farms** resilience option applied in Valencia.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Wide variety of eligible costs • Simplified cost options (SCO) less errors in reporting (the tracing of every euro of co-financed expenditure to individual supporting documents is no longer required) 	<ul style="list-style-type: none"> • Needs partnership 5 to 10 partners with 3 minimum countries (Interreg Europe) • Needs co-finance because it finances 80% • Partners Only available for specific areas (Interreg B transnational) • Needs dissemination campaign 	<ul style="list-style-type: none"> • Tackle common challenges identified jointly in different EU regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purposes of the overall harmonious development of the Union • Networking opportunity • Innovation, especially networks of universities, research institutions, SMEs • Best practice exchange • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • Needs a sound structure for each partner to produce an action plan, Set up a stakeholder group, Participate in the Interreg Europe Policy Learning Platforms. • After this stage, each partner must monitor the progress of the implementation of their action plan and report to the lead partner. Pilot actions may be supported during this period.

Crossing SWOT Analysis of **ERDF** for **Pilot Farms** resilience option applied in Valencia.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Success rate higher than direct funds • Has to be written in national language and submitted to the regional authority • Easier reporting than direct funds • No partnership needed • Closer to citizens, supporting locally-led development and sustainable urban development across the EU 	<ul style="list-style-type: none"> • Co-funding depends on the regions and the operational program • Budget per project lower than direct funds • Linked to High TRL projects • More bricks than brain projects 	<ul style="list-style-type: none"> • Development opportunity for all municipalities • Support for SECAP development • At least 6% of the ERDF allocation for each Member State has to be earmarked for integrated actions for sustainable urban development 	<ul style="list-style-type: none"> • Operational programs not yet published at local level (no calls available at this stage)

Crossing SWOT Analysis of **Life Climate Change** fund for **Awareness Raising Campaign** resilience option applied in Valencia

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • No need partnership, partners can be both from the same country and from different countries • it finances both public and private entities • support documentation is not very complex • The program is designed to be simpler and more flexible than the previous programming phase to facilitate the access. • Plenty of info events and previous projects to referred to. 	<ul style="list-style-type: none"> • Financed by EU commission at 60% so need to co-finance • Indirect costs/overhead have a low flat rate of max 7% • Small budget projects (below EUR0.5 mil) are not financed so it would be necessary to involve many countries in the campaign to raise the budget up. • Local stakeholders' involvement is needed 	<ul style="list-style-type: none"> • Many Two stage proposal (ten pages concept note first) • Bonus points if the consortium is transnational • Possibility to submit the project application in country language • Partners have to guarantee a structural stability of their organization for about 3 to 5 years • Share in the civil population not common scientific topics • Capacity building action in target stakeholders groups • Create a critical mass in the population about different themes usually carried on by experts only to 	<ul style="list-style-type: none"> • Very low success rate (around 20%) because of the low budget for each call • Low impact in the community because of lack of knowledge or interest on the topic

		influence the social acceptability of certain actions and projects.	
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Crossing SWOT Analysis of **PPP** fund for **Awareness Raising Campaign** resilience option applied in Valencia.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Flexible implementation mechanism: private companies, foundations, banks, associations and public authorities can be involved. • Possibility to consider different project models • Possibility to reach the needed budget • Reduction in public spending 	<ul style="list-style-type: none"> • Complex process in requiring public high level of expertise and responsible approach in project evaluation and control • Limited number of private partners capable to implement the project may restrict the competition needed for the effective partnership • Public responsibility remains (citizens will consider the public responsible for quality) 	<ul style="list-style-type: none"> • Opportunity for private business participation in strategic and social important initiatives • Political and public support • Possible value growth of the campaign as result of PPP implementation • Sharing long term risk with private partners • Opportunity to attract experienced private partners (management, marketing, financial control..) • Share in the civil population not common scientific topics • Capacity building action in target stakeholder groups • Create a critical mass in the population about different themes usually carried on by experts only to influence the social acceptability of certain actions and projects. 	<ul style="list-style-type: none"> • Limited number of participants in the project • Annual budgeting process and approval of PPP projects funding • Inaccurate data on the private partners • Overestimation of private partner involvement in the management of the project • Overestimation of financial capacity of private partner • Private companies' involvement brings the risk to jeopardize the campaign because of their public perception

Crossing SWOT Analysis of **Interreg** fund for **Awareness Raising Campaign** resilience option applied in Valencia.

