



SYNERGIES

*Innovating Preparedness by Leveraging SYNERGIES and
Enhancing Results of DRM Projects*

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Evaluation and Validation Plan





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ABBREVIATIONS

Acronym	Description
DRM	Disaster Risk Management
DRS	Disaster Resilient Societies
EVP	Evaluation and Validation Plan
FR	First Responders
KB4ICC	Knowledge Base for Innovative Channels and Communication
NGO	Non-Governmental Organisation
PC	Preparedness Cases
R	Result
SV	Spontaneous Volunteers
T	Task
TRL	Technology Readiness Level
WP	Work Package

LIST OF DEFINITIONS

Term	Explanation
Results	Synergies outcomes such as: Navigable Atlas, Tool for preparedness assessment, Training modules, Knowledge Base for Innovative Channels and Communication (KB4ICC), Tool for early warning messaging, Support System for integration of Spontaneous Volunteers in Preparedness Plans, Tabletop Game.
Exercises	Activities conducted during the evaluation and validation phase
Evaluators	Evaluators carry out the evaluation and validation by observing activities and analysing the feedback based on their knowledge and specific measurement factors.
Users	Individuals who will participate in the evaluation and validation activities by providing feedback and indications critical for further developments of the Results.

PROJECT OVERVIEW

The SYNERGIES project aims to strengthen a culture of disaster preparedness by fostering a cohesive and coordinated engagement of various stakeholders in disaster management such as first and second responders, citizens, communities, research and education systems, authorities and public administrations, and businesses. SYNERGIES concentrates on five preparedness needs:

- involvement of all relevant actors in building preparedness
- strengthening preparedness education and training
- communicating with citizens
- management of spontaneous volunteers
- ensuring the sustainability of solutions for preparedness

The project leverages from the results of past Horizon 2020 projects under the call for Disaster Resilient Societies (DRS01) (e.g., LINKS, RESILOC, BUILDERS, ENGAGE, etc.). These “component projects” will integrate their results into SYNERGIES with the best practices and experiences of practitioners, refining and elevating their maturity.

Three Preparedness Cases will guide the project, allowing for orientation, progress evaluation, and demonstrations of the final Results. These cases involve real-life scenarios where stakeholders, such as first responders, authorities, citizen associations, and NGOs, seek to enhance preparedness by better involving and empowering citizens.

EXECUTIVE SUMMARY

The SYNERGIES project aims to leverage existing knowledge and best practices in disaster risk management (DRM) to develop innovative Results for community preparedness. This document aims to present the plan to evaluate and validate the SYNERGIES Results and activities undertaken to implement it.

The project's Results, which address various aspects of disaster preparedness – including a Navigable Atlas, a Tool for preparedness assessment, Training modules, a Knowledge Base for Innovative Channels and Communication (KB4ICC), a Tool for early warning messaging, a Support System for integration of Spontaneous Volunteers in Preparedness Plans, and a Tabletop Game - will be evaluated and validated in the context of three preparedness cases.

Key activities encompass characterising these Preparedness Cases, defining comprehensive evaluation and validation criteria, establishing a detailed timeline, executing evaluation and validation exercises, and diligently monitoring the entire process.

The WP1 approach presented in the document involves three phases: **Steering**, **Evaluation**, and **Validation**.

The **steering phase** of the SYNERGIES project aimed to understand the **needs and priorities** of three preparedness cases: Reunion Island, Malta, and Rotterdam. Through workshops, interviews, and data collection activities, the project identified specific areas where its research results could make a significant impact, particularly in the areas of citizen empowerment, communication channels, and volunteer management.

The project developed a standardised framework for gathering information from the preparedness cases and conducted various activities, including semi-structured interviews and participatory exercises. The collected data will inform the research and development efforts in subsequent work packages, ensuring that the project's results are aligned with the real-world needs of the preparedness cases. In the table below is presented as quick recap of the main findings emerged from a participatory exercise (Rotterdam, June 2024), conducted with Preparedness Cases (PC) responsible and Results owners, to identify the main needs and challenges for each PC in relation to the WP research topics: WP2 - engagement of community members, WP3 - innovative communication channels, and WP4 - involvement of spontaneous volunteers.

WP	Preparedness Case	Main findings
WP2	Reunion Island PC	Difficulties in engaging specific groups like vulnerable populations and the homeless. To address these issues, there's a need to increase knowledge and awareness among young people, teenagers, and adults, as well as generalising cyclone preparedness to other natural risks.
	Malta PC	Problems such as a lack of volunteers, coordination, and a framework. Additionally, there's a need to identify responsible stakeholders, establish organisational structures, and clarify rules. Increasing awareness and understanding areas for improvement are also crucial.
	Rotterdam PC	Challenges in engaging diverse groups and promoting self-protection measures. The population's lack of preparation and awareness was another concern. To address these issues, there's a need to increase civil participation, raise awareness during the cold phase of crisis management, and establish a legal framework and insurance mechanisms.
WP3	Reunion Island PC	Difficulties in communicating with young people and young adults, as well as challenges in reaching non-Francophone populations. To address these issues, a comprehensive catalogue of communication solutions and tools is needed, along with enhanced collaboration between official and popular stakeholders.
	Malta PC	Lack of a robust system for alerting the population and the overreliance on digital channels. To improve communication, resilient channels that foster trust between authorities and the population are essential. Prompt and decisive action by authorities is crucial to effectively convey information and guide public response.

	Rotterdam PC	Challenges related to public awareness of risks and difficulties in accessing information for both citizens and authorities. While raising awareness is important, it is equally crucial to provide clear guidance on actions to take in case of a disaster. Addressing the digital gap between generations by offering diverse communication channels and tools is essential to ensure inclusive and effective communication.
WP4	Reunion Island PC	Issues related to volunteer accountability, traceability of volunteer actions, and the effectiveness of communication with volunteers. Additionally, the lack of qualification among volunteers and the proliferation of uncoordinated initiatives were significant concerns. To address these challenges, mechanisms to support civilian volunteers, improve coordination, and ensure their protection are needed.
	Malta PC	Lack of coordination among volunteers is a major problem. To leverage the potential of spontaneous volunteers, civil protection authorities need to understand their role and develop protocols for collaboration.
	Rotterdam PC	Difficulties in utilising the full capacity of spontaneous volunteers due to their decentralised nature and challenges in networking between regional councils and safety regions. To optimise volunteer involvement, effective communication and awareness among different actors, centralization of volunteer efforts, and strategies to fully harness their potential are essential.

The **evaluation phase** will focus on assessing the preliminary Results of WP2, 3, and 4 through workshops to gather feedback and refine the Results.

The **validation phase** will test the improved Results in real-world scenarios to demonstrate their effectiveness and impact.

A set of criteria has been established to assess the performance of the project's results, including usefulness, usability, transferability, compatibility, maturity, and economic viability.

For each of these phases, the document presents the activities undertaken and planned to meticulously develop and test the SYNERGIES Results to their fullest potential. This process ensures that the Results meet expectations, are actionable, and are accepted by all potential users within the project's target groups. Ultimately, the EVP provides indications and criteria, serving as a manual for those implementing the three phases of validation.

DOCUMENT CHANGE HISTORY

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3.0	31.07.2025	Alessia Golfetti, DBL; Alberto Pasquini, DBL, Michela Cohen, DBL.	Resubmission integrating reviewers' comments on the methodology.

3.1	29.10.2025	Michela Cohen, DBL; Alberto Pasquini, DBL, Alessia Golfetti, DBL.	Clarification of hazard Types, links between the deliverables and the related tasks and addition of Annexes where to find information about user-needs, gaps and best practices.
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TABLE OF CONTENTS

1. INTRODUCTION	15
1.1 Intended readers	16
1.2 Structure of the Document	16
2. WP1 APPROACH: STEERING, EVALUATION AND VALIDATION	17
2.1 SYNERGIES Results overview	19
2.2 SYNERGIES Preparedness Cases	24
2.3 Inputs to project Results	25
2.3.1 Literature review	26
2.3.2 Component projects	27
2.3.3 Preparedness Cases	30
3. STEERING PHASE	30
3.1 Outline	31
3.2 Activities to identify the PCs' needs and gaps	32
3.2.1 The WP1 Study Template	33
3.2.2 The semi-structured interviews	35
3.2.3 Participatory exercise	36
3.3 Activities to collect data from the PCs to steer R&D in WP2, 3, and 4	47
4. EVALUATION AND VALIDATION PHASE	49
4.1 The Evaluation and Validation Criteria	51
4.2 The Evaluation and Validation exercises	52
4.3 The evaluation and validation toolkit	54
4.4 Criteria & exercises workshop	54
5. CONCLUSIONS	57
6. ANNEXES: The WP1 Study Templates	58
Rotterdam - WP1 Study Template, Analysing the needs of the Real Preparedness Cases	59
La Reunion - WP1 Study Template, Analysing the needs of the Real Preparedness Cases	85
Malta - WP1 Study Template, Analysing the needs of the Real Preparedness Cases	114

LIST OF FIGURES

Figure 1 - WP1 three main phases	18
Figure 2 - Milestones timeline	19
Figure 3 - SYNERGIES Results and research topics	25
Figure 4 - Steering activities timeline	31
Figure 5 - Overview of the interviews conducted and partners involved	35
Figure 6 - Partners working during the participatory exercise	37
Figure 7 - Evaluation activities timeline	50
Figure 9 - Evaluation workshops overview	54
Figure 10 - Miro board used during the workshop	55

LIST OF TABLES

Table 1 - Overview of the SYNERGIES Results	21
Table 2 - PC specific risks and preparedness topics	24
Table 3 - Potential use of the Outcomes from Component projects in Synergies	28
Table 4 - PC reference event scenario and Results assumed to be used from the DoA	32
Table 5 - Exercise findings from WP2 perspective	38
Table 6 - Exercise findings from WP3 perspective	40
Table 7 - Exercise findings from WP4 perspective	41
Table 8 - Comprehensive analysis of the preliminary Results that emerged from the participatory exercise	45
Table 9 - Project Results assigned in the participatory exercise	47
Table 10 - SYNERGIES Data Collection Calendar	48
Table 11 - Evaluation workshops general structure	53
Table 12 - Workshop outcomes	55

1. INTRODUCTION

The SYNERGIES Evaluation and Validation Plan (EVP) outlines a comprehensive framework for assessing and validating the effectiveness of the project's solutions within the context of Preparedness Cases (PCs). The EVP will ensure that the project's outcomes align with the needs and expectations of stakeholders and contribute meaningfully to enhancing community resilience and preparedness.

