REGIONE AUTONOMA FRIULI VENEZIA GIULIA

CEI CENTRAL EUROPEAN INITIATIVE

unesco Chair
UNESCO Chair on Intersectoral Safety for Disaster risk reduction and Resilience
SPRINT-Lab, University of Udine, Italy

UNIVERSITY OF UDINE
SAFETY AND PROTECTION INTERSECTORAL LABORATORY
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CISM International Centre for Mechanical Sciences

RESILIENHANCE PLATFORM EXPERT RECOMMENDATIONS

from the launching event of the ResiliEnhance Platform

2022

RESILI ENHANCE platform

Enhancing the resilience to disasters for sustainable development

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This publication was prepared by the UNESCO Chair on Intersectoral Safety for Disaster Risk Reduction and Resilience at the University of Udine (Italy), for the "Central European Initiative", within the framework of the "Cooperation agreement for research activities" 2022. The Experts' Recommendations presented in this document summarize the discussions held during the launching event of the ResiliEnhance Platform organized in Udine (Italy), on 24-25 October 2022.

Authors:

Stefano Grimaz, Petra Malisan
UNESCO Chair on Intersectoral Safety for Disaster Risk Reduction and Resilience, SPRINT-Lab, University of Udine (Italy)

In collaboration with:

Lucille Anglès
UNESCO Chair on Intersectoral Safety for Disaster Risk Reduction and Resilience, SPRINT-Lab, University of Udine (Italy)

Revision by the Scientific Committee of the ResiliEnhance Platform

Matjaž Mikoš (coordinator) - UNESCO Chair on Water-related Disaster Risk Reduction, University of Ljubljana, Slovenia

Zvonko Sigmund - European Science & Technology Advisory Group (E-STAG), UNDRR, Faculty of Civil Engineering, University of Zagreb, Croatia

Janusz Szpytko - UNESCO Chair on Science, Technology and Engineering Education, Krakow, Poland

ResiliEnhance Platform participants (2022):

Lucille Anglès; Ingrid Belčáková; Maria De America Bendito Torija; Daniela Di Bucci; Margherita Fanchiotti; Carlo Fortuna; Stefano Grimaz; Petra Malisan; Jadranka Mihaljević; Matjaž Mikoš; Ferenc Miszlivetz; Sebastien Penzini; Aldo Primiero; Chiara Scaini; Zvonko Sigmund; Jasmina Stankova; Janusz Szpytko; Veronica Tofani; Jair Torres; Dimiter Velev.

ISBN: 978-88-85137-49-3

Published with the support of the CISM: International Centre of Mechanical Science (Udine, Italy)

Photo of the boat in the cover by Daniel Kuruvilla on Unsplash

The ResiliEnhance Program is co-financed under Friuli Venezia Giulia Regional funds (L.R.18/2011) - CEI-FVG operative programme 756/2021.

The key terms related to DRR concepts are defined in the terminology developed by the United Nations office for Disaster Risk Reduction (UNDRR) [1].

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1 BACKGROUND

The United Nations Secretary-General, Antonio Guterres, introducing the Global Assessment Report 2022, states: “Nothing undermines sustainable development like disasters”.

Events and phenomena with a strong impact on the territory, linked to climate change, natural hazards (e.g., earthquakes, floods, tornadoes, hydrogeological instability phenomena) and human activities (e.g., air pollution, water pollution, deforestation, soil degradation, abandonment of territories) are increasingly common. These events are affecting with greater frequency and intensity all countries around the world, including those of Central Europe. Moreover, social and natural systems have become increasingly complex and strongly interconnected, so the adoption of intersectoral approaches is essential to advise strategies and actions for increasing safety and resilience at the territorial level.

To address these challenges, a set of global frameworks has emerged, including the UN 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction 2015-2030, and the Paris Agreement. These frameworks work hand in hand to provide a coordinated approach for building resilience across various sectors and scales.

The Sustainable Development Goals (SDGs), unveiled as part of the **UN 2030 Global Agenda** [2], represent a comprehensive and ambitious blueprint for global development. These goals are designed to bring about a transformative impact on our world by addressing interconnected challenges across five crucial dimensions: people, planet, prosperity, peace, and partnership. These dimensions are not isolated objectives but interconnected facets of a comprehensive vision for a more sustainable and equitable future. Their integrated and indivisible nature underscores the recognition that progress in one area is intricately linked to advancements in others, emphasizing the need for a holistic and inclusive approach to development. To achieve these goals, the UN advocates for the development and implementation of effective methods and strategies. These approaches should be risk-informed, science-based, and evidence-based, acknowledging the complexity and systemic nature of the challenges at hand.

The emphasis on risk-informed strategies highlights the importance of anticipating and mitigating potential threats, while the reliance on scientific insights and evidence-based practices underscores the significance of science-based and empirical decision-making in crafting sustainable solutions. Moreover, the SDGs call for a global partnership to foster cooperation among nations, organizations, and communities. This collaborative effort recognizes that addressing global challenges requires collective action and shared responsibility. By promoting a unified approach, the SDGs aim to build a foundation for peace, stability, and prosperity worldwide, ultimately shaping a more sustainable and equitable future for all.

The **Sendai Framework for Disaster Risk Reduction 2015-2030** [3] underscores an urgent call for action to address the complex challenges posed by disaster risks and presents a strategic and comprehensive approach to addressing disaster risk with the goal of substantially reducing disaster risks and losses in lives, livelihoods, and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries. Through four interconnected priorities, this framework reflects a commitment to understanding the systemic nature of disaster risk, not merely as an academic pursuit but as a prerequisite for informed and effective action. By recognizing the intricate web of factors contributing to vulnerability, the framework calls for a comprehensive understanding that informs concrete measures to reduce risk. This understanding serves as the foundation for proactive and sustainable investments in risk reduction. The framework advocates for the allocation of resources towards preventive measures, stressing that the cost-effectiveness of these investments far surpasses the economic toll of post-disaster response and recovery. Furthermore, the Sendai Framework highlights the imperative of enhancing preparedness and response capacities. It emphasizes the dynamic nature of risks and the need for adaptive strategies that can respond to evolving circumstances. Integrating resilience into recovery and reconstruction processes is not a passive concept but an active strategy to ensure that communities not only recover but emerge

stronger and more resilient after facing disasters. In essence, the Sendai Framework is a rallying call for immediate and collective action. It calls for the translation of commitment into tangible, on-the-ground initiatives, recognizing that time is of the essence in the face of increasing disaster risks. The framework urges nations, communities, and international entities to collaborate actively, pooling resources, expertise, and efforts to collectively navigate the challenges of disaster risk. It is through concrete action that the vision of a more resilient and sustainable future, as outlined in the Sendai Framework, can be realized.