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Wide variety of eligible costs • Simplified cost options (SCO) less errors in reporting (the tracing of every euro of co-financed expenditure to individual supporting documents is no longer required) • Interreg B finances projects related to: Cultural heritage and sustainable tourism development, capacity building and governance, people-to-people actions and engagement. • No need of a communication campaign 	<ul style="list-style-type: none"> • Needs partnership 5 to 10 partners with 3 minimum countries (Interreg Europe) • Needs co-finance because it finances 85% public bodies and 75% private bodies (Interreg Europe) • Only available for specific areas (Interreg B transnational) • Needs dissemination campaign 	<ul style="list-style-type: none"> • Tackle common challenges identified jointly in different EU regions and to exploit the untapped growth potential in border areas, while enhancing the cooperation process for the purposes of the overall harmonious development of the Union • Networking opportunity • Innovation, especially networks of universities, research institutions, SMEs • Best practice exchange • Partners have to guarantee a structural stability of their organization for about 3 to 5 years 	<ul style="list-style-type: none"> • Variable co- financing rate: it may decrease (Interreg B) • Needs a sound structure for each partner to produce an action plan, Set up a stakeholder group, Participate in the Interreg Europe Policy Learning Platforms. • After this stage, each partner must monitor the progress of the implementation of their action plan and report to the lead partner. Pilot actions may be supported during this period.

5.4.1. VALENCIA applicability process RESULTS

The results are valued with a score from 1 to 5 (1= lowest applicability, 5= highest applicability) and a traffic light in which the green light stand for proceeding smoothly, with the yellow one you can proceed but paying attention and the red light means it is worth it for Valencia stakeholders to stop and think whether they can apply that fund or not.

VALENCIA	LIFE Climate Change	Interreg	Private Public Partnership	BID Invest EU	w/ ERDF	Horizon Europe
Monetization of ecosystem services	4	3				5
Pilot farms		3			3	5
Awareness raising	4	3	4			

6. Conclusions

Deliverable D6.3 contains an inventory of funding measures available from the public and private sectors and an in-depth analysis of the most appropriate funding measures for the selected resilience options for ARCH pilot cities. In fact, starting from the broad range of resilience options contained in the Resilience Measures Inventory (RMI) developed by TecNALIA (D6.1), SOGESCA worked with the pilot cities representatives of Bratislava, Camerino, Hamburg and Valencia, and the technical partners TecNALIA and ENEA to select a few specific measures as being the most appropriate and urgent for the needs of each pilot to make the target historic areas more resilient.

For the selected resilience options applicable to each pilot, three funding measures and their applicability to the pilot cities are analysed in more detail. The selected funding measures are analysed according to a set of parameters resulting in a SWOT analysis for each funding measure.

To analyse the applicability of the funding measure to the specific case of each pilot, a SWOT analysis was carried out that takes into account the SWOT analysis of the funding measure and the information gathered from the pilots during the interviews conducted by SOGESCA as better described in chapter 4. The applicability of the selected funding measures to each pilot characteristic was derived both from pilots' interviews and in-depth research into each chosen funding measure funds specific objectives. The result is a "scoring" of the selected funding measures applicability resulting from matching the characteristics of the funding measures with those of the pilot cities (chapter 5)

Although the analysis results in a score of separate funding measures applicability to each resilience options for a specific pilot city, most of the times a combination of more than one fund is the solution to address the funding needs. In fact, combining multiple funding sources, for example private and public funds, is the most appropriate solution for most of the identified resilience measures as it provides efficiency gains by exploiting synergies with EU Structural and Investment Funds (ESIF) and mobilising a wider range of actors and resources (JRC, 2020). For example a crowd funding campaign, therefore private funds, could be anticipated by a publicly funded awareness raising campaign financed through EU grants.

As reported above, there are some steps to follow when looking for funds. In the specific case of ARCH the research is focused on funds for public actors (municipalities) and only in one case funds for private actors (in the case of Hamburg) with special emphasis on HA and cultural heritage resilience to climate change. The case of Valencia is more focused on the agricultural areas surrounding the city of Valencia.

As illustrated in the paragraphs above, the EU programmes are focused on clear individual themes, specialist sectors or specialist areas. Therefore, once the project idea is established, there is normally one main funding instrument per thematic sector. However, there is also the possibility to present cross-sectoral projects with cross-sectoral synergy effects.

