RESCUEME
RESILIENT CULTURAL LANDSCAPES

D2.1 RESCUEME RESILIENCE META-REPOSITORY

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Summary

Communities who are struggling to improve the resilience of cultural landscapes are currently lacking ready-to-use tools and methods that facilitate the evidence-based decision making and the implementation of resilience solutions.

The RescueME resilience meta-repository is a catalogue that collects knowledge available from both previous research projects and local practices to offer an integrated searchable data base of solutions characterized by their effectivity in improving the resilience of cultural landscapes. Specifically in the framework of the project, the RescueME resilience meta-repository will serve as a catalogue of solutions for the Resilience Landscape Laboratories (R-Labscapes or R-Labs) to get inspired about actions to be included in their transformative resilience pathways. 5 R-Labs are involved: Psiloritis in Crete (Greece), Neuwerk in Hamburg (Germany), Portovenere, Cinque Terre & the islands (Italy), L'Horta in Valencia (Spain) and the city of Zadar (Croatia). Nevertheless, R-Labs have also the active role of collectors of solutions, both the ones already implemented in their territories, and the ones that will be developed during the project implementation.

This report describes the methodology used to create the RescueME resilience meta-repository, the theoretical and operational frameworks that were applied and led to the collection of 1000 solutions. RescueME defines solutions as practices, products, processes, actions, and initiatives for innovative, cooperative, and applicable resilience strategies connected with our culture and environment to address climate change, natural hazards, and societal and other crises.

The meta-repository collects three typologies of solutions: policy recommendation; lesson learnt; and place based solution. The latter typology has been further detailed by adopting five solution domains: heritage based solutions; nature based solutions; adaptive governance tools; financing and business models strategies; and creative industries strategies.

The solutions collected through the meta-repository will be available through the Incremental Spatial Decision Support System (ISDSS).

For more information
www.resilientculturallandscapes.eu

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1 Introduction

The RescueME resilience meta-repository (hereafter referred to as meta-repository) is a catalogue that collects knowledge available from both previous research projects and local practices to offer an integrated searchable data base of solutions characterized by their effectivity in improving the resilience of Cultural Landscapes, including innovative solutions for cultural heritage, nature based solutions, solutions for resilience financing, inclusion of creative and cultural sector industries, and adaptive governance models.
This document delineates the methodology used to create the meta-repository, and all the theoretical framework and definitions connected to the solutions, their typologies and domains.

1.1 Aims and objectives

The overall objective of Work Package 2 of the RescueME project is to define the measures, solutions and conditions to guide Cultural Landscapes in building their transformative resilience strategies. Specifically in the framework of the project, the meta-repository will serve as a catalogue of solutions for the Resilience Landscape Laboratories (R-Labscapes or R-Labs) to get inspired about actions to be included in their transformative resilience pathways. 5 R-Labs are involved: Psiloritis in Crete (Greece), Neuwerk in Hamburg (Germany), Portovenere, Cinque Terre & the islands (Italy), L'Horta in Valencia (Spain) and the city of Zadar (Croatia).
Specific objectives connected to the meta-repository are:

- to map, systematize and operationalize existing heritage-based and nature-based knowledge and measures through a meta-repository of resilience solutions;
- to identify strategies from the culture and creative industries sector, and to formulate innovative strategies for financing resilience.

1.2 Relation with other project activities

RescueME is structured in six Work Packages and a number of tasks linked to each other to ensure cross-fertilization among the different steps and partners and the achievement of the project objectives. The work described in this report is the creation of the meta-repository as the result of the combination of Task 2.1 (Meta-repository of resilience solutions for Cultural Landscape) and Task 2.2 (Strategies from Cultural Industries and Innovative resilience financing) within WP2.
The meta-repository will be also an input to the following RescueME Work Packages and activities:

- **WP1 (Assessment and monitoring of heritage values and resilience)**

The methodology and structure of the RescueME meta-repository of resilience solutions have been elaborated in accordance with the Actionable Resilient Historical Landscapes Framework developed in WP1. This has served in the preparation of the templates to be used for the collection of solutions, divided into typologies and domains previously defined.
The Atlas of European coastal heritage landscapes typologies and climate change impacts developed in T1.2 will be one of the entry points of the meta-repository, especially in the case the user wants information on place-based solutions shown within the map.

- **WP2 (Transformative resilience strategies)**

Task 2.3 (Ready to use tools for adaptive governance) has been giving input to Task 2.1 and 2.2, especially with the creation of a domain of solutions denominated "Adaptive Governance Tools" explained in section 3.4.3, and with the definition of some strings, such as the main stakeholders and the end users.
In Task 2.4 (Development of a serious game as a social innovation and co-creation tool for resilience strategy development) a serious game for resilience strategy development is created. Related co-creation activities for the game and its application with the R-Labscapes are pursued in Task 4.3, where the R-Labscapes create their own resilience strategies. Solutions from the meta-repository will be picked up in the serious game development.
Task 2.5 (Long-term agenda for the implementation of transformative resilience strategies) based on the results of the previous tasks of the WP will help R-Labscapes to create a long-term agenda for the implementation of transformative resilience strategies in connection with T4.4 (Co-creation of local resilience measures and solutions) which will use the solutions of the meta-repository in local workshops.

- **WP3 (Data Management and Digital Solutions)**

The other entry point of the meta-repository will be the Incremental Spatial Decision Support System developed in T3.4 for the design and monitoring of transformative pathways, through which a potential user will be able to access to all the solutions visualized with specific filtering options.

- **WP4 (Co-creation of local solutions with communities)**

The meta-repository is strictly connected to WP4 which is going to develop the co-creation of local solutions with the communities of the R-Labscapes. Specifically, T4.4 (Co-creation of local resilience measures and solutions) based on previous project outputs like impact chains, meta-repository, organigraphs, etc., will lead to the activities of T4.3 (Application and co-evaluation of serious game) to develop a resilience strategy from the measures and solutions integrated into a long-term agenda (T2.5). Solutions defined in the framework of WP4 by the R-Labs will then, in a later stage of the project, feed again the meta-repository.

1.3 Report structure

The elaboration of the meta-repository of solutions has been structured in the following phases, with reference to the sections of this document, where the phases and their outcome are explained in detail, and the responsibility of project partners

A theoretical framework has been developed by UNIBO in Section 2 by performing bibliographical research to collect details about existing meta-repository structures and examples (section 2.1). This initial research has been complemented by the collection of reference to archives or collection of solutions implemented in previous projects and initiation of the collection of solutions (section 2.2).

The operation framework has been then defined by UNIBO in Section 3 through the identification of the meta-repository structure and the elaboration of templates with descriptive strings (section 3.1). Three solution typologies (section 3.2) and five solution domains (section 3.3) have been defined, in collaboration with the project partners involved in Tasks 2.1, 2.2 and 2.3, who have been responsible of the definition of specific solution domains as follows:

- Heritage based solutions: UNIBO
- Nature based solutions: TECNALIA
- Adaptive governance tools: ULg
- Financing and business model strategies: CMCC
- Creative industries strategies: CI

Once the solution typologies and domains have been defined, the same project partners have also been responsible for manually collecting the solutions (section 3.4) and then validating them (section 3.5). UNIBO was also coordinating the collection of solutions from R-Labs. In parallel, SISTEMA has been responsible of automatize the collection of solutions from the datasets of the three main reference H2020 projects (i.e., RURITAGE, SHELTER and ARCH), while the validation of the solutions automatically retrieved was performed by the coordinators of the above-mentioned projects (respectively UNIBO, TECNALIA and FhG).

Concluding remarks are drawn in Section 4.

2 Theoretical framework

2.1 Bibliographical research on how to build a meta-repository

In RescueME, the meta-repository might be defined as a tool that stores in the same digital place (i.e., file) metadata that provide knowledge and evidence about solutions to improve resilience of cultural landscapes, which have been either defined by or collected from other projects and platforms.
The bibliographical research with the purpose of finding methodologies on how to build a meta-repository has followed different stages. The first stage was the research on Web of Science[1] and ResearchGate[2] of relevant literature with the following six combinations of keywords:

#toolkit solutions cultural heritage
#repository solutions cultural heritage
#collection best practices cultural heritage
#archive actions cultural heritage
#lessons learnt cultural heritage
#repository resilience practices

The result was a list of 20 papers which were selected based on the relevance from their title and covering the last 15 years. The filtering of the list through the abstract and additional snowballing research aimed at complementing the literature collected resulted in a shortened list of 6 publications useful for the elaboration of the meta-repository. Main findings are summarized in Table 1, while all the references detailed are included in the References section.

[1] https://www.webofscience.com/
[2] https://www.researchgate.net

RELEVANT LITERATURE	MAIN FINDINGS
Svec et al. (2012).	The paper describes a repository of information for regenerative design developed together with a forum and a framework capable of stimulating dialogue among a diversity of practitioners and decision-makers with different disciplinary backgrounds and viewpoints.
Giannakoulopoulos et al. (2021).	The contribution presents the digital tools implemented during the project BYZART, describing the creation of the platform and its usability and the re-use of existing content related to cultural heritage.
Long Nguyen at al. (2021).	The paper proposes a general architecture for a resilience data repository that enables communities to adopt a general methodology for collecting, storing, managing, and sharing resilience-based information.
Inan et al. (2022).	The article focusses its contribution on providing an alternative to the traditional written disaster management plans using a unified repository, facilitating sharing, reusing, and a better decision-making system.
Pesaro & Colucci (2022).	The book focuses on resilience practices and includes toolboxes and solutions showing the reader a systematic and stable approach, moving from a conceptual framework to actual practice.
Santangelo et al. (2022).	The paper provides an insight on disaster risk management and climate change adaptation of cultural heritage, aiming at increasing resilience of historical areas, through the codification and analysis of good practices collected from EU-funded projects.

Table 1: Summary of most relevant results from bibliographical research

The second step of the process consisted in analyzing the selected articles to uncover recurring themes, concepts, and challenges related to building and managing meta-repositories for cultural heritage or resilience solutions, particularly regarding their design, implementation, and evaluation.
Finally, some additional methodologies were compared with the findings from the previous search, trying to identify potential synergies. Especially:
FAIREST (d'Aquin et al. 2023) which provides a set of metrics for assessing and selecting solutions for creating digital repositories for research artefacts, identifying gaps and research challenges to be addressed.
BASE Evaluation Criteria for Climate Adaptation (BECCA) which equips with a checklist of topics and issues to be considered in evaluations of concrete adaptation situations, focusing on outcomes and processes[3].
INSPIRE Data Specification on Protected Sites – Technical Guidelines which exemplify the INSPIRE methodology to overcome challenges such as the lack of availability, quality, organisation, accessibility, and sharing of spatial information[4].

2.2 Systematic research of previous projects

One of the main purposes of the RescueME meta-repository is to map, systematize and operationalize existing heritage-based and nature-based knowledge and resilience solutions. The project approach is very much focused on searching for prior knowledge and solutions gathered from other European projects in order to make them available through the ISDSS at a later stage. Part of the activity was to systematically search the CORDIS[5] portal with keywords for the presence of solution archives. This work resulted in the following list of projects to be consulted (Table 2). For each of them, we looked for metadata availability – through online archives or direct contacts – and the number of solutions found, if available.

[3] https://climate-adapt.eea.europa.eu/en/metadata/publications/base-evaluation-criteria-for-climate-adaptation-becca (last accessed 28th June 2024)
[4] https://knowledge-base.inspire.ec.europa.eu/publications/inspire-data-specification-protected-sites-technical-guidelines_en (last accessed 28th June 2024)
[5] https://cordis.europa.eu/ (last accessed 28th June 2024)

PROJECT ACRONYM	AVAILABILITY	TOTAL NO. OF SOLUTIONS FOUND
RURITAGE	Direct contact (project coordinator and some partners within RescueME consortium)	163
SHELTER	Direct contact (project coordinator leads also RescueME project)	100
ARCH	Direct contact (project coordinator and some partners within RescueME consortium)	261
Climate-ADAPT	Available in repository online	125
CLIC	Available in repository online	127
ForHeritage	Available in repository online	N/A
TexTOUR	Direct contact (some project partners within RescueME consortium)	28

Table 2: List of EU projects consulted and related no. of solutions considered for the inclusion in the meta-repository

Other database and projects consulted, but not included are: Phusicos, Stonewalls4life, Adaptation Compass, Think Hazard, Hercules, ResCult, RESIN, HYPERION, MEMOLA, PERICLES, RISK-KIT.

RescueME builds specifically on the results of three main projects that have been coordinated by partners of RescueME:

ARCH (Advancing Resilience of Historic Areas against Climate-related and other Hazards)[6], which produced a suite of tools for assessing and improving the resilience of historic areas, targeted at heritage managers, urban planners, and other professionals from the fields of climate change adaptation, disaster risk management, and heritage management.

SHELTER (Sustainable Historic Environments hoListic reconstruction through Technological Enhancement and community-based Resilience)[7], which aimed at developing a data driven and community-based knowledge framework that brought together the scientific community and heritage managers, with the main objectives of increasing resilience, reducing vulnerability and promoting better and safer reconstruction in historic areas.

RURITAGE (Heritage for Rural Regeneration)[8], which strived to enable rural regeneration through heritage with the aim to sustainably enhance local heritage for regional and community development.

To capitalize on the efforts of the consortiums, the 524 solutions coming from these three projects have been screened and partly included in the meta-repository, via an automatization process described section 3.4.

Other projects considered for the collection of the solutions for the meta-repository were selected between some previous knowledge of the RescueME partners. Between these there are:

CLIC (Circular models Leveraging Investments in Cultural heritage adaptive reuse)[9], which aimed at identifying evaluation tools to test, implement, validate and share innovative "circular" financing, business and governance models for systemic adaptive reuse of cultural heritage and landscape, demonstrating the economic, social, environmental convenience, in terms of long lasting economic, cultural and environmental wealth.

TExTOUR (Rethinking Cultural Tourism in Europe and beyond)[10], which co-designs pioneering and sustainable cultural tourism strategies to improve deprived areas in Europe and beyond.

ForHeritage[11], which promoted integrated heritage management engaging communities, mobilising funding and developing capacities for enhanced protection and management of cultural heritage assets in central Europe. 13 solutions have been included.

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[6] https://www.heritageresearch-hub.eu/ (last accessed 28th June 2024)
[7] https://shelter-project.com/ (last accessed 28th June 2024)
[8] https://www.ruritage.eu/ (last accessed 28th June 2024)
[9] https://www.clicproject.eu/ (last accessed 28th June 2024)
[10] https://textour-project.eu/ (last accessed 28th June 2024)
[11] https://programme2014-20.interreg-central.eu/Content.Node/ForHeritage.html (last accessed 28th June 2024)

ResCult (Increasing Resilience of Cultural heritage)[12]**,** which developed a supporting decision tool for the safeguarding of cultural assets. The European Interoperable Database contains the best practices collected within the project, that were not included in the meta-repository because they were not sufficiently described according to the strings defined in RescueME.

RESIN (Climate Resilient Cities and Infrastructures)[13]**,** which has developed practical and applicable tools to support cities in designing and implementing climate adaptation strategies for their local contexts. The focus of the project was specific on building and urban level, so the strategies were not considered relevant for the cultural landscapes, while they were a useful input to the development of the meta-repository's strings.

HYPERION[14] which aimed to leverage existing tools/services and novel technologies to deliver an integrated resilience assessment platform, addressing multi-hazard risk understanding, better preparedness, faster, adapted and efficient response, and sustainable reconstruction of historic areas, not included for unavailable data.

Hercules (towards geoHazards rEsilient infRastruCtUre under changing cLimatES)[15]**,** which developed a step change in the understanding and monitoring capabilities of geohazards and in turn produce groundbreaking new methods to boost the resilience of current infrastructure under changing climates, not included for unavailable data.

Adaptation Compass[16]**,** which created a guidance tool for developing climate-proof city and regions, not included because specifically focused on urban areas.

Stonewalls4life (Drystone walls as a multi-purpose climate change adaptation tool)[17]**,** which aims at repairing drystone walls and ensuring their long-term maintenance, to protect the territory and its inhabitants against the effects of extreme weather events, not included for unavailable data.

Additional projects found through the systematic review on CORDIS, not included in the meta-repository because of incompatibility with its structure or unavailable data, were:

Phusicos[18] which demonstrated how nature-based solutions provide robust, sustainable and cost-effective measures for reducing the risk of extreme weather events in rural mountain landscapes.

Memola (Mediterranean Mountainous Landscapes: an historical approach to cultural heritage based on traditional agrosystems)[19] which aims at protecting this cultural heritage

[12] https://rescult-project.eu/ (last accessed 28th June 2024)
[13] https://cordis.europa.eu/project/id/653522 (last accessed 28th June 2024)
[14] https://www.hyperion-project.eu/ (last accessed 28th June 2024)
[15] https://cordis.europa.eu/project/id/778360 (last accessed 28th June 2024)
[16] http://www.future-cities.eu/project/adaptation-compass/ (last accessed 28th June 2024)
[17] https://www.stonewalls4life.eu/ (last accessed 28th June 2024)
[18] https://www.phusicos.eu/ (last accessed 28th June 2024)
[19] https://memolaproject.eu/ (last accessed 28th June 2024)

and, at the same time, increasing and transmitting knowledge about it in order to benefit the local and wider European society.

Pericles (Preserving and sustainably governing cultural heritage and landscapes in European Coastal and Maritime regions)[20] which worked to show the potentials and opportunities of Europe's diverse cultural heritage, while protecting and preserving it for future generations.

RISC-kit (Resilience-Increasing Strategies for Coasts – toolKIT)[21] which delivered ready-to-use methods, tools and management approaches to reduce risk and increase resilience to low-frequency, high-impact hydro-meteorological events.

Finally, two online portals were considered:

Think Hazard[22]**,** which helps you identify and understand natural hazards in your project area and how to reduce their impact. Since the portal focus on providing an overall view of the hazards for a given location and only produce general inputs on how to reduce the impact of these hazards, and where to find more information, the solutions of Think Hazard have been excluded from the meta-repository.

Climate-ADAPT[23]**,** The European Climate Adaptation Platform Climate-ADAPT is a partnership between the European Commission and the European Environment Agency (EEA). Climate-ADAPT aims to support Europe in adapting to climate change helping users to access and share data and information. Within the RescueME meta-repository the solutions included were connected to EU, national and transnational adaptation strategies and actions, adaptation case studies and potential adaptation options, and tools that support adaptation planning.

[20] https://www.pericles-heritage.eu/ (last accessed 28th June 2024)
[21] https://cordis.europa.eu/project/id/603458 (last accessed 28th June 2024)
[22] https://thinkhazard.org/en/ (last accessed 28th June 2024)
[23] https://climate-adapt.eea.europa.eu/en (last accessed 28th June 2024)

3 Operational framework

3.1 Structure of the meta-repository

Based on bibliographical research on how to build a meta-repository and the systematic research of previous project, a structure was proposed. The elements to be defined were the descriptive characteristics (defined in the task as “strings”) to best collect the solutions information, and the modalities of standardization for solutions coming from other projects. A look-up table by comparison was defined in two phases. Firstly, to evaluate the relevance and frequency of specific strings to be included into the meta-repository, based on the strings that are part of the information/categories of the 7 repositories of solutions consulted. Figure 1 shows the frequency of the different strings out of 7 projects analyzed (as included in Table 2), considering some flexibility in the terminology (e.g., “scale of implementation”, “action scale” and “scale of intervention” were all referring to the territorial scale the solution was applied).
Secondly, Table 3 was created for automatically retrieving the solutions from the three main projects of reference for RescueME (see Annex 6.2).

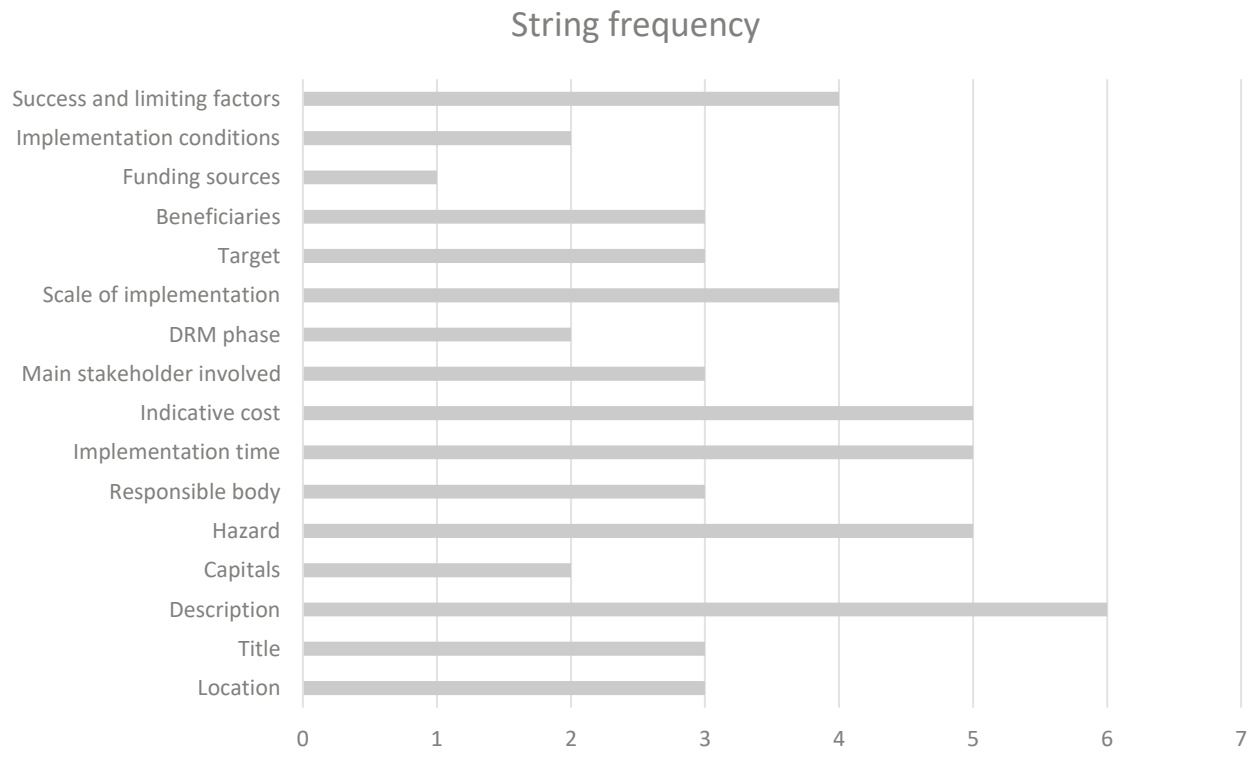


Figure 1: Frequency of the strings appearing in the analyzed projects included in Table 2.

Other strings considered for the meta-repository, but discarded because of a low frequency or representativeness for cultural landscapes are: sustainability of the action, replicability, monitoring plan and indicators, formal partnership established, reversibility, visual, physical and spatial impact, co-benefits, negative effects, urban typology, feasibility, maintenance, acceptability, robustness, flexibility, uncertainty.