The **Paris Agreement** [4], a pivotal component of global efforts to combat climate change, echoes a resounding call for urgent action and transformative governance. Unveiled as part of the international community's commitment to limit global warming, this agreement emphasizes the need for decisive steps to mitigate the impacts of climate change and adapt to its inevitable consequences. It recognizes that effective action requires collaborative efforts on both national and international fronts. The agreement calls for the submission of nationally determined contributions, where each country outlines its specific climate action plans, reflecting a bottom-up approach that respects individual circumstances while collectively working towards shared goals. By establishing robust mechanisms for monitoring, reporting, and verifying progress, the Paris Agreement ensures that nations adhere to their commitments and continuously enhance their climate ambitions. In essence, the Paris Agreement stands as a call to action, urging nations to translate their climate commitments into tangible, measurable initiatives. It recognizes the immediacy of the climate crisis and emphasizes the need for swift, ambitious, and inclusive efforts to safeguard the planet for current and future generations.

Since 2019, the COVID-19 pandemic has clearly highlighted the need to create and strengthen tools and strategies for dealing with crisis situations in a synergistic and coordinated manner, at various levels. With this in mind, the “Next Generation EU” Recovery plan of the European Commission [5] aims to help repair the immediate economic and social damage caused by the coronavirus pandemic. It states that the post-COVID-19 Europe will be greener, more digital, more resilient and better fit for the current and forthcoming challenges, and will ensure reaching the UN Global Agenda 2030 goals among the objectives of returning to a *new normal*. Alongside the digital and ecological transition, there is a call for greater resilience and the ability to manage territorial risks, as explicitly defined in the priorities of the Sendai Framework for Disaster Risk Reduction. The post-pandemic recovery, therefore, constitutes an opportunity to reduce/mitigate the risks deriving from natural hazards and to increase resilience to future critical events and crises. The systemic dimension and the complexity of the aforementioned issues require strengthening the cooperation among countries, to guide the transition from reducing risk to creating resilient and safer societies, and to introduce stimulus to increase integration processes, good neighbourly relations, and interregional cooperation.

In the face of global systemic risk, the **Global Assessment Report** (GAR) 2022 - “Transforming governance for a resilient future” [6], released by the United Nations Office for Disaster Risk Reduction (UNDRR), presents a comprehensive and ambitious roadmap for global disaster risk reduction (DRR). This report is designed to bring about a transformative impact on our world by addressing interconnected challenges across three crucial dimensions: people (social), planet (environment), and prosperity (economy). These dimensions are not isolated objectives but interconnected facets of a comprehensive vision for a more resilient and sustainable future. Their integrated and indivisible nature underscores the recognition that progress in one area is intricately linked to advancements in others, emphasizing the need for a holistic and inclusive approach to DRR. The GAR 2022 highlights that despite commitments to build resilience, tackle climate change, and create sustainable development pathways, current societal, political, and economic choices are doing the reverse. This jeopardizes not only the achievement of the Sendai Framework for Disaster Risk Reduction 2015–2030 but also hinders progress towards the Paris Agreement and the Sustainable

Development Goals (SDGs). To achieve these goals, the GAR 2022 calls for a paradigm shift, urging a transition from planning to action, through the development and deployment of effective DRR methods and strategies. These approaches should be both risk-informed and science-based, acknowledging the complexity and systemic nature of the challenges at hand. Moreover, the GAR 2022 calls for a transformation in governance systems to foster cooperation among nations, organizations, and communities. This collaborative effort recognizes that addressing global challenges requires collective action and shared responsibility. By promoting a unified approach, the GAR 2022 aims to build a foundation for resilience, stability, and prosperity worldwide, ultimately shaping a more sustainable and equitable future for all.

2 THE RESILIENHANCE PROGRAM AND PLATFORM

To achieve a sustainable development characterized by a greater capacity for proactive action and the prevention and management of present and future risks and crises, societies must prioritize enhancing resilience and safety, and foster the transition to systemic risk governance. The GAR 2022 [6] warns that current approaches are failing to build societies resilient enough to withstand disasters. This, according to UN Secretary-General Guterres, hinders progress towards achieving Sustainable Development Goals. Transforming governance for a resilient future is the key aspect to face the challenges of the current world context. A lack of investment in understanding and addressing systemic risks will hinder the achievement of sustainable development. GAR 2022 emphasizes a more holistic approach that considers the interconnectedness of social, environmental, and economic factors.

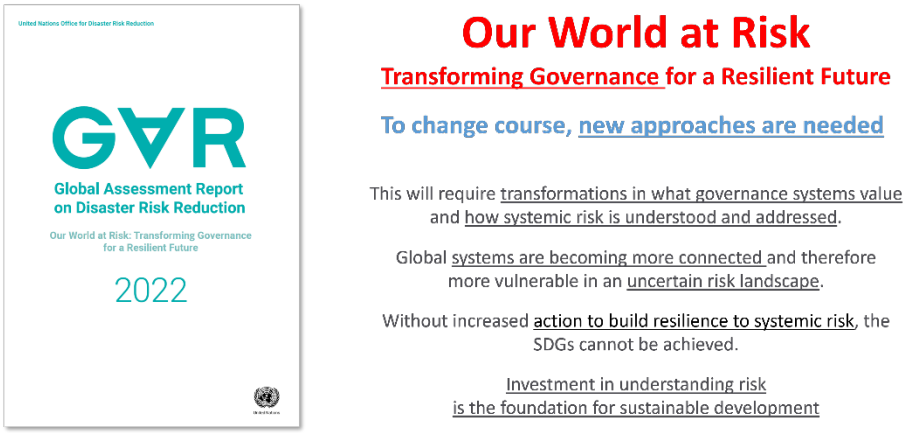


Figure 1: The Global Assessment report on Disaster Risk Reduction 2022 by UNDRR.