The key objective of the EVP is to establish a robust evaluation and validation methodology, identify and prioritise evaluation criteria, characterise Preparedness Cases for testing project solutions, develop a timeline for implementing evaluation and validation activities, and monitor and measure the effectiveness of the evaluation and validation process.

The EVP will follow a three-phase approach: Steering Phase, Evaluation Phase, and Validation Phase.

In order to establish the EVP, we conducted several activities (listed in section 3.1) during the steering phase to analyse and assess PC needs and gaps. These activities were crucial in understanding the specific requirements and challenges associated with each PC, allowing us to tailor the evaluation and validation process accordingly.

Specific Preparedness Cases will be involved to test the Results and provide feedback at different stages of the development process. The EVP will include a detailed timeline for implementing evaluation and validation activities, as well as the specific exercises to be used. Regular monitoring and evaluation will be conducted throughout the project to track progress, identify areas for improvement, and measure the effectiveness of the evaluation and validation process.

The SYNERGIES EVP provides a solid foundation for ensuring that the project's solutions are effective, efficient, and aligned with the needs of the target communities. By following this plan, the project will be able to deliver valuable outcomes and contribute to enhancing community resilience.

1.1 Intended readers

This deliverable defines the evaluation and validation process; this is especially useful for the SYNERGIES partners who will be directly involved in Task 1.2 Preparedness Case 1, Task 1.3 Preparedness Case 2 and Task 1.4 Preparedness Case 3.

Moreover, the feedback and suggestions collected during the evaluation and validation activities will be useful to improve and refine the SYNERGIES Results in tasks: T 2.1 Atlas for Empowerment, T 2.2 Preparedness Self Assessment) T 2.3 Roadmap and Training Modules, T 3.1 Knowledge Base for Innovative Channels and Communication, T3.3 Tool for Early Warning Messaging and T 4.2 Integration of Spontaneous Volunteers.

1.2 Structure of the Document

This document is structured around 5 main sections as follows:

- **Introduction:** This section provides an overview of the document, including its intended audience and the structure of the subsequent sections.
- **WP1 Approach: Steering, Evaluation, and Validation:** This section outlines the overall approach taken in WP1, including a summary of the SYNERGIES Results and a list of the Preparedness Cases analysed.
- **Steering Phase:** This section details the activities conducted and during the steering phase, focusing on identifying the needs and gaps of the Preparedness Cases and collecting data to inform research and development in subsequent work packages.
- **Evaluation and Validation Phase:** This section describes the criteria, exercises, and tools planned to be used for evaluating and validating the project's outcomes. Furthermore, an analysis of the Preliminary Result assignment stemmed from exercises is given.
- **Conclusions:** This final section summarises the key findings and the main activities that have contributed and will contribute to the EVP implementation.

2. WP1 APPROACH: STEERING, EVALUATION AND VALIDATION

The main objectives of Work Package (WP) 1 are to support the project work with the three Preparedness Cases during the whole duration of the project; to evaluate the project Results, as soon as these become available, in the real environment of the Preparedness Cases, providing feedback useful for the Result improvement and to validate final project Results and to demonstrate their effectiveness and economic viability supporting exploitation and transfer to market.

WP1, composed of three main phases: Steering, Evaluation, and Validation (Figure 1), is directly responsible for interacting with the main implementation work packages (WP2, WP3, and WP4) throughout their lifecycle:

- **Steering & Knowledge Input:** WP1 ensures that the work in WP2, WP3, and WP4 is based on **real stakeholder needs and knowledge**.
- **Evaluation & Feedback (Initial Results):** WP1 evaluates the initial results coming from WP2/WP3/WP4. It then provides feedback back to these WPs to ensure the results are improved.

Validation & Feedback (Final Results): WP1 is also responsible for the validation of the final results coming from WP2/WP3/WP4. It demonstrates their effectiveness and sustainability and provides further "Feedback" (Knowledge) to the implementation WPs..

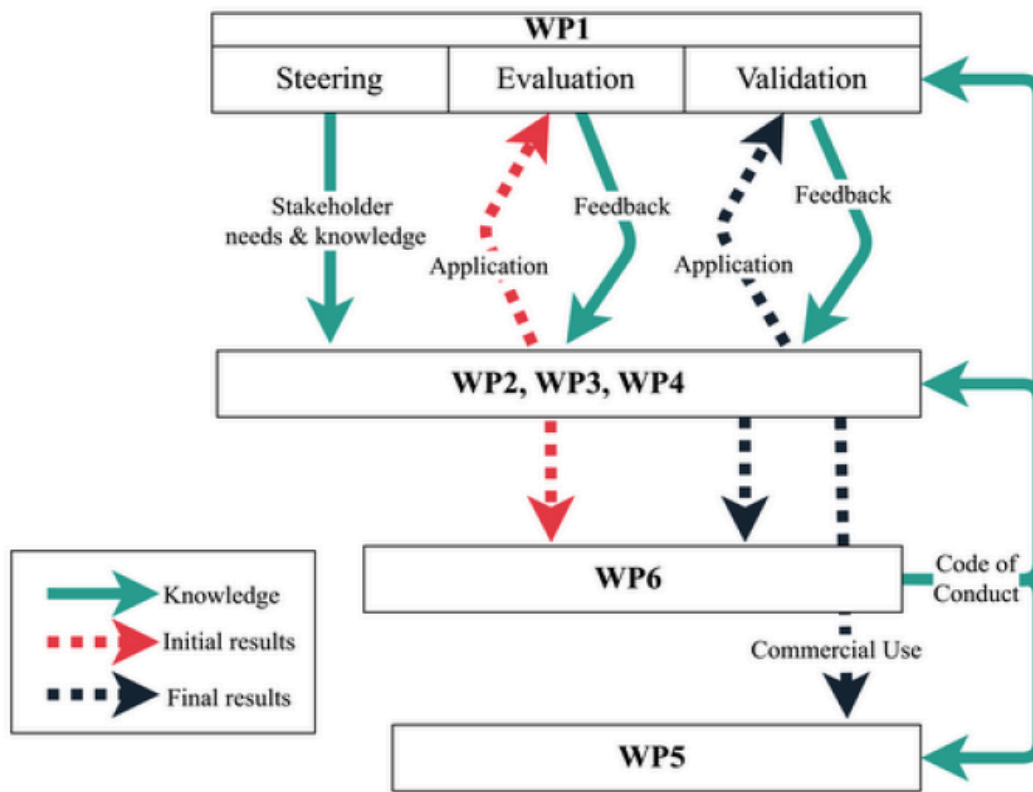


Figure 1 - WP1 three main phases

The **Steering phase** focuses on the collection of the main needs, gaps and best practices already existing in the three preparedness cases in the preparation phase of an event. This phase is taking place in synergy with the research activities in WP2, 3 and 4 that address three specific aspects of preparedness: citizen empowerment, communication and spontaneous volunteering.

The preliminary feedback collected during the Steering phase will be used to guide the design of the initial versions of the project Results developed under WP2, 3 and 4. Further information about the project Results can be found in section 2.1.

Evaluation and Validation phase aims to ensure that the approach, methods and Results are correct and applicable in different real-world scenarios. It assesses whether the Results meet expectations, are actionable and accepted by project targets such as first responders (FR) and authorities. Feedback from end-users will be gathered at key points of the project lifecycle. Therefore, the overall process and the main outputs described in this document should be seen as part of the iterative approach that will guide the development of the SYNERGIES outputs.

Initially, evaluation will rely on qualitative analysis to explore necessary enhancements, which will then be translated into specific recommendations. This first phase enables the project to adapt and improve based on evaluators' feedback, as well as to discard less

relevant aspects. Additionally, it facilitates the communication of preliminary Results early in the project.

In this phase, three evaluation workshops will be organised in M15, M17, M19 to assess the functionality, usability, and effectiveness of preliminary Results and gather early feedback from the end users on the Results of SYNERGIES and to allow for adjustments and revisions.

The feedback collected during this preliminary stage will allow:

- *Solution owners* to gather suggestions for improving the tools they are developing. The feedback collected during this phase will be used to refine and adjust the tools for their final release.
- *End users* to familiarise themselves with the Results of the project and start using them, even if in preliminary versions.

Following the implementation of improvements, the validation phase will test the Results of the project and provide guidance on their use. This phase will be more formal and comprehensive, focusing on providing evidence of the effectiveness of the Results for dissemination and practical use. It will include an assessment of the needs and expectations addressed and a measurement of the impact of the solutions on the project's target groups. The feedback collected during the validation phase will inform and guide the project's sustainability and exploitation activities in WP5. The image below presents the main milestones based on the WP1 approach. More information about the Steering, Evaluation and Validation phase can be found in the following chapters.

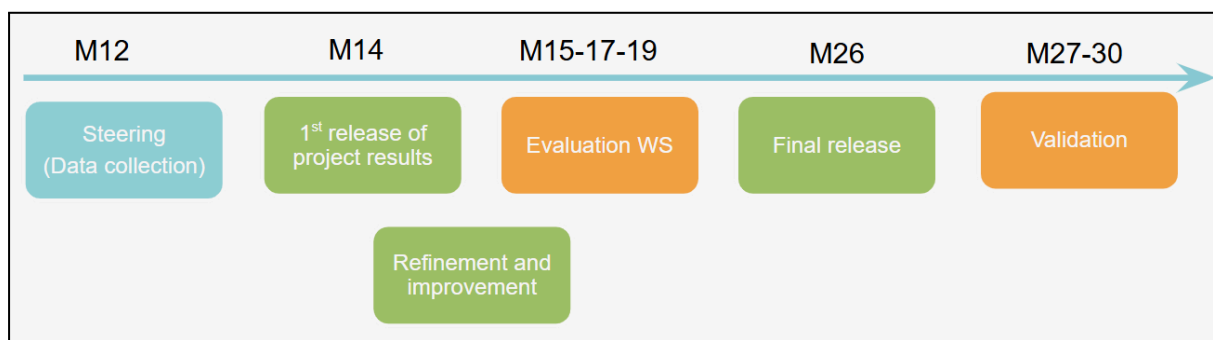


Figure 2 - Milestones timeline

2.1 SYNERGIES Results overview

Building on the outcomes of six previous projects (ENGAGE, RESILOC, LINKS, IMPACT, BUILDERS, Ready2Help), SYNERGIES will develop different types of Results addressing specific needs of disaster preparedness. The nature of the results to be produced in SYNERGIES is very diverse and includes data repositories of best practices and guidance materials, Training Modules, games etc; all share the common goal of enhancing community preparedness and resilience to disasters. The project considers as target users for the project Results the following categories dealing with DRM: Formal and informal leaders (including academia, local government, first responders, social workers and other community leaders), Disaster management authorities, Crisis managers and Organisations.