The results of D6.3 will be used as part of D6.4 "Resilience pathway visualisation tool".

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Annexes

Annex 1 Inventory of funding Opportunities

Annex 2 Selected Resilience measures Data Sheets

ANNEX I - EUROPEAN FUNDING PROGRAMMES: DIRECT FUNDING GRANTS FROM THE EUROPEAN COMMISSION OR ITS EXECUTIVE AGENCIES FOR PROJECTS WITH SPECIFIC OBJECTIVES								
FUNDING SOURCE	FUNDING	MANAGING AUTHORITY	FOCUS	FUNDED ACTIONS	PROJECT PARTNERS	BUDGET PER PROJECT	TOTAL BUDGET	EU CONTRIBUTION%
Horizon Europe	Grant	DG RTD - CINEA- HaDEA	It tackles climate change, helps to achieve the UN's Sustainable Development Goals and boosts the EU's competitiveness and growth.	Under Pillar II, Horizon Europe is divided into 6 clusters: 1.Health; 2.Culture, Creativity and Inclusive Society; 3.Civil Security for Society; 4.Digital, Industry and Space; 5.Climate, Energy and Mobility; 6.Food, Bioeconomy, Natural Resources, Agriculture and Environment.	At least 3 partners from 3 different countries	Project size: < 1.5 million €; 1.5-5 million €; 5-10 million €; 10-20 million €	95.5 bn	IA (Innovation Actions) - 70% for profit entities (except for non-profit legal entities, where a rate of 100% applies) CSA (coordination and support actions) – 100% RIA (Research and Innovation actions) – 100 %
LIFE	Grant	DG ENVIRONMENT, DG CLIMATE, CINEA, EIB	The LIFE programme is divided into two strands: one for the environment (Clean energy transition)and another for climate action (Climate change mitigation and adaptation).	Standard Action Projects (SAPs), traditional LIFE projects focused on best practices, demonstration, capacity building, deployment, mobilizing investment, and implementation of relevant EU policy. Strategic Nature Projects (SNAPs) Strategic Integrated Projects (SIPs) Technical assistant project NGO operating grants	Both from same country and different EU countries	Project size: >0.5 million; < 1.5 million €; 1.5-5 million €; 5-10 million €	5.43 bn	60% (By way of exception, a co-financing rate of up to 75% of the total eligible costs may be granted to LIFE Nature and Biodiversity proposals)
LIFE CET Clean Energy Transition)	Grant	DG ENV, DG CLIMA, CINEA, EIB & National Contact Points	Clean Energy Transition	Five areas of interventions: Building a national, regional and local policy framework supporting the clean energy transition; Accelerating technology roll-out, digitalisation, new services and business models and enhancement of the related professional skills on the market; Attracting private finance for sustainable energy; Supporting the development of local and regional investment projects; Involving and empowering citizens in the clean energy transition.	Both from same country and different EU countries	Project size: >0.5 million; < 1.5 million €; 1.5-5 million €; 5-10 million €	0.5 bn (2021-2022)	Standard Action Projects, Strategic Integrated Projects, Strategic Nature Projects and Technical Assistance: 60% (By way of exception, a co-financing rate of up to 75% of the total eligible costs may be granted to LIFE Nature and Biodiversity proposals) Other Actions: 95% of eligible costs, except for the small grants for biodiversity in ORs and OCTs that constitute the continuation of the BEST programme - 100%)
LIFE Climate change mitigation and adaptation	Grant	DG ENV, DG CLIMA, CINEA, EIB & National Contact Point	Climate change mitigation and adaptation	It supports projects in the areas of: farming, land use, peatland management, renewable energies and energy efficiency. It co-finance projects in the areas of: urban adaptation and land-use planning, the resilience of infrastructure, sustainable management of water in drought-prone areas, flood and coastal management, the resilience of the agricultural, forestry and tourism sectors, and/or support to the EU's outermost regions. It provides action grants for: best practice, pilot and demonstration projects. It promotes Integrated projects that implement EU policy and strategy on climate change adaptation. It co-funds projects supporting the European Climate Pact, sustainable finance activities, awareness-raising, training and capacity building, knowledge development and stakeholder participation in climate change mitigation and adaptation areas. LIFE provides action grants for: information, awareness and	Both from same country and different EU countries	Project size: >0.5 million; < 1.5 million €; 1.5-5 million €; 5-10 million €	0.5 bn (2021-2022)	Standard Action Projects, Strategic Integrated Projects, Strategic Nature Projects and Technical Assistance: 60% (By way of exception, a co-financing rate of up to 75% of the total eligible costs may be granted to LIFE Nature and Biodiversity proposals) Other Actions: 95% of eligible costs, except for the small grants for biodiversity in ORs and OCTs that constitute the continuation of the BEST programme - 100%)
Next Generation EU	Grant and loans	national and regional governments	Repair the damage caused by the Corona virus Pandemic. Build a post Covid 19 EU that is greener, more digital, more resilient.	Check National recovery and resilience plans - NRRP	no need	Check National recovery and resilience plans - NRRP	806.9 bn	