RESCUEME	RURITAGE	SHELTER	ARCH
Title	Name of the action	Adaptive solution	Name measure
Description	Brief description of the action and related objectives	Description	Measure description
Disaster Risk Management phase	-	DRM phase	DRM phase
Scale of implementation	-	Action scale	Scale of intervention
Implementation time	Start time; End time	Implementation time	-
Main stakeholders involved	Main stakeholders	-	-
End users	Beneficiaries	-	-
Indicative cost	Indicative costs; Currency type	-	-
Funding sources	Indicative funding sources	-	-

Implementation conditions	Initial conditions	Technical requirement	Implementation conditions
Success and limiting factors	Barriers	Other aspects: success and limiting factors	

Table 3: Comparison table of the meta-repository strings with the three main reference projects RURITAGE, SHELTER and ARCH.

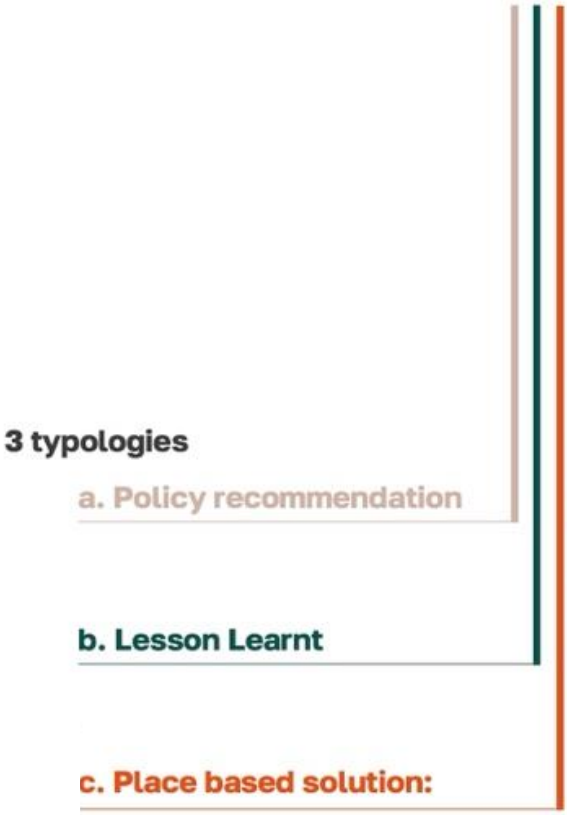
Due to the diverse range of description of the solutions coming from the other projects, another important aspect to be defined was which are the strings that represent the minimum information to be exhaustive (defined in the task as "must have") and the strings that are not strictly necessary (defined as "nice to have"). The templates and the strings were tested firstly internally within the group of partners involved in the task. In a second phase they were part of a workshop with all the RescueME partners during the 2nd General Assembly of the RescueME consortium in October 2023.
Since the final result of the meta-repository will be presented through one of the key RescueME tool – the Incremental Spatial Decision Support System (ISDSS), the Microsoft Excel file with macro (.xlsm format) has been chosen to create a collector file for supporting the work of partners. A template for each of the solution typologies and domains, as described in the following section, was prepared (see Annex 6.1).

3.2 Solution typologies

RescueME defines solutions as practices, products, processes, actions, and initiatives for innovative, cooperative, and applicable resilience strategies connected with our culture and environment to address climate change, natural hazards, and societal and other crises. They might also be called as "tools" or "strategies", depending on the solution domains (see section 3.3). The meta-repository collects three typologies of solutions (Figure 2) defined as follows:

- **Place-based Solutions (PBS)** are practices, products, actions, and initiatives addressing one or more dimensions of resilience presented in relation to its specific implementation location and its responsible body of management and administration.

- Lesson Learnt (LL) are practices, products, actions and initiatives addressing one or more dimensions of resilience, proved, validated and potentially replicable regardless of the place of design and/or implementation.
- Policy Recommendations (PR) are practices, actions, and initiatives addressing one or more dimensions of resilience presented as a set of suggestions or guidance regarding future processes of changes (i.e., environmental, technical, social, institutional, behavioural).



Data title	Data format
Title*	Text
ID*	Text
Compiler*	Text
Solution domain*	Selection menu
Description*	Text
References*	Text
Image*	Image formats
Capitals*	Selection menu
Key elements*	Selection menu
Hazard*	Selection menu
Disaster Risk	Selection menu
Scale of implementation	Selection menu
Readiness Level	Selection menu
Comments	Text
Source project and code	Text
Various	Text
Technological readiness	Selection menu
Implementation time	Text
Main stakeholders	Selection menu
End users	Selection menu
Funding	Selection menu
Implementation conditions	Text
Success and limiting	Text
Location*	Text
Country*	Text
Coordinates	Text
Responsible body	Text
Indicative cost	Currency and
Total investment	Currency and

Figure 2: Strings used according to the three typologies of solutions.

The strings used to describe the solutions have been selected after bibliographical research and in reference to previous projects. The number of strings is incremental from the Policy Recommendation typology to the Places-Based solution typology (as shown in Figure 3).
The strings defined have two collection modalities: they can be either a short text, or a selection from a menu. This characteristic was defined to set up an efficient base of filtering for the ISDSS. For this purpose, the selection menus were specifically chosen for those descriptive strings that are more relevant for the project. Description and selection menus

of each string are included in the RescueME meta-repository templates and glossary (see Annex 6.1)

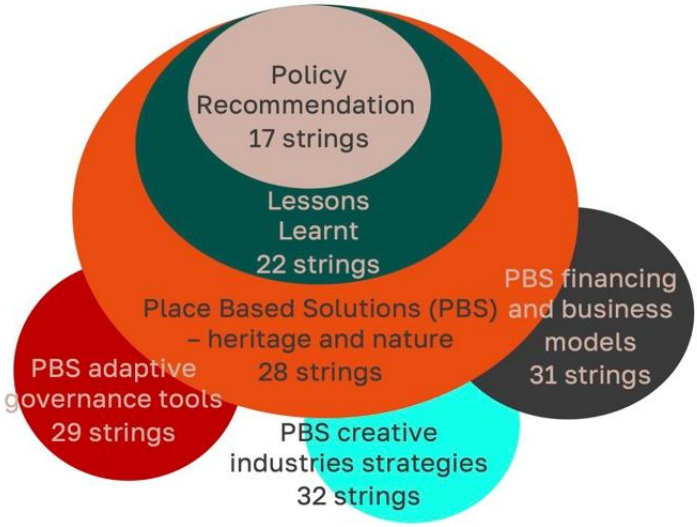


Figure 3: Number of strings per typology and domain.

Between these strings, there are some considered to be "must have", since they are essential to describe the solutions collected in the framework of the RescueME project.

- **Title.** Name of the implemented solution as presented in the source dataset.
- **ID.** Univocal code of the implemented solution, to be added by the compiler (i.e., "source project_progressive number")
- **Compiler.** Name of the person compiling the solution. This is a confidential information for collection phase only, to be removed before making the solutions publicly available.
- **Description.** Description of the main objective and activities of the solution (what is the solution, what issue is trying to solve, whether it is successfully implemented, how the solution impacts capitals and key elements)
- **Reference.** Reference material such as websites, links to articles, pictures, video, etc.
- **Image.** Picture(s) of the solution or location
- **Solution domain.** Area of solutions defined for the meta-repository between: heritage based solutions, nature based solutions, financing and business models, creative industries solutions, adaptive governance tools. Chosen by the compiler and validated then during the validation process.
- **Capitals and key elements.** As explained in D1.1 "Actionable Resilient Historic Landscape Framework", RescueME proposes a set of key elements which are linked to those capitals aimed at enabling resilience improvements, based on coping, adaptive and transformative capacities of cultural landscapes (see Figure 04). Chosen by the compiler and validated then during the validation process.

- **Hazard.** The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources. The list includes only the hazards considered in RescueME: fluvial floods, pluvial floods, coastal floods (including sea level rise), landslides, wildfires, heat waves, drought, poor air quality. The meta-repository includes also an additional strings titles "Other hazard(s) or stressor(s)" to leave the possibility for the compiler to add information on hazards not categorized within the project. Chosen by the compiler and validated then during the validation process.

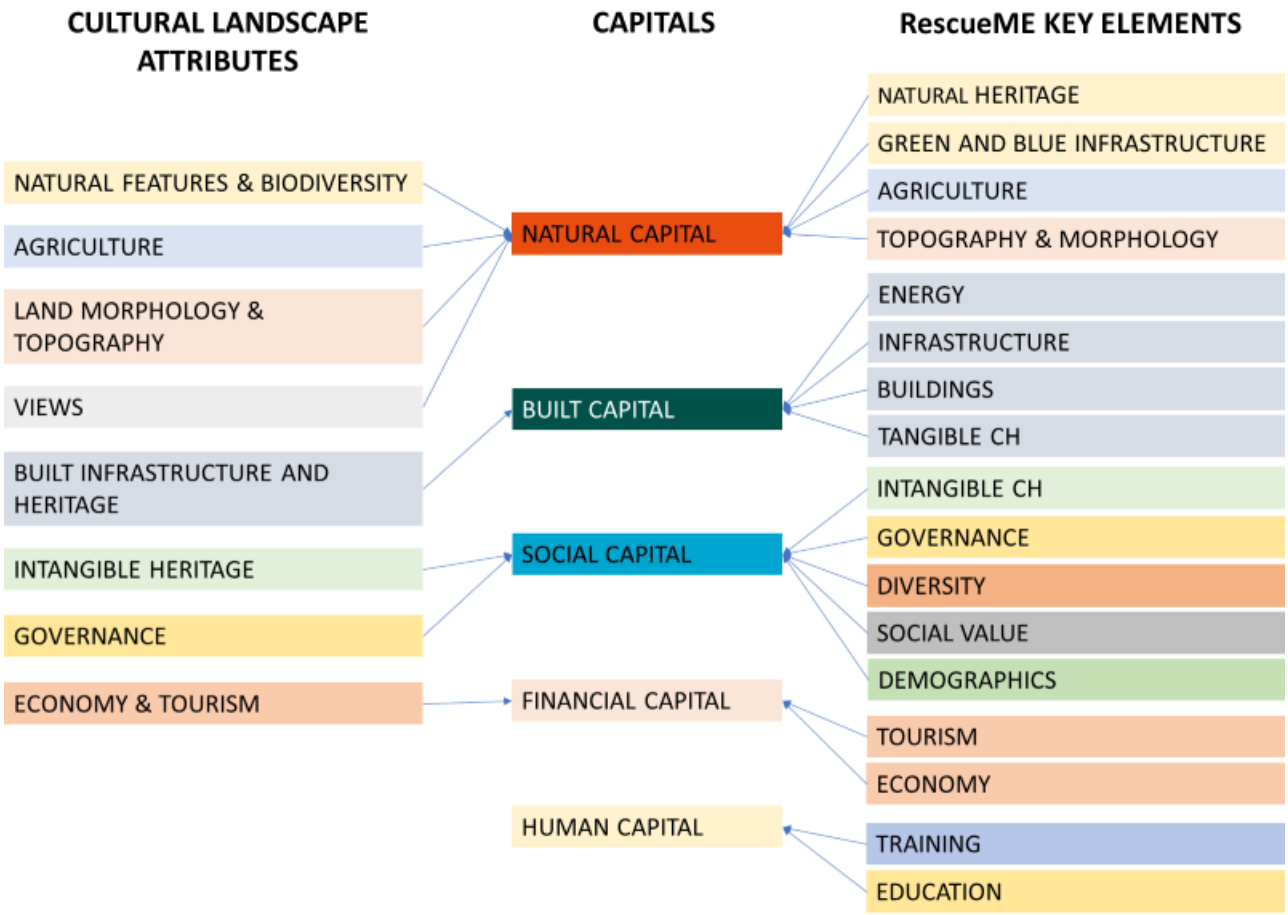


Figure 4: RescueME key elements of CL resilience, as extracted from Deliverable 1.1.

Additional information collected through selection menus are "nice to have" strings:

- **Disaster risk management phase.** The strings describe the phase for which the solutions are designed: pre-disaster, during disaster or post-disaster. The choice not to include the disaster risk management phases was drawn by the need to be more comprehensive. Pre-disaster includes preparedness activities to be undertaken before a disaster occurs which include both risk prevention (risk assessment,

prevention and mitigation measures for specific hazards) and emergency preparedness (creation of emergency teams, evacuation plan and procedures, warning systems and drills, temporary storage). During disaster includes emergency response procedures for saving people as well as heritage, developed and practiced beforehand for the first 72 hours after the incident. Post-disaster includes damage assessment, treatment of damaged components of the cultural landscape through different kind of interventions.

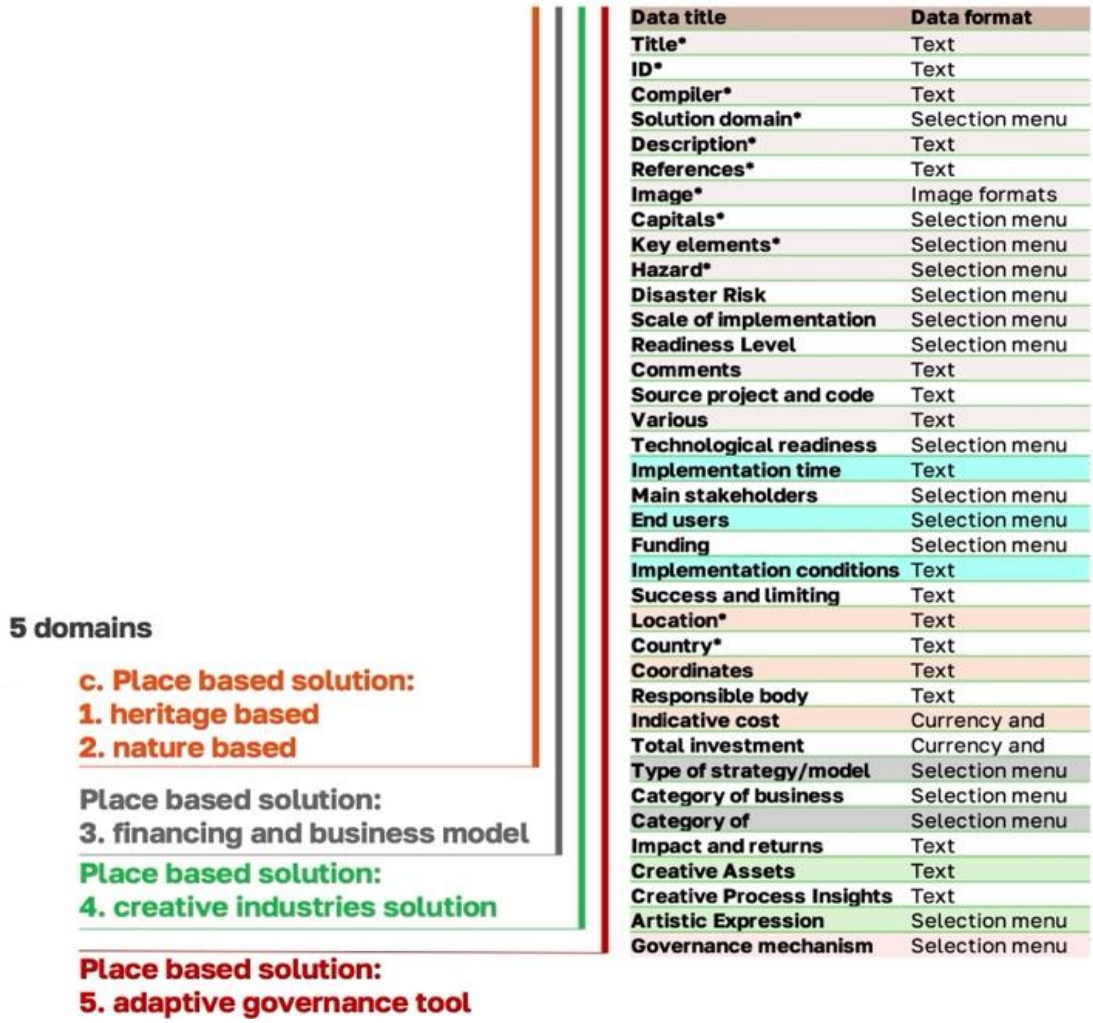
- **Scale of implementation.** Indicates the scale and governance or territorial level involved between local, provincial, regional, national, supranational.
- **Technological Readiness Level.** Is a scale used to measure the progress or maturity level of a technology: 1) basic principles observed, 2) solution concept formulated, 3) experimental proof of concept, 4) solution validated in research context, 5) solution validated in relevant environment, 6) solutions demonstrated in relevant environment, 7) solution system prototype demonstrated in operational environment, 8) solution system complete and qualified, 9) actual solution system proven in operational environment.
- **Main stakeholders involved and the end users.** The first are the main authorities, agencies, private stakeholders and organizations involved in the implementation of the solution, and the second are the main target group(s) the solution who received the results and benefits of the solution. Both the strings can be selected between the following list: national government, international business, insurance companies, foreign aid, military, university / research group, NGO, Civil Protection Authority, emergency services/first responders, small/medium enterprises, private companies, surrounding municipalities, donor, local government, practitioner, policy maker, local land users, property owners, local residents, local business owner, volunteers, tourists.
- **Funding sources/Investors.** Represents the indicative financing sources and/or investor(s) between private, public or public and private (see Annex 6.4).

3.3 Solution domains

Five domains have been defined starting from the place based solution (PBS) typology:

- heritage based solutions (PBS-H)
- nature based solutions (PBS-N)
- adaptive governance tools (AGT)
- financing and business models (FBM) strategies and
- creative industries strategies (CIS)

AGT, FBM and CIS have additional strings than the ones of the place based solution that are specific to them (Figure 5).



Data title	Data format
Title*	Text
ID*	Text
Compiler*	Text
Solution domain*	Selection menu
Description*	Text
References*	Text
Image*	Image formats
Capitals*	Selection menu
Key elements*	Selection menu
Hazard*	Selection menu
Disaster Risk	Selection menu
Scale of implementation	Selection menu
Readiness Level	Selection menu
Comments	Text
Source project and code	Text
Various	Text
Technological readiness	Selection menu
Implementation time	Text
Main stakeholders	Selection menu
End users	Selection menu
Funding	Selection menu
Implementation conditions	Text
Success and limiting	Text
Location*	Text
Country*	Text
Coordinates	Text
Responsible body	Text
Indicative cost	Currency and
Total investment	Currency and
Type of strategy/model	Selection menu
Category of business	Selection menu
Category of	Selection menu
Impact and returns	Text
Creative Assets	Text
Creative Process Insights	Text
Artistic Expression	Selection menu
Governance mechanism	Selection menu

Figure 5: Strings used according to the five domains of solutions.

3.3.1 Heritage based solutions

- Description of the domain

Heritage based solutions include practices, products, actions, and initiatives addressing one or more dimensions of resilience that have been proven as valid for tangible and intangible heritage valorisation in cultural landscapes (i.e., aimed at improving physical, social, institutional, financial, environmental resilience). This domain does not necessarily include solutions which are valid for cultural heritage only, but which have been applied to cultural heritage related projects.

- **Strings adopted to describe the solutions**

The template for collecting heritage based solutions is available in Annex 6.1, where a glossary is also provided to the compilers to explain without ambiguity the data format, description and selection options. It consists of 28 strings in total, of which 12 are classified as “must have” while the others as “nice to have”.

Among the 6 strings introduced specifically to the heritage based solution domain, two follow under “must have” (i.e., Location and Country), while four are “nice to have” (i.e., Coordinates; Responsible body; Indicative cost; Total investment).

The templated for collecting heritage based solutions has been also applied to nature based solutions (see section 3.4.2).

- **Sources of the solutions**

The University of Bologna (UNIBO) was responsible for identifying and consolidating the solutions to be included in the meta-repository. Most of the heritage based solutions have been collected manually or automatically from the projects RURITAGE, CLIC and TExTOUR, already mentioned in section 3.1. All these projects collect a wide number of solutions for cultural landscape and heritage since their activities have concerned the rural regeneration through heritage, adaptive reuse and circular models, and sustainable cultural tourism strategies. The solutions have been filtered and selected depending on their relevance for RescueME project. In Table 4 some examples of solutions are reported.

TEXTOUR_09: FOREST ART WORKSHOP IN THE NATURAL HISTORY MUSEUM OF THE LESVOS PETRIFIED FOREST	This action aimed to organize a workshop on “Forest Art – Nature Art” underlining the characteristics of the forest of Lesvos UNESCO Global Geopark. The event addressed a wide audience (e.g., students, educators, environmentalists, and artists) to explore the links between nature, art, history, and local, sustainable development. Moving from theoretical lectures focusing on the diverse aspects of the relations between art and nature and introducing artists working on this topic and delving into how “forest art” can engage in climate change, participants were also invited to create art. A pedagogue from the International Forest Art Path organized a course on experimental activities using natural materials and combining the experiences of Forest Art, Nature Art, and Global Nomadic Art.

CLIC_44: CREATIVE SPACE CO-CREATION, LITHUANIA	Four different sectors (public, private, NGO and church) have worked together in order to co-create a concept for revitalizing the building and together with other stakeholders (neighboring community, businesses, universities) to create a co-managed space open for everyone. The building has become a new landmark of Vilnius, attracting many people daily. Our approach was to involve all key stakeholders from the very beginning. Moreover, we did it intersectorally, inviting public, NGO and business sectors. Through the activities, all these different sectors not even realised their roles but also understood their commitments. Later on, we expanded the stakeholders' circle via community building and public participation events. This helped us to co-create the sustainable strategy of the place. Currently, the space is actively used by various stakeholders and is open to different stakeholders and sectors. The vision has expanded to the outside of the building and now the strategy of revitalisation is being created for the whole area embracing different stakeholders and their properties (schools, university, private apartments, nationally owned objects).
TEXTOUR_03: ENHANCING ACCESS TO UNDERWATER CULTURAL HERITAGE THROUGH DIGITAL TECHNOLOGIES: "CALA MINNOLA" SHIPWRECK SITE	This action aims to improve the sustainable development of an underwater cultural heritage (UCH) site, Cala Minnola Shipwreck, through innovative digital technologies. The divers' experience is enhanced through a virtual tour of the site. A virtual diving system has been developed to allow users an interactive virtual experience within the reconstructed 3D model of the Cala Minnola shipwreck site. An augmented diving system, which includes an underwater tablet and a hybrid system for acoustic localization and inertial navigation, guides and provides contextual information to the divers during the exploration of the underwater site. These digital technologies fit recommendations of UNESCO for UCH sites and the European Parliament for smart and sustainable growth of coastal and maritime tourism.