To actively contribute to this process, the *Central European Initiative* (CEI) and the *UNESCO Chair on Intersectoral Safety for Disaster Risk Reduction and Resilience at the University of Udine* (hereinafter *UNESCO Chair UNIUD*) are promoting the ResiliEnhance Program. This program aims to achieve the following short- and long-term results:

a) address the issue of strengthening territorial resilience and safety throughout the various phases of the Disaster Risk Management Cycle, using an intersectoral approach to develop recommendations and reference guidelines;

b) establish an interdisciplinary scientific network involving scientific institutions, United Nations agencies, EU institutions, as well as regional and national governmental and territorial institutions to promote a holistic approach to the problem;

c) increase synergy between the scientific community and policy and decision-makers with the goal of enhancing resilience and safety to support sustainable development.

This is worth noting that the ResiliEnhance Program focuses on the Central European Initiative (CEI) area, which brings together about fifteen Member States in Central, Eastern and South-Eastern Europe (https://www.cei.int/). This initiative particularly fosters European integration and promotes sustainable development through regional cooperation.

A fundamental step in the ResiliEnhance Program is to provide a space that facilitates interdisciplinary and intersectoral exchanges on the topic of resilience to disasters. This involves the activation of the **ResiliEnhance Platform** where experts can discuss and propose recommendations to support risk-informed and resilient sustainable development. This effort

aligns with the objectives of the United Nations 2030 Agenda and contributes to critical thinking that will help shape the post-2030 agenda.

The ResiliEnhance Platform functions as a knowledge-sharing and knowledge-bridging tool, operating through networks between academia in CEI Member States, United Nations Agencies, and European Institutions. These networks are structured on various interconnected and functional levels to facilitate synergistic exchanges between the scientific community and policy-makers.

The primary focus of the platform is resilience to disasters, which plays a central role in addressing challenges posed by systemic risks, climate change, natural hazards, man-made threats, the COVID-19 pandemic, and the increasing complexity and uncertainty that characterize the world. Proactive thinking and action to reduce risks and enhance the capacity to cope with surprises and unprecedented situations are key challenges in effectively enhancing resilience. Aligning with the key issue of transforming governance for a resilient future, the ResiliEnhance Platform adopts the concept of governance as “play of the game” rather than merely the “rules of the game” [6]. The activities of the platform aim to provide an interdisciplinary and intersectoral contribution in this direction, charting a course for *navigating* the evolving contexts in which decisions and actions must be made and taken.

Figure 2: The ResiliEnhance Program.

2.1 The basics of ResiliEnhance

The ResiliEnhance Platform focuses on actions recommended for enhancing safety and resilience to disasters, for sustainable development. A key aspect is the importance of contextualizing the systems in which decisions and actions are made and taken, as well as the need to identify suitable tools for different contexts. Moreover, it is fundamental to acknowledge the systemic dimension and the complexity that characterize the above-mentioned systems.

The ResiliEnhance Platform is based on the following frameworks and processes, which are briefly presented in the next sub-sections:

- Intersectoral Safety (IS) approach
- Disaster Risk Management Cycle (DRMC)
- Resilience
- Management Process for Disaster Risk Reduction and Resilience

2.1.1 Intersectoral safety approach

The management of safety and the identification of actions to enhance resilience and address the challenges of DRR in complex systems must consider multiple risks, dimensions, and disciplines, along with numerous interconnections, the variability of contexts in which not everything is entirely knowable, predictable, and controllable, as well as the plurality of stakeholders, with their roles and points of view [7]. These circumstances push for a new strategy for enhancing resilience and managing safety, grounded in an **intersectoral safety approach**.

The new paradigm of "Intersectoral Safety" (IS) has been developed by the researchers of the *UNESCO Chair UNIUD* [8], drawing from their years of project implementation experience.

The intersectoral approach implies linking the technical aspects with the socio-economic and human behaviour but also, as highlighted by the UN Agenda 2030, taking advantage of interdisciplinary and inter-institutional synergies. It aims to improve the capacity of contextualization and finalization and to build levers and tools for helping actors in managing safety and enhancing resilience.

Figure 3 summarizes the IS approach for safety management in the age of complexity. This approach adopts the point of view of who (e.g., an actor – i.e., a person called to act -, a group of actors, a community) is called to "play of the game", managing safety in a complex, uncontrollable, and constantly changing

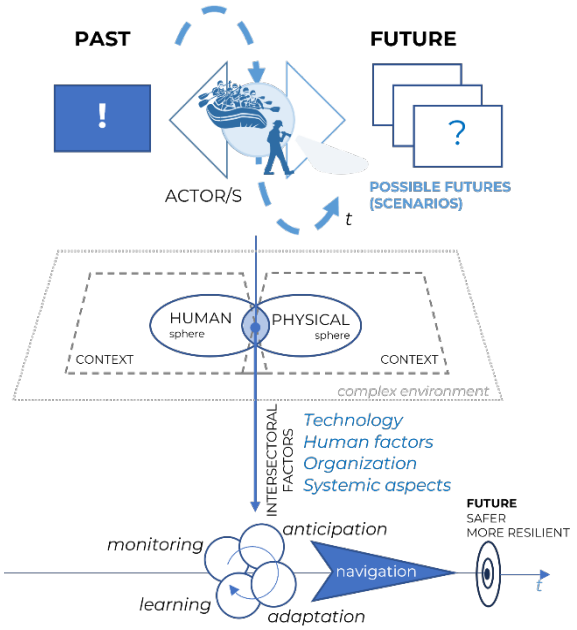


Figure 3: The intersectoral safety approach. Safety management in a complex context: acting in the present for navigating toward the desired future in an uncontrollable and changing environment.

environment. The actor acts in the present navigating towards the desired future, that is a continuously moving target. The use of the navigation metaphor is common when addressing complex systems and environments because it suggests a proactive and strategic approach to dealing with continuously changing and uncontrollable situations. It implies not only facing the situation but also finding ways to navigate through it effectively, like navigating a ship through a dense fog bank or during a storm.