The table below provides an overview of the SYNERGIES Results, reporting a brief description of the Result and the intended target user, the related WP, the preparedness topic addressed by the Result, the responsible partner and the TRL to be achieved at the end of the project. All these Results will be presented and assessed in the evaluation and validation phase.

Table 1 - Overview of the SYNERGIES Results

SYNERGIES Results	Description	WP	Specific WP topic addressed by the Results	Partner Responsible	TRL
R1.1 Navigable Atlas	<p>The Atlas of Empowerment is a navigable platform with tools and solutions, lessons learned, guidance material, good practices and ethical guidelines on citizen’s engagement.</p> <p>Target User: formal and informal leaders in DRM. Formal leaders include national, regional, and local authorities, first responders and social workers. Informal leaders include CSOs, NGOs and organised volunteers.</p>	WP2	Empowering Actors	ISIG	7-8
R1.2 Tool for preparedness assessment	<p>The Preparedness self-Assessment Tool (PAT) supports identification of actions to improve preparedness, by assessing both vulnerability sources, affected groups and the factors that strengthen community resilience.</p> <p>Target User: formal and informal leaders in DRM who play key roles in enhancing the preparedness of their communities.</p>	WP2	Empowering Actors	UTARTU	7
R2.1 Training modules	<p>The roadmap outlines the requirements for a capacity-building strategy to enhance community preparedness. The Training Modules aim to</p>	WP2	Empowering Actors	UTARTU	8

	<p>develop capacities for preparedness in line with the requirements of the roadmap.</p> <p>Target User: formal and informal community leaders in DRM who are responsible for or have a role in building the preparedness of their communities, and their educators in particular. These groups include academia, local government, first responders, social workers and other community leaders.</p>				
R3.1 Knowledge Base for Innovative Channels and Communication (KB4ICC)	<p>The Knowledge Base for Innovative Channels and Communication serves as a knowledge repository that offers guidance and resources to authorities for effectively engaging citizens during the preparedness phase of crisis, by innovative communication channels and strategies.</p> <p>Target User: disaster management authorities, crisis managers</p>	WP3	Innovative communication	SIC	7
R3.2 Tool for Early Warning messaging	<p>The Early Warning is a Tool for Early Warning Messaging that implements the findings from the KB4ICC. This tool will be able to prepare the structure of audience tailored messages from selected keywords.</p> <p>Target User: disaster management authorities</p>	WP3	Innovative communication	WGS	7
R4.1 Support System for integration of	<p>The System will provide best practices, lessons learnt and guidance material for managing spontaneous volunteers, selected on the basis of the different actors having a role in such an activity.</p>	WP4	Management of volunteers	SINTEF	7

Spontaneous Volunteers in Preparedness Plans	Target User: organisations that are responsible for creating preparedness plans and have a role in the management of spontaneous volunteers during crises and disasters.				
R4.2 Tabletop Game	<p>The Tabletop Game simulates the role of organised and spontaneous volunteers in the management of a set of disasters.</p> <p>Target User: authorities in DRM responsible for managing (spontaneous) volunteers</p>	WP4	Management of volunteers	SINTEF	8

2.2 SYNERGIES Preparedness Cases

SYNERGIES Preparedness Cases (PC) present real-world challenges and conditions for the project. The PCs will serve different purposes during the project. Firstly, they will provide insights into the real needs, best practices and tools used by local stakeholders during the steering phase (see section 3).

As a second step, they will contribute to the evaluation and validation activities of the project by providing feedback and expert opinions on the initial and final Results produced by WP2, 3 and 4. Each PC will focus on specific risks and preparedness topics that they want to address as shown in the table below.

Table 2 - PC specific risks and preparedness topics

PC	Risk	Key preparedness topics/needs
La Reunion	Management of a cyclone risk within a context changing in terms of weather patterns and rapidly growing population.	<ul style="list-style-type: none"> enhancing preparedness and societal resilience to tropical storms amidst a shifting context. leveraging existing solutions for broader preparedness to various risks.
Malta	Earthquake response: Management and displacement of an unexpected group of residents and vulnerable groups	<ul style="list-style-type: none"> overcoming systemic shortcomings in emergencies. considering the needs of the population in emergency preparedness. learning from existing solutions to support a human and culturally sensitive response by all stakeholders.
Rotterdam area	Flooding and cascading events exceeding the expected forecast	<ul style="list-style-type: none"> integrating strategies for managing spontaneous volunteers into flexible preparedness plans facilitating mutual learning and knowledge exchange between formal actors and volunteers

For each Preparedness Case (PC), hazards were identified based on the specific context of the PC. For Reunion Island and Malta, a single primary hazard was identified (cyclone risk

and earthquake response, respectively). In the Rotterdam area, the PC is focused on a multiple-hazard scenario involving flooding and cascading events.

The preparedness topics and needs related to each PC were further detailed during the steering phase. A comprehensive detailing of the specific hazards relevant to each Preparedness Case will be provided in subsequent deliverables, namely D1.2, D1.3, and D1.4. These deliverables are scheduled for submission by Month 33 of the project, which corresponds to June 2026. This phased approach ensures that a robust understanding of both preparedness requirements and the specific threats they address is progressively built and documented throughout the project lifecycle. The following chapter provides an overview of the activities carried out. The following chapter provides an overview of the activities carried out.

2.3 Inputs to project Results

As further explained in the Steering section, the design and development of the SYNERGIES Results will be guided by a comprehensive methodology. This approach will integrate various information channels and leverage past experiences, specifically drawing from existing literature, current state-of-the-art practices, and previous projects.

As illustrated in the image below, our approach will be firmly anchored in the project's three primary research topics: the empowerment of disaster management actors, innovative channels and communication, and managing spontaneous volunteers.

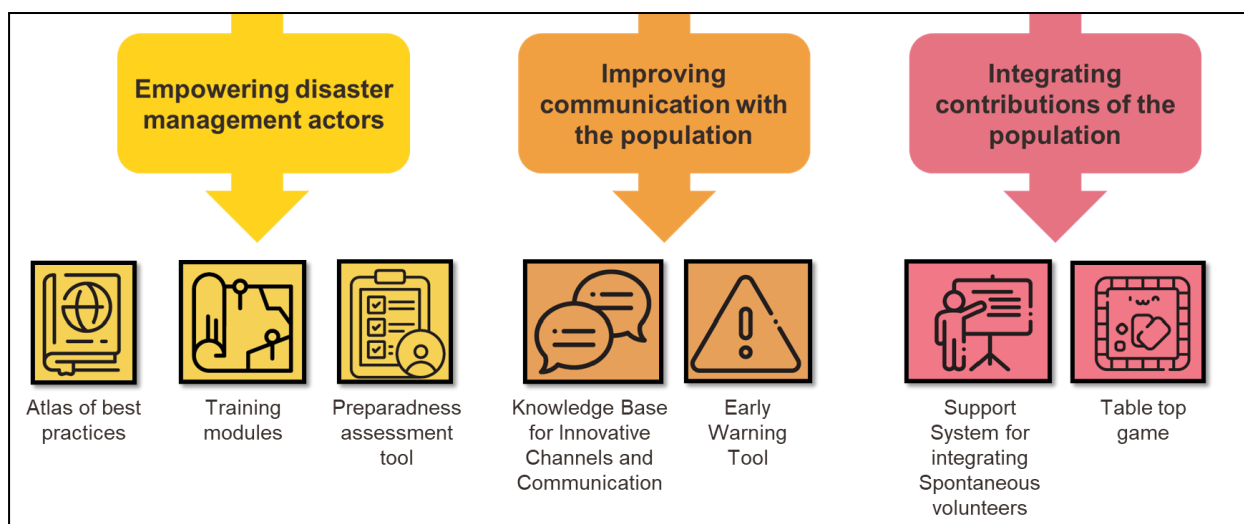


Figure 3 - SYNERGIES Results and research topics

This multi-faceted strategy will ensure that our results are robust, relevant, and well-informed.

2.3.1 Literature review

Our literature review will systematically identify and analyze relevant academic papers and publications. An initial pre-selection will be conducted by project partners, focusing on keywords derived from CMINE (The Crisis Management Innovation Network Europe), ensuring alignment with our primary research topics. This initial screening will also involve **selecting papers based on specific keywords established by the partners**, ensuring their direct relevance to our research objectives.

Following this, Work Package and Task Leaders will perform a second, more in-depth selection and analysis of the identified papers. These documents will be meticulously organized into dedicated folders for easy access and reference. Work Package Leaders will then analyze and classify these papers according to relevant keywords.

Here's a proposed categorization of the criteria for the paper classification, this example is specifically for one of the research topics "managing spontaneous volunteers", that will guide this in-depth analysis

1. **Bibliographic & General Paper Information** This category covers the core identification details of the paper itself, along with its main purpose and theoretical underpinnings. This includes: Author(s), Year of publication, DOI, Type of publication, Main objectives, Main contributions, Model/theory, Model/theory - Comments, Important model(s) and concept(s) applied in the article, Other relevant Literature, and Relevant resources.
2. **Core Definitions & Terminology** This group focuses on the foundational language and concepts used within the paper, particularly concerning spontaneous volunteers and their integration. This includes: Definition(s), Terminology, Spontaneous Volunteers, Mode of Integration, and Other definitions.
3. **Specific Thematic Areas / Intervention Sectors** This category is dedicated to the various fields or sectors where the research or solutions are applied. This will allow for classification based on relevance to: Medical, Medical - Comments, Shelter, Shelter - Comments, Information and Communications, Information and Communications - Comments, Security and Coordination, Security and Coordination - Comments, Psychological and bereavement, Psychological and bereavement - Comments, Preparedness, Preparedness - Comments, Buildings and services, Buildings and services - Comments, Advocacy, Advocacy - Comments, Provisions

and supplies, Provisions and supplies - Comments, Other, and Other - Comments, and Other Topics.