ANNEX I – SHARED MANAGEMENT FUNDS: FUNDING CHANNELLED VIA OPERATIONAL PROGRAMMES IN THE MEMBER STATES											
FUNDING SOURCES	FUNDING MECHANISM	MANAGING AUTHORITY	APPLICABILITY FOR ARCH PILOTS	FOCUS	FUNDED ACTIONS	TOTAL BUDGET (2021-2027)	PROJECT PARTNERSHIP	BUDGET PER COUNTRY	BUDGET PER PROJECT	EU CONTRIBUTION%	SOURCE LINK
Cohesion fund - CF	Grant, Financial instruments (loans, guarantee, equity), Technical assistance	Managed by National or Regional authorities and DG REGIO	Bratislava (because of its GNI)	The Cohesion Fund provides support to member states with a gross national income (GNI) per capita below 90% EU-27 average to strengthen the economic, social and territorial cohesion of the EU.	<p>The Cohesion Fund supports investments in the field of environment and trans-European networks in the area of transport infrastructure (TEN-T).</p> <p>It is also possible to use the CF in the form of financial instruments.</p> <p>All ESIF including CF can be used in integrated packages at the local, regional or national levels through the use of territorial integrated instruments such as Community-led Local Development (CLLD) and Integrated Territorial Investments (ITI).</p>	48 bn	Partners from the same country	2.110 bn (for Slovakia)	Project size: < 1.5 million € 1.5-5 million € 5-10 million € 10-20 million € >20 million €	The level of financing from the Cohesion Fund for a project can amount to up to 85% of its cost. A grant of up to 100% can be awarded for technical assistance related to the preparation of investment projects funded by the Cohesion Fund.	https://www.covenantofmayors.eu/support/funding.html
Eu agricultural Fund for rural development - EAFRD	Grant, Financial instruments (loans, guarantee, (quasi-)equity participation)	Managed by National or Regional authorities and DG REGIO	Valencia (because of the topic)	It is an instrument of the EU's common agricultural policy (CAP) that focuses on resolving the particular challenges of rural areas.	Assistance to farmers and inhabitants of rural areas to increase sustainability and competitiveness, including through the following: boosting the use of digital and technological tools; actions to improve the attractiveness of rural areas both for living and for job creation; support for innovation and diversification of on-farm activities; village revitalisation; protection of the environment and biodiversity; and actions aimed at restoring, preserving and enhancing ecosystems related to agriculture and forestry, with a positive impact on biodiversity, soil, water and air.	87.4 bn + 8.1 bn (from next gen eu)	Partners from the same country	7.8 bn	Project size: < 1.5 million € 1.5-5 million € 5-10 million € 10-20 million € >20 million €	Co-funding depends on the regions and the operational programme.	https://www.covenantofmayors.eu/support/funding.html