In this context, resilience – the ability to adapt to changing circumstances – is crucial for the actor to reach their safety goals. In the IS approach, the actor navigates by leveraging the interaction between human and physical spheres, and their respective contexts. This involves executing continuous cycles of monitoring, anticipation, adaptation, and learning (MAAL), all while accounting for the mutual interactions among technological, human organizational, and systemic factors. Identifying strategies and tools in advance for determining why and what actions to take can significantly assist actors in their navigation.

From the actor's perspective, the fundamental question is: how can one take the right action at the right time? Real-world experience has shown that navigation is not always linear and calm. Adverse events, such as earthquakes, floods, pandemics, droughts, wars, or unprecedented events can occur, potentially causing unexpected or surprising effects.

2.1.2 Disaster Risk Management Cycle

A disaster occurs when an adverse event impacts a system that contains exposed values, and depending on its vulnerability and capacity, could lead to severe consequences. It is worth noting that whenever an adverse event occurs (in a more or less predictable way), it sets a remarkable point for a cycle of phases with specific purposes, named "**Disaster Risk Management Cycle**" (DRMC, Figure 4) (also known as "Disaster Management Cycle", see [9–11] and references therein). If we stick to a very simplified schematisation, after an adverse event there are two main phases with the following purposes: **response** (comprising the emergency and emergency-overcoming sub-phases), and **recovery** (comprising the sub-phases of rehabilitation, and reorganization/reconstruction). If these two phases are successful, the affected system is restored to a new state of **normality** (to explore this concept refer to [6,12,13]).

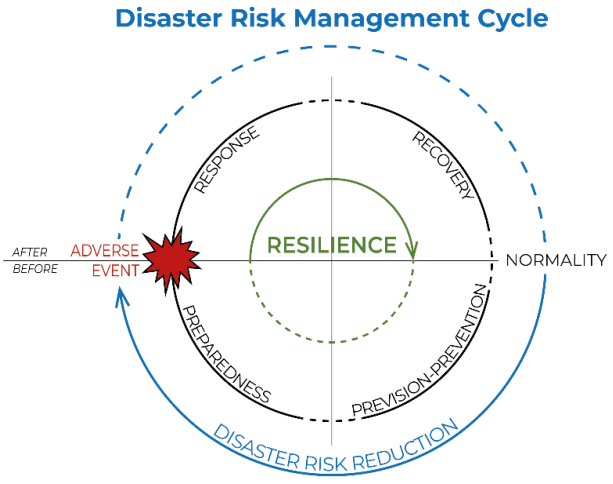


Figure 4: Simplified schematization of the Disaster Risk Management Cycle.

The ability to respond and recover following an event strongly depends on what has been done in terms of **prevision-prevention** and **preparedness** before the occurrence of an event, also considering what has been learned and capitalized from previous experiences.

The DRMC conceptualises the sequence of the above-mentioned "purpose phases" in a sort of cycle, in order to express the idea of linking [9–11] cyclically the adverse event to the return to normality and normality to a possible next event. The simplified scheme in Figure 4 aims to summarize these phases, i.e. Response, Recovery, Prevision-Prevention, and Preparedness (names of the phases can slightly change in literature). Given the diversity of the DRMC's phases, each targeting distinct purposes, its implementation strives to modify the context, particularly by reducing disaster risk and enhancing resilience. Due to this inherent dynamism, DRMC implementation necessitates the continuous development and refinement of approaches and tools.

The DRMC is often depicted as a sequential process with clearly defined phases. However, despite this representation, the DRMC inherently

exhibits overlap between the phases, indicated by the dashed black line in Figure 4. This overlap is intricately linked to the dynamic and interrelated nature of DRMC's phases, wherein the execution of activities from one phase is pivotal for the successful implementation of subsequent phases. Moreover, these phases often necessitate concurrent implementation of activities, further emphasizing their interdependence.

The return to normality is not the end of the DRMC process, but rather the beginning of capitalising on previous experience and implementing knowledge in a targeted way, to continue with the prevision-prevention and preparedness phases. As stated by UNDRR [14], "*More than "building back better", we need to focus on doing better from the outset. That means both reducing the existing sources of risk in the world and avoiding creating new risk*".

The DRMC conceptualization forms the basis for the disaster preparedness policies established by the United Nations in recent decades. While the actions defined in the Sendai framework 2015-2030 focus on DRR and resilience, more than on disaster management, both DRR and resilience aspects are present in the DRMC, i.e.:

- **disaster risk reduction** concerns mainly the "before" phases of the DRMC, i.e., prevision-prevention and preparedness, when actions are taken to improve the situation and prepare for dealing with a new event; however, actions for reducing disaster risk can be organized and implemented already during the response and recovery phases, when the concept of "build back better" becomes strategic, fostering the opportunity not just to restore, but to improve safety and reduce future risk of disasters;
- **resilience** concerns mainly the "after" phases of DRMC, and can be interpreted as the ability to reach a condition of "normality" (or "new normality") as quickly as possible; this means the ability to close the loop of the post-event phases (response and recovery) in a fast and effective way. This capacity is closely related to what has been done and invested before the event, i.e., in the prevision-prevention and preparation phases, when resilience is "built", also comprising what has been capitalized from positive and negative experiences in previous events.

2.1.3 Resilience

The term "resilience" is multidisciplinary and lacks a precise definition due to its broad usage. Etymologically derived from the Latin words *resilio* and *resilire*, meaning to return or resume, the concept was coined by Holling [15] within ecological science, describing it as the capacity to withstand disturbances while maintaining stability. Several studies offer valuable insights for further exploration of the definition (see references [14–18]). The concept of resilience is commonly explained through the resilience curve depicted in Figure 5. This curve outlines the trend of a territorial system's functioning over time when it encounters an adverse event. The diagram recalls the phases of the DRMC, allowing for insights into the concept of system resilience. The initial considerations draw an analogy to the resilience of materials, often referred to as the "bounce-back effect". They can be summarized as follows:

- the adverse event affecting the system may cause a more or less pronounced decrease in functionality compared to the pre-event situation;
- the time required for the system to return to a level of normality similar to the pre-event condition may vary in duration;
- the more restricted the above-mentioned factors, the larger the resilience of the system.