4. **Organizational & Management Aspects (Integration)** This section delves into the practicalities of managing and integrating volunteers, including: Understandings, Skills, and Rules.

This comprehensive process, from initial selection by partners to detailed classification by Work Package Leaders, will inherently leverage the expert opinion and experience of the consortium partners. This ensures a practical and informed understanding of the existing knowledge base, ultimately strengthening the foundation of our research.

2.3.2 Component projects

The active participation in research and the direct involvement in the research work, bring the best knowledge of the potential and limits of research results. SYNERGIES is well aware of the importance of having the researchers who were originally involved in producing the results. The SYNERGIES consortium has been built accordingly, involving some of the main partners of the Component Projects, with particular attention for those partners directly involved in producing the results of interest for SYNERGIES, and owning or co-owning the related IPR. Several research projects produced important results that could be of relevance for this call. To keep its consortium to a manageable size, SYNERGIES had to focus on the most relevant and recent ones, considering primarily (but not only) H2020 projects. Projects selected were those recently concluded or those that are going to finish before the expected start of the SYNERGIES activities. These Component Projects are:

- **ENGAGE** - H2020 project ending 12/23. ENGAGE explores how citizens, and first responders can interrelate effectively considering the influence of contextual aspects.
- **LINKS** - H2020 project ending 11/23. LINKS aims at understanding, assessing and managing the role of social media and crowdsourcing on disaster resilience in Europe.
- **RESILOC** - H2020 project ending 12/22. RESILOC Studies and implements methods and tools for the assessment of resilience indicators in a community.
- **IMPACT** - H2020 project completed. IMPACT investigated the role of cultural factors when managing safety and security issues related to emergencies.
- **BUILDERS** - H2020 project completed. BUILDERS investigated the role of societal resilience to strengthen social capital, risk awareness and preparedness of the vulnerable segments of society.
- **READY2HELP** - Dutch project completed. READY2HELP promoted and organised the participation of volunteers before and during emergencies.

All these Component Projects bring important contributions to deal with the needs of the SYNERGIES project.

The table below (Table 3) presents a revised selection of key outcomes from various Component Projects that are particularly relevant to SYNERGIES. This revision stems from Table 2 in the original Description of Activity of the proposal, with a specific focus on identifying contributions that will directly feed into the SYNERGIES repositories. These repositories are dedicated to:

- Empowering Citizens and their Communities (WP2 result R1.1)
- Communication (WP3 result R3.1)
- Integration of Spontaneous Volunteers in Preparedness Plans (WP4 result R4.1)

Within their respective Work Packages (WPs), these outcomes from component projects will undergo further analysis, filtering, and adaptation as needed to ensure their seamless integration.

Table 3 - Potential use of the Outcomes from Component projects in Synergies

	Outcome to be considered in WP2	Outcome to be considered in WP3	Outcome to be considered in WP4	Potential use of the Outcome
ENGAGE	Best practices for the involvement of citizens			To be included in the Solutions of R1.1
	Identification of contextual aspects			To be included in the Solutions of R1.1
	Platform for selection of best practices			Support the definition of functionalities for the R1.1 interface
			Solutions for the management of spontaneous volunteers	To be included in the Solutions of R4.1

	Management of citizen generated solutions			To be included in the Solutions of R1.1
LINKS	Engaging with citizens through social media (including those with impairments).	Engaging with citizens through social media (including those with impairments).		To be included in the Solutions of R1.1 or of R3.1
		SMCS technologies and guidelines		To be included in the Solutions of R3.1
			Strategies and examples for mobilising volunteers	To be included in the Solutions of R4.1
RESILOC	Building local resilience teams			To be included in the Solutions of R1.1
IMPACT		Cultural aspects in communication and early warning		Support the definition of functionalities for the R3.1 and Early Warning interface
BUILDERS	Ethical guidelines for involving citizens			To be included in the Solutions of R1.1
		Techniques for fighting misinformation		To be included in the Solutions of R3.1
			Regulatory framework for engaging spontaneous volunteers	To be included in the Solutions of R4.1

READY 2HELP			Education needs for volunteers	To be included in the Solutions of R4.1
			Best practices for the management of volunteers	To be included in the Solutions of R4.1

It's worth noting that the Tool for resilience assessment and strategy for improvement developed by RESILOC is not included in Table 3. This tool has a direct and clear application in SYNERGIES, serving as a foundational basis for the Tool for Preparedness Assessment (WP2 result R1.2). It will provide essential approaches and strategies for monitoring preparedness and identifying necessary actions for its enhancement.

To effectively determine the real contributions from these component projects, we will conduct dedicated meetings with representatives from each project. Furthermore, internal meetings will be held between partners involved in the component projects and the SYNERGIES result owners. These discussions will clarify how the component projects can contribute to our results and define the necessary requirements to be imported. This process was partially initiated during the project's Kick-off Meeting.

In the initial phase of the project, Work Packages 2, 3, and 4 will further refine the specific requirements for their respective results. For example, a key requirement might be the presence of all necessary information, such as the application cost, for selecting solutions within each repository.

2.3.3 Preparedness Cases

The three preparedness cases, that are presented better in the Section 4 Evaluation, will serve as critical operational experiences, providing invaluable real-world insights. Through a dedicated steering phase (more details in the next section), we will meticulously evaluate the methodologies and techniques observed during these cases. This evaluation will specifically identify those elements that are crucial for achieving our project results and have the potential to be directly integrated into the SYNERGIES Results. This hands-on evaluation and validation will be facilitated during specific events, such as dedicated Evaluation Workshops, ensuring thorough assessment and effective knowledge transfer.

3. STEERING PHASE

The steering phase of SYNERGIES aimed to ensure that the research efforts directly addressed the pressing challenges faced by various preparedness cases. Through a series of workshops, interviews, and in-depth analyses, we sought to comprehensively understand the needs and priorities associated with our three primary research topics:

- Empowerment of disaster management actors.
- Innovative channels and communication.
- Managing spontaneous volunteers.

The steering phase is currently ongoing and is scheduled to conclude at M12. In addition to the activities that were already carried out and are documented in section 3.2, Results owners are planning a series of additional data collection events and activities involving the PCs.

Over the first year of the project (M1-M12), stakeholders from diverse backgrounds were engaged in a structured and participatory data gathering activity. These interactions facilitated the identification of specific areas where the project Results could make a significant impact. Building upon this foundation, the culmination of the steering phase is the development of a robust evaluation and validation plan (presented with this deliverable D1.1). This plan aims to outline the strategies and methodologies to be used to rigorously test and refine the SYNERGIES final Results, ensuring that they meet the real-world demands and expectations of the PC.

The steering activities depicted in the image below encompass the initial year of the project. However, additional steering activities have been implemented beyond this timeframe, also in coordination with other Work packages, to ensure optimal outcomes and to maintain flexibility in addressing the evolving needs of the participating parties (PCs).

STEERING PHASE											
Year 1											
M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
Q1			Q2			Q3			Q4		
Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24

Figure 4 - Steering activities timeline

3.1 Outline

The table below outlines the preliminary concepts for the Results distribution across the Preparedness Cases. For each Preparedness case, a specific reference event scenario was selected: Cyclone risk for Reunion Island (France), Earthquake Preparedness for Malta³, and Flow for the Rotterdam area (Netherlands). Based on these scenarios, potential Results assumed to be used were identified and assigned. For each Preparedness Case, three or four potential Results were assigned. These Results were carefully selected based on specific considerations aligned with the research topics investigated in Working Packages 2, 3, and 4.

Table 4 - PC reference event scenario and Results assumed to be used from the DoA

Reference event scenario	Results assumed to be used
Cyclone risk Preparedness Case 1: Reunion Island (FR)	R1.1 Navigable Atlas of Best Practices and guidance material for citizen empowerment R1.2 Preparedness Self Assessment tool R2.1 Roadmap and Training packages
Earthquake Preparedness Case 2: Malta (MA)	R1.2 Preparedness Self Assessment tool R2.1 Roadmap and Training packages R3.1 Knowledge Base for Innovative Channels and Communication R3.2 Automated early warning
Flow Preparedness Case 3: Rotterdam area (NL)	R1.2 Preparedness Self Assessment tool R2.1 Roadmap and Training packages R4.1 Support System for integrating Spontaneous volunteers in preparedness plans R4.2 Tabletop Game on role of spontaneous volunteers

3.2 Activities to identify the PCs' needs and gaps

³ It is important to note that for Preparedness Case 2: Malta, the reference event scenario was initially proposed as Management of Migrants. However, during the implementation phase, this was changed to earthquake preparedness. Consequently, the assignment for this case had to be reworked to fit the new scenario.

For the steering phase and the analysis of the needs of different Preparedness Cases, several activities primarily focused on data collection were conceived and implemented.

It is important to remember that steering activities are still ongoing. The initial focus was on understanding the needs and limitations of the PCs. Subsequently, the activities shifted toward gathering information from the PCs to inform and guide the research and development efforts in Work Packages 2, 3, and 4.

The activities fall into two main categories, that are described more in detail in the next paragraphs:

1. Activities aimed to identify the PCs' needs and gaps.
2. Activities aimed to collect data from the PCs to steer R&D in WP2, 3, and 4.

All activities were designed based on research questions and their corresponding data collection tools, developed in collaboration by WP1, 2, 3 and 4.

To gain a comprehensive understanding of the Preparedness Cases and their specific requirements, we conducted a series of targeted activities. These activities listed below aimed to ensure consistent data collection:

- **WP1 Study Template:** A standardised framework for collecting information about preparedness cases.
- **Semi-Structured Interviews:** In-depth conversations with individuals involved in preparedness cases to gather detailed insights.
- **Participatory Exercises in Rotterdam:** Workshops where partners, and in particular WP leaders and PC teams, collaboratively identified the needs of preparedness cases and assigned corresponding Results.

The current version of the three Study Templates is available in the Annexes. While more detailed information about the user needs, gaps, and best practices collected during the Steering phase will be reported in D1.2, D1.3 D1.4 (due in M33).”

3.2.1 The WP1 Study Template

The purpose of this template (Annexes) was to collect data about the preparedness cases through customised questions in order to get a better understanding of the specific tools and strategies used in the preparedness cases. Is a structured and living document designed to facilitate the collection and organisation of information and it served as a standardised framework that ensured consistent data collection and analysis, facilitating informed decision-making and effective planning.