ANNEX I - SHARED MANAGEMENT FUNDS: FUNDING CHANNELLED VIA OPERATIONAL PROGRAMMES IN THE MEMBER STATES											
FUNDING SOURCES	FUNDING MECHANISM	MANAGING AUTHORITY	APPLICABILITY FOR ARCH PILOTS	FOCUS	FUNDED ACTIONS	TOTAL BUDGET (2021-2027)	PROJECT PARTNERSHIP	BUDGET PER COUNTRY	BUDGET PER PROJECT	EU CONTRIBUTION%	SOURCE LINK
Eu Regional Development Fund - ERDF -EU27	Grant, Financial instrument, Financial instruments (loans, guarantee, equity), Technical assistance	Managed by National or Regional authorities and DG REGIO	EU 27	The European Regional Development Fund (ERDF) aims to strengthen economic, social and territorial cohesion in the European Union by correcting imbalances between its regions. In 2021-2027 it will enable investments in a smarter, greener, more connected and more social Europe that is closer to its citizens.	<p>The ERDF will enable investments to make Europe and its regions:</p> <ul style="list-style-type: none"> More competitive and smarter, through innovation and support to small and medium-sized businesses, as well as digitisation and digital connectivity Greener, low-carbon and resilient More connected by enhancing mobility More social, supporting effective and inclusive employment, education, skills, social inclusion and equal access to healthcare, as well as enhancing the role of culture and sustainable tourism Closer to citizens, supporting locally-led development and sustainable urban development across the EU <p>Organisations that can benefit from ERDF include public bodies, private sector organisations (especially SMEs), universities, associations, NGOs and voluntary organisations, depending on the operational programme.</p> <p>Urban areas are directly targeted by several of the ERDF investment priorities. The action is designed to reduce economic, environmental and social problems in urban areas, with a special focus on sustainable urban development. At least 8 % of the ERDF resources are set</p>	226 bn	Partners from the same country	26.6 bn (Italy); 10.91 bn (Germany including 65mil for Hamburg in climate prevention and innovation projects); 8.11 bn (Slovakia); 23.54 bn (Spain)	Co-funding depends on the regions and the operational programme.	Co-funding depends on the regions and the operational programme.	https://ec.europa.eu/regional-policy/en/funding/erdf/#1
Interreg Transnational ADRIAN (Adriatic-Ionian)	Grant, Financial instrument, Financial instruments (loans, guarantees, equity)	Managing authorities, DG REGIO	Camerino	Sustainable growth through a programme that invests in regional innovation systems, cultural and natural heritage, environmental resilience, sustainable transport and mobility as well as capacity building.	Climate change and risks prevention (risk management systems, early warning systems; Protection of the environment, natural and cultural heritage with the preservation and renovation of the old buildings	118 mil	Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, Serbia and Slovenia.		Project size varies according to the call	Co-funding varies according to the call	https://interreg.eu/programme/interreg-adrian/
Interreg Transnational CENTRAL EUROPE	Grant, Financial instrument, Financial instruments (loans, guarantees, equity)	Managing authorities, DG REGIO	Bratislava	Interreg CENTRAL EUROPE improves capacities for regional development in innovation, carbon dioxide reduction, the protection of natural and cultural resources as well as transport and mobility.	To improve territorially based low-carbon energy planning strategies and policies supporting climate change mitigation; To improve integrated environmental management capacities for the protection and sustainable use of natural heritage and resources; To improve capacities for the sustainable use of cultural heritage and resources; To improve environmental management of functional urban areas to make them more liveable places	246 mil	Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia and Slovenia.		Project size varies according to the call	Co-funding varies according to the call	https://interreg.eu/programme/interreg-central-europe/

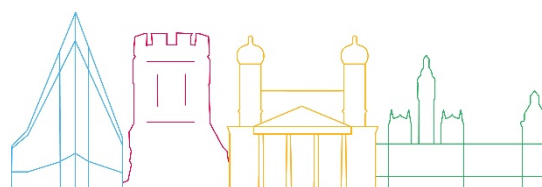
ANNEX I - SHARED MANAGEMENT FUNDS: FUNDING CHANNELLED VIA OPERATIONAL PROGRAMMES IN THE MEMBER STATES