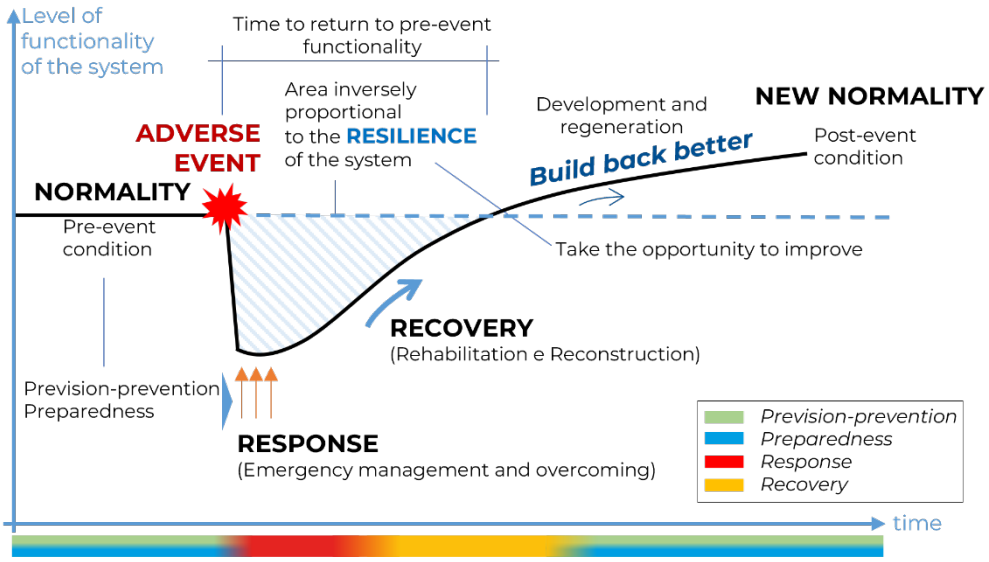


Figure 5: Schematic representation of resilience, with indication of the DRMC phases.

Figure 5 illustrates how post-event recovery can result in a **new normality**, potentially at a better level than the pre-event. While the analogy with material resilience is pragmatic and effective, it can however be limiting, as territorial systems are not solely 'material' systems.

To grasp the connotative aspects of resilience of physical-social systems, such as territorial systems, one must therefore resort to a more comprehensive (ecological) interpretation of resilience. The ecological view of resilience, which goes beyond the assessment of rebound, also considers the capacity to anticipate the adverse event and seize the opportunity for a return to a new normal, that introduces elements of improvement and regeneration compared to the pre-event state (*build back better*).

The ecological-evolutionary approach is not passive-reactive like for materials, but mainly proactive. To improve resilience, the system uses not only its ability to respond and recover but also its ability to anticipate, regenerate and learn. These capabilities are particularly important given that adverse events may recur over time and the system has the ability to prepare in advance for future events and avoid creating new risks. The ability to learn from the gained knowledge gives the system a potential evolutionary capacity.

2.1.4 Management process for disaster risk reduction and resilience

An ecological-evolutionary approach involves assuming the role of the active agent, i.e., as the player called to “play of the game” (Figure 6), whether as an individual, a group, or a community. In this perspective, the system's resilience depends on the capabilities of these players, including their knowledge, strategies, and tools used to understand the problem, make decisions, and implement actions. The correctness, relevance, timeliness, contextualization, and impact of these actions (or inactions) collectively determine the system's resilience.

Moreover, there exist the external observers, who have a comprehensive overview of the entire situation. Considering the entire process or even each step, they analyse the outcomes resulting from the actions of the players, as well as the appropriateness, effectiveness, and efficacy of the entire process. However, these observations are conducted with an ex-post point of view.

External observers possess knowledge of how the system evolved under the specific circumstances and on which have been the results of the actions. In this case, the task of the observer is to interpret the situation to gather knowledge and experience that can be applied to future events.

These two figures (player and observers) are at the core of the Management Process for Disaster Risk Reduction and Resilience (MP-DRRR). This process is primarily based on the steps of understanding the problem, making decisions, and putting in place actions in order to reach a specific goal. It operates in a context characterized by complexity, large uncertainties, and systemic risks. In this process, the governance (referred to as "play the game" to navigate toward a safer and more resilient future) involves the direction, coordination, and control of players activities. This is achieved through a combination of formal and informal mechanisms, such as organizational structures, decision-making authority, and procedures, establishing accountability, and focusing on activities that contribute to overall objectives.

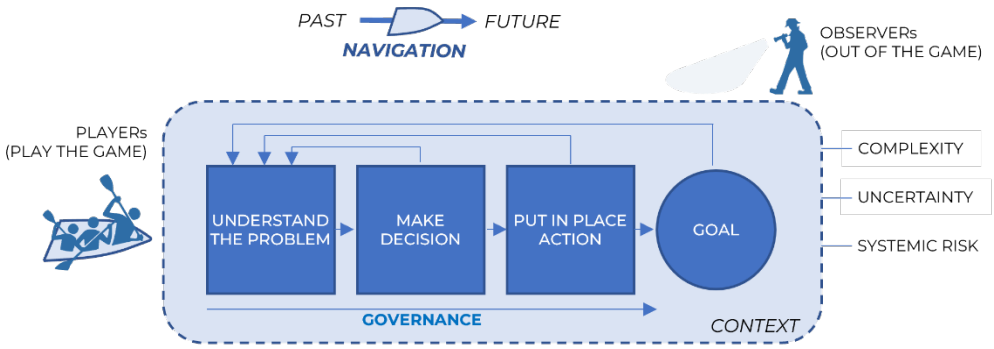


Figure 6: The management process, with players and observers.