The template can be consulted during various stages of the project from all the consortium partners but filled in only by the PC. This facilitated a standardised and organised approach to information gathering, promoting clarity and ease of analysis for the intended audience. This template covers key areas relevant to preparedness cases, including:

- **Partners and Roles:** Identifying the key stakeholders involved in the preparedness case.
- **Data Collection:** Gathering information on risk types, tools, practices, challenges, and decision-making processes.
- **Work Package-Specific Questions:** Addressing specific questions related to the project's work packages.

The template is intended for research and operational partners involved in the project or initiative, and it was used from the first phase of the project to organise data collection and align the three Preparedness cases. One WP1 study template per Preparedness Case was prepared, for a total of 3 WP1 study templates. By following this framework, stakeholders were able to ensure that information was gathered systematically, promoting clarity and facilitating analysis. To gain a better understanding of the document's objectives and the data it aims to gather, please refer to the following template structure:

1. Preparedness Case Overview

1.1 Partners and Roles

1.1.1 Preparedness Case (PC) Team

1.1.2 Local Support Team (LST)

1.2 Data Collection Overview

1.2.1 Types of Risks

1.2.2 Current Tools

1.2.3 Best Practices

1.2.4 Challenges

1.2.5 Partner Role

1.2.6 Decision-Making and Budgeting

1.2.7 Target Population

1.2.8 Involved Entities

2. Work Package-Specific Questions

3. Annexes

3.2.2 The semi-structured interviews

Following the first completion of the WP1 study templates, semi-structured interviews with customised questions were organised and conducted for each preparedness case. The purpose of these interviews was to gain a deeper understanding of the specific needs of the preparedness case partners in relation to their preparedness activities. The interview agenda included a brief explanation of the interview's purpose and the scientific partners' needs, a roadmap of the project and the next steps, and a review of the key questions from the WP1 Study Template. The preparedness case partners were then invited to provide their insights regarding the topics of the template. This was followed by a discussion based on triggering questions related to each WP: WP2 (Empowerment of citizens), WP3 (Communication), and WP4 (Volunteers). This interactive review allowed for a more in-depth exploration of the preparedness case partners' specific needs and perspectives. In the image below an overview of the interviews conducted and partners involved.

	Preparedness Case Partners	Scientific Partner	Date
Malta	REJGTR, ISTC, Save The Children	DBL, ISIG, UTR, SINTEF, SIC, Webgenesis	14 March h 14 CET
Rotterdam	RCNL,GB, VU	DBL, ISIG, UTR, SINTEF, SIC, Webgenesis	15 March h 10 CET
Reunion Island	AGORAH, SINTEF, SRUN	DBL, ISIG, UTR, SINTEF, SIC, Webgenesis	14 March h 10 CET

Figure 5 - Overview of the interviews conducted and partners involved

The results of these semi-structured interviews fed into the WP1 study template, a comprehensive framework that serves as both a grid for data collection and a structure for the 'case study' report. This template provided a standardised approach for gathering and analysing information from various stakeholders, ensuring consistency and comparability across the different case studies. By using this template, the project team was able to collect data on a wide range of topics, including the current state of disaster preparedness, identified needs and gaps, and potential solutions. The study template also helped to organise and structure the findings into a coherent and informative case study report, which was used to inform subsequent data collection phases and activities.

3.2.3 *Participatory exercise*

For the preliminary mapping of PCs needs & Results assignment we conducted a participatory exercise during the plenary meeting in Rotterdam (June 2024) where WP leaders and PC teams collaboratively identified the needs of preparedness cases and assigned corresponding Results. This exercise aimed to provide an overview of the information gathered in the steering phase and foster a participatory discussion around the preliminary Result allocation/distribution. WP leaders (Results owners) were asked to briefly present their Results to facilitate the assignment. The objectives of the participatory exercise were to: 1) summarise the problems faced by Preparedness Cases (PCs), 2) identify their specific needs, and 3) begin the process of assigning Results, incorporating input from various stakeholders.

The final goal was to assess whether the initial ideas, identified in the proposal phase (table 7), were still valid, more specifically and make a first Results assignment, having different stakeholders' views at the same table. To achieve these objectives, we formed three groups, each corresponding to a specific research topic: engagement of community members, innovative communication channels, and involvement of spontaneous volunteers.

The analysis of the three topics unveiled common challenges and needs across the Preparedness Cases of Reunion Island, Malta, and Rotterdam. Work Package 2 highlighted the difficulty in engaging specific community groups, particularly vulnerable populations. A significant gap in awareness and knowledge about disaster preparedness was also identified. Work Package 3 revealed challenges in effective communication, particularly with specific groups, and an overreliance on digital channels. The lack of clear, actionable information for the public was another key concern. Work Package 4 focused on the challenges of coordinating spontaneous volunteers, ensuring their accountability, and maximising their impact. The results for each topic can be consulted below.



Figure 6 - Partners working during the participatory exercise

WP2 - Engagement of community members in building preparedness to act in disasters

Analysing the "Engagement of community members in building preparedness to act in disasters" for each Preparedness Case (PC) revealed various challenges and needs.

PC Reunion Island identified difficulties in engaging specific groups like vulnerable populations and the homeless. To address these issues, there's a need to increase knowledge and awareness among young people, teenagers, and adults, as well as generalising cyclone preparedness to other natural risks.

PC Malta highlighted problems such as a lack of volunteers, coordination, and a framework. Additionally, there's a need to identify responsible stakeholders, establish organisational structures, and clarify rules. Increasing awareness and understanding areas for improvement are also crucial.

PC Rotterdam faced challenges in engaging diverse groups and promoting self-protection measures. The population's lack of preparation and awareness was another concern. To address these issues, there's a need to increase civil participation, raise awareness during

the cold phase of crisis management, and establish a legal framework and insurance mechanisms.

Based on this information, project Results were proposed, focusing solely on those related to the specific work package. In essence, the table provides a concise overview of the problems and needs encountered in each case and the corresponding Results that were suggested within the context of WP2 namely: **R1.1 Navigable Atlas**, **R1.2 Tool for preparedness assessment** and **R2.1 Two Training Modules**.

Table 5 - Exercise findings from WP2 perspective

Preparedness Case 1: Reunion Island (FR)	Problems
	<ul style="list-style-type: none"> ● Engaging specific groups in local communities ● Vulnerable categories / homeless
	Needs
	<ul style="list-style-type: none"> ● Address gap young people, teenager, adults in knowledge and awareness ● Generalise cyclone preparedness to other natural risks
	Result proposed
Preparedness Case 2: Malta (MA)	Problems
	<ul style="list-style-type: none"> ● No volunteers ● Lack of coordination, no framework ● Lack of skills capacity
	Needs
	<ul style="list-style-type: none"> ● Identify responsible stakeholders, organisation structures, baseline ● Clarifications of the rules ● Increase awareness ● Systematic understanding of areas of improvement
	Result proposed

	<ul style="list-style-type: none"> ● R2.1 Training modules
Preparedness Case 3: Rotterdam area (NL)	Problems
	<ul style="list-style-type: none"> ● Engaging diverse groups ● Self protection measures ● Lack of preparation & awareness of the population
	Needs
	<ul style="list-style-type: none"> ● Actors to increase civil participation ● Awareness raising in cold phase of crisis management - preparedness-building and mitigation phase of the DRM cycle ● Legal framework and insurance
	Result proposed
	<ul style="list-style-type: none"> ● R1.2 Tool for preparedness assessment

WP3 - Exploring innovative channels and ways of communication in disaster preparedness

Our WP3 analysis for each PC revealed several challenges and needs:

PC Reunion Island identified difficulties in communicating with young people and young adults, as well as challenges in reaching non-Francophone populations. To address these issues, a comprehensive catalogue of communication solutions and tools is needed, along with enhanced collaboration between official and popular stakeholders.

PC Malta highlighted the lack of a robust system for alerting the population and the overreliance on digital channels. To improve communication, resilient channels that foster trust between authorities and the population are essential. Prompt and decisive action by authorities is crucial to effectively convey information and guide public response.

PC Rotterdam encountered challenges related to public awareness of risks and difficulties in accessing information for both citizens and authorities. While raising awareness is important, it is equally crucial to provide clear guidance on actions to take in case of a disaster. Addressing the digital gap between generations by offering diverse communication channels and tools is essential to ensure inclusive and effective communication.

Based on this information, project Results were proposed, focusing solely on those related to the specific work package. In essence, the table provides a concise overview of the

problems and needs encountered in each case and the corresponding Results that were suggested within the context of WP3 namely: **R3.1 Knowledge Base for Innovative Channels and Communication (KB4ICC)** and **R3.2 Tool for Early Warning Messaging**.

Table 6 - Exercise findings from WP3 perspective

Preparedness Case 1: Reunion Island (FR)	Problems
	<ul style="list-style-type: none"> ● Communication with young people / young adults. ● Non Francophone communication
	Needs
	<ul style="list-style-type: none"> ● Catalogue of all of the solutions / tools ● Collaboration between official and popular stakeholders
	Result proposed
	<ul style="list-style-type: none"> ● R3.1 Knowledge Base for Innovative Channels and Communication (KB4ICC)
Preparedness Case 2: Malta (MA)	Problems
	<ul style="list-style-type: none"> ● Lack of system for alerting population ● Only digital channels
	Needs
	<ul style="list-style-type: none"> ● Resilient communication channels ● Trust from population ● Action by the authorities
	Result proposed
	<ul style="list-style-type: none"> ● R3.1 Knowledge Base for Innovative Channels and Communication (KB4ICC) ● R3.2 Tool for Early Warning Messaging
Preparedness Case 3: Rotterdam area (NL)	Problems
	<ul style="list-style-type: none"> ● Citizens are not aware of risks ● Difficulty to find info, both for citizens and authorities ● Awareness does not mean they know what to do ● Digital gap between different generations when it comes to tools and channels
	Needs
	<ul style="list-style-type: none"> ● Action Perspective: What do I need to do?