RURITAGE_89: CREATING CULTURAL MUSICAL HERITAGE MAP IN BAKIRCAY BASIN	Within the scope of the action, it is aimed to determine the cultural music heritage of the region by both literature and field studies in Bakircay Basin. It will also increase the recognition of the region and the ownership of local heritage by citizens. Objectives: Improve partnership and collaboration among different stakeholders of the region for the integrated landscape management; Increase the strong sense of belonging by raising awareness of the importance and sustainability of the cultural and natural assets for the region; Prevent the extinction of the natural heritages and use them as driver for creating economic values.
RURITAGE_63: CLIMATE HEROES - CITIZEN SCIENCE FOR CLIMATE PROTECTION	Joint exhibition "Understanding Climate Change. Exploring the consequences in the geological record. Cenozoic ecosystems and the current threat." The aim of the exhibition is to introduce to the German public the unique natural monument of Lesvos and to raise public awareness on climate change. The exhibition includes parts of petrified tree trunks, leaves, branches, roots, fruits and volcanic rocks, as well as detailed information material in English and German about the Lesvos Petrified Forest and impacts of climate change. Citizens will use the digital resources and the application knowledge to collect visual data on vulnerable places due to climate change, that need protection measures. Especially in the rural context it is often hard to organize people for action taking and analyzing the status quo situation in widespread areas. In applying the mapping process, citizens will more actively observe their surroundings and identify more with it, increasing the feeling of responsibility in citizens to protect it.

Table 4: ID, title and short description of some examples of the heritage based solutions collected in the meta repository.

3.3.2 Nature based solutions

- Description of the domain

In the context of RescueME project, nature based solutions (NBS) encompass a variety of practices, products, actions, and initiatives aimed at protecting, conserving, restoring, and

managing both natural and modified ecosystems, including terrestrial, freshwater, coastal, and marine environments. NBS are among the actions that play an essential role in the overall global effort to achieve the Sustainable Development Goals, effectively and efficiently addressing major social, economic, and environmental challenges.
By adopting a holistic approach, NBS contribute to the resilience of cultural landscapes, ensuring their preservation, enhancement, and adaptation to future and unexpected changes, not only safeguarding these valuable sites but also providing a wide range of ecological and societal benefits.

- Strings adopted to describe the solutions

The template for collecting nature based solutions is available in Annex 6.1, where a glossary is also provided to the compilers to explain without ambiguity the data format, description and selection options. It consists of 28 strings in total, of which 12 are classified as “must have” while the others as “nice to have”.
Among the 6 strings introduced specifically to the nature based solution domain, two follow under “must have” (i.e., Location and Country), while four are “nice to have” (i.e., Coordinates; Responsible body; Indicative cost; Total investment).
The templated for collecting nature based solutions has been also applied to heritage based solutions (see section 3.4.2).

- Sources of the solutions

Most of the nature-based solutions have been collected manually or automatically from existing projects such as RESIN, ARCH and SHELTER, already mentioned in section 3.1. with primary source being ClimateAdapt as well as other sources such as Landezine platform. All these sources provide a wide number of solutions for climate change adaptation and resilience, and for better preserving areas of cultural heritage from climate related hazards and risks. The solutions have been filtered and selected depending on their relevance for RescueME project. In Table 5 some examples of solutions are reported.

NBS_09 PARCO DORA CONTROL FLOODPLAIN- THE VALUE OF INDUSTRIAL HERITAGE, TURIN (ITALY)	Dora Park includes a large riparian buffer zone designed specifically to accommodate river overflow during flood events to prevent damage to build areas. Especially relevant in issues of transversal axes and generation of public space using industrial infrastructure. This daylighting of the Dora River is the culmination of a 20-year strategy to reclaim the city’s massive industrial brownfields in the process of drastically increasing the city’s green infrastructure and reconnecting the urban fabric from these scars. Turin’s former industrial areas were converted into over 200 parks and gardens, thus increasing the surface of green and open space by 3,500,000 sqm in the past 20 years.

NBS_14 BLANDAN PARK – LYON (FRANCE)	In the center of Lyon, on the old Blandan barracks built in 1830, a new 20-hectare public space opened to the public in 2013. Blandan Park offers a new urban contemporary alternative to classic public spaces in urban areas. It is an extraordinary site, long hidden from view. It is a project about memory and military history, urban renewal, the reconquest by plants and the appropriation of public space with sport and games. Around the central fortifications, the ancient defense logics and bastions are re-interpreted. This is a place to escape from the city. There are new spaces to discover and meet at, plains of moat, horticultural borders, natural wild gardens, a parade ground, and a gigantic playground – The Ramparts' Wave. Many of these design elements resonate with the site's history, giving rise to specific uses and typologies. Driven by function, sport and sustainability, this first phase is about providing exclusive sports and play activities.
NBS_15 ROUGH ECOLOGIES AND STRAIGHT LINES NATURE & RECREATION AREA DE PUNT OUDDORP. STRATEGIC INTERVENTIONS IN UNIFORM WOODLAND. DE PUNT PROVINCE OF ZUID-HOLLAND (NETHERLANDS)	A cultural-historical experience De Punt was created after the closing of the Grevelingendam in 1971. As the tides disappeared, the wind created small sand drifts, and eventually a new dune landscape. In 1974, de Punt van Goeree was landscaped as a recreational nature area with a visitor centre and parklands. Large woodlands were planted, complemented in the 80's by the digging of five dune lakes. After completion, hardly anything changed, and the regular processes of nature took their course. The Province of Zuid-Holland commissioned BoschSlabbers to make a design for the recreational area of De Punt. The emphasis for the design is on enhancement of cultural history and the experience of nature.

NBS_18 ARTIFICIAL INLAND DUNE REINTEGRATES REMNANTS OF WAR INTO THE FOREST LANDSCAPE BERLIN (GERMANY)	In the middle of Berlin's Grunewald, an ammunition depot was cleared after the withdrawal of the Allies. A convincing and cost-effective idea had to be found for Berlin's Forest authority to reintegrate the area into the forest landscape. We developed the concept of covering the bunkers with sand to create an artificial inland dune – a typical ice age landscape relic of this region. Most of the bunkers were completely covered with sand. Individual bunker surfaces already populated with valuable flora and fauna were preserved as a starting point for plant expansion. One of the bunkers was converted into winter quarters for bats. A wide, light place has been created in the middle of the dense forest area.

Table 5: ID, title and short description of some examples of the nature based solutions collected in the meta repository.

3.3.3 Adaptive governance tools

- Description of the domain

Adaptive governance tools include rules, norms, mechanisms, policies, interactions and actions that facilitate the desired state of social-ecological systems at a given time period. They promote polycentrism, collaboration, self-organization and innovation in reaction to different evolving situations.

- Strings adopted to describe the solutions

The template for collecting adapting governance tools is available in Annex 6.1, where a glossary is also provided to the compilers to explain without ambiguity the data format, description and selection options. It consists of 29 strings in total, of which 13 are classified as "must have" while the others as "nice to have". One "must have" string specific to the domain adaptive governance tools was introduced. This is Governance mechanism, intended as type of governance mechanism that the adaptive governance tool use. The selection options of this string include: policy, legislation, degree, directive, convention, regulation, financial incentive, meeting, committee, guideline, framework, strategy, tool.

- Sources of the solutions and methodology

The University of Liege (ULg) was responsible for identifying and consolidating replicable adaptive governance solutions (AGS) for the meta-repository. ULg wanted to develop a method to maximise project resources, facilitate collaboration between work packages and build upon previous research. To achieve this, ULg employed a three-part mixed method approach. The three parts of this approach are explained below.

Part 1 of the mixed method approach created governance maps in collaboration with the stakeholders from the five RescueMe project R-Labs. To create the governance maps, researchers employed a four-phase semi-empirical methodological approach beginning in March 2023 and ending in March 2024. However, the Organigraphs (Durrant et al. 2022) remained open and accessible throughout the project. They can be adapted and used by the stakeholders in the R-Labs indefinitely. Figure 6 below shows the four-phase semi-empirical methodological approach each phase has been explained in detail below.

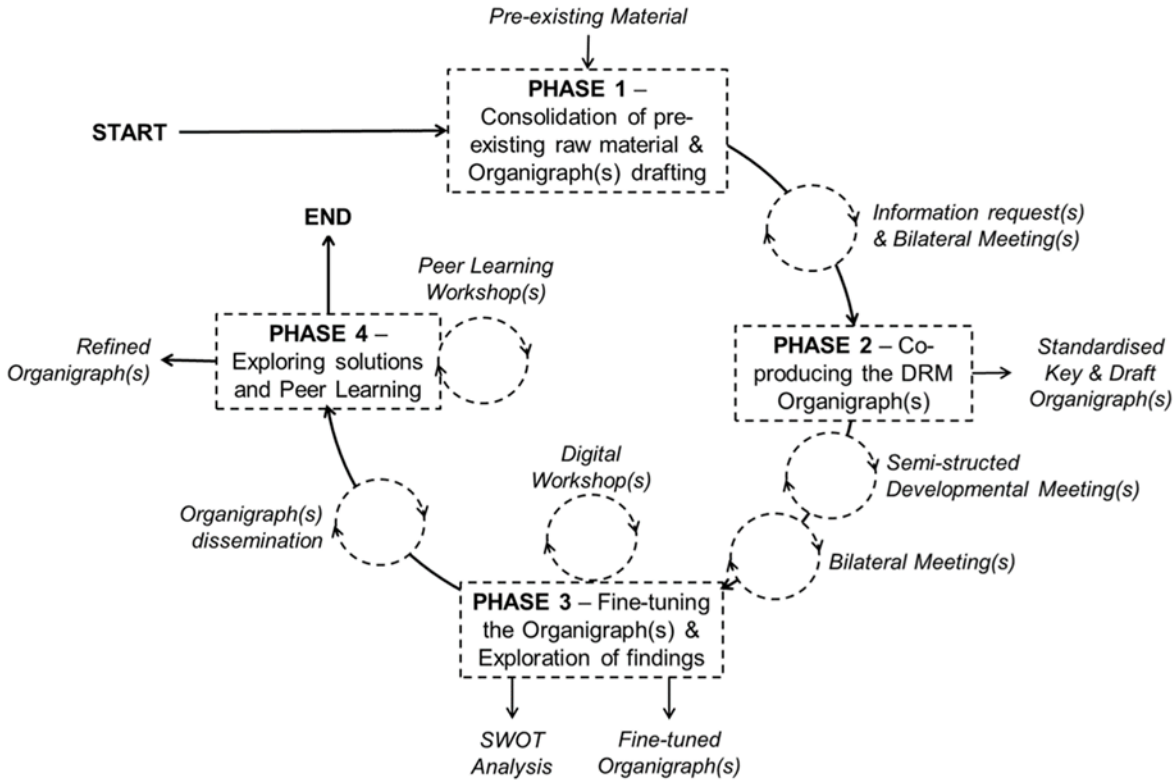


Figure 6 – The quantitative semi-empirical research used in part 1 of the methodological approach.

Phase 1, entitled the exploration phase, aimed at exploring the critical elements of the R-Labs governance structures. The researchers collected the raw data from the R-Labs through two main activities: a workshop where a collaborative online tool was used (i.e., MIRO[24]) and a preliminary introduction meeting. The MIRO workshops focused on the key stakeholders, fundamental governance mechanisms and the perceptions of hazards essential to building the Organigraph. The introduction meeting provides a platform to demonstrate and discuss the Organigraph. It provides a space for the stakeholders to tailor the output to meet their requirements or needs. The second phase of the methodology focused on developing the Organigraph for each R-Lab. This phase started in May 2023 and

[24] https://miro.com/

continued until October 2023. This phase aimed to develop an accurate and robust representation of the governance structures within the R-Lab projects. The researcher at ULg used a series of online semi-structured developmental meetings. In these meetings, the organisations on the digital whiteboard software Lucidchart formed the basis for the discussions.

The R-Lab coordinators (also known as Case Study Coordinator – CSC in WP4) would respond to prompts on the Organigraphs themselves and have an open discussion on the current version of the Organigrpahs. Following the meeting, the researcher at ULg would edit the Organigraph based on the responses and circulate the revised version. In this phase, the research at Ulg would focus the conversation on AGS in particular. It is important to note that this methodology was designed to unpack the disaster risk management governance of R-Labs in detail. Not necessarily to distil AGS from those R-Labs. As a result, the researchers at ULg focused less on the refinement and reflection phase and more on the exploration and development. The research prompted the stakeholders in the R-Labs to explore the mix of stakeholders and the interactions they had with one another rather than attempting to get a complete picture of the DRM governance.

The final phases of the semi-empirical approach focused on the refinement and reflection of the Organigraphs and their potential value. These two phases were not necessarily the focus of the work within WP2. However, they still form essential parts of the semi-empirical quantitative approach because these two phases validate the organigraph's context and close the work's feedback loop, ensuring that the results and discussion occur within the organigraph feedback into the project. These two phases continued from November until May 2024.

Part 2 of the methodology attempted to capitalize on the plethora of pre-existing material collected during the Horizon 2020 SHELTER project. Within this project, the researchers at ULg collaborated with stakeholders on detailed adapted governance maps across five countries over three years from 2019-2022. Namely, this process also yielded raw data regarding stakeholders and their relationships, which informed the research. For clarity, all these Organigraphs and the associated raw data can be accessed online through the following URL links.

SANTA CROCE CHURCH, RAVENNA (ITALY)

https://lucid.app/lucidchart/invitations/accept/inv_70cee264-3c73-4239-998d-0637c02c9c55 (last access 31st May 2024)

ISLE OF DORDRECHT (NETHERLANDS)

https://lucid.app/lucidchart/invitations/accept/inv_6551cc84-14e4-4b87-af8b-e7984ba9ac63 (last accessed 31st May 2024)

DISTRICT OF SEFERIHIAR (TURKEY)

https://lucid.app/lucidchart/invitations/accept/inv_8fc332b9-3e46-4c86-8926-5dcf51dfc361 (last accessed 31st May 2024)

SERRA DO XURÉS NATURAL PARK IN GALICIA (SPAIN)
https://lucid.app/lucidchart/invitations/accept/inv_6868fe50-7430-4820-bef5-9be5013bbda (last accessed 31st May 2024)
INTERNATIONAL SAVA RIVER BASIN
https://lucid.app/lucidchart/invitations/accept/inv_7f70e7c2-8025-4b19-9b7e-c327ecd0b1ff (last accessed 31st May 2024)

This phase aimed not to repeat what was defined in the SHELTER project, but instead focus specifically on the adaptive governance solutions within each case study.
Finally, Part 3 of the methodology utilised a simple snowballing literature review methodology to select and explore relevant research articles, in line with the guidelines defined by Mohlin (2014). This part of the methodology aimed to demonstrate a small collection of AGS that could be found across more comprehensive research and working examples. To achieve this, the researcher conducted a tailored search for relevant literature using the search queries' adaptive governance' and 'disaster risk management' by adding the terms' example' and 'case study'. This combination of these search queries yielded a mixture of different research articles. Following this, the research prioritised those articles that provided explicit information that could be used to develop an Organigraph. In particular, the research articles needed to define the stakeholders involved in the governance. The article needed to specify the relationship those stakeholders had with one another. The article needed to specific governance mechanism that underpinned the AGS. Finally, where possible, the research article needed to explicitly define what it was about the AGS that made it adaptive in the given context.
These three parts of the methodological approach culminated into an approach that maximized on the project resources and established a unified platform for exploring and mapping AGS from different contexts and perspectives.

3.3.4 Financing and business model strategies

- **Description of the domain**

Financing and business model strategies domain includes practices, actions, and initiatives addressing one or more dimensions of resilience presented in relation to economic, financial and business models for incentivizing and leveraging regenerative capital investments.

- **Strings adopted to describe the solutions**

The template for collecting adapting governance tools is available in Annex 6.1, where a glossary is also provided to the compilers to explain without ambiguity the data format, description and selection options. It consists of 31 strings in total, of which 15 are classified as “must have” while the others as “nice to have”.

Several strings specific to the domain financing and business model strategies were introduced to provide a comprehensive overview of the solutions and foster their implementation:

- **Type of strategy/model:** String soliciting the selection between 1) economic & financial strategy/model and 2) business strategy/model.
- **Category of business strategy/model:** String soliciting the selection among five categories of business strategies, identified based on a systematic review of existing literature and databases from prior projects (see the following section). The selection options include income diversification, social entrepreneurship, collaborative business strategy, climate-smart business strategy, and territorial branding.
- **Category of economic & financial strategy/model:** String soliciting the selection among seven categories of economic & financial strategies, identified based on a systematic review of existing literature and databases from prior projects (see the following section). The selection options include grants, economic policy instruments, PPP, hybrid funding, crowdfunding and community financing, impact funding, and risk management.
- **Impact and returns:** It is a concise overview of socio-cultural, economic, and environmental impacts, values, and return on investment (ROI), including but not limited to the enhancement of local identity, fostering social unity, bolstering resilience, fostering collaborative regional efforts, and generating financial/market returns for investors.

- Sources of the solutions

A systematic review of existing literature and databases from prior projects is applied to collect, review, and systematize the existing strategies on resilience financing, and make them available in the meta-repository. The review followed the PRISMA approach shown in Figure 7.

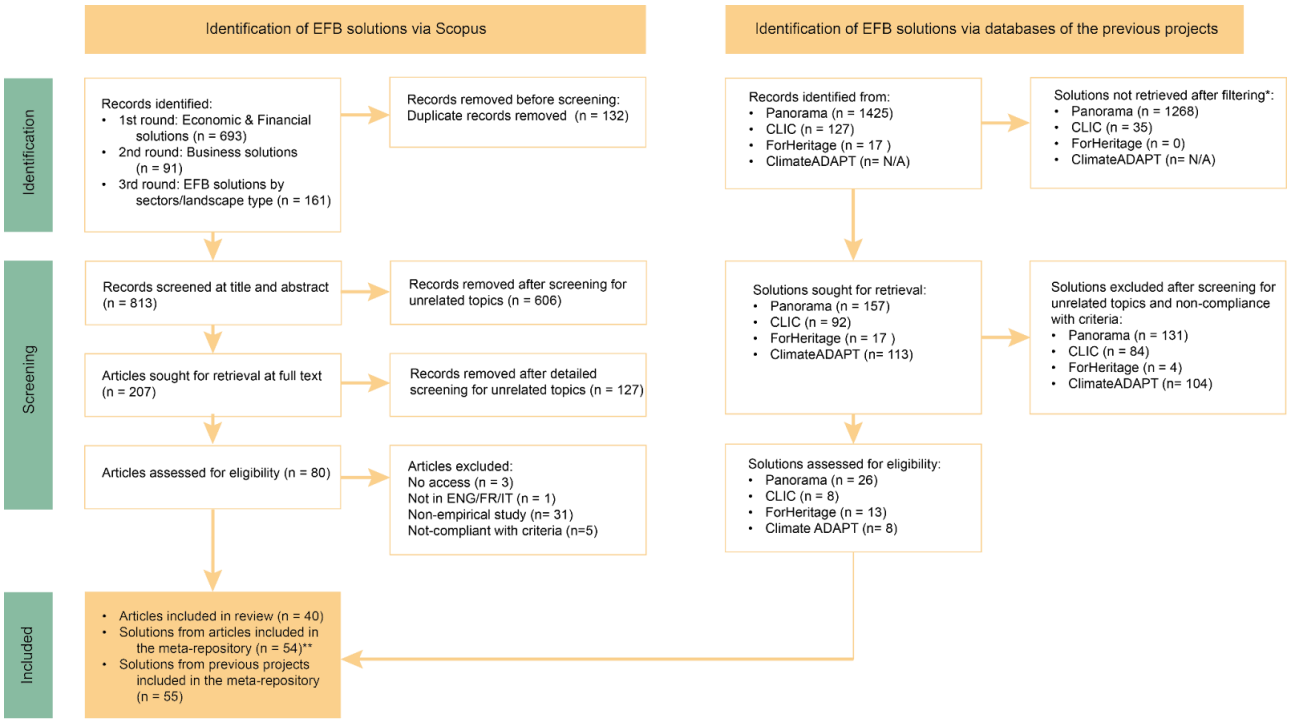


Figure 7. Diagram of systematic literature review and database screening.

** Screening criteria used: innovative, sustainable, hazard-oriented, replicable.*

*** Some articles included two or more solutions*

In the first phase, three-round literature searches were conducted on Scopus[25] to identify relevant peer-reviewed papers with a focus on economic and financial strategies; business strategies; sector-specific EFB solutions. Overall, 40 articles published between 2015 and 2024 were selected and analyzed, and 55 EFB solutions were identified from these. The literature was first identified through keyword search.

After removing duplicate records, they were screened by the title and abstract, and if relevant to the topic of EFB strategies, they were screened at the level of the full text. For full text screening, the following exclusion criteria were used: articles that were mere literature review articles or theoretical in nature, articles that were not reporting empirical cases, articles without a clear reference to cultural heritage or landscape nor to one or more of the screening criteria:

- **Innovative:** Solutions going beyond the mainstream finance mechanisms and profit generation, embracing a broader array of value propositions (as conceptualized in Section 2) (Finpiemonte, 2021; Pickerill, 2021).

[25] https://www.scopus.com/

- **Sustainable:** Solution that aligns with circular economy and sustainability principles (SDGs).

- **Hazard-oriented:** Solutions useful in addressing the challenges and hazards inherent to CLs, as addressed by the RescueME project. This includes natural hazards (e.g., floods, soil erosion) and stressors such as over-tourism, legal complexities (e.g., land property issues), socio-economic factors (e.g., population decline and agricultural production decrease), and governance issues, such as conflicting interests and disputes (Gandini et al., 2023).
    - **Replicable:** Solution and its impact can be replicable to the case of Cultural Landscapes and/or scalable. For example, economic instruments that have been developed to stimulate environmental conservation and financing nature-based solutions (European Environment Agency, 2021).

In the second phase, screening EFB solutions from past projects, including databases and project deliverables was conducted. Specifically, four past projects and databases providing EFB solutions were considered, including: CLIC project, ForHeritage, Climate Adapt, and Panorama[26]. Given that databases have different thematic focus and structure, the available solutions were first filtered (Table 6).

PROJECT SOURCE/DATABASE	Panorama database	CLIC project	ForHeritage	Climate ADAPT
TOTAL SOLUTIONS	1425	127	17	N/A
FILTERS USED	Regions: All Theme: Financing Type: Full solutions	Funding: Private Foundation, Private Donations, Owners'	No filters were used (a deliverable of the	Type of item: Case study Adaptation sectors: all (except

[26] https://panorama.solutions/en

		investment, Managers investment, Crowdfunding campaign, Other	project was considered)	Health, Energy, Transport)
RESULTS AFTER FILTERING	157	92	17	113

Table 6: Filters used in screening the databases

As in the case of literature review, the remaining solutions were screened based on relevance and compliance with the above-presented criteria. Indeed, the detailed screening of the solutions showed that not all solutions with the theme of financing focus on EFB strategies. Overall, 55 solutions from previous projects were analyzed.

- Solutions from financing and business model strategies domain included in the meta repository

In total, 109 EFB solutions were registered in the dedicated meta-repository template. Figure 8 shows their geographical distribution.