The management process can be directly linked with the four priorities of the Sendai Framework:

- Priority 1: Understanding disaster risk;
- Priority 2: Strengthening disaster risk governance to manage disaster risk;
- Priority 3: Investing in disaster risk reduction for resilience;
- Priority 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction.

Figure 7 integrates the MP-DRRR with the Sendai Framework's four priorities through a graphical representation specifically adopted within the ResiliEnhance Platform. This highlights the process for navigating towards a safer and more resilient future, aimed at safety and sustainable development.

Considering the Sendai Framework, therefore, it is necessary, always taking into account the characteristics of the context in which one is operating, to first "understand the risk" (Priority 1) in order to provide the knowledge necessary for making decisions that lead to the implementation of actions ("investing in disaster risk reduction for resilience", Priority 3) aimed at achieving the goal, which must remain a constant target even considering the potential occurrence of adverse events. Throughout this process, it is necessary to continuously gather feedback to allow manoeuvring toward the target, even in face of disruptions or changes. Following this process, it is possible to "strengthen disaster risk governance to manage disaster risk" (Priority 2), and its implementation leads to "enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction" (Priority 4).

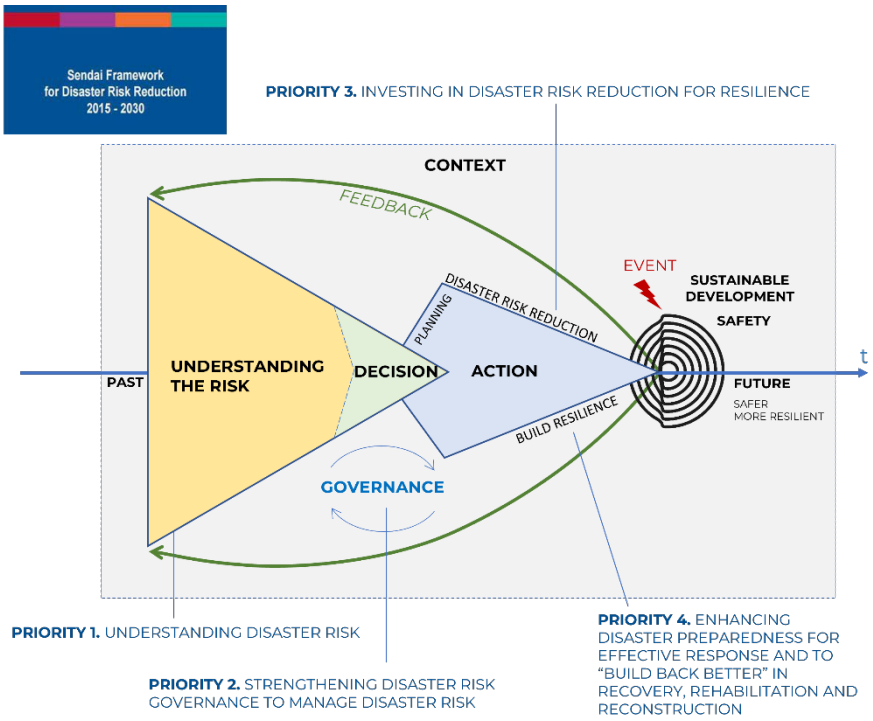


Figure 7: The management process and the priorities of the Sendai Framework

The overall image in Figure 7 also intends to evoke the shape of a boat (as represented in Figure 6). This metaphor signifies navigation towards a safer and more resilient future, for a sustainable development. Highlighting the context-dependency of this process is vital, as it significantly impacts execution and success. The "boat metaphor" simply describes and provides hints on which are the substantial elements to consider for the MP-DRRR. When navigating on a boat, it is important to know the starting point and the destination, to be aware of the characteristics of the boat (e.g., technology, limits, capacities, weaknesses, strengths), the characteristics of the crew (e.g., capacities, abilities, synergies) and the potentially varying characteristics of the sea (i.e., context). Tools to monitor the situation are also essential to support navigation within this dynamic context.

* * *

Building on the navigation metaphor, discussions at the ResiliEnhance Platform activities underscored the critical role of effective governance in fostering resilience, especially considering the complexity and systemic risks acknowledged by the Sendai Framework, distinguishing the roles of players and observers.

At its core, resilience embodies the capacity to adapt and navigate unforeseen disruptions. This necessitates a proactive approach, akin to that taken on a boat at sea. While maintaining a focus on set objectives remains crucial, capitalizing on unexpected opportunities is equally important.

This understanding of resilience lays the foundation for the ResiliEnhance Platform activities. Here, the focus shifts towards the mechanisms through which effective governance fosters and sustains resilience enhancement. This enhancement is the direct outcome of an appropriate governance process, enabling us to navigate the "new normal" context.

The ResiliEnhance Platform participants emphasized the importance of recognizing the characteristics of this "new normal". Subsequently, they discussed a proactive approach to disaster risk reduction and resilience enhancement, in the different phases of the DRMC.

2.2 The first meeting of the ResiliEnhance platform

Thinking and acting proactively for reducing risks and increasing the capacity to face and cope surprises and unprecedented situations is one of the main challenges in building an effective resilience enhancement.

The ResiliEnhance platform has thus been conceived to contribute to resilient sustainable development by enhancing territorial resilience to adverse events and critical situations using an intersectoral and interdisciplinary approach. The Platform indeed acts as a knowledge-sharing and knowledge-bridging tool fostering interdisciplinary dialogue and collaboration between experts from diverse background including scientists, policy-makers, and experts from CEI's Member States, United Nations and European organizations, and local institutions.

With a first meeting organised in October 2022, the ResiliEnhance platform embarked on its inaugural gathering with a mission to delve into the intricacies of enhancing territorial resilience to disaster risk, for fostering sustainable development. Guided by the principles of the intersectoral safety paradigm, participants engaged in robust discussions aimed at understanding and addressing the multifaceted challenges posed by systemic risks, climate change, natural hazards, man-made threats, COVID-19 pandemic, and also by the increased complexity and uncertainty of our world.