	<ul style="list-style-type: none"> • Access to information: digital and inclusive
	Result proposed
	<ul style="list-style-type: none"> • R3.1 Knowledge Base for Innovative Channels and Communication (KB4ICC) • R3.2 Tool for Early Warning Messaging

WP4 - Preparing for the involvement of spontaneous volunteers

We identified several challenges and needs in preparing for spontaneous volunteer involvement for each PC:

PC Reunion Island identified issues related to volunteer accountability, traceability of volunteer actions, and the effectiveness of communication with volunteers. Additionally, the lack of qualification among volunteers and the proliferation of uncoordinated initiatives were significant concerns. To address these challenges, mechanisms to support civilian volunteers, improve coordination, and ensure their protection are needed.

PC Malta highlighted the lack of coordination among volunteers as a major problem. To leverage the potential of spontaneous volunteers, civil protection authorities need to understand their role and develop protocols for collaboration.


PC Rotterdam encountered difficulties in utilising the full capacity of spontaneous volunteers due to their decentralised nature and challenges in networking between regional councils and safety regions. To optimise volunteer involvement, effective communication and awareness among different actors, centralization of volunteer efforts, and strategies to fully harness their potential are essential.

Based on this information, project Results were proposed, focusing solely on those related to the specific work package. In essence, the table provides a concise overview of the problems and needs encountered in each case and the corresponding Results that were suggested within the context of WP4 namely: **R4.1 Support System for integration of Spontaneous Volunteers in Preparedness Plans and R4.2 Tabletop Game.**

Table 7 - Exercise findings from WP4 perspective

Preparedness Case 1: Reunion Island (FR)	Problems
	<ul style="list-style-type: none"> • Accountability of volunteers

	<ul style="list-style-type: none"> • No traceability • Viability of messages sent • No qualification / Profusion of uncoordinated initiatives • Request of contribution from population not well known (non identified)
	Needs
	<ul style="list-style-type: none"> • Ways to support civilians volunteers mechanism • Coordination • Protection of volunteers
	Result proposed
Preparedness Case 3: Rotterdam area (NL)	<ul style="list-style-type: none"> • R4.2 Tabletop Game
	Problems
	<ul style="list-style-type: none"> • Lack of coordination of volunteers
	Needs
	<ul style="list-style-type: none"> • Civil protection need to understand the potential role of specials volunteers (SV) • Defining protocols to collaborate with specials volunteers (SV)
	Result proposed
	<ul style="list-style-type: none"> • R4.1 Support System for integration of Spontaneous Volunteers in Preparedness Plans • R4.2 Tabletop Game
	Problems
	<ul style="list-style-type: none"> • Difficulty to use the full capacity of SVs • A lot of volunteers not centralised • Networking between RC and safety region • Impossibility to plan (when and who)
	Needs
	<ul style="list-style-type: none"> • Communication and Awareness among different actors • To centralise the volunteers • Use the full potential of the SV
	Result proposed

- 
- R4.1 Support System for integration of Spontaneous Volunteers in Preparedness Plans
 - R4.2 Tabletop Game

Analysis of the Preliminary Result assignment stemmed out from the Participatory Exercise.

The exercise focused on the problems and needs of each Preparedness Case (PC). As a result, some of the Results initially assigned during the proposal phase were added or removed based on the specific requirements of each PC.

The Results assigned to **Preparedness Case 1: Reunion Island** in the proposal phase have largely remained unchanged. The Navigable Atlas of Best Practices and guidance material for citizen empowerment (R1.1) and the Self-Assessment preparedness tool (R1.2) will continue to be implemented. Additionally, the Roadmap and Training packages (R2.1) will be delivered as planned.

To further strengthen the project, two additional Results have been added. The Knowledge Base for Innovative Channels and Communication (R3.1) will enhance collaboration between official and popular stakeholders, facilitating more effective communication and engagement. The Tabletop Game on the role of spontaneous volunteers (R4.2) will support and coordinate the work of volunteers, improving their effectiveness and impact during crisis situations.

For **Preparedness Case 2: Malta**, the exercise resulted in some adjustments to the initially proposed outcomes. The Knowledge Base for Innovative Channels and Communication (R3.1) and Automated Early Warning System (R3.2) will remain as originally planned. However, several new outcomes have been added:

- Training Modules to increase awareness and understanding of areas for improvement (R2.1)
- Support System for integrating Spontaneous Volunteers in preparedness plans (R4.1)
- Tabletop Game on the role of spontaneous volunteers (R4.2)

The Self-Assessment Preparedness Tool (R1.2) has been removed due to challenges related to coordination and role clarity, which would hinder effective data collection. It is anticipated that these issues will be addressed through the establishment of the Local

Support Team which already proved a better alignment between the Malta organisations and initiatives dealing with the preparedness.

Compared to the initial proposal, the following Results have been retained for the **Preparedness Case 3: Rotterdam**: R1.2 Self-Assessment Preparedness Tool to help assess the current level of preparedness and identify areas for improvement; R4.1 Support System for Integrating Spontaneous Volunteers to facilitate the integration of spontaneous volunteers into preparedness plans, ensuring their effective utilisation; R4.2 Tabletop Game on the Role of Spontaneous Volunteers to provide a practical way to train volunteers and improve their coordination.

Additionally, the following Results have been added: R3.1 Knowledge Base for Innovative Channels and Communication to Access to Information: This Knowledge Base will help improve access to information, particularly for digital and inclusive communication, bridging the digital gap between generations; R3.2 Automated Early Warning System: This system will help raise awareness of risks and provide timely alerts to citizens.

The Roadmap and Training Package (R2.1) has been removed as it was not deemed a high priority for preparedness, and many relevant solutions are already available.

Table 7 presents a comprehensive analysis of the preliminary Results that emerged from the participatory exercise, for each reference event scenario a detailed comparison between the initial Results assigned in the proposal phase and those assumed to be utilised from the exercise. This comparative analysis provides valuable insights into the evolution of the project's scope and objectives, highlighting the impact of the participatory exercise on the final outcomes.

To better highlight the distinction between the preliminary assignment during the proposal phase and the one made during the participatory exercise, the "Results assumed to be used from the exercise" column doesn't highlight Results that remained unchanged. Results shown in green represent new additions to the initial plan, while those highlighted in red have been removed from the original plan.

Table 8 - Comprehensive analysis of the preliminary Results that emerged from the participatory exercise

Reference event scenario	Results assigned in the proposal phase	Results assumed to be used from the exercise
<p>Cyclone risk Preparedness Case 1: Reunion Island (FR)</p>	<p>R1.1 Navigable Atlas of Best Practices and guidance material for citizen empowerment R1.2 Tool for Preparedness Assessment R2.1 Roadmap and Training modules</p>	<p>R1.1 Navigable Atlas of Best Practices and guidance material for citizen empowerment R1.2 Tool for Preparedness Assessment R2.1 Roadmap and Training modules + R3.1 Knowledge Base for Innovative Channels and Communication R4.2 Tabletop Game on role of spontaneous volunteers</p>
<p>Earthquake Preparedness Case 2: Malta (MA)</p>	<p>R1.2 Tool for Preparedness Assessment R2.1 Roadmap and Training modules R3.1 Knowledge Base for Innovative Channels and Communication R3.2 Automated early warning</p>	<p>R3.1 Knowledge Base for Innovative Channels and Communication R3.2 Automated early warning + R2.1 Roadmap and Training modules R4.1 Support System for integrating Spontaneous volunteers in preparedness plans R4.2 Tabletop Game on role of spontaneous volunteers - R1.2 Tool for Preparedness Assessment</p>

<p>Flow Preparedness Case 3: Rotterdam area (NL)</p>	<p>R1.2 Tool for Preparedness Assessment R2.1 Roadmap and Training modules R4.1 Support System for integrating Spontaneous volunteers in preparedness plans R4.2 Tabletop Game on role of spontaneous volunteers</p>	<p>R1.2 Tool for Preparedness Assessment R4.1 Support System for integrating Spontaneous volunteers in preparedness plans R4.2 Tabletop Game on role of spontaneous volunteers + R3.1 Knowledge Base for Innovative Channels and Communication R3.2 Automated early warning - R2.1 Roadmap and Training modules</p>
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Finally, table 8 summarises the project Results assigned in the participatory exercise. The primary purpose of this exercise was to gather input from the PCs and initiate a preliminary discussion on the Results to be assigned. It's important to note that the outcomes of this exercise do not directly correlate with the final assignment for the validation phase but for the evaluation phase. Rather, they provide a foundational framework for subsequent, more definitive decisions regarding the assignment of Results.

Table 9 - Project Results assigned in the participatory exercise

Project Results assigned in the participatory exercise	Reunion Island	Malta	Rotterdam
R1.1 Navigable Atlas	X		
R1.2 Tool for preparedness assessment	X		X
R2.1 Two training modules	X	X	
R3.1 Knowledge Base for Innovative Channels and Communication (KB4ICC)	X	X	X
R3.2 Tool for early warning messaging		X	X
R4.1 Support System for integration of SV in Preparedness Plans		X	X
R4.2 Tabletop Game	X	X	X

3.3 Activities to collect data from the PCs to steer R&D in WP2, 3, and 4

The SYNERGIES Data Collection Calendar, summarised in the table below, provides a comprehensive overview of the planned activities to gather data from Preparedness Cases. This data will serve as a foundation for the research and development efforts undertaken in Work Packages 2, 3, and 4. For each completed activity, the table outlines the specific goals, scope, and the type of data collection activity organised.

Table 10 - SYNERGIES Data Collection Calendar

Stage of execution	Name of the event	PC investigated	Date
Conducted	Meeting of the risk referent network	La Reunion	19-Mar-2024
Conducted	RETEX Risk Culture - La Reunion Stakeholder Mobilisation workshop. Event with local stakeholders to present the project and collect information for WP2-3-4	La Reunion	9-Apr-2024
Conducted	Stakeholder mapping interviews	Rotterdam	23-May-2024
Conducted	Disaster Preparedness Workshop	Rotterdam	18-June-2024
Conducted	Malta Stakeholder Mobilisation workshop	Malta	19-July-2024
Conducted	Ready2Help & Reunion Meeting	Rotterdam	21-June-2024
Conducted	Preparedness Assessment Workshop follow-up	Rotterdam	18-June-2024
Conducted	Meeting with Local Support Team	La Reunion	8-Oct-2024
Conducted	Meeting crisis communication	La Reunion	9-Oct-2024
Conducted	Meeting university (Natural risks Masters)	La Reunion	10-Oct-2024
Conducted	Meeting St Pierre	La Reunion	11-Oct-2024
Conducted	Meeting: Empowerment for Disaster Preparedness (with Shona)	Rotterdam	11-Oct-2024
Conducted	Meeting SHLMR	La Reunion	14-Oct-2024
Conducted	Meeting AFPCNT	La Reunion	15-Oct-2024
Ongoing	Natural risks Hackathon	La Reunion	24-Oct-2024

Please note that the calendar is subject to change and additional activities may be added in the coming months. A full report for each event will be provided within the final project deliverables (D1.2, D1.3 and D1.4).