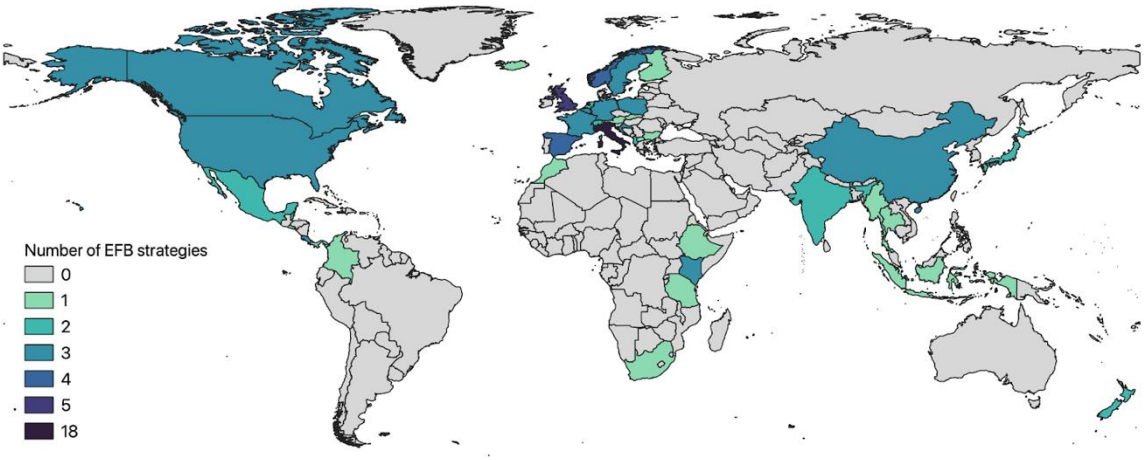


Figure 8: Geographical distribution of EFB solutions.

They spread across 44 countries and 6 continents. The identified EFB solutions are mainly located in Europe (65%), North America (15%) and Asia (9%). Italy is the country with the

highest number of cases (25%), followed by the UK (5%), France, Norway, Poland and Spain (4% each).
109 EFB solutions were grouped into 12 broader categories (EFB strategies), including 7 categories for financial and economic solutions, and 5 categories for business strategies. The figure below shows the share of each category (Figure 9).

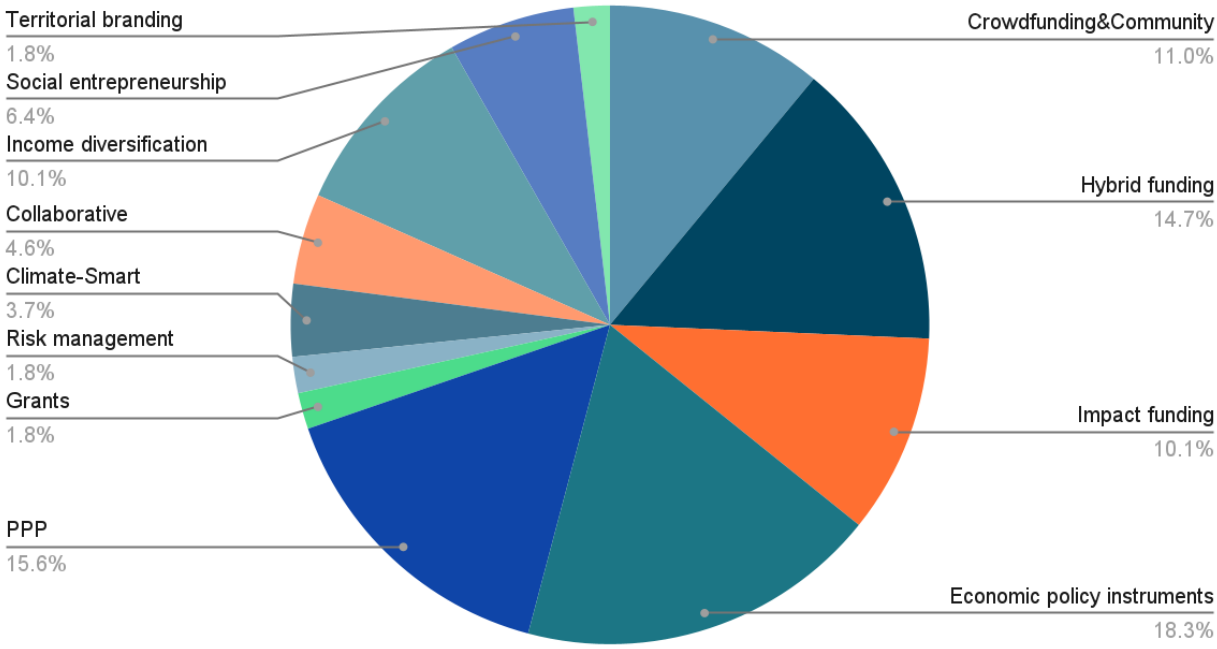


Figure 9. The share of EFB strategies.

Table 7 provides the synthetic overview of the categories, including a short description, sectors, spatial scale of implementation, key benefits, enabling and limiting factors, and selected examples.

EFB STRATEGY	CHARACTERISTICS	EXAMPLES OF SOLUTIONS FROM THIS CATEGORY INCLUDED IN THE META-REPOSITORY (ID AND TITLE)
Economic policy instruments	Based on economic instruments, including both incentives (e.g., subsidies) and disincentives (e.g.,	ID: FBS_36 - Eco-Taxes in Balearic Islands (ES)

	taxes) provided by the public or private sector to encourage specific behaviours or support activities related to the protection of cultural heritage and landscapes	
Grants	Based on non-repayable funds provided by public or private bodies to support specific projects, activities, or objectives, contingent on certain conditions and reporting procedures.	ID: FBS_98 - Lottery Environment and Heritage Committee (NZL)
Public-private partnerships	Based on long-term agreement between two or more public and private bodies for the purpose of providing public assets and services	ID: FBS_82 - Sponge City community in Changsha (CH)
Hybrid funding	Based on a mix of financial instruments, such as grants, loans (debt), guarantees, equity and quasi equity.	ID: FBS_85 - Innovative Financing Mechanism for Preserving Traditional Housing in Machiya (JP)
Crowdfunding and community financing	Focused on soliciting small contributions from multiple people, including	ID: FBS_02 - “Adopt a terrace” in Brenta River Valley (IT)
Impact funding	Focused on generating social and environmental impact alongside a financial return	ID: cliad_22 - Climate bond financing adaptation actions in Paris (FR)

Risk management	Focused on identifying, assessing, and mitigating potential threats to cultural heritage and landscapes, which involves the transfer of risks between two or more parties	ID: FBS_47 - Adjusted Gross Revenue insurance for Villa Adriana and Villa D'Este (IT)
Income diversification	Strategy where production resources are partly transferred from the original/main activity towards a set of new activities	ID: FBS_83 - Community-based eco-tourism in Northern Cape (SA)
Social entrepreneurship	Strategy where organisations or ventures pursue both economic goals and social and environmental objectives	ID: FBS_31 - Social enterprise Doh Eain (MM)
Collaborative business strategy	Based on an institutionalised form of cooperation	ID: FBS_58 - Agricultural cooperative in Lanzo Valleys in the Piedmont Region (IT)
Climate-smart strategies	Focused on climate-smart value creation, encompassing agricultural productivity, resilience of farms and farmers, as well as climate change mitigation.	ID: FBS_70 - Winmarleigh carbon farm (UK)
Territorial branding	Based on set of symbols, cultures, and identities transformed into distinctive	ID: FBS_49 - Entrepreneurial strategy based on the promotion of a traditional

	brands, in a planned or organic manner	cultural landscape (Fattoria di Lamole) (IT)

Table 7: Overview of the EFB strategies.

Understanding the benefits associated with the EFB strategies is crucial in guiding the decision-making within the stakeholders interested in the protection of Cultural Landscapes. Therefore, factsheets with a concise description of each EFB strategy were elaborated, including key benefits and key governance, policy, and market enablers. These factsheets can be instrumental in guiding decisions of partners representing the R-Labscapes) (the factsheets are available in Annex 6.4).

3.3.5 Creative industries strategies

- Description of the domain

Creative sectors and industries strategies domain includes practices, actions, and initiatives addressing one or more dimensions of resilience which integrates arts, culture and creativity in their design, development, and implementation.

- Strings adopted to describe the solutions

The template for collecting adapting governance tools is available in Annex 6.1, where a glossary is also provided to the compilers to explain without ambiguity the data format, description and selection options. It consists of 31 strings in total, of which 15 are classified as “must have” while the others as “nice to have”.

Several strings specific to the cultural and creative sectors were introduced to provide a comprehensive overview of the strategies and promote their implementation:

- **Creative assets:** information related to unique creative assets utilized within the strategy, such as artworks, cultural performances, or creative content.
- **Creative process insights:** includes information on the creative process and methodologies employed in developing the strategy.
- **Artistic expression:** it emphasizes the role of artistic expression within the strategy, highlighting how creativity contributes to resilience.

- Sources of the solutions

The process of gathering strategies from the cultural and creative sectors and industries involved several key phases, starting premises, criteria for evaluation, and focused areas of interest. The aim was to compile comprehensive strategies that integrate arts, culture, and creativity to enhance resilience.

The initial phase centered around understanding the roles and contributions of cultural agents. These agents encompass both tangible and intangible heritage, spanning industrial and other cultural and creative sectors. The emphasis was on viewing cultural agents not merely as productive entities but as dynamic builders of identity through creative, relational, and cultural change processes. This approach highlighted the importance of 'soft technologies'—innovative, collaborative, and creative strategies crucial for preserving cultural landscapes and heritage.

The development was structured into three distinct stages:

- **First stage:** This stage involved extensive research and compilation of strategies from cultural industries, with a particular focus on mechanisms to support territorial resilience.
- **Second stage:** The focus shifted to territories with high cultural heritage density. Strategies were tailored to address the unique challenges and opportunities in these areas.
- **Third stage:** The final stage concentrated on cultural landscapes affected by climate change. Strategies here aimed to bolster the resilience of these areas through cultural and creative interventions.

The following criteria served as points of departure for the search for strategies:

- **Collaborative elements:** The extent of collaboration within the strategy, including the involvement of partners, creative processes, and the role of stakeholders in achieving resilience.
- **Impact on local culture:** How the strategy impacts and enriches local culture, integrating it into the community's fabric.
- **Storytelling:** The narratives and storytelling elements that enhance the strategy's effectiveness, particularly in a cultural context.
- **Community engagement:** How the strategy engages with the local community or audience, fostering a sense of participation and ownership.
- **Cultural diversity:** The promotion of cultural diversity and inclusivity within the strategy.

The strategies were collected focusing on the following key areas:

- **Creative sector-driven innovation:** Emphasizing interdisciplinary collaborations between artists, architects, designers, and environmental experts.
- **Cultural heritage preservation:** Concentrating on methods and conservation techniques to safeguard historic buildings, artifacts, and intangible cultural heritage. Digital heritage tools, such as 3D modeling and virtual tours.
- **Community involvement and empowerment:** Highlighting community-led initiatives that empower residents to participate actively in cultural landscape preservation. This involvement was fostered through cultural events, festivals, and exhibitions, driven by local artists and performers.
- **Education and awareness:** Integrating cultural and environmental knowledge into educational programs to foster a deeper understanding of the interconnectedness of

heritage and the environment. Narrative preservation through storytelling, documentaries, and oral history projects was a key component.

- **Sustainable tourism:** Developing responsible tourism practices that promote sustainability and regenerative tourism, encouraging responsible visitor behavior and fostering cultural appreciation.
- **Collaborative governance and decision making:** Ensuring community participation in decision-making processes and fostering multi-stakeholder partnerships involving local governments, cultural organizations, creative industries, and environmental agencies.
- **Capacity building and skills development:** Providing training programs and workshops to equip local artists, artisans, and creative professionals with the skills needed to contribute to resilience efforts.

The following sources has been used primarily to collect the solutions to be included in the meta-repository:

- Panorama Solutions: https://panorama.solutions/en
- Good Practices Agenda 21 Culture: https://obs.agenda21culture.net/en/home-grid
- Julie's Bicycle: https://juliesbicycle.com/
- Creative Carbon Scotland: https://cultureforclimate.scot/
- Our Place Scotland: https://www.ourplace.scot/
- California State Parks: https://www.parks.ca.gov/
- Georgetown World Heritage Inc.: https://gtwhi.com.my/
- Strategies from cultural and creative sectors and industries included in the meta repository

The systematic review of literature and databases has been completed, identifying 83 strategies from 60 countries and compiling them in the meta repository.

The geographical distribution of the creative industries strategies (CIS) is shown in Figure 10 and reported as follows:

- North America: 10.53%
- South America: 8.77%
- Europe: 28.07%
- Asia: 21.05%
- Africa: 19.30%
- Oceania: 12.28%

In Table 8 some examples of solutions are reported.

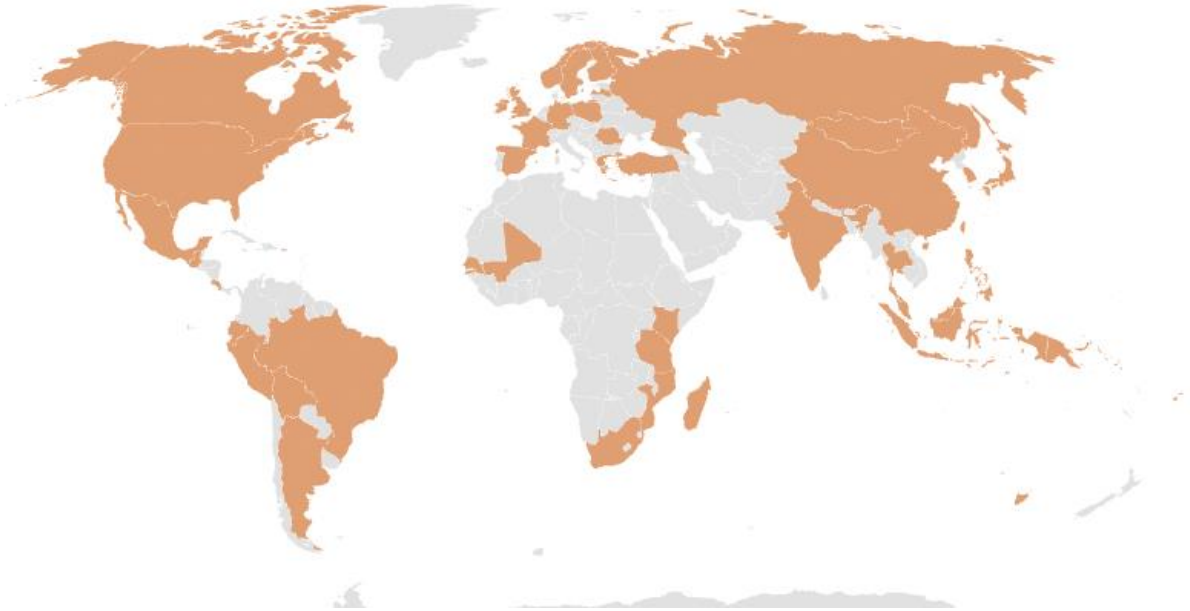


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Figure 10: Geographical distribution of the creative industries strategies.

CREATIVE INDUSTRIES STRATEGIES	ID AND TITLE	DESCRIPTION
Sustainable tourism	CIS_55: Advocating eco-tourism through art photography	TEG's project enhances eco-tourism and agribusiness opportunities for youth near nature reserves, addressing challenges like unemployment and natural degradation. It involves local communities, especially around Uluguru Mountains, in eco-tourism through their culture and traditions and improves their livelihoods by connecting them to markets, providing capacity building, and using art

		photography to document and promote conservation and cultural heritage.
Creative sector-driven innovation	CIS_05: Communicating climate crisis lab	Oxford Contemporary Music, in collaboration with 101 Outdoor Arts, initiated the Communicating Climate Crisis Lab to address the climate crisis through music and sound-based live events. The program aimed to commission works focusing on climate issues, develop artists' practice in this area, and encourage impactful climate-related creative work. Through cross-sector skills sharing and collaboration with experts in climate communications and activism, the lab facilitated critical conversations, community building among artists, and widened networks for commissioning future projects.
Community involvement and empowerment	CIS_07: Boosting up culture as a key for resilience and development	Izmir's project underlines culture's role in city resilience and development. Implementing a "circular culture" strategy, the city supports cultural production and access to ensure economic, social, and environmental

		sustainability. Successes include digital cultural events and bolstering solidarity, sustaining cultural vitality amid crisis.
Collaborative governance and decision making	CIS_46: Cultural Collaboration on Climate	The project aims to mobilize climate action within the cultural sector and beyond. It involves 50 arts and cultural organizations across Manchester and Greater Manchester, working collectively to understand and address climate change impacts. Through initiatives like green procurement, carbon literacy training, and engagement programs, the project fosters collaboration and climate action.
Capacity building and skills development	CIS_15: Creative Approaches to Flood Awareness: The Burnie Journey	The project involved a creative engagement initiative in Aberdeen commissioned by the Scottish Environment Protection Agency (SEPA) to raise levels of flood awareness and preparedness in flood risk communities. The project utilized art and music as a medium for conveying messages about flood warnings and risks to build

		resilient communities. Musician Simon Gall led the design and delivery of creative workshops with local community groups, including Fernielea Primary School's P6 class. The project aimed to engage with hard-to-reach groups and promote flood risk awareness in an innovative way.
Cultural heritage preservation	CIS_01: Mysia Ways Nature, History, and Culture Routes	The Mysia Ways project aims to promote cultural and nature-based tourism in rural areas surrounding the urbanized district of Nilüfer in Bursa, Turkey. It involves the establishment of approximately 300 kilometers of trekking, cycling, and horse-riding routes, aimed at showcasing the region's abundant natural wealth and historical significance. Through cooperation with rural settlements, civil society organizations, and women's associations, the project encourages local participation in cultural activities, promotes the preservation of cultural heritage, and provides economic opportunities for

		rural communities through tourism.
Education and awareness	CIS_75: Beach of Dreams	Beach of Dreams was a 500-mile journey along the UK's East Coast engaging communities, scientists, and artists in environmental exploration. Through collaboration, the project sought to creatively reimagine the future, resulting in 500 silk pennants representing local connections and aspirations. It fostered online and in-person community engagement, sustainable practices in art materials, and digital storytelling via a story map.

Table 8: Typology, ID, title and short description of some examples of the creative industries strategies collected in the meta-repository.

3.4 Collection of solutions

To summarise and complete the description started in the previous sections, the collection of solutions has followed three different directions:

- Collection done by technical partners from sources and projects outside RescueME (described in section 3.4);
- Collection done by R-Labs of solutions developed in their territory in the past (described in section 3.5.1);
- Collection done by technical partners from RURITAGE, SHELTER and ARCH through automatization process (described in section 3.5.2).

3.4.1 Collection of solutions from R-Labscapes

The collaboration of R-Labs was crucial in collecting 69 solutions already implemented in their cultural landscape that have been included in the meta-repository to greatly increase the knowledge and valuable experience that future users will find in the IDSS. This collection followed two stages of collection with bilateral meetings with UNIBO and the project partners responsible for solution domains to work together for the most informed collection process. Table 9 shows the R-Labs solutions, their titles and domains.

NO.	TITLE	TYPOLOGY/ DOMAIN	ID AND LOCATION
1	Restauration of safety tower	Heritage based solution	HAM_01 Neuwerk
2	Regular Dyke inspections	Heritage based solution	HAM_02 Neuwerk
3	Dyke target altitude restoration	Heritage based solution	HAM_03 Neuwerk
4	Renaturation and natural flood protection Eastern foreland	Nature based solution	HAM_04 Neuwerk
5	Green roof strategy Hamburg	Adaptive governance tool	HAM_05 Hamburg
6	Green facades guide	Adaptive governance tool	HAM_06 Hamburg
7	Climate information system	Adaptive governance tool	HAM_07 Hamburg
8	Urban trees in a changing climate: Climate impact monitoring and adaptation strategy for trees	Adaptive governance tool	HAM_08 Hamburg

9	Intense rainfall hazard map	Adaptive governance tool	HAM_09 Hamburg
10	CulturalPearls	Adaptive governance tool	HAM_10 Baltic Sea Region
11	MURIEL Multifunctional retention areas - from idea to realization	Adaptive governance tool	HAM_11 Germany
12	Flooding passport	Adaptive governance tool	HAM_12 Germany
13	Exhibition stay.strong.resilient	Creative industries strategy	HAM_13 Hamburg
14	Themed tour on the topic of "Climate change on the Lower Weser"	Creative industries strategy	HAM_14 Butjadingen
15	Green facades funding programme	Financing and business model strategy	HAM_15 Hamburg
16	We plant drinking water	Nature based solution	HAM_16 Germany
17	Climate adaptation in hydraulic engineering practice - educational program for engineers	Lesson Learnt	HAM_17
18	Preventive climate impact adaptation with Hamburg's skilled trades sector	Lesson Learnt	HAM_18

19	RegenInfraStrukturAnpassung (RISA) - Rain infrastructure adaptation	Policy Recommendation	HAM_19
20	Annual Flooding prevention measures	Nature based solution	IDEON_01 Region of Rethymno
21	Adriseismic Moodle platform	Adaptive governance tool	IDEON_02 Heraklion
22	Adriseismic Regional Action Plan	Heritage based solution	IDEON_03 Psiloritis
23	Psiloritis Enhancement plan	Adaptive governance tool	IDEON_04 Psiloritis
24	Sensor and crowdsourcing techniques for early detection problems in CH	Adaptive governance tool	IDEON_05 Rethimno
25	Program - I SAVE - I AM INDEPENDENT	Financing and business model strategy	IDEON_06 Greece
26	Olive cultivation with a look at climate change	Policy recommendation	IDEON_07
27	Moisture management and rainwater harvesting in olive groves by CRETANTHOS OLIVE PARK & MUSEUM - TOURS & OLIVE OIL TASTING	Nature based solution	IDEON_08 Aggeliana, Crete

28	Olive grove moisture management by olive producer	Nature based solution	IDEON_09 Aggeliana, Crete
29	Waste and energy management by olive producer	Nature based solution	IDEON_10 Aggeliana, Crete
30	Indigenous vine varieties, surface tillage and proper timing in pruning by winery	Nature based solution	IDEON_11 Patsos, Crete
31	Daily practices towards the green direction by winery	Nature based solution	IDEON_12 Patsos, Crete
32	Regional Plan for Adaptation to Climate Change "PeSPKA"	Adaptive governance tool	IDEON_13 Herakleion, Rethymno, Lasithi, Chania
33	Act: "Accessible Nature and Culture - Sustainable Tourism", with acronym: “In-Heritage” under the INTERREG V-A Cooperation Programme "Greece - Cyprus 2014-2020"	Heritage based solution	IDEON_14 Rethymno, Crete and Agia Napa and Sotiras, Cyprus
34	Establishment of Transnational Civil Protection EARLY WARNING System to improve the resilience of Adrion territories to natural and man-made risks	Adaptive governance tool	IDEON_15 Rethymno