The intersectoral safety approach not only guided discussions but also shaped the topics of conversation for participants within the ResiliEnhance platform. The 2022 meeting adopted a World Café approach, providing participants with a structured yet informal setting for exchanging ideas and perspectives. Small group discussions at different tables allowed for in-depth exploration of specific topics related to resilience enhancement. This dynamic exchange of ideas facilitated the emergence of innovative solutions and approaches to resilience challenges.

2.2.1 Insights into the event

Focus: enhancing resilience to disasters for a sustainable development.

The event was marked by the contribution of experts from different disciplines, offering a collective synergy for an intersectoral approach to DRR and resilience. This event formalised:

- The creation of a regional Platform to enhance resilience for supporting the achievement of the 2030 Global Agenda, and contribute to the critical thinking that will help shape the post-2030 Agenda.
- The elaboration of expert recommendations for strengthening territorial resilience to adverse events and critical situations in the context of complexity and systemic risks.

Rationale: background / starting points.

The ResiliEnhance meeting began by exploring the rationale behind the Platform, as prepared by the UNESCO Chair UNIUD. This exploration delved into the fundamental principles and underlying concepts that underpin the Platform's activities. This initial presentation served to establish a shared understanding, laying the groundwork for subsequent reflections and collaborative efforts. The following statements and observations were considered as a starting point for of discussion:

- **Generational knowledge gap:** Effectively transferring knowledge between generations is crucial to avoid losing valuable experience.

- **Resilience as a management process:** Resilience is not just an outcome, but a continuous management process that requires adaptation. Players face a moving target, while observers evaluate performance from outside the field of action.
- **Focus on action, not just prediction:** The relentless pursuit of perfect forecasts shouldn't delay taking action to reduce risks.
- **Breaking down silos:** Prevention efforts need to be integrated across different sectors, moving beyond isolated, sector-specific approaches.
- **Beyond individual expertise:** Building resilience requires a systemic approach that leverages the combined knowledge of diverse specialists, rather than focusing solely on individual contributions.
- **The power of systems thinking:** In complex systems, the whole is greater than the sum of its parts. We must consider interactions and interdependencies, not address issues in isolation.
- **Key features for resilience:** Anticipation, adaptability, interoperability, and a focus on system building are essential for creating resilient systems.
- **Shared vision for collaboration:** A common understanding of resilience facilitates communication and collaboration among people with diverse roles, backgrounds, and expertise (both observers and actors).
- **Assessing vs. building resilience:** While assessing resilience is valuable, proactive measures like collaborative problem-solving and continuous improvement are more important.
- **Embracing uncertainty:** The future may not be linear and can bring surprises. However, this presents opportunities to shape a more resilient future through proactive planning and adaptation.

Modality: expert knowledge sharing.

During the ResiliEnhance Platform meeting, experts contributed their visions and experiences for the definition of a common intersectoral process for enhancing resilience to disasters for sustainable development.

The meeting employed a dynamic format known as “World Café”. This involved participants sharing their knowledge in focused discussions at round tables, each centred on a specific topic. To ensure a diversity of perspectives and foster collaboration, expert groups varied for each round table, with participants rotating between tables throughout the two-day event. This rotation facilitated the exchange of insights and experiences. A facilitator, who remained constant at each table, played a key role. They began by introducing the round table's topic and summarizing the outcomes from previous discussions at that table. This ensured continuity and built upon existing knowledge. The facilitator guided the group's exploration of key questions pre-prepared by the UNESCO Chair UNIUD, informed by the Intersectoral Safety Approach, to stimulate focused debate. To conclude each round table, the group collectively summarized their key findings.

In the sessions of the first day, participants discussed the problem of **exploring the field of action**, i.e. understanding the contexts of current and future critical situations. The themes of the tables concern complexity, uncertainty, the interaction between human and physical dimensions, and the difference in perspective between those who are called to act and those who are called to assess and define policies.

In the sessions of the second day, participants shared their experiences and thoughts to provide operational **recommendations for enhancing resilience in the phases of the DRMC**. At each table, participants discussed the specific actions and criteria that should characterise each phase of the DRMC (i.e., response, recovery, prevision-prevention, and preparedness), taking into account the perspective of who should implement the proposed solutions.

Figure 8: Photos of the World Café activities during the ResiliEnhance Platform meeting in 2022.

Goal: Expert recommendations for enhancing disaster resilience for sustainable development.

The goal of the first meeting of the ResiliEnhance Platform was to define “expert recommendations for enhancing disaster resilience for sustainable development” and summarize them in a shared document. Upon the conclusions of the launch event of the ResiliEnhance platform, experts collaborated to craft the Udine Chart (Annex I). This document underscores the centrality of resilience in achieving Sustainable Development Goals and managing complex risks. It emphasizes the importance of cross-sectoral approaches and highlights the essence of knowledge co-creation. The Udine Chart conveys participants' appreciation to key partners for their support, recognizing the imperative link between resilience and the 2030 UN Agenda's Sustainable Development Goals. The commitment to intersectoral collaboration, knowledge co-creation, and governance transformation underscores the Platform mission, emphasising the pivotal role of bridging science and decision-making to enhance resilience and sustainable development. The Udine Chart envisions collective knowledge development, openly shared to facilitate evidence-based decision-making and risk-informed actions. Post-workshop, the experts are committed to sustaining their collaboration with the UNESCO Chair of Udine as part of the ongoing efforts within the ResiliEnhance platform.

* * *

This report further aims to synthesize, in the two following chapters, the discussions held within the Platform, focusing on the new normality as a field of action and exploring how to enhance resilience throughout the various phases of the DRMC.

3 EXPLORING THE FIELD OF ACTION: THE NEW NORMAL

The "field of action", i.e. the context in which governance decisions for a safer and more resilient future are made, is identified as the "**new normal**", characterized by uncertainty, strong interconnections, disruptions, unexpected events, surprises, big data availability, strong interactions between the human sphere and the physical sphere, as well as by strong interactions within the human sphere.