4. EVALUATION AND VALIDATION PHASE

The aim of the evaluation phase is to present and assess the first version of the SYNERGIES Results produced in WP 2, 3 and 4. As shown in the figure below, the evaluation phase will run from M13 (Dec 2024) to M22 (Sept 2025), where three workshops (La Reunion M15, Malta M17 and Rotterdam M19) will be held to gather input from the local support teams and external experts to facilitate the refinement of the Results for the validation phase. The guiding question of the evaluation phase will be *"How can we improve the Results?"*. The focus of this phase would be to assess the functionality, usability and effectiveness of the preliminary Results in order to gather early feedback and recommendations for their refining and fine-tuning. The evaluation phase will provide an additional opportunity to incorporate the knowledge and solutions of the stakeholders from their real experiences and through the feedback and recommendations they will provide.

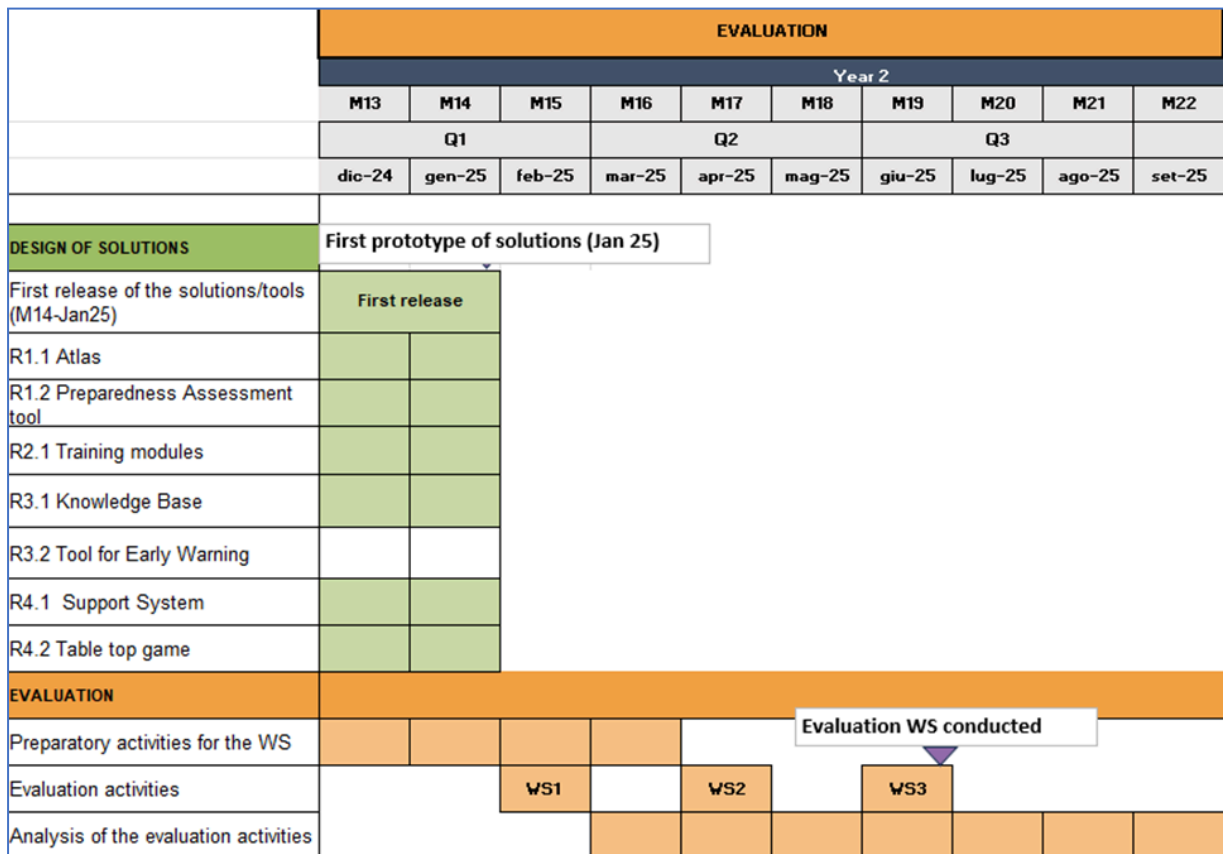


Figure 7 - Evaluation activities timeline

When WP 2, 3 and 4 will start releasing their final Results, these will be applied in the Preparedness Cases in the Validation phase that will run from M23 to M31 (see Figure 7).

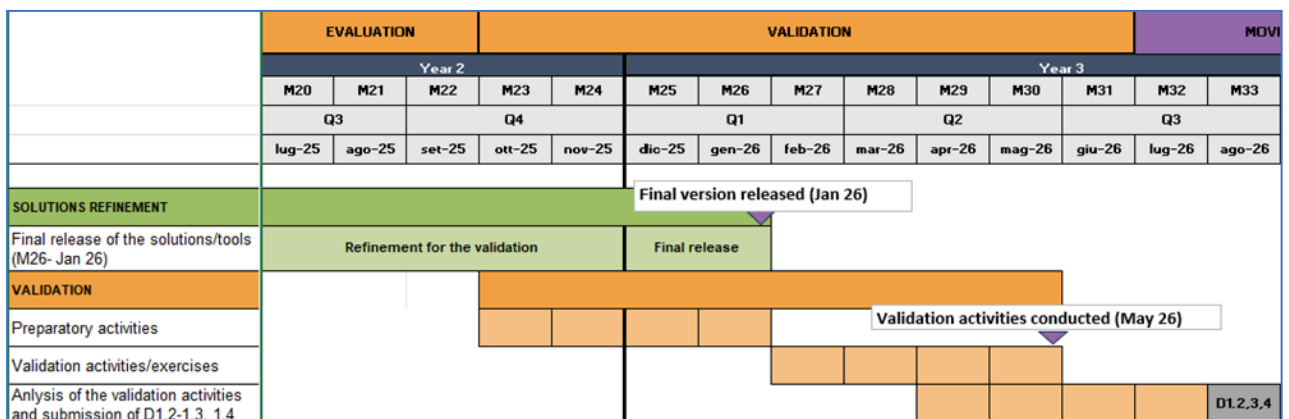


Figure 8 - Validation activities timeline

In the Validation phase the improved Results will be tested in a more comprehensive setting to demonstrate their validity and assess their impact e.g., achievement of the promised benefits (effectiveness), the transferability of the solutions to different contexts, etc.

This phase will also focus on providing evidence of the effectiveness of the Results for dissemination and practical use. It will include a measurement of the impact of the solutions on the project's target groups. The feedback collected during the validation phase will inform and guide the project's sustainability and exploitation activities in WP5.

All the activities conducted in the evaluation and validation phase will be reported in deliverables D1.2, D1.3 and D1.4 due in M33 including possible modification to the timeplan presented above.

4.1 The Evaluation and Validation Criteria

Evaluation and Validation will check against a set of criteria, if the SYNERGIES Solutions would bring advantages if used instead (or in addition to) of the current practices, methods and tools. A set of criteria has been defined on the basis of needs expressed by end users and similar validation activities in past projects and revised with project partners and end users representatives (see section 4.4 for further details). These criteria are:

- **Usefulness:** Degree to which the SYNERGIES outcomes are able to meet users' needs.
- **Usability:** Degree to which the SYNERGIES outcomes and data repository are reasonably easy to understand and use.
- **Maturity:** The degree to which the Solution has been experimented and successfully applied. If this is not the case: the feasibility of actions for promoting a wider usage
- **Economic Viability:** Assessment of economic performances in operational conditions compared to user expectations and performances of current solutions.
- **Transferability:** Applicability across different contexts and countries and the Results obtained are repeatable and independent of users and are scalable (that is, able to scale from toy application in the lab or academic context to real large-scale cases).
- **Compatibility:** Degree to which the SYNERGIES outcomes are considered compatible with already existing practices within a specific context/organisation and regulations of reference e.g. privacy, legal and ethical regulations.

Validation will offer the opportunity to investigate the sustainability of the project Results assessing technical and economic performances in real market conditions, using the maturity and economic viability criteria, which will be used only for the validation phase. This will include the analysis of the costs (including resources required such as competencies, investments) of the marketable project outcomes, when considered in operation.

4.2 The Evaluation and Validation exercises

Exercises are planned to be carried out to measure the criteria achievement. Taking into account the nature of the Results to be tested in the evaluation phase (e.g. mainly prototypes, mock-ups, concepts and ideas), exercises will consist of a set of workshops to collect early feedback that can be used to improve and refine the Results. The common structure for the exercises has been identified and discussed with the project partners (see section 4.4) and it is presented in the table below. It will be used in T1.2, T1.3 and T1.4 as a basis to further refine the exercises according to the maturity of the Results and the expectations of the PCs. The evaluation workshops are planned for M15, M17 and M19.

Table 11 - Evaluation workshops general structure

Workshop phases	Description
1. Preparation of a scenario relevant to the PC involved in the evaluation activities	<p>General section</p> <ul style="list-style-type: none"> ● Description of the PC e.g. characteristics of population, budget, decision-making autonomy. ● Type of event to be prepared for: type of event, level of risk, population affected, main consequences ● Main gaps/needs in preparedness <p>Result specific section</p> <ul style="list-style-type: none"> ● The scenario must then be designed to present the problems that the specific Result is intended to solve.
2. Presentation of the Result to experts and relevant stakeholders	<ul style="list-style-type: none"> ● Description of the Result (e.g. mock-up with key features of the Atlas) ● Best examples of the use of the Atlas in the scenario
3. Discussion with experts and relevant stakeholders to collect relevant feedback for improvement	<ul style="list-style-type: none"> ● Discussion with experts and relevant stakeholders involved in the workshop (e.g., Local Stakeholders Teams and Advisory Board members) ● Evaluation questionnaire with a series of questions on usability, usefulness, etc. ● Debriefing to collect recommendations

With regard to the validation phase, the relevant exercises for testing the SYNERGIES Results will be defined at a later stage of the project life cycle, when the characteristics and functionalities of the Results will be more mature. The exercises will be defined in relation to the nature and characteristics of the specific Results. For example, the table-top game could be validated through a gaming activity under real conditions, while for Training Modules, the validation activity could be the delivery of modules with the collection of feedback from the target users involved.