FUNDING SOURCES	FUNDING MECHANISM	MANAGING AUTHORITY	APPLICABILITY FOR ARCH PILOTS	FOCUS	FUNDED ACTIONS	TOTAL BUDGET (2021-2027)	PROJECT PARTNERSHIP	BUDGET PER COUNTRY	BUDGET PER PROJECT	EU CONTRIBUTION%	SOURCE LINK
Interreg Transnational NORTH SEA REGION	Grant, Financial instrument, Financial instruments (loans, guarantees, equity)	Managing authorities, DG REGIO	Hamburg	4 programs: thinking growth, eco-innovation, sustainable NorthSeaRegion, green transport and mobility	in the sustainable NSR program there are projects to bolster flood defence and project to find alternative approaches to climate change adaptation and mitigation. Risk preservation and management with long term perspectives.	167 mil	Denmark and some regions of Belgium, Germany, Netherlands, Norway, Sweden		Project size varies according to the call	Co-funding varies according to the call	https://northsearegion.eu/sustainable-nsr/
Interreg Transnational SUDOE	Grant, Financial instrument, Financial instruments (loans, guarantees, equity)	Managing authorities, DG REGIO	Valencia	4th axis (12% del budget totale) - Combating climate change: Improving the coordination and effectiveness of prevention, disasters management and rehabilitation tools of damaged areas.	Types of projects: Development of common emergency plans. Implementing early warning systems. Development of transnational risk management tools. Creation of tools and methodologies for the regeneration of soil damaged by natural disasters.	142.3 mil	Andorra and some regions of France, Portugal, Spain and UK		Project size varies according to the call	Co-funding varies according to the call	https://www.interreg-sudoe.eu/gbr/home
Interreg Interregional EUROPE	Grant, Financial instrument, Financial instruments (loans, guarantees, equity)	Interreg Joint secretariat - DG REGIO	Bratislava, Camerino, hamburg and Valencia	4 themes: Research and innovation, SME competitiveness, low-carbon economy and environment and resource efficiency	through interregional cooperation projects, partners must identify a common interest and work together for 3-5 years. Initially, partners will share experience, ideas and know-how about how best to deal with the issue at hand. Each partner region must: Produce an action plan Set up a stakeholder group Participate in the Interreg Europe Policy Learning Platforms After this stage, each partner must monitor the progress of the implementation of their action plan and report to the lead partner. Pilot actions may be supported during this period	359 mil was financed in 2014-2020 period by ERDF, not yet defined for 2021-2027 period	EU28, Norway and Switzerland		Project size: < 1.5 million € 1.5-5 million €	85% public bodies 75% private bodies (50% for Norway and Switzerland)	https://www.interregeurope.eu/about-us/2021-2027/
Interreg Interregional - URBACT IV	Grant	URBACT IV secretariat - Monitoring Committee of the Programme	Bratislava, Camerino, hamburg and Valencia	The URBACT IV programme is organised around 3 main objectives: 1) Use transnational networks to improve the capacity of European cities to: - co-design and implement Integrated Action Plans linked to common sustainable urban development challenges - transfer established urban good practices - design investment plans for replicating elements of Urban Innovative Actions 2) Improve the capacity of urban stakeholders to design and implement sustainable urban development45 policies,practices and innovations in an integrated, participative and place-based way. 3) Ensure that URBACT knowledge and practice is made accessible to urban practitioners and policymakers to feed into local, regional, national and European urban policies, in particular throughthe European Urban Initiative; and contributing to the Urban Agenda for the EU	3 types of interventions: - Innovative actions; - Capacity building (networks of cities, peer learning, urban development network-type of capacity building); - Knowledge, policy and communication (knowledge sharing platforms, capitalization of knowledge in support of policy making; communication and dissemination; network of national contact points) In urbact III there also was: Physical Urban Development: abandoned spaces, culture and heritage, mobility, public space, balanced territorial development, priority Neighbourhoods, urban renewal.	79.76 mil	EU28		project size: < 1.5 million €	85% for partners from less developed regions 70% for partners from more developed regions 50% for partners from Norway and Switzerland	https://urbact.eu/ https://urbact.eu/sites/default/files/1-urbact_iv_cp_final_draft.pdf

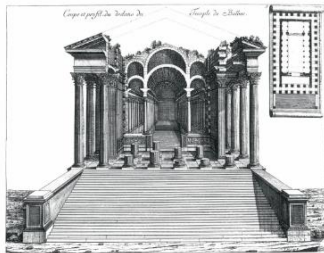
ANNEX 2 – SELECTED RESILIENCE MEASURES DATA SHEETS

MONITORING SYSTEM


Name of the measure	Description of the measure		
Infrastructure structural monitoring of stability	Technologies to provide information on the performance and condition of the infrastructure such as GPS systems through sensors		
Name of subgroup	Description of subgroup		
Monitoring Systems	Monitoring the damages or changes in historic assets to understand their evolution and limit the damages		
Name of group	Description of group		
Forecasting, monitoring and Early Warning Systems	Processes and technological tools to prepare and enable a sound response or a real-time response to a hazard in order to mitigate the damage that it may cause to Cultural Heritage		
Photo of subgroup			
<div></div> <p>Photo by Luke Chesser via Unsplash</p>			
Resilience essentials		Resilience sub-essentials	
Organize for resilience/ Increase infrastructure resilience/ Ensure Effective Disaster Response		Data capture, publication and sharing/ Water sanitation/ Energy - Electricity/ Energy - Gas/ Transportation/ Communications/ Healthcare/ Warning systems	
DRM phase	Type of hazard it tackles	Category of resilient measures (IPCC type of options)	
Pre-disaster/ During disaster/ Post-disaster	Coastal flooding/ Fluvial flooding/ Landslides/ Pluvial flooding/ Extreme heat & Heatwave/ Earthquakes	Structural_Technologies and tools	