35	Circular economy practices by Ecotourism Village	Nature based solution	IDEON_16 Axos Rethymno
36	Inventory, Mapping and characterization of areas suitable for use as Climate Shelters in the Valencia municipal area	Nature based solution	LNV_01 Valencia
37	Development of an adaptation pathway focused on extreme heat in the city of València	Heritage based solution	LNV_02 Valencia
38	Testing of the resilience to Climate Change of the GIAHS of the Historical Irrigation System of l'Horta of Valencia	Heritage based solution	LNV_03 Valencia
39	Vertical Ecosystem (Green Wall) with water reuse system in a public school	Nature based solution	LNV_04 Benicalap, Spain
40	Sustainable forest	Nature based solution	LNV_05 Benicalap, Spain
41	Green roof	Nature based solution	LNV_06 Benicalap, Spain
42	Green-Blue Corridor - Naturalization and SUDs in Foc Street and Regino Mas Square	Nature based solution	LNV_07 Benicalap, Spain

43	Green space Benicalap / Community Garden and Social space	Nature based solution	LNV_08 Benicalap, Spain
44	Repository of adaptation measures at the municipal level in the Valencian Community	Nature based solution	LNV_09 Valencia
45	Coastal adaptation viewer	Adaptive governance tool	LNV_10 Valencia
46	Cartographic viewer	Adaptive governance tool	LNV_11 Valencia
47	Horta-Cuina	Financing and business model strategy	LNV_12 Valencia
48	Vorasenda - Alter de Vorasenda Space	Financing and business model strategy	LNV_13 Carpesa, Spain
49	Creation of local working group in Food and Climate Change in the city of Valencia, within the Local Food Council	Adaptive governance tool	LNV_14 Valencia
50	Miradors de l'Horta - ephemeral art festival whose theme is about sustainable development, food sovereignty and the relationship between agricultural and urban territories	Creative industries strategy	LNV_15 Valencia

51	Observatori Ciutadà de l'Horta	Adaptive governance tool	LNV_16 Spain
52	Wetlands4Climate	Nature based solution	LNV_17 Spain
53	Canari (Climate ANalysis for Agriculture Recommendations and Impacts)	Nature based solution	LNV_18 Spain
54	Guidelines for integrating the climatic perspective in SME	Adaptive governance tool	LNV_20 Valencia
55	Policy Support Facility of the Covenant of Mayors Europe. Technical assistance to help in the implementation of adaptation measures	Adaptive governance tool	LNV_21 Valencia
56	Consolidated diagnosis of vulnerability and risk facing climate change in the municipality of Valencia	Adaptive governance tool	LNV_22 Valencia
57	Stonewalls4life	Heritage based solution	PV5T_01
58	Webinar "Managing a Crisis Table in times of a pandemic"	Adaptive governance tool	PV5T_02
59	Climate Change Adaptation Plan of the Cinque Terre National Park	Adaptive governance tool	PV5T_03
60	Training course 'UNESCO site and its value'	Heritage based solution	PV5T_04

61	Heritage Impact Assessment on the Palmaria island masterplan	Heritage based solution	PV5T_05
62	Tourism Carrying Capacity	Adaptive governance tool	PV5T_06
63	Disaster Risk Management Plan	Adaptive governance tool	PV5T_07
64	Performance of permeable surfaces	Heritage based solution	ZADAR_01
65	Expansion and improvement of the system storm drains with application of natural solutions	Nature based solution	ZADAR_02 Park Vruljica
66	Greening - planting trees	Nature based solution	ZADAR_03
67	Development and implementation of an intelligent traffic system and road reconstruction with prioritization of public transport vehicles and a bicycle path in the city of Zadar	Adaptive governance tool	ZADAR_04
68	Strategy of green urban renewal of the City of Zadar	Adaptive governance tool	ZADAR_05
69	Living streets, Zadar	Adaptive governance tool	ZADAR_06

Table 9: List of solutions collected from the R-Labscapes.

3.4.2 Automatization of the collection of solutions from RURITAGE, SHELTER, ARCH

- **Implementation of scripts for the automatic collection of solutions from RURITAGE, SHELTER and ARCH**

To facilitate the extraction of solutions from the three main projects ARCH, SHELTER, RURITAGE, SISTEMA has implemented six Python scripts[27] (one per solution type per existing database) which automatically fetches the needed information according to the look-up table designed by UNIBO (see Annex 6.2).

SISTEMA created Python scripts implemented in Jupyter Notebooks (JN) with the exploitation of different libraries (re, pandas, numpy, csv; see Table 10).

Following the list of implemented Jupyter Notebooks:

- LL_ARCH.ipynb, which automatically extracts Lessons Learnt (LL) solutions from the ARCH database.
- PR_ARCH.ipynb, which automatically extracts Policy Recommendation (PR) solutions from the ARCH database.
- LL_RURITAGE.ipynb, which automatically extracts Lessons Learnt (LL) solutions from the RURITAGE database.
- PBS_RURITAGE.ipynb, which automatically extracts Place based Solutions (PBS) solutions from the RURITAGE database.
- LL_SHELTER.ipynb, which automatically extracts Lessons Learnt (LL) solutions from the SHELTER database.
- PR_SHELTER.ipynb, which automatically extracts Policy Recommendation (PR) solutions from the SHELTER database.

Figure 11 shows the different steps of the workflow that was designed to automatize the solutions' extraction:

[27] Scripts will be published on Zenodo or similar repositories as publicly available dataset once the Deliverable will be accepted by the European Commission. By then, this footnote will be replaced with the DOI of the datasets.

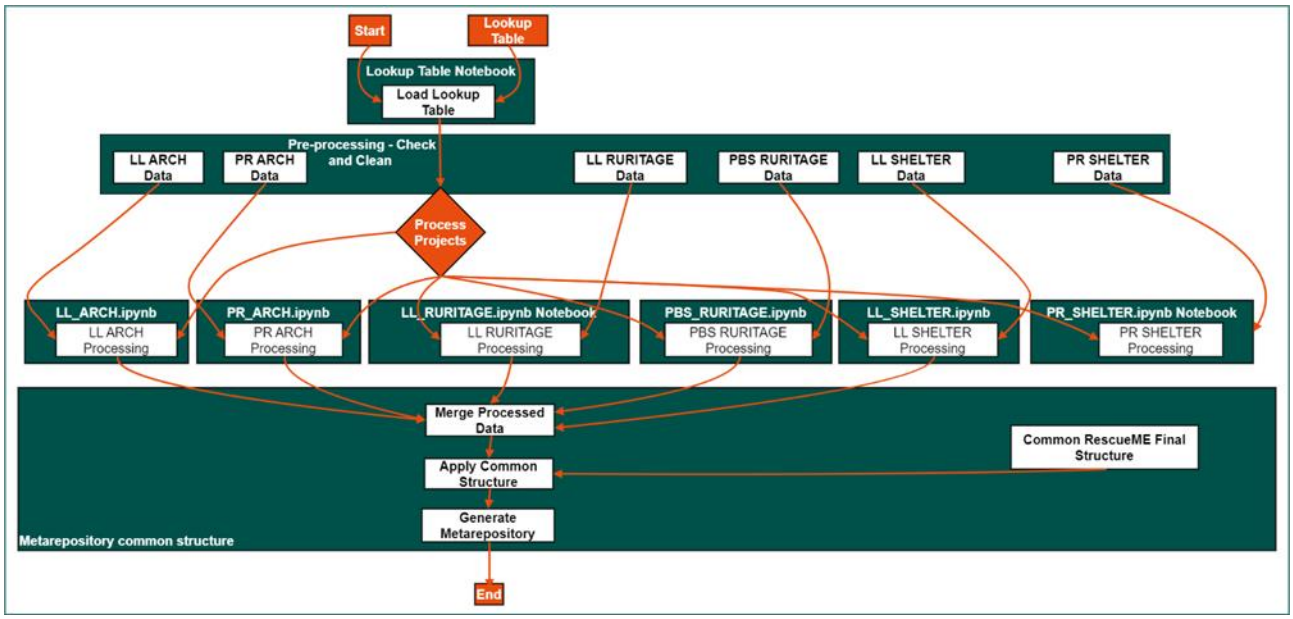

Figure 11: Workflow of the automatization of the collection of solutions from RURITAGE, SHELTER and ARCH.

Following a detailed description of the workflow, broken down by phases:

- **Look-up table loading:** The look-up table is used to define the mapping between solution types and relevant fields in the database. This is a critical component for ensuring consistency across datasets as it maps key identifiers to a standard format. It is used in the pre-processing stage to align data fields, resolve discrepancies, and ensure uniformity before further analysis.
- **Pre-processing - Check and Clean:** Raw data from the different input databases undergo preliminary checks and cleaning. This phase ensures data quality and consistency before processing. Invalid or missing values are replaced with numpy.nan or custom placeholders. Rows with insufficient data are dropped to ensure only complete entries are retained. Redundant keys or columns are removed to streamline the data.
- **Process Projects:** this is the central phase where data is processed individually for each project (ARCH, RURITAGE, SHELTER) and for each type of solution (LL and PR/PBS). Parsing the look-up table: the scripts iterate over rows in the look-up table to build a dictionary, which maps the solution type (key) to its corresponding database columns (values). If multiple columns are specified, the values are split into a list for easier processing. Special handling ensures that even complex mappings, such as those for 'Various' fields, are stored correctly for dynamic mapping. Using the dictionary created from the look-up table, the scripts dynamically match solution types to the corresponding fields in the database. Only the fields tagged in the look-up table as “TO BE COMPILED BY US” have been excluded by the data extraction process as the related information has been manually inserted by UNIBO.

- **Merge Processed Data:** Extracted data is stored in a new DataFrame, where columns are dynamically rearranged to match the required order, prioritizing key fields and rows are grouped and aggregated (e.g., concatenating data for similar identifiers) to ensure data consistency. The individually processed data is thus merged into a single structure according to the schema provided by UNIBO.
- **Generate meta-repository:** The cleaned and structured data is saved as an Excel file in the output directory, named appropriately for each project / solution type.

To correctly run the scripts for the solutions extraction, it is recommended to organize the Jupyter Lab environment through the different folders:

- **Main folder:** where to store all the python scripts
- **Input folder:** where to store all the necessary input files
- **Output folder:** where to store all the output files generated by the scripts (i.e.: one file per solution types per project in excel format) (see Table 10).

Table 10 and Table 11 illustrates the different libraries and input files which are necessary for the correct run of the above-listed scripts.

LIBRARY	LL_ARCH	PR_ARCH	LL_RURITAGE	PBS_RURITAGE	LL_SHELTER	PR_SHELTER
re	x	x	x	x	x	x
numpy	x	x	x	x	x	x
pandas	x	x	x	x	x	x
itables				x	x	x
os					x	x

Table 10: Libraries to be imported to correctly run the RescueME Jupyter Notebooks for the automatic extraction of solutions from existing databases (ARCH, SHELTER, RURITAGE).

INPUT FILE	LL_ARCH	PR_ARCH	LL_RURITAGE	PBS_RURITAGE	LL_SHELTER	PR_SHELTER

Metarepository_templates_lookup_table.xlsm	x	x	x	x	x	x
ARCH_DATABASE.xlsx	x	x				
RURITAGE_BP.xlsx			x			
RoleModels_enhancement_data.xlsx				x		
N4_Replicators_data.xlsx				x		
PORTFOLIO_of_solutions_and_strategies.xlsx					x	x

Table 11: List of input files necessary to correctly run the RescueME Jupyter Notebooks for the automatic extraction of solutions from existing databases (ARCH, SHELTER, RURITAGE).

In some cases, it has been necessary to pre-process the input files to optimize the script performances (e.g., by removing duplicates, typos...). Table 12 shows the list of output files generated by the JNs implemented by SISTEMA.
In total 687 solutions have been extracted thanks to the described methodology. For more details about the technical specifications of the meta-repository, see D3.1 – Technical Specifications and Data Mapping.

JN SCRIPT	OUTPUT FILE
LL_ARCH	ll_arch.xlsx
PR_ARCH	pr_arch.xlsx

LL_RURITAGE	ll_ruritage.xlsx
PBS_RURITAGE	pbs_ruritage.xlsx
LL_SHELTER	ll_shelter.xlsx
PR_SHELTER	pr_shelter.xlsx

Table 12: Output files generated by the RescueME Jupyter Notebooks for the automatic extraction of solutions from existing databases (ARCH, SHELTER, RURITAGE)

3.5 Validation of solutions

The purpose of this phase was to assist in the validation of the solutions collected for the meta-repository of resilience solutions. The main objectives of the validation were:

- to check the relevance of the solutions and strategies collected for cultural landscapes,
- to find possible repetition and reflect on the potential grouping of similar solutions,
- to insert data that was not yet available during the previous collection.

A validation protocol has been created and distributed between the partners in charge of the validation process (see Annex 6.3). Specifically, the partners involved in the validation are included in Tables 13 and 14.

SOLUTIONS DOMAINS	PARTNERS IN CHARGE OF THE VALIDATION	DEADLINE
Adaptive Governance tools	ULG	July 2024
Creative Industries strategies	CI	July 2024
Financing and business model strategies	CMCC	July 2024

Heritage based solutions (+ LL and PR)	UNIBO	September 2024
Nature based solutions	TEC	September 2024

Table 13: Partners in charge of the validation per solution domain and timing – phase 1.

At the end of this first step of validation of the solutions collected by the project partners and R-Labs, an initial check on the representativeness of certain strings and different domains was made on the place based solutions (642 in total at the time).

In a second phase, the validation of the collection of solutions coming from the automatization of RURITAGE, ARCH and SHELTER previously described involved the coordinators of the three projects, after a pre-selection done by UNIBO, when solutions automatically collected to be validated reduced to 566 out of 687:

SOLUTION'S SOURCE	PARTNERS IN CHARGE OF THE VALIDATION	DEADLINE
RURITAGE	UNIBO	December 2024
SHELTER	TEC	December 2024
ARCH	FhG	December 2024

Table 14: Partners in charge of the validation per reference project – phase 2.

During the validation process some solutions have been removed. The main reasons were the repetition, the low details of information collected that was considered not sufficient to properly describe the solution, or the low relevance for the cultural landscapes.
Table 15 is presenting the final number of solutions collected by typology and domain, as well as the number of solutions removed.

SOLUTION TYPOLOGY	SOLUTION DOMAIN	NO. SOLUTIONS COLLECTED	NO. SOLUTIONS AFTER VALIDATION	NO. SOLUTIONS REMOVED
Policy recommendations	-	219	**148**	71
Lesson Learnt	-	334	**274**	60
Place based solutions	Adaptive Governance tools	81	**81**	0
	Creative Industries strategies	89	**89**	0
	Financing and business model strategies	114	**114**	0
	Heritage based solutions	198	**192**	6
	Nature based solutions	137	**102**	35
	Total	1172	**1000**	172

Table 15: Overview on the total number of solutions embedded in the meta-repository by typology and domain.

After validation, the total number of solutions included in the meta-repository is 1000. The following figures further describes the main characteristics of the solutions included according to the solution domains (Figure 12), hazards (Figure 13), capitals and key elements defined by RescueME (Figure 14), territorial scale of implementation of the solution (Figure 15) and territorial coverage and continent where the solutions come from (Figure 16).

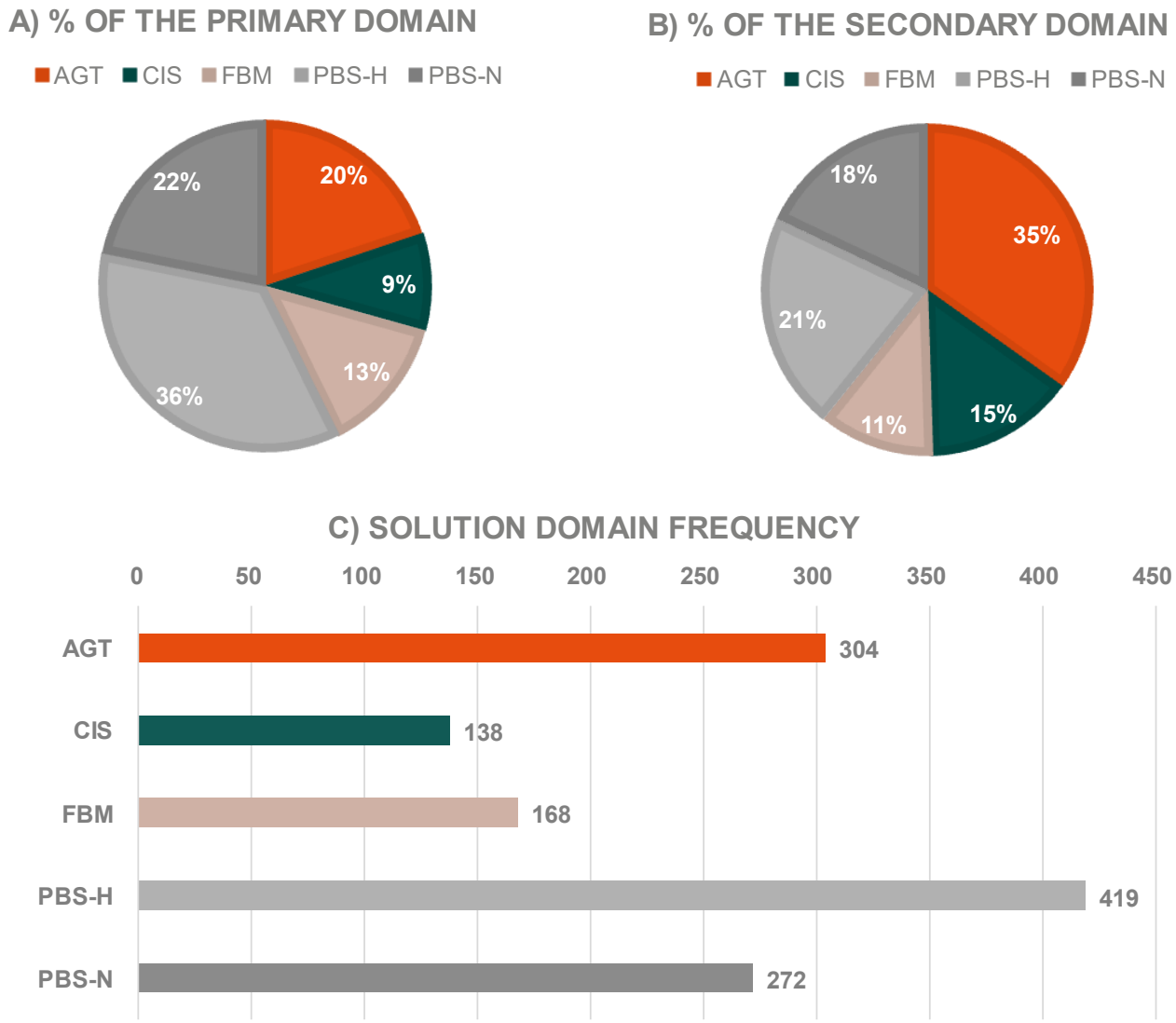

Figure 12: A) Share of solutions by primary solution domain; B) Share of solutions by secondary solution domain; C) Solution domain frequency by considering both primary and secondary domains.

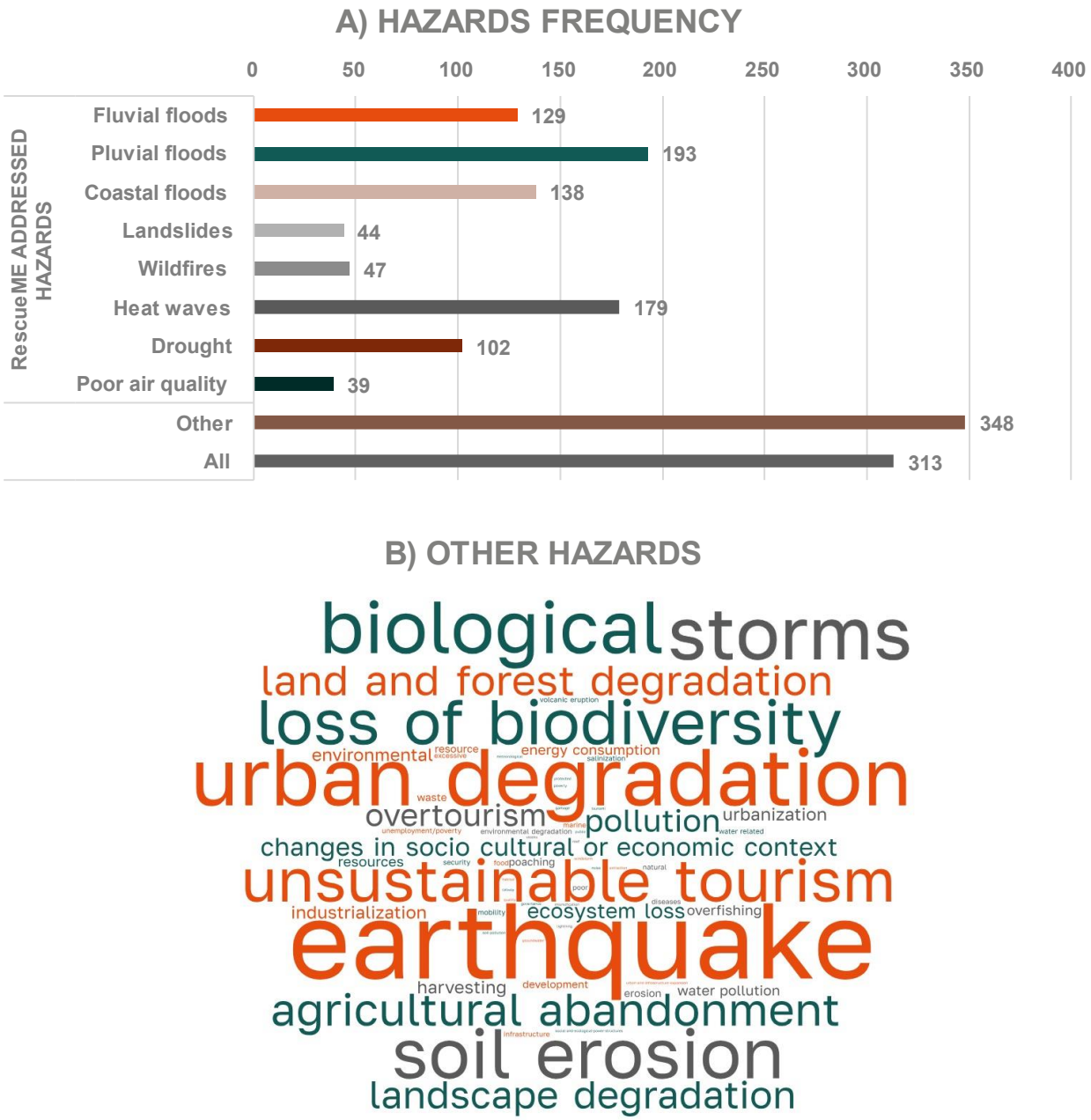

Figure 13: A) Number of solutions by RescueME hazards; B) wordcloud describing the other hazards.