Finally, some tools with similar characteristics such as data repositories (R1.1 Atlas, R3.1 Knowledge Base and R4.1 Support System) could be tested using the same method such as workshops or more structured exercises to present and showcase the functionalities of the Results. These preliminary ideas will be discussed in more detail during the next WP1

activities. The image provides an initial overview of the Results that will be assessed in detail during the evaluation workshops.

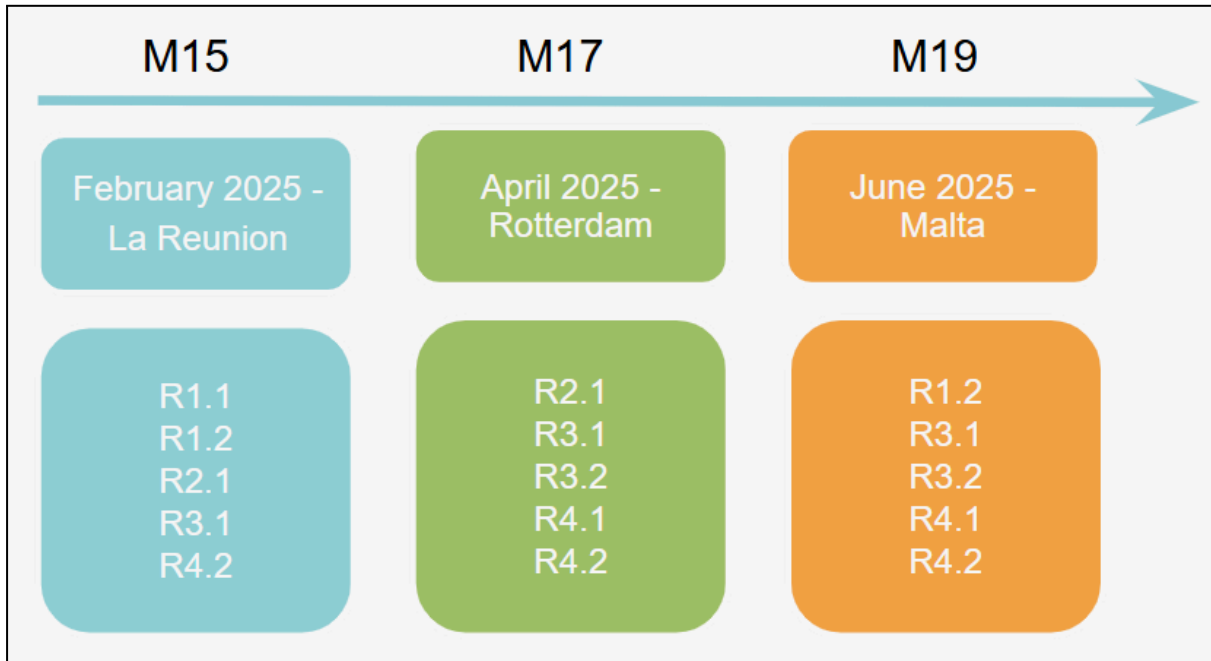


Figure 9 - Evaluation workshops overview

4.3 The evaluation and validation toolkit

Given that the SYNERGIES solutions are different, and each tool is characterised by specific and unique features and components, a toolkit will be developed to facilitate the data collection during the execution of the evaluation and validation activities.

The evaluation and validation toolkit will consist of quantitative and qualitative instruments, i.e.: questionnaires and debriefing templates.

The evaluation and validation instruments will be designed and customised according to the specific functionalities, features and maturity of the Results.

4.4 Criteria & exercises workshop

On September 17th, 2024, a dedicated workshop was convened with project partners to establish a robust framework for evaluating and validating the project's Results.

The workshop was focused on the consolidation of the evaluation criteria and exercises. In this respect, the primary objectives of the workshop were to meticulously review the proposed evaluation criteria, reach a consensus on the most effective evaluation exercises. Partners were actively engaged in the workshop, tasked with critically examining the

established criteria (see section 4.1), analysing the corresponding Results, assessing the proposed exercises (see section 4.2), and considering the necessary measures to ensure a comprehensive and rigorous evaluation. Through collaborative discussions and thoughtful deliberation, the workshop participants were able to refine the evaluation criteria and discuss the most appropriate methods to be used in the evaluation phase.

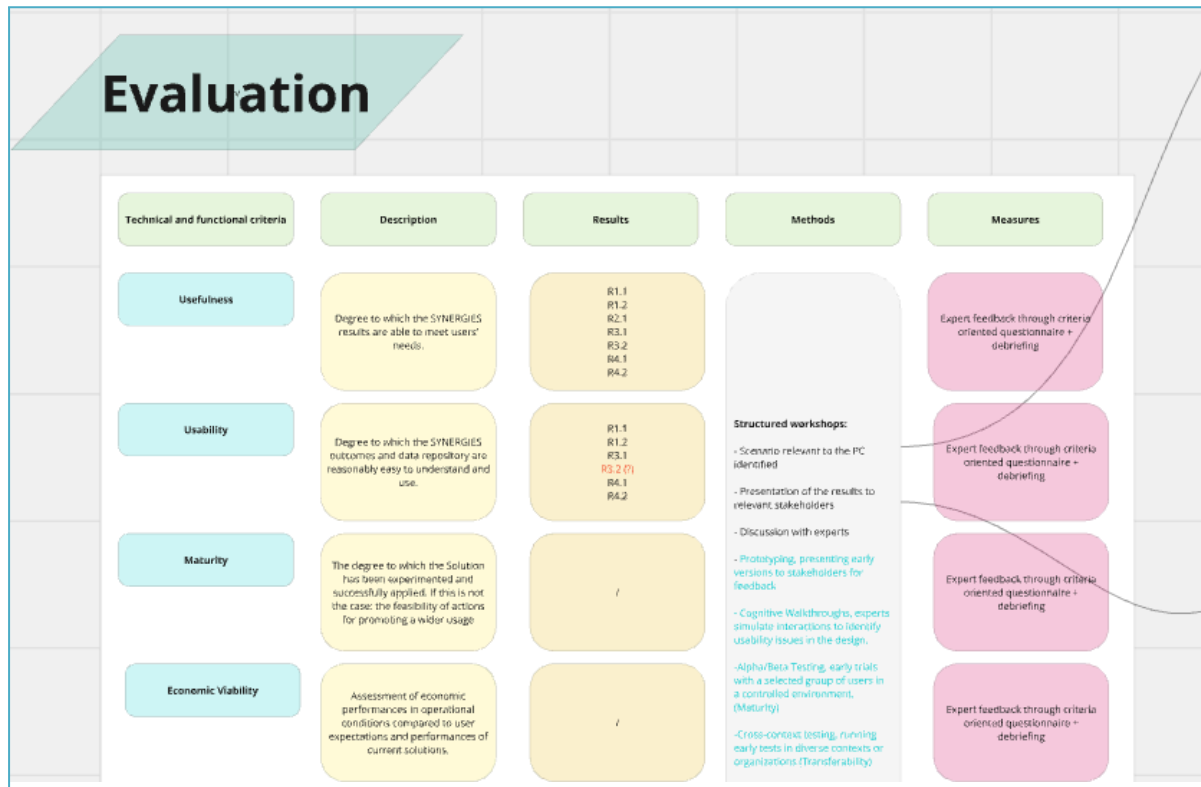


Figure 10 - Miro board used during the workshop

The main outcomes of the workshop are presented in the table below. This will serve as a foundation for T1.2, T1.3, and T1.4, allowing for the refinement of evaluation activities based on the maturity of the Results and the expectations of the Preparedness Cases. It is important to note that not all criteria will be applied in both phases. Specifically, the criteria of 'maturity' and 'economic viability' will be applied exclusively in the validation phase.

Table 12 - Workshop outcomes

Technical and functional criteria	Description	Exercises	Measure

1. USEFULNESS	Degree to which the SYNERGIES outcomes are able to meet users' needs.	<p>Structured workshops:</p> <ul style="list-style-type: none"> • Scenario relevant to the PC identified • Presentation of the Results to relevant stakeholders • Discussion with experts 	<p>Expert feedback through criteria-oriented questionnaire + debriefing</p>
2. USABILITY	Degree to which the SYNERGIES outcomes and data repository are reasonably easy to understand and use.		
3. MATURITY	The degree to which the Solution has been experimented and successfully applied. If this is not the case: the feasibility of actions for promoting a wider usage		
4. ECONOMIC VIABILITY	Assessment of economic performances in operational conditions compared to user expectations and performances of current solutions.		
5. Transferability	Applicability across different contexts and countries and the Results obtained are repeatable and independent of users and are scalable (that is, able to scale from toy application in the lab or academic context to real large-scale cases).		
6. Compatibility	Degree to which the SYNERGIES outcomes are considered compatible with already existing practices within a specific context/organisation and regulations of reference e.g. privacy, legal and ethical regulations		

5. CONCLUSIONS

The Evaluation and Validation Plan for the SYNERGIES project provides a comprehensive framework for assessing the effectiveness of the project's solutions. By following this plan, the project will be able to ensure that its solutions are aligned with the needs of target communities and contribute to enhancing their preparedness and resilience.

The activities detailed in this EVP will be executed within Tasks 1.2, 1.3, and 1.4. In the coming months, we will focus on developing the exercises that will be used in the evaluation and validation phases, as well as defining the agendas and roles and responsibilities for the teams working on the Preparedness Cases. Additionally, we will prepare an evaluation and validation toolkit, consisting of both quantitative and qualitative instruments. This toolkit will be ready within the next month and will guide partners in implementing the exercises to test the project's results.

Following the implementation of the three evaluation workshops (in months 15, 17, and 19), we will analyse the feedback collected from users. This feedback will be crucial for refining and developing the SYNERGIES project results, ultimately leading to the final validation.

The EVP will be iteratively reviewed and updated based on the findings of evaluation workshops. This iterative process guarantees that the plan remains relevant and responsive to the evolving needs of the project and preparedness cases.