PREVENTIVE MAINTENANCE

Name of the measure	Description of the measure		
Preventative maintenance	Heritage conservation must be based fundamentally on preservation. Prevention starts from the regular maintenance of Cultural Heritage elements. It requires reviewing not only the state of structural and functional elements, but also the state of conservation of materials to promptly detect the appearance of new damages to avoid major and invasive interventions		
Name of subgroup	Description of subgroup		
Built Cultural Heritage codes	Specific codes for conservation and safeguarding of built Heritage against hazards		
Name of group	Description of group		
Buildings codes and regulations	Building scale legislation that enables hazard resilient Cultural Heritage		
Photo of subgroup			
<div><p>Michael Petzet</p><p>International Principles of Preservation</p><p>MONUMENTS AND SITES MONUMENTS ET SITES MONUMENTOS Y SITIOS</p><p>XX</p></div> <p>Michael Petzet: International Principles of Preservation (Monuments and Sites XX). Berlin 2009, ISBN 978-3-930388-54-7</p>			
Resilience essentials		Resilience sub-essentials	
Resilient development/ Expedite Recovery and Build Back Better		Building codes & standards/ Learning from experience - building back better	
DRM phase	Type of hazard it tackles	Category of resilient measures (IPCC type of options)	
During disaster	Coastal flooding/ Fluvial flooding/ Landslides/ Pluvial flooding/ Extreme heat & Heatwave/ Earthquakes	Institutional_ Government policies and programmes	

AWARENESS RAISING CAMPAIGN

Name of the measure	Description of the measure		
Awareness-raising campaign to the community on hazards and risks	Disaster risk reduction throughout local communities by raising community awareness and understanding of hazards and disaster risks		
Name of subgroup	Description of subgroup		
Innovative governance models	Innovative governance models and engagement strategies that enable a government (thus a community) being prepared to answer to the risks and damages that an hazard may cause		
Name of group	Description of group		
Administrative instruments and management strategies (European, national or regional)	The institutional measures foster increasing resilience pre- or post-disaster by implementing economic, policy and governance measures promoted by public institutions and involving public and/or private sector. They enable being prepared to answer to the risks and damages that an hazard may cause to Cultural Heritage and therefore to the community		
Photo of subgroup			
			
Photo by gerald, via pixabay			
Resilience essentials		Resilience sub-essentials	
Organize for resilience/ Resilient development/ Increase and Strengthen Social Capacity for Resilience		Planning for resilience/ Organization, coordination and participation/ Participatory planning and stakeholder consultation in heritage management/ Community or 'grass roots' organizations	
DRM phase		Type of hazard it tackles	Category of resilient measures (IPCC type of options)
Pre-disaster		Coastal flooding/ Fluvial flooding/ Landslides/ Pluvial flooding/ Extreme heat & Heatwave/ Earthquakes/ Drought & water scarcity/ Biological hazard	Social_Educational


PERMEABLE PAVEMENT

Name of the measure	Description of the measure		
Permeable pavement	Specific type of pavement with a high porosity that allows rainwater to pass through it into the ground below		
Name of subgroup	Description of subgroup		
Infiltration techniques	Infiltration components are used to capture surface water runoff and allow it to infiltrate (soak) and filter through to the subsoil layer, before returning it to the water table below. Infiltration components can be incorporated into a range of Sustainable drainage systems components		
Name of group	Description of group		
Urban interventions	Urban Interventions that help reducing the damage that an on-going or future hazard may cause to Cultural Heritage		
Photo of subgroup			
			
Chris Light, CC by-SA 4.0, via Wikimedia Commons			
Resilience essentials		Resilience sub-essentials	
-		-	
DRM phase		Type of hazard it tackles	Category of resilient measures (IPCC type of options)
Pre-disaster		Coastal flooding/ Fluvial flooding/ Pluvial flooding/ Drought & water scarcity	Structural_Ecosystem-based Adaptation (Green-Blue)
Scale of implementation		Resilience target (Type of heritage to be protected or a general beneficiary)	Reversibility
Element_Building/ Element_Infrastructure/ Element_Work of art_immovable/ District_Group of buildings/ District_Historic centre/town/ District_Cultural landscape		Archaeological resources/ Building and structures	Yes
Visual impact		Physical impact	Spatial impact
Negligible change		None	None