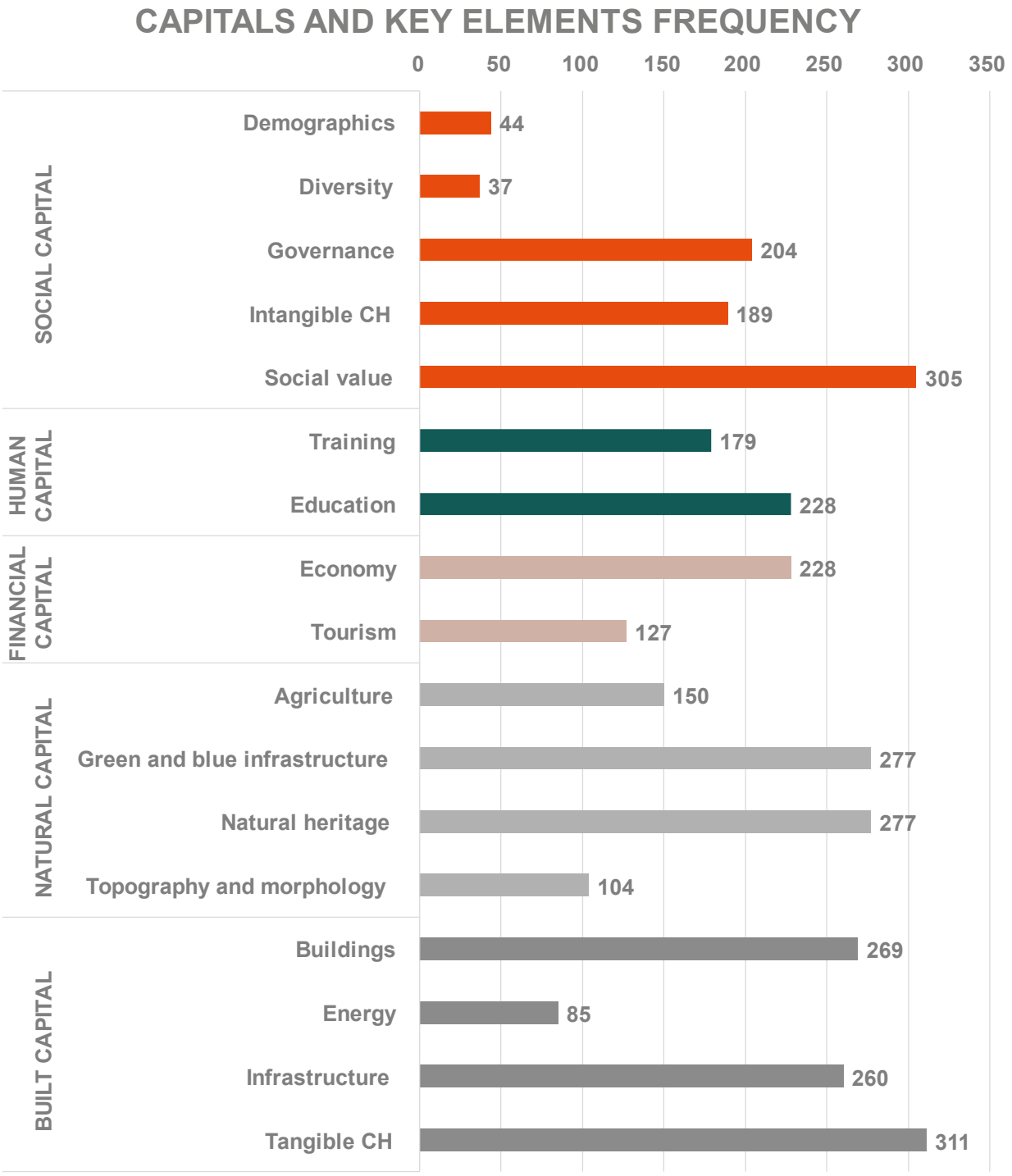

Figure 14: Solutions grouped by capitals and key elements as defined in RescueME

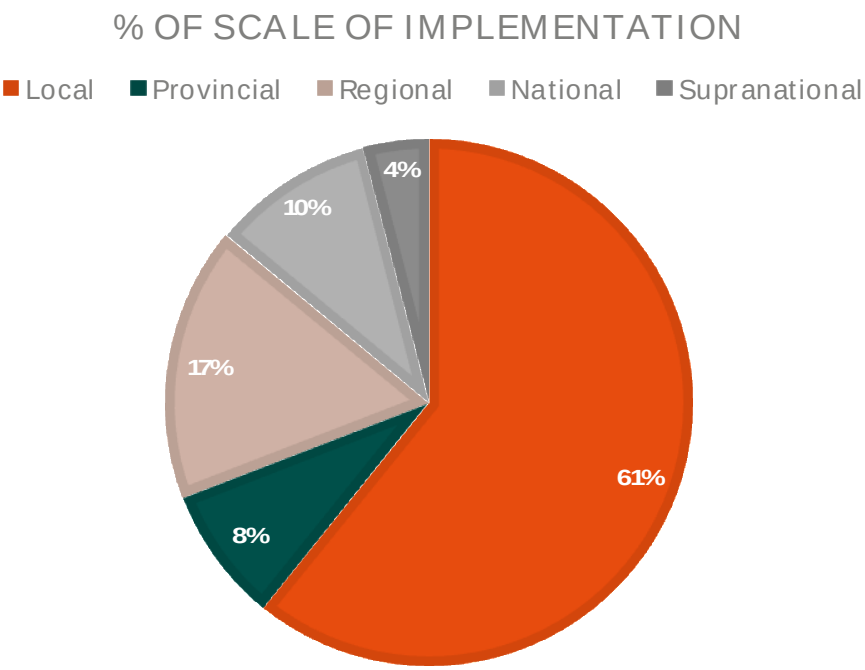

Figure 15: Share of solutions by territorial scale of implementation.

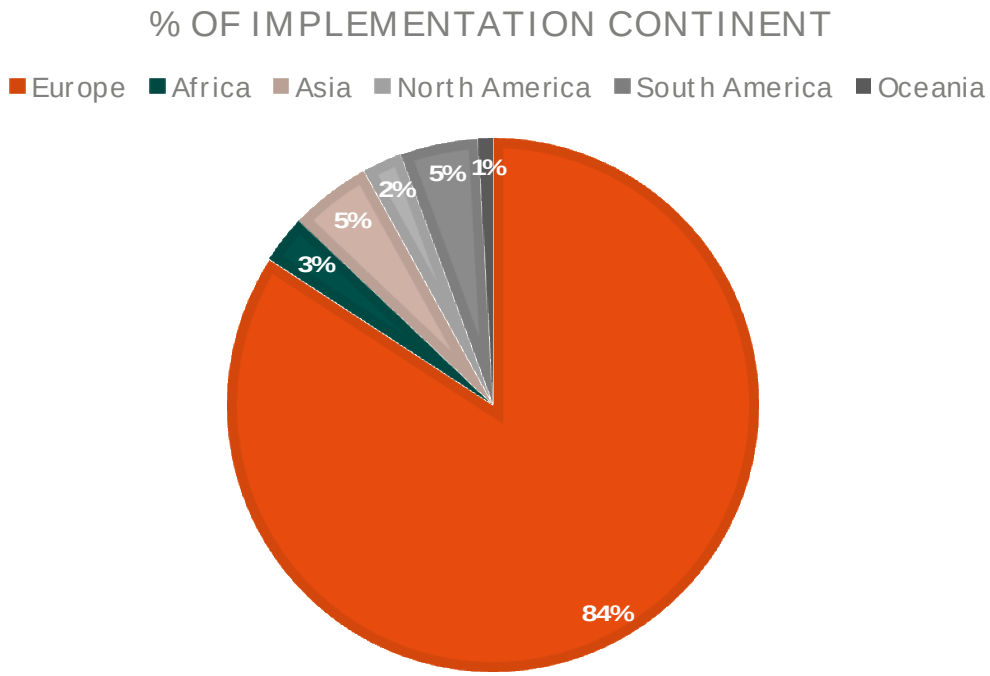

Figure 16: Share of solutions by continent.

4 Concluding remarks

The RescueME resilience meta-repository is a catalogue that collects knowledge available from both previous research projects and local practices to offer an integrated searchable data base of solutions characterized by their effectivity in improving the resilience of cultural landscapes. Solutions are clustered according to three solution typologies (i.e., policy recommendation; lesson learnt; and place based solution) and five solution domains (i.e., heritage based solutions; nature based solutions; adaptive governance tools; financing and business models strategies; and creative industries strategies).

The methodology designed and presented in this report has been grounded on literature review and the collection and analysis of catalogues adopted by previous projects in the fields of culture and resilience. Based on bibliographical research on how to build a meta-repository and the systematic research of previous project, a structure was proposed, with a number of “strings” to describe and characterize the solution information which take into account data availability. Due to the diverse range of description of the solutions coming from the other projects, another important aspect to be defined was which are the strings that represent the minimum information to be exhaustive (defined in the task as “must have”) and the strings that are not strictly necessary (defined as “nice to have”) although they add very important details.

Solutions have been collected both manually by compilers from different partners by using pre-defined templates with detailed instructions, and through the implementation of scripts for the automatic collection of solutions from some key H2020 projects for which the datasets were available (i.e., RURITAGE, SHELTER and ARCH projects).

A validation phase was foreseen to further check the solutions collected. The main objectives of the validation were: i) to check the relevance of the solutions and strategies collected for cultural landscapes; ii) to find possible repetition and reflect on the potential grouping of similar solutions; iii) to insert data that were not yet available during the previous collection. A validation protocol has been created and distributed between the partners in charge of the validation process. After validation, the total number of solutions included in the meta-repository is 1000.

Concluding, the meta-repository is a fundamental step to support cultural landscapes in defining their own path towards transformative resilience with a ready-to-use tool that facilitate the evidence-based decision making and the implementation of resilience solutions. In the framework of RescueME project, it will be further exploited in a number of project tasks and tools, especially the Incremental Spatial Decision Support System.

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6 Annexes

6.1 Solution templates and glossary

Template for policy recommendations

Data title	Data format	Description	Selection options
Title*	Text	Name of the implemented solution	-
ID*	Text	Code of the implemented solution	-
Compiler*	Text	Name of the person compiling the solution. This is a confidential information for collection phase only, to be removed before making the solutions publicly available	-
Solution domain*	Selection menu		Heritage based solution Nature based solution Adaptive governance tool Cultural industries strategy Financing and business model strategy
Description*	Text	Description of the main objective and activities of the solution (what is the solution, what issue is trying to solve, whether it is successfully implemented, how the solution impacts capitals and key elements)	-
References*	Text	Reference material such as websites, links to articles, pictures, video, etc.	-
Image*	Image formats	Picture(s) of the solution or location	-
Capitals*	Selection menu		Social capital
			Human capital

		Assets and resources connected to the capacity of communities for prospective development	Financial capital
			Natural capital
			Built capital
Key elements*	Selection menu	Component linked to the capitals aimed at enabling resilience improvements, based on coping, adaptive and transformative capacities of cultural landscapes	(SOCIAL CAPITAL): Demographics/ Diversity/ Governance/ Intangible CH/ Social value (HUMAN CAPITAL): Training/ Education (FINANCIAL CAPITAL): Economy/ Tourism (NATURAL CAPITAL): Agriculture/ Green and blue infrastructure/ Natural heritage/ Topography and morphology (BUILT CAPITAL): Buildings/ Energy/ Infrastructure/ Tangible CH
Hazard*	Selection menu	The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.	Fluvial floods Pluvial floods Coastal floods (including sea level rise) Landslides Wildfires Heat waves Drought Poor air quality All Other
Other hazard(s) and stressor(s)	Text	Other natural or human-induced physical event(s)	-
Disaster Risk Management phase	Selection menu	DRM phase for which the solution is designed	Pre-disaster During disaster Post-disaster
Scale of implementation	Selection menu	Scale and governance/territorial level involved	Local Provincial Regional National Supranational

Technological Readiness Level	Selection menu	Scale used to measure the progress or maturity level of a technology.	1) Basic principles observed 2) Solution concept formulated 3) Experimental proof of concept 4) Solution validated in research context 5) Solution validated in relevant environment 6) Solution demonstrated in relevant environment 7) Solution system prototype demonstration in operational environment 8) Solution system complete and qualified 9) Actual solution system proven in operational environment
Comments	Text	Additional comments regarding data entered	-
Source project and code	Text	Code of the implemented solution in the source project	-
Various	Text	Additional information to include in the description of the solution	-

* "must have" string

Template for lesson learnt

Data title	Data format	Description	Selection options
Title*	Text	Name of the implemented solution	-
ID*	Text	Code of the implemented solution	-
Compiler*	Text	Name of the person compiling the solution. This is a confidential information for collection phase only, to be removed before making the solutions publicly available	-
Solution domain*	Selection menu		Heritage based solution Nature based solution Adaptive governance tool

			Cultural industries strategy Financing and business model strategy
Description*	Text	Description of the main objective and activities of the solution (what is the solution, what issue is trying to solve, whether it is successfully implemented, how the solution impacts capitals and key elements)	-
References*	Text	Reference material such as websites, links to articles, pictures, video, etc.	-
Image*	Image formats	Picture(s) of the solution or location	-
Capitals*	Selection menu	Assets and resources connected to the capacity of communities for prospective development	Social capital Human capital Financial capital Natural capital Built capital
Key elements*	Selection menu	Component linked to the capitals aimed at enabling resilience improvements, based on coping, adaptive and transformative capacities of cultural landscapes	(SOCIAL CAPITAL): Demographics/ Diversity/ Governance/ Intangible CH/ Social value (HUMAN CAPITAL): Training/ Education (FINANCIAL CAPITAL): Economy/ Tourism (NATURAL CAPITAL): Agriculture/ Green and blue infrastructure/ Natural heritage/ Topography and morphology (BUILT CAPITAL): Buildings/ Energy/ Infrastructure/ Tangible CH
Hazard*	Selection menu	The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods,	Fluvial floods Pluvial floods Coastal floods (including sea level rise) Landslides Wildfires Heat waves

		service provision, and environmental resources.	Drought Poor air quality All Other
Other hazard(s) and stressor(s)	Text	Other natural or human-induced physical event(s)	-
Disaster Risk Management phase	Selection menu	DRM phase for which the solution is designed	Pre-disaster During disaster Post-disaster
Scale of implementation	Selection menu	Scale and governance/territorial level involved	Local Provincial Regional National Supranational
Technological Readiness Level	Selection menu	Scale used to measure the progress or maturity level of a technology.	1) Basic principles observed 2) Solution concept formulated 3) Experimental proof of concept 4) Solution validated in research context 5) Solution validated in relevant environment 6) Solution demonstrated in relevant environment 7) Solution system prototype demonstration in operational environment 8) Solution system complete and qualified 9) Actual solution system proven in operational environment
Comments	Text	Additional comments regarding data entered	-
Source project and code	Text	Code of the implemented solution in the source project	-
Various	Text	Additional information to include in the description of the solution	-

Implementation time	Text	Time needed to implement the solution (start time-end time)	-
Main stakeholders involved	Selection menu	Main authorities, agencies, private stakeholders and organizations involved in the implementation of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner Volunters Tourists
End users	Selection menu	Main target group(s) the solution who received the results and benefits of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority

			Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner Volunters Tourists
Funding sources/Investors	Selection menu	Indicative financing sources (i.e., private, public, public&private) and/or investor(s)	Private Public Public and private
Implementation conditions	Text	Strict requirements and factors that allowed the implementation of the solutions	-
Success and limiting factors	Text	Beneficial aspects and restriction factors that influenced the implementation of the solution (e.g., policy and market/business enablers, governance models)	-

* "must have" string

Template for heritage based solution and nature based solution

Data title	Data format	Description	Selection options
Title*	Text	Name of the implemented solution	-

ID*	Text	Code of the implemented solution	-
Compiler*	Text	Name of the person compiling the solution. This is a confidential information for collection phase only, to be removed before making the solutions publicly available	-
Solution domain*	Selection menu		Heritage based solution Nature based solution Adaptive governance tool Cultural industries strategy Financing and business model strategy
Description*	Text	Description of the main objective and activities of the solution (what is the solution, what issue is trying to solve, whether it is successfully implemented, how the solution impacts capitals and key elements)	-
References*	Text	Reference material such as websites, links to articles, pictures, video, etc.	-
Image*	Image formats	Picture(s) of the solution or location	-
Capitals*	Selection menu	Assets and resources connected to the capacity of communities for prospective development	Social capital Human capital Financial capital Natural capital Built capital
Key elements*	Selection menu	Component linked to the capitals aimed at enabling resilience improvements, based on coping, adaptive and transformative capacities of cultural landscapes	(SOCIAL CAPITAL): Demographics/ Diversity/ Governance/ Intangible CH/ Social value (HUMAN CAPITAL): Training/ Education (FINANCIAL CAPITAL): Economy/ Tourism (NATURAL CAPITAL): Agriculture/ Green and blue infrastructure/ Natural heritage/ Topography and morphology

			(BUILT CAPITAL): Buildings/ Energy/ Infrastructure/ Tangible CH
Hazard*	Selection menu	The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.	Fluvial floods Pluvial floods Coastal floods (including sea level rise) Landslides Wildfires Heat waves Drought Poor air quality All Other
Other hazard(s) and stressor(s)	Text	Other natural or human-induced physical event(s)	-
Disaster Risk Management phase	Selection menu	DRM phase for which the solution is designed	Pre-disaster During disaster Post-disaster
Scale of implementation	Selection menu	Scale and governance/territorial level involved	Local Provincial Regional National Supranational
Technological Readiness Level	Selection menu	Scale used to measure the progress or maturity level of a technology.	1) Basic principles observed 2) Solution concept formulated 3) Experimental proof of concept 4) Solution validated in research context 5) Solution validated in relevant environment 6) Solution demonstrated in relevant environment 7) Solution system prototype demonstration in operational environment 8) Solution system complete and qualified

			9) Actual solution system proven in operational environment
Comments	Text	Additional comments regarding data entered	-
Source project and code	Text	Code of the implemented solution in the source project	-
Various	Text	Additional information to include in the description of the solution	-
Implementation time	Text	Time needed to implement the solution (start time-end time)	-
Main stakeholders involved	Selection menu	Main authorities, agencies, private stakeholders and organizations involved in the implementation of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner Volunters Tourists

End users	Selection menu	Main target group(s) the solution who received the results and benefits of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner Volunters Tourists
Funding sources/Investors	Selection menu	Indicative financing sources (i.e., private, public, public&private) and/or investor(s)	Private Public Public and private
Implementation conditions	Text	Strict requirements and factors that allowed the implementation of the solutions	-
Success and limiting factors	Text	Beneficial aspects and restriction factors that influenced the implementation of the solution (e.g., policy and market/business enablers, governance models)	-

Location*	Text	Location of the implemented solution	-
Country*	Text	Country of the implemented solution	-
Coordinates	Text	Coordinates of the solution's location	-
Responsible body	Text	Responsible party for the design and/or managment of the solution	-
Indicative cost	Currency and value	Indicative costs required for the realization of the solution	-
Total investment	Currency and value	Approximate amount of the investment realized	-

* "must have" string

Template for innovative resilience financing strategy

Data title	Data format	Description	Selection options
Title*	Text	Name of the implemented solution	-
ID*	Text	Code of the implemented solution	-
Compiler*	Text	Name of the person compiling the solution. This is a confidential information for collection phase only, to be removed before making the solutions publicly available	-
Solution domain*	Selection menu		Heritage based solution Nature based solution Adaptive governance tool Cultural industries strategy Financing and business model strategy

Description*	Text	Description of the main objective and activities of the solution (what is the solution, what issue is trying to solve, whether it is successfully implemented, how the solution impacts capitals and key elements)	-
References*	Text	Reference material such as websites, links to articles, pictures, video, etc.	-
Image*	Image formats	Picture(s) of the solution or location	-
Capitals*	Selection menu	Assets and resources connected to the capacity of communities for prospective development	Social capital Human capital Financial capital Natural capital Built capital
Key elements*	Selection menu	Component linked to the capitals aimed at enabling resilience improvements, based on coping, adaptive and transformative capacities of cultural landscapes	(SOCIAL CAPITAL): Demographics/ Diversity/ Governance/ Intangible CH/ Social value (HUMAN CAPITAL): Training/ Education (FINANCIAL CAPITAL): Economy/ Tourism (NATURAL CAPITAL): Agriculture/ Green and blue infrastructure/ Natural heritage/ Topography and morphology (BUILT CAPITAL): Buildings/ Energy/ Infrastructure/ Tangible CH
Hazard*	Selection menu	The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.	Fluvial floods Pluvial floods Coastal floods (including sea level rise) Landslides Wildfires Heat waves Drought Poor air quality All

			Other
Other hazard(s) and stressor(s)	Text	Other natural or human-induced physical event(s)	-
Disaster Risk Management phase	Selection menu	DRM phase for which the solution is designed	Pre-disaster During disaster Post-disaster
Scale of implementation	Selection menu	Scale and governance/territorial level involved	Local Provincial Regional National Supranational
Technological Readiness Level	Selection menu	Scale used to measure the progress or maturity level of a technology.	1) Basic principles observed 2) Solution concept formulated 3) Experimental proof of concept 4) Solution validated in research context 5) Solution validated in relevant environment 6) Solution demonstrated in relevant environment 7) Solution system prototype demonstration in operational environment 8) Solution system complete and qualified 9) Actual solution system proven in operational environment
Comments	Text	Additional comments regarding data entered	-
Source project and code	Text	Code of the implemented solution in the source project	-
Various	Text	Additional information to include in the description of the solution	-
Implementation time	Text	Time needed to implement the solution (start time-end time)	-

Main stakeholders involved	Selection menu	Main authorities, agencies, private stakeholders and organizations involved in the implementation of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner Volunters Tourists
End users	Selection menu	Main target group(s) the solution who received the results and benefits of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises

			Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner Volunters Tourists
Funding sources/Investors	Selection menu	Indicative financing sources (i.e., private, public, public&private) and/or investor(s)	Private Public Public and private
Implementation conditions	Text	Strict requirements and factors that allowed the implementation of the solutions	-
Success and limiting factors	Text	Beneficial aspects and restriction factors that influenced the implementation of the solution (e.g., policy and market/business enablers, governance models)	-
Location*	Text	Location of the implemented solution	-
Country*	Text	Country of the implemented solution	-
Coordinates	Text	Coordinates of the solution's location	-

Responsible body	Text	Responsible party for the design and/or managment of the solution	-
Indicative cost	Currency and value	Indicative costs required for the realization of the solution	-
Type of strategy/model*	Selection menu	Type of implemented strategy/model	Business Economic&Financial
Category of business strategy/model*	Selection menu	Categories of business models identified based on literature review	Climate-Smart BM Certification-based BM BM based on co-governance and inclusivity (e.g., Sustainable Food Labs) Circular
Category of economic&financial strategy/model*	Selection menu	Categories of economic&financial models identified based on literature review	Loan Subsity Non-monetary incentives Public Private Partnership
Impact and returns	Text	Concise overview of socio-cultural, economic, and environmental impacts, values, and returns, including but not limited to the enhancement of local identity, fostering social unity, bolstering resilience, fostering collaborative regional efforts, and generating financial/market returns for investors (if any).	-

* "must have" string

Template for cultural and creative sectors and industries strategies

Data title	Data format	Description	Selection options

Title*	Text	Name of the implemented solution	-
ID*	Text	Code of the implemented solution	-
Compiler*	Text	Name of the person compiling the solution. This is a confidential information for collection phase only, to be removed before making the solutions publicly available	-
Solution domain*	Selection menu		Heritage based solution Nature based solution Adaptive governance tool Cultural industries strategy Financing and business model strategy
Description*	Text	Description of the main objective and activities of the solution (what is the solution, what issue is trying to solve, whether it is successfully implemented, how the solution impacts capitals and key elements)	-
References*	Text	Reference material such as websites, links to articles, pictures, video, etc.	-
Image*	Image formats	Picture(s) of the solution or location	-
Capitals*	Selection menu	Assets and resources connected to the capacity of communities for prospective development	Social capital Human capital Financial capital Natural capital Built capital
Key elements*	Selection menu	Component linked to the capitals aimed at enabling resilience improvements, based on coping, adaptive and transformative capacities of cultural landscapes	(SOCIAL CAPITAL): Demographics/ Diversity/ Governance/ Intangible CH/ Social value (HUMAN CAPITAL): Training/ Education (FINANCIAL CAPITAL): Economy/ Tourism (NATURAL CAPITAL): Agriculture/ Green and blue

			infrastructure/ Natural heritage/ Topography and morphology (BUILT CAPITAL): Buildings/ Energy/ Infrastructure/ Tangible CH
Hazard*	Selection menu	The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.	Fluvial floods Pluvial floods Coastal floods (including sea level rise) Landslides Wildfires Heat waves Drought Poor air quality All Other
Other hazard(s) and stressor(s)	Text	Other natural or human-induced physical event(s)	-
Disaster Risk Management phase	Selection menu	DRM phase for which the solution is designed	Pre-disaster During disaster Post-disaster
Scale of implementation	Selection menu	Scale and governance/territorial level involved	Local Provincial Regional National Supranational
Technological Readiness Level	Selection menu	Scale used to measure the progress or maturity level of a technology.	1) Basic principles observed 2) Solution concept formulated 3) Experimental proof of concept 4) Solution validated in research context 5) Solution validated in relevant environment 6) Solution demonstrated in relevant environment 7) Solution system prototype demonstration in operational environment

			8) Solution system complete and qualified 9) Actual solution system proven in operational environment
Comments	Text	Additional comments regarding data entered	-
Source project and code	Text	Code of the implemented solution in the source project	-
Various	Text	Additional information to include in the description of the solution	-
Implementation time	Text	Time needed to implement the solution (start time-end time)	-
Main stakeholders involved	Selection menu	Main authorities, agencies, private stakeholders and organizations involved in the implementation of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner

			Volunters Tourists
End users	Selection menu	Main target group(s) the solution who received the results and benefits of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner Volunters Tourists
Funding sources/Investors	Selection menu	Indicative financing sources (i.e., private, public, public&private) and/or investor(s)	Private Public Public and private
Implementation conditions	Text	Strict requirements and factors that allowed the implementation of the solutions	-
Success and limiting factors	Text	Beneficial aspects and restriction factors that influenced the implementation of the	-

		solution (e.g., policy and market/business enablers, governance models)	
Location*	Text	Location of the implemented solution	-
Country*	Text	Country of the implemented solution	-
Coordinates	Text	Coordinates of the solution's location	-
Responsible body	Text	Responsible party for the design and/or managment of the solution	-
Indicative cost	Currency and value	Indicative costs required for the realization of the solution	-
Creative Assets*	Text	Information related to unique creative assets utilized within the strategy, such as artworks, cultural performances, or creative content.	-
Creative Process Insights*	Text	Includes information on the creative process and methodologies employed in developing the strategy.	-
Artistic Expression*	Selection menu	It emphasizes the role of artistic expression within the strategy, highlighting how creativity contributes to resilience.	Literary Arts Craftmanship Culinary Arts Traditional and Folk Arts Street and Graffiti Art Performance Art

* “must have” string

Template for Adaptive governance tool

Data title	Data format	Description	Selection options
Title*	Text	Name of the implemented solution	-
ID*	Text	Code of the implemented solution	-
Compiler*	Text	Name of the person compiling the solution. This is a confidential information for collection phase only, to be removed before making the solutions publicly available	-
Solution domain*	Selection menu		Heritage based solution Nature based solution Adaptive governance tool Cultural industries strategy Financing and business model strategy
Description*	Text	Description of the main objective and activities of the solution (what is the solution, what issue is trying to solve, whether it is successfully implemented, how the solution impacts capitals and key elements)	-
References*	Text	Reference material such as websites, links to articles, pictures, video, etc.	-
Image*	Image formats	Picture(s) of the solution or location	-
Capitals*	Selection menu	Assets and resources connected to the capacity of communities for prospective development	Social capital
			Human capital
			Financial capital
			Natural capital
			Built capital
Key elements*	Selection menu	Component linked to the capitals aimed at enabling resilience improvements, based	(SOCIAL CAPITAL): Demographics/ Diversity/ Governance/ Intangible CH/ Social value

		on coping, adaptive and transformative capacities of cultural landscapes	(HUMAN CAPITAL): Training/ Education (FINANCIAL CAPITAL): Economy/ Tourism (NATURAL CAPITAL): Agriculture/ Green and blue infrastructure/ Natural heritage/ Topography and morphology (BUILT CAPITAL): Buildings/ Energy/ Infrastructure/ Tangible CH
Hazard*	Selection menu	The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.	Fluvial floods Pluvial floods Coastal floods (including sea level rise) Landslides Wildfires Heat waves Drought Poor air quality All Other
Other hazard(s) and stressor(s)	Text	Other natural or human-induced physical event(s)	-
Disaster Risk Management phase	Selection menu	DRM phase for which the solution is designed	Pre-disaster During disaster Post-disaster
Scale of implementation	Selection menu	Scale and governance/territorial level involved	Local Provincial Regional National Supranational
Technological Readiness Level	Selection menu	Scale used to measure the progress or maturity level of a technology.	1) Basic principles observed 2) Solution concept formulated 3) Experimental proof of concept 4) Solution validated in research context 5) Solution validated in relevant environment

			6) Solution demonstrated in relevant environment 7) Solution system prototype demonstration in operational environment 8) Solution system complete and qualified 9) Actual solution system proven in operational environment
Comments	Text	Additional comments regarding data entered	-
Source project and code	Text	Code of the implemented solution in the source project	-
Various	Text	Additional information to include in the description of the solution	-
Implementation time	Text	Time needed to implement the solution (start time-end time)	-
Main stakeholders involved	Selection menu	Main authorities, agencies, private stakeholders and organizations involved in the implementation of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners

			Local residents Local business owner Volunters Tourists
End users	Selection menu	Main target group(s) the solution who received the results and benefits of the solution	National government International business Insurance companies Foreign aid Military University / Research Group NGO Civil Protection Authority Emergency services/First responders Small/Medium Enterprises Private companies Surrounding municipalities Donor Local government Practitioner Policy maker Local land users Property owners Local residents Local business owner Volunters Tourists
Funding sources/Investors	Selection menu	Indicative financing sources (i.e., private, public, public&private) and/or investor(s)	Private Public Public and private
Implementation conditions	Text	Strict requirements and factors that allowed the implementation of the solutions	-

Success and limiting factors	Text	Beneficial aspects and restriction factors that influenced the implementation of the solution (e.g., policy and market/business enablers, governance models)	-
Location*	Text	Location of the implemented solution	-
Country*	Text	Country of the implemented solution	-
Coordinates	Text	Coordinates of the solution's location	-
Responsible body	Text	Responsible party for the design and/or managment of the solution	-
Indicative cost	Currency and value	Indicative costs required for the realization of the solution	-
Total investment	Currency and value	Approximate amount of the investment realized	-
Governance mechanism*	Selection menu	Type of governance mechanism that the adaptive governance tool use	Policy Legislation Degree Directive Convention Regulation Financial Incentive Meeting Committee Guideline Framework Strategy Tool

* “must have” string

6.2 Look-up tables

Look-up table for place based solutions

DATA TITLE	RURITAGE (NAME FILE: ROLEMODEL'S_ENHANCEMENT_DATA.XLS)	RURITAGE (NAME FILE: N4_REPLICATORS 'S DATA.XLS)	RURITAGE (NAME FILE: RURITAGE-FINAL BEST PRACTICES + LL REPOSITORY_FINAL 11-07-2019.XLS_SHEET RMA)
Title*	Title of the actions	Name of the actions	NAME OF THE RM ACTION
ID*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Location*	Ruritage role model identifier	Ruritage replicators identifier	RELATED RM
Country*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Coordinates	*Manually compiled*	*Manually compiled*	*Manually compiled*
Compiler*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Solution domain*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Description*	Brief description of the action; Related objectives	Brief description of the action; Related objectives	OBJECTIVE OF THE ACTION; DESCRIPTION (under capital transference mechanism)
References*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Image*			
Capitals*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Key elements*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Hazard*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Disaster Risk Management phase			
Scale of implementation			
Responsible body			
Indicative cost	Indicative costs; Currency type	Indicative costs; Currency type	
Total investment			

Implementation time	Start time; End time	Start time; End time	
Main stakeholders involved	Main stakeholders	Main stakeholders	
End users	Beneficiaries	Beneficiaries	
Funding sources/Investors	Indicative funding sources	Indicative funding sources	
Implementation conditions			INITIAL CONDITIONS
Success and limiting factors			BARRIERS
Technological readiness Level			
Comments			
Source project and code	"RURITAGE"; Code of the action	"RURITAGE"; Code of the actions	"RURITAGE"; CODE RM ACTION
Various	Related challenges; Objective and target of the action; Specific activities	Overall objectives of the plan; Related challenges; Objective of the action; Specific activities Monitoring indicators Formal partnerships established Sustainability of the action	REPLICABILITY; KEYWORDS RELATED MILESTONE

*** "must have" string**

Look-up table for lesson learnt

Data title	RURITAGE (Name file: RURITAGE-FINAL best practices + LL repository_final 11-07-2019.xls_sheet LL)	SHELTER (Name file: PORTFOLIO of solutions and strategies_pulito)	ARCH (Name file: ARCH DATABASE)
Title*	LESSON LEARNT	Adaptive solution	Name measure
ID*	*Manually compiled*	*Manually compiled*	*Manually compiled*

Compiler*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Solution domain*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Description*		Description	Measure Description
References*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Image*			
Capitals*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Key elements*	*Manually compiled*	*Manually compiled*	*Manually compiled*
Hazard*			
Disaster Risk Management phase	*Manually compiled*	*Manually compiled*	*Manually compiled*
Scale of implementation		DRM phase	DRM phase
Implementation time		Action scale	Scale of intervention
Main stakeholders involved		Implementation time	
End users			
Funding sources/Investors			
Implementation conditions			
Success and limiting factors	REQUIRED INITIAL CONDITIONS/ REPLICABILITY CONDITIONS	Technical requirement	Implementation conditions
Technological readiness Level	ACHIEVEMENTS; DESCRIPTION	Other aspects: success and limiting factors	
Comments			
Source project and code			
Various	"RURITAGE"; LL CODE		"ARCH"; ID
	REPLICABILITY; KEYWORKDS	Cost; Function (1) - (2); Reusable; Maintenance; Positive aspects; Negative aspects; Effectivity	Co-benefits; Negative effects; Contributing to CC mitigation (CO2 reduction); Visual impact; Physical impact; Spatial impact; Reversibility

* “must have” string

Look-up table for policy recommendation

Data title	SHELTER (Name file: PORTFOLIO of solutions and strategies_pulito)	ARCH (Name file: ARCH DATABASE)
Title*	Adaptive solution	Name measure
ID*	*Manually compiled*	*Manually compiled*
Compiler*	*Manually compiled*	*Manually compiled*
Solution domain*	*Manually compiled*	*Manually compiled*
Description*	Description	Measure Description
References*	*Manually compiled*	*Manually compiled*
Image*	-	-
Capitals*	*Manually compiled*	*Manually compiled*
Key elements*	*Manually compiled* (check type of adaptive solution)	*Manually compiled* (check category of resilient measure)
Hazard*	*Manually compiled* (check Hazards)	*Manually compiled* (check Hazards)
Disaster Risk Management phase	DRM phase	DRM phase
Scale of implementation	Action scale	Scale of intervention
Technological readiness Level	Implementation time	
Comments		
Source project and code	"SHELTER"; ID	"ARCH"; ID
Various	Technical requirement; Other aspects: success and limiting factors; "Cost; Function (1) - (2); Reusable; Maintenance; Positive aspects; Negative aspects; Effectivity"	Implementation; conditions; Co-benefits; Negative effects; Contributing to CC mitigation (CO2 reduction); Visual impact; Physical impact; Spatial impact; Reversibility

6.3 Validation protocol

The purpose of this document is to assist in the validation of the solutions collected for the meta-repository of resilience solutions within Work Package 2 of RescueME.
The main objectives of the validation are:

- to check the relevance of the solutions and strategies collected for cultural landscapes,
- to find possible repetition and reflect on the potential grouping of similar solutions,
- to insert data that was not yet available during the previous collection.

How is the meta-repository structured?

The solutions included in the meta-repository are divided into three categories:

- **Policy recommendations:** practices, actions, and initiatives addressing one or more dimensions of resilience presented as a set of suggestions or guidance regarding future processes of changes (i.e., environmental, technical, social, institutional, behavioural).
- **Lesson learnt:** practices, products, actions and initiatives addressing one or more dimensions of resilience, proved, validated and potentially replicable regardless of the place of design and/or implementation.
- **Place-based solutions:** practices, products, actions, and initiatives addressing one or more dimensions of resilience presented in relation to its specific implementation location and its responsible body of management and administration.

The place-based solutions are then assigned to five different domains:

  - *Heritage-based solutions*: practices, products, actions, and initiatives addressing one or more dimensions of resilience coming from tangible and intangible heritage valorisation for cultural landscapes (i.e., aimed at improving physical, social, institutional, financial, and environmental resilience).
  - *Nature-based solutions:* practices, products, actions, and initiatives addressing one or more dimensions of resilience inspired by nature and circular economy principles relevant to cultural landscapes.
  - *Adaptive governance tools:* rules, norms, mechanisms, policies, interactions and actions that facilitate the desired state of social-ecological systems at a given time period. They promote polycentrism, collaboration, self-organisation and innovation in reaction to different and evolving situations.
  - *Financing and business model strategies:* practices, actions, and initiatives addressing one or more dimensions of resilience presented in relation to economic, financial and business models for incentivising and leveraging regenerative capital investments.

- *Creative industries solutions:* practices, products, actions, and initiatives addressing one or more dimensions of resilience which integrate arts, culture and creativity in their design, development, and implementation.

The number of strings is incremental from the Policy Recommendation typology to the Places-Based solution typology (as shown in the following image). Three domains (adaptive governance tools, financing and business models and creative industries strategies) have additional strings that are specific to them.

How many are the solutions to validate?

STEP 1 (NUMBER OF SOLUTIONS TO BE VALIDATED: 572)		
PLACE-BASED SOLUTIONS	HERITAGE BASED SOLUTIONS	80 (incl. 9 from R-Labs)
	NATURE BASED SOLUTIONS	137 (incl. 23 from R-Labs)
	ADAPTIVE GOVERNANCE TOOLS	63 (incl. 24 from R-Labs)
	CREATIVE INDUSTRIES STRATEGIES	97 (incl. 3 from R-Labs)
	FINANCING AND BUSINESS MODELS STRATEGIES	114 (incl. 5 from R-Labs)
LESSONS LEARNT		51 (incl. 2 from R-Labs)
POLICY RECOMMENDATIONS		30 (incl. 2 from R-Labs)
STEP 2 (NUMBER OF SOLUTIONS TO BE VALIDATED: 566)		
RURITAGE	HERITAGE BASED SOLUTIONS	94
	LESSONS LEARNT	40

SHELTER	POLICY RECOMMENDATIONS	56
	LESSONS LEARNT	127
ARCH	POLICY RECOMMENDATIONS	133
	LESSONS LEARNT	116

Which are the steps of the validation process?

The validation will take place in several steps and with different partners involved and different timing, as follows.

Step 1 - Validation of place-based solutions by domain-responsible

For solutions collected by partners from different sources:

Solutions domains	Partners in charge of the validation	Deadline
Adaptive Governance tools	ULG	July 2024
Creative Industries strategies	CI	July 2024
Financing and business model strategies	CMCC	July 2024
Heritage based solutions (+ LL and PR)	UNIBO	September 2024
Nature based solutions	TEC	September 2024

The unified file has been split into **one file per partner** and includes three **additional columns** to nominate the solution to be **removed**, **grouped** with other solutions, or **moved** to another domain. Please use these columns also to comment and **motivate the nomination**.

STEP 1a – Check and report to UNIBO via email the following:
Strings that are rarely compiled (less than 5-10% of the total number of solutions) to investigate the possibility to remove them;

STEP 1b – Check and compile the new columns to nominate for removal, grouping or changing of domain of specific solutions:

- Considered not relevant or not detailed enough (e.g. description is missing) – to be removed.
- Repeated or very similar (e.g. same solutions in different locations, same solutions in the same location but from different sources) – to be grouped.
- More relevant to another domain – to be moved in another sheet.

STEP 1c – Double-check and ensure to compile the "must have" strings, especially:

- Description: if the description is missing nominate it to be removed.
- Solution domain: select up to TWO domains – keep the most important as first.
- Capitals: check whether they are filled in correctly.
- Key Elements: check whether they are filled in correctly.
- Hazard: select from the menu hazards related to the RescueME classification. Important: if the solution applies to a generic situation, please select "All".
- Other hazard(s) or stressor(s): insert text for additional hazards or stressors.
- Important: at the moment of the validation all the hazards already inserted are located in this column. IT IS NECESSARY TO CHECK if the text contain RescueME hazard, and in this case select from the menu of the previous column "Hazard".

Please note: cultural landscape typology was erased in accordance with WP1 partners.

STEP 1d – Double-check the following "nice to have" strings (if available):

- Disaster Risk Management phase: check.
- Main stakeholders involved: check.
- End users: check.
- Domain specific strings (e.g. governance mechanism for AGT): check.

The "must have" and "nice to have" strings are:

TYPOLOGY	MUST HAVE	NICE TO HAVE

Place-based solutions	Title, ID, Location, Country, Solution domain, Description, References, Image, Capitals, Key Elements, Hazard	Disaster Risk Management Phase, Scale of implementation, Responsible body, Indicative cost, Total investment, Implementation time, Main stakeholders involved, End users, Funding sources/Investors, Implementation conditions, Success and limiting factors, Technical Readiness Level, Comments, Source project and code, Various **+ domain specific strings** (e.g. governance mechanism for AGT)
Lessons learnt	Title, ID, Solution domain, Description, References, Image, Capitals, Key Elements, Hazard	Disaster Risk Management Phase, Scale of implementation, Implementation time, Main stakeholders involved, End users, Funding sources/Investors, Implementation conditions, Success and limiting factors, Technical Readiness Level, Comments, Source project and code, Various
Policy recommendations	Title, ID, Solution domain, Description, References, Image, Capitals, Key Elements, Hazard	Disaster Risk Management Phase, Scale of implementation, Technical Readiness Level, Comments, Source project and code, Various

Step 2 - Validation of solutions imported from RURITAGE, SHELTER and ARCH

The partners involved are:

Solutions domains	Partners in charge of the validation	Deadline
RURITAGE	UNIBO	December 2024

SHELTER	TEC	December 2024
ARCH	FhG	December 2024

There is **one file per project** and includes two **additional columns** to nominate the solution to be **removed** or **grouped** with other solutions. Please use these columns also to comment and **motivate the nomination**.

STEP 1 – Check and compile the new columns to nominate for removal or grouping of specific solutions:

- Considered not relevant or not detailed enough (e.g. description is missing) – to be removed.
- Repeated or very similar (e.g. same solutions in different locations, same solutions in the same location but from different sources) – to be grouped.

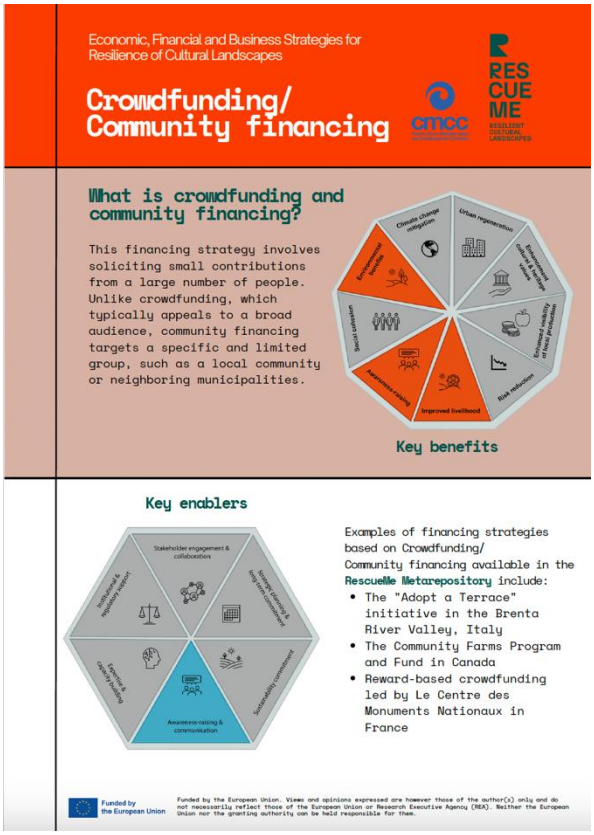
STEP 2 – Double-check the "must have" strings, especially:

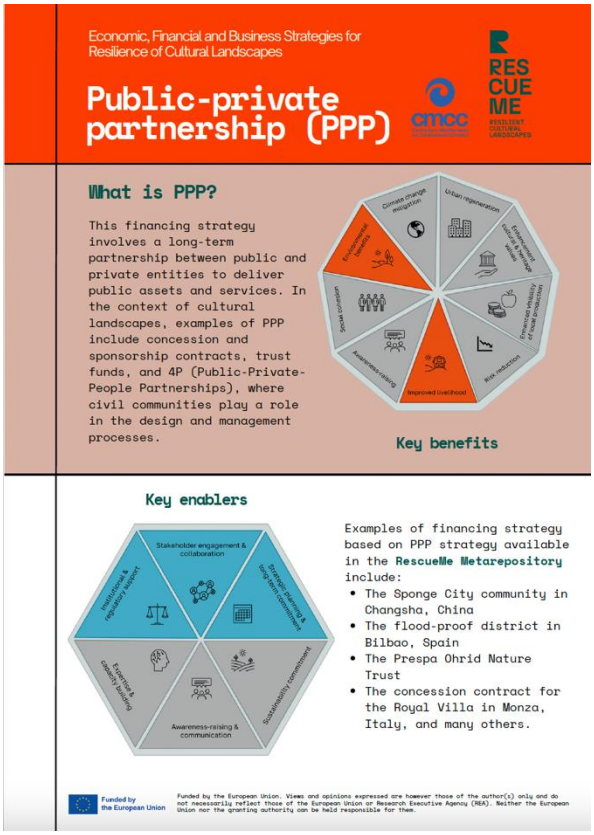
- Solution domain: check whether they are filled in correctly.
- Capitals: check whether they are filled in correctly.
- Key Elements: check whether they are filled in correctly.
- Hazard: check whether they are filled in correctly.