BUILDING BACK BETTER

Name of the measure	Description of the measure	
Early Recovery plans for building back better (BBB)	Planification for post-disaster reconstruction, following a disaster, not only reconstructing what was damaged and return the pre-disaster state but to seize the opportunity to improve overall community resilience	
Name of subgroup	Description of subgroup	
Early Recovery plans for BBB	Early Recovery plans for BBB	
Name of group	Description of group	
Rehabilitation, restoration and conservation interventions in buildings	Interventions in buildings that help reducing the damage that an on-going or future hazard may cause to Cultural Heritage	
Photo of subgroup		
<div><div>Build Back Better</div><div><div>Risk Reduction</div><div>Community Recovery</div><div>Implementation</div></div><div><div>Principle 1 Improvement of Structural Designs</div><div>Principle 2 Land-Use Planning</div><div>Principle 3 Social Recovery</div><div>Principle 4 Economic Recovery</div><div>Principle 5 Management of Stakeholders</div><div>Principle 6 Legislation and Regulation</div></div><div>Monitoring and Evaluation</div></div> <p>Mannakkara, Sandeeka & Wilkinson, Suzanne. (2013). Post-Disaster Legislation for Building Back Better. Construction Law Journal. 29.</p>		
Resilience essentials		
Expedite Recovery and Build Back Better		
Resilience sub-essentials		
Preparedness / planning for post disaster recovery/ Learning from experience - building back better		
DRM phase	Type of hazard it tackles	Category of resilient measures (IPCC type of options)
Post-disaster	Coastal flooding/ Fluvial flooding/ Landslides/ Pluvial flooding/ Extreme heat & Heatwave/ Drought & water scarcity/ Biological hazard	Institutional_ Government policies and programmes

PILOT FARMS

Name of the measure	Description of the measure
Program of pilot farms demonstrating sustainable, adaptive and/or innovative actions	Pilot farm demonstration aims at building on technical capacity by 'learn by doing approach' with the co-benefit of bringing together participants from different contexts to facilitate knowledge exchange and learning amongst peers
Name of subgroup	Description of subgroup
Training communities	Measures that aim at skill learning from the agriculture community in order increase preparedness against climate change hazards and their impacts and disaster management
Name of group	Description of group
Developing resilient communities	Community-based adaptation and preparation instruments aiming at the development of resilience of climate change-related hazards and others at both the level of the individual learner and at the level of socio-ecological systems including Cultural Heritage
Photo of subgroup	
 <p>Photo by Nadirah Nordin, from “The 11th SEATUC Symposium assessing social capital among the aging residents of housing complexes in suburban Tokyo: A case study of Haraichi-Danchi and Oyamadai-Danchi in the city of Ageo</p>	
Resilience essentials	Resilience sub-essentials
Strengthen Institutional Capacity for Resilience/ Increase and Strengthen Social Capacity for Resilience	Training delivery/ Learning from others/ Community or 'grass roots' organizations/ Social networks & vulnerable population groups/ Private sector / employers/ Citizen engagement techniques

PAYMENT FOR ECOSYSTEM SERVICES

Name of the measure	Description of the measure
Promotion and financial support for sustainable and innovative agricultural practices	Strengthen incentives such as fiscal reductions for agriculture system transformation or payments for ecosystem services in order to support food safety, agriculture sustainability and smart agriculture
Name of subgroup	Description of subgroup
Public and private economic instruments for agriculture	Financial and monetary benefits offered to encourage adaptation actions with other instruments that alleviate the economic impacts due to disaster fatalities such as agriculture insurances that consider climate change
Name of group	Description of group
Administrative instruments and management strategies (European, national or regional)	The institutional measures foster increasing resilience pre- or post-disaster by implementing economic, policy and governance measures promoted by public institutions and involving public and/or private sector. They enable being prepared to answer to the risks and damages that an hazard may cause to Cultural Heritage and therefore to the community
Photo of subgroup	
 <p>Photo by Jeremy Bishop, via Unsplash</p>	
Resilience essentials	Resilience sub-essentials
Strengthen Institutional Capacity for Resilience	Incentives and financing for businesses, community organizations and citizens