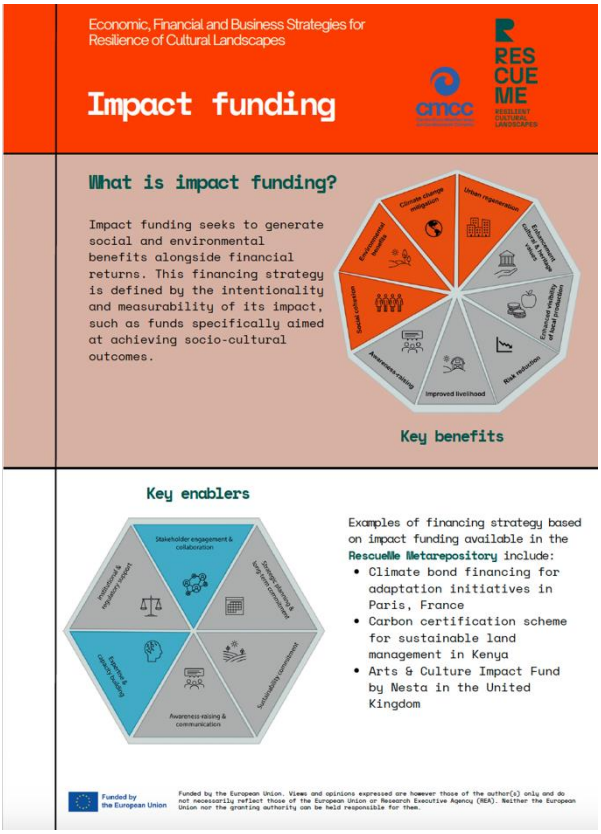
STEP 3 – Double-check the following "nice to have" strings (if available):

- Disaster Risk Management phase: check.
- Scale of implementation: check.

6.4 Economic, Financial and Business Strategies for Resilience of Cultural Landscapes factsheets






Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Impact funding
What is impact funding?
Impact funding seeks to generate social and environmental benefits alongside financial returns. This financing strategy is defined by the intentionality and measurability of its impact, such as funds specifically aimed at achieving socio-cultural outcomes.
Key benefits
Key enablers
Examples of financing strategy based on impact funding available in the RescueMe Metarepository include:
• Climate bond financing for adaptation initiatives in Paris, France
• Carbon certification scheme for sustainable land management in Kenya
• Arts & Culture Impact Fund by Nesta in the United Kingdom
Funded by the European Union
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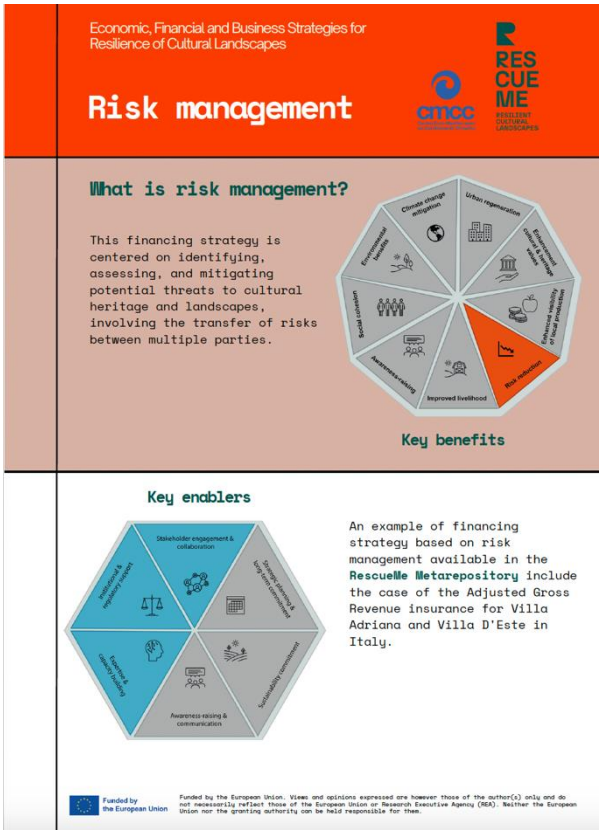
Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Risk management
What is risk management?
This financing strategy is centered on identifying, assessing, and mitigating potential threats to cultural heritage and landscapes, involving the transfer of risks between multiple parties.
Key benefits
Key enablers
An example of financing strategy based on risk management available in the RescueMe Metarepository include the case of the Adjusted Gross Revenue insurance for Villa Adriana and Villa D'Este in Italy.
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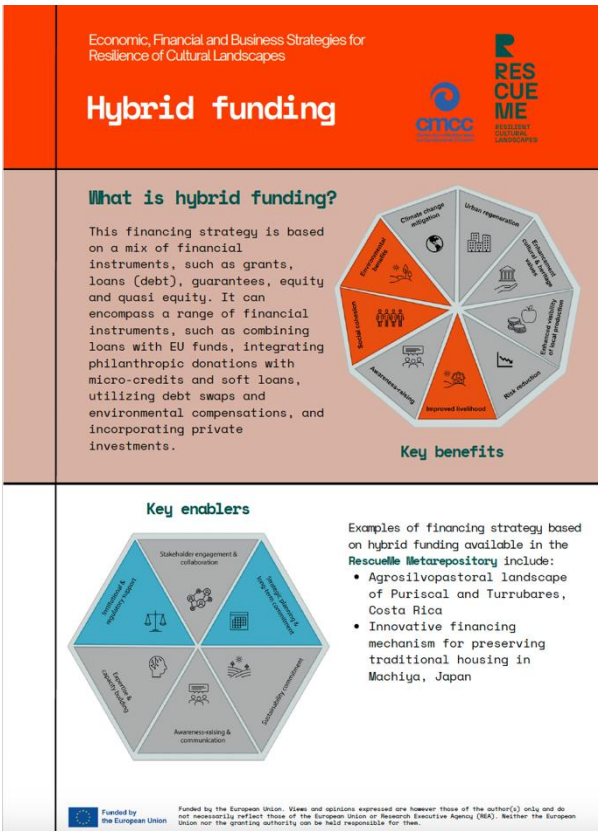
Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Hybrid funding
What is hybrid funding?
This financing strategy is based on a mix of financial instruments, such as grants, loans (debt), guarantees, equity and quasi equity. It can encompass a range of financial instruments, such as combining loans with EU funds, integrating philanthropic donations with micro-credits and soft loans, utilizing debt swaps and environmental compensations, and incorporating private investments.
Key benefits
Key enablers
Examples of financing strategy based on hybrid funding available in the RescueMe Metarepository include:
• Agrosilvopastoral landscape of Puriscal and Turrubares, Costa Rica
• Innovative financing mechanism for preserving traditional housing in Machiya, Japan
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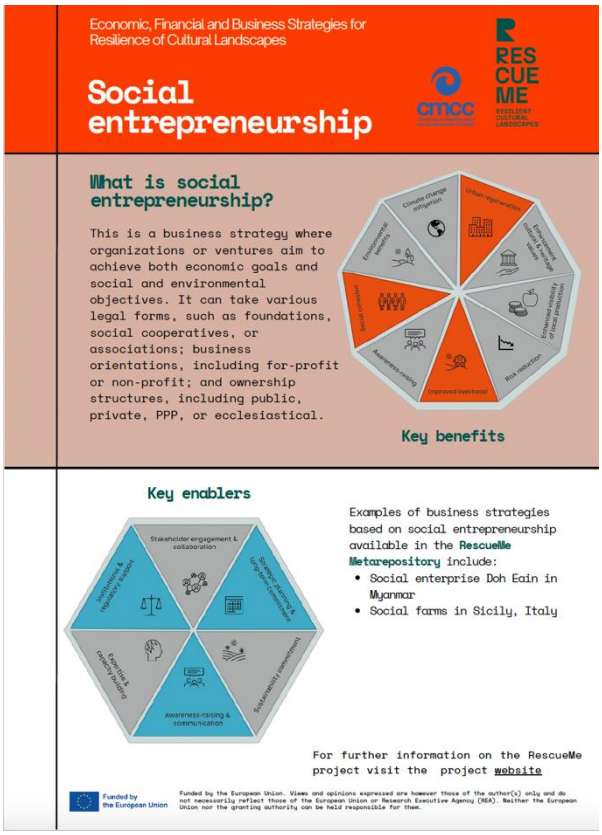
Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Social entrepreneurship
What is social entrepreneurship?
This is a business strategy where organizations or ventures aim to achieve both economic goals and social and environmental objectives. It can take various legal forms, such as foundations, social cooperatives, or associations; business orientations, including for-profit or non-profit; and ownership structures, including public, private, PPP, or ecclesiastical.
Key benefits
Key enablers
Examples of business strategies based on social entrepreneurship available in the RescueMe Metarepository include:
• Social enterprise Doh Eain in Myanmar
• Social farms in Sicily, Italy
For further information on the RescueMe project visit the project website
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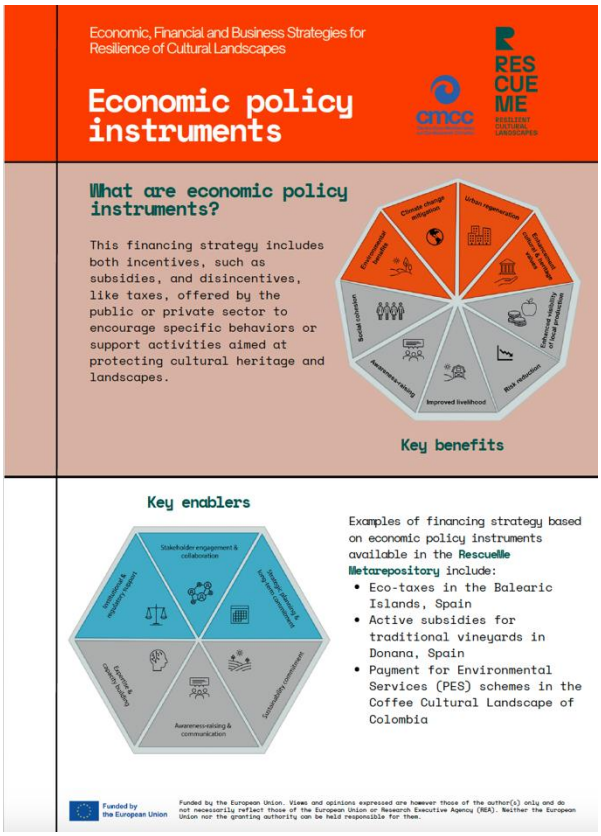
Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Economic policy instruments
What are economic policy instruments?
This financing strategy includes both incentives, such as subsidies, and disincentives, like taxes, offered by the public or private sector to encourage specific behaviors or support activities aimed at protecting cultural heritage and landscapes.
Key benefits
Key enablers
Examples of financing strategy based on economic policy instruments available in the Rescuelle Metarepository include:
• Eco-taxes in the Balearic Islands, Spain
• Active subsidies for traditional vineyards in Donana, Spain
• Payment for Environmental Services (PES) schemes in the Coffee Cultural Landscape of Colombia
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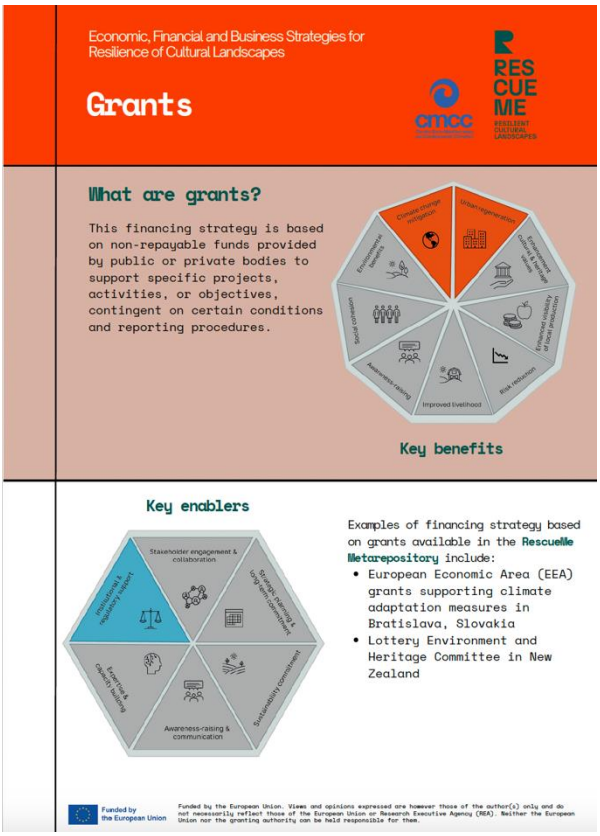
Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Grants
What are grants?
This financing strategy is based on non-repayable funds provided by public or private bodies to support specific projects, activities, or objectives, contingent on certain conditions and reporting procedures.
Key benefits
Key enablers
Examples of financing strategy based on grants available in the Rescuelle Metarepository include:
• European Economic Area (EEA) grants supporting climate adaptation measures in Bratislava, Slovakia
• Lottery Environment and Heritage Committee in New Zealand
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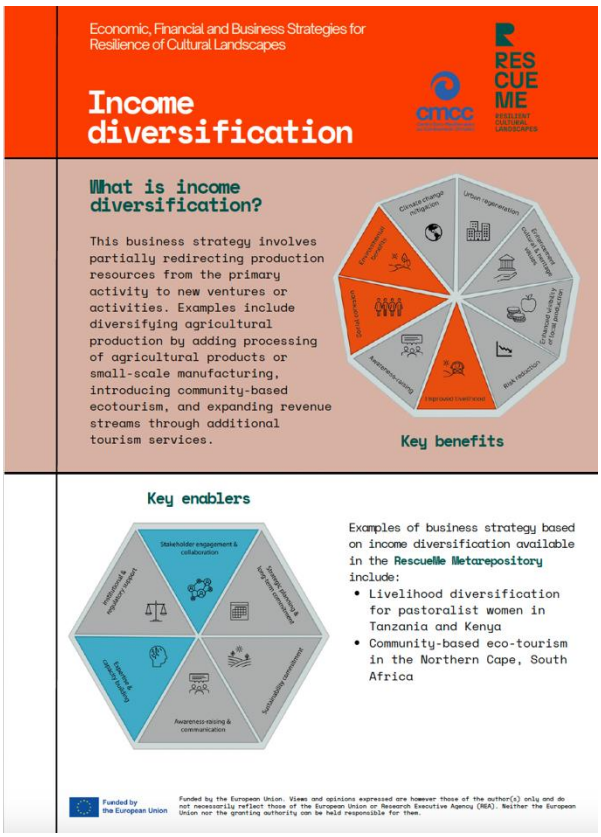
Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Income diversification
What is income diversification?
This business strategy involves partially redirecting production resources from the primary activity to new ventures or activities. Examples include diversifying agricultural production by adding processing of agricultural products or small-scale manufacturing, introducing community-based ecotourism, and expanding revenue streams through additional tourism services.
Key benefits
Key enablers
Examples of business strategy based on income diversification available in the Rescuelle Metarepository include:
• Livelihood diversification for pastoralist women in Tanzania and Kenya
• Community-based eco-tourism in the Northern Cape, South Africa
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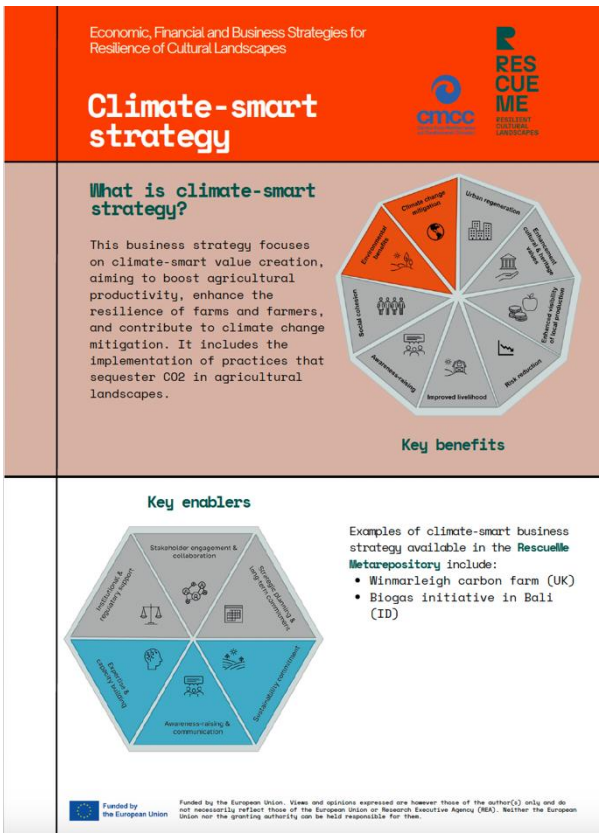
Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Climate-smart strategy
What is climate-smart strategy?
This business strategy focuses on climate-smart value creation, aiming to boost agricultural productivity, enhance the resilience of farms and farmers, and contribute to climate change mitigation. It includes the implementation of practices that sequester CO2 in agricultural landscapes.
Key benefits
Key enablers
Examples of climate-smart business strategy available in the Rescuelle Metarepository include:
• Winmarleigh carbon farm (UK)
• Biogas initiative in Bali (ID)
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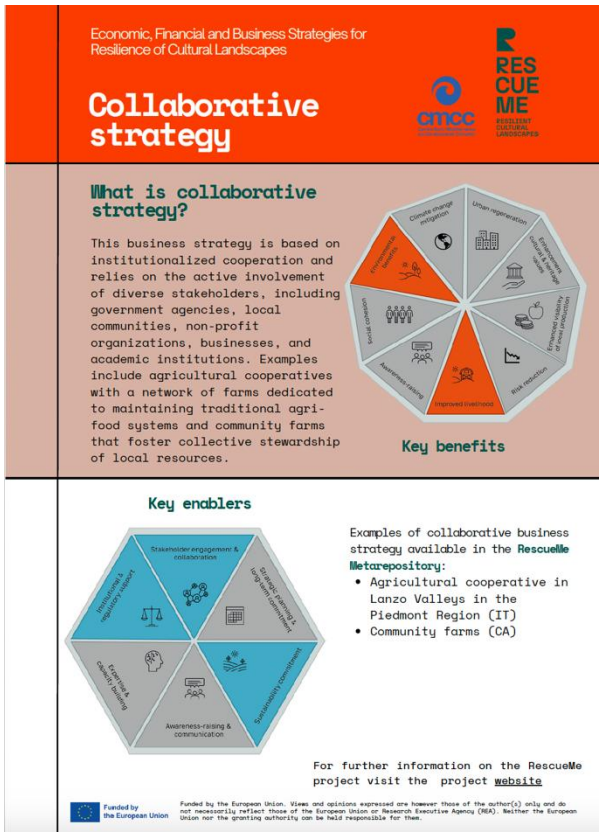
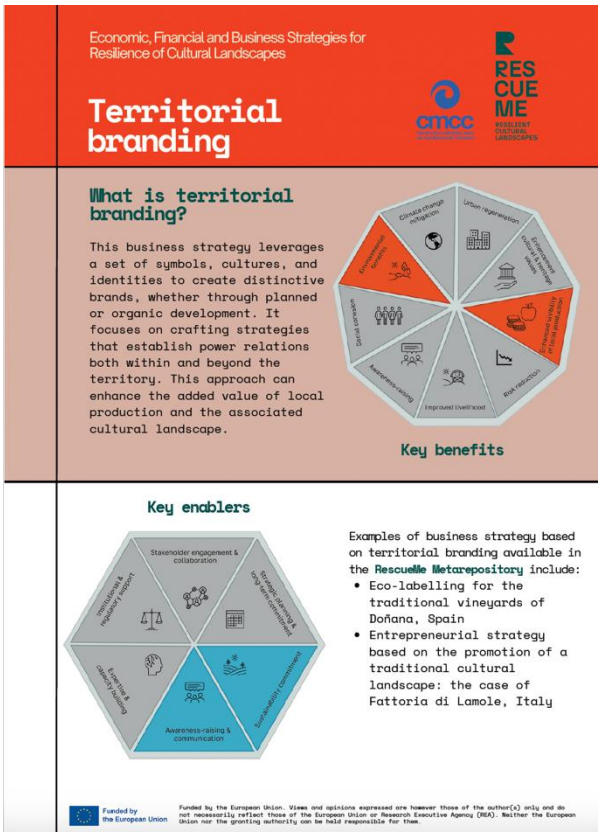

Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Collaborative strategy
What is collaborative strategy?
This business strategy is based on institutionalized cooperation and relies on the active involvement of diverse stakeholders, including government agencies, local communities, non-profit organizations, businesses, and academic institutions. Examples include agricultural cooperatives with a network of farms dedicated to maintaining traditional agri-food systems and community farms that foster collective stewardship of local resources.
Key benefits
Key enablers
Examples of collaborative business strategy available in the RescueMe Metarepository:
• Agricultural cooperative in Lanzo Valleys in the Piedmont Region (IT)
• Community farms (CA)
For further information on the RescueMe project visit the project website
Funded by the European Union


Economic, Financial and Business Strategies for Resilience of Cultural Landscapes
Territorial branding
What is territorial branding?
This business strategy leverages a set of symbols, cultures, and identities to create distinctive brands, whether through planned or organic development. It focuses on crafting strategies that establish power relations both within and beyond the territory. This approach can enhance the added value of local production and the associated cultural landscape.
Key benefits
Key enablers
Examples of business strategy based on territorial branding available in the RescueMe Metarepository include:
• Eco-labelling for the traditional vineyards of Doñana, Spain
• Entrepreneurial strategy based on the promotion of a traditional cultural landscape: the case of Fattoria di Lamole, Italy
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7 Partners

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