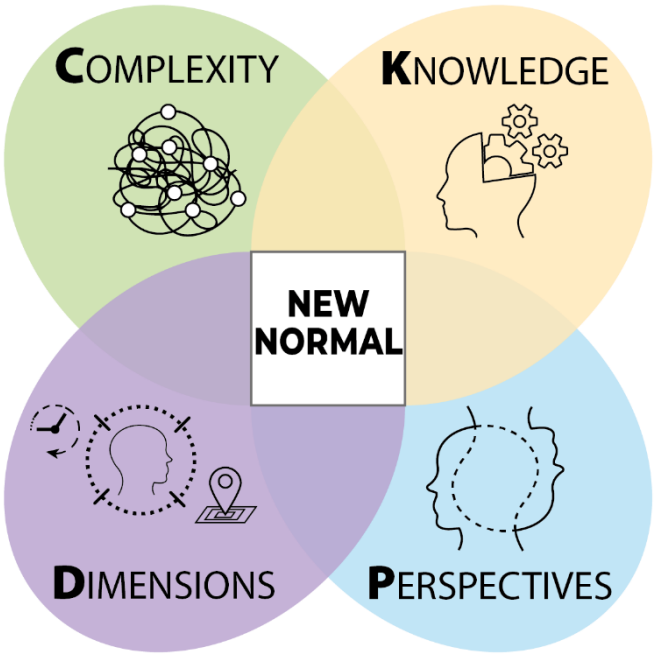
Continuing with the navigation metaphor, the purpose of the discussion among experts was thus to explore the characteristics of the "sea where we are navigating". This was discussed considering different perspectives, using the "World Café" method. Four tables were organized, to discuss four topics:

Topic **C: complexity**. Related to the characteristics of most of the systems in the "new normal" context.

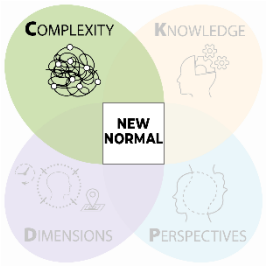
Topic **K: knowledge**. Related to decisions and future, which depend on the distinction between data availability and knowledge of the situation.

Topic **P: perspectives**. Related to the discussion on the various points of view under which governance actions can be identified.

Topic **D: dimensions**. Related to the discussion on the interconnected dimensions of the human and physical spheres and their interconnections, considering varying space and temporal scales.



3.1 Governance for action in the era of complexity



Key question

What governance approach and tools are required in complex systems and contexts, to facilitate actions aimed at sustainable development and safety?

Outcomes from the discussion

Effectively managing complex systems requires adaptable approaches due to their multifaceted nature and continuous change. Collaboration, communication, and ongoing monitoring are essential for successful governance. Rigid solutions and siloed work are counterproductive. Education plays a key role in equipping individuals to understand and manage complexity.

Challenges of Complex Systems:

- Complexity demands specific tools: Most governance actions aimed at sustainable development and safety deal – and will deal, with complex systems, requiring contextualized and adaptable approaches.
- Multi-faceted complexity: Recognize that complexity encompasses various spheres – social, physical, technological, and organizational.
- Continuous monitoring: A crucial aspect is implementing a continuous monitoring process to understand the characteristics and key indicators of the evolving context within a complex system.
- Adaptability is key: Governance in complex systems needs to be adaptable to continuous changes, surprises, and disruptions. "One-size-fits-all" solutions don't work; solutions must be tailored to the specific situations and contexts (controlled flexibility).

Governance Strategies for Complex Systems:

- Flexible regulations: Regulations need to be flexible to allow for adaptations based on the continuously changing context.
- Collaboration and knowledge sharing: Bringing together diverse actors (e.g., decision-makers, , academia, communities) fosters knowledge sharing and promotes common goals (intersectoral and interdisciplinary approach).
- Leadership and coordination: Effective leadership and coordination are crucial to manage the involvement of all actors.
- Nurturing innovation: Promote conditions, depending on the context, to foster good practices and encourage follow-up (e.g., project-based learning).

Overcoming Challenges:

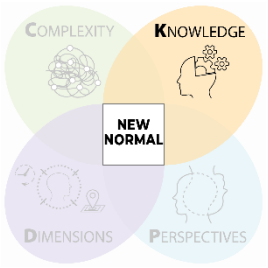
- Avoiding counterproductive approaches: Recognize the threats of fragmented approaches, siloed work, or rigid solutions. These may appear simpler but ultimately hinder effective action in complex systems.

Fostering Effective Action:

- Synergy, communication, and collaboration: Promote tools based on synergy, communication, and collaboration among all actors and sectors. Community awareness is essential.

- Transdisciplinary education: Foster education at all levels, equipping individuals with the skills to recognize and manage complex systems through a transdisciplinary approach. This education underpins collaboration and strengthens technical and political approaches.
- Adaptive management: Implement a step-by-step approach that involves monitoring the situation, anticipating future needs, adapting to changes, and learning from outcomes.
- Intersectoral and interdisciplinary dialogue: Encourage dialogue among all actors, promoting an intersectoral and interdisciplinary approach.

3.2 Knowledge for navigating the futures in the era of uncertainty



Key question

For an effective governance for sustainable development and safety, which kinds and levels of knowledge are needed, and how to ensure availability and access to that knowledge?

Outcomes from the discussion

Effective governance requires using data to generate actionable insights to navigate inherent uncertainties. Integrating diverse knowledge (scientific and traditional) through interdisciplinary education is crucial. Decision-makers need to consider multiple future scenarios and potential downsides of over-optimization for sustainable development.

Challenges and considerations:

- Knowledge spectrum and uncertainty: Effective governance requires acknowledging the spectrum of knowledge, moving from data to knowledge. Data alone is insufficient.
- Navigating uncertainty: The future is not linear, necessitating the development and continuous update of multiple scenarios informed by ongoing knowledge acquisition (transition from the concept of predicting the future to analysing potential scenarios of possible futures).
- Embracing complexity: Recognize the inherent uncertainties and complexities within systems and contexts. Building resilience requires understanding that the future cannot be perfectly predicted, but could be built.

Knowledge sources and integration:

- Harnessing diverse knowledge: Integrate traditional knowledge and experience alongside scientific knowledge to inform effective governance actions. Consider creating repositories of traditional knowledge.
- Intersectoral and purpose-driven education: Educational programs should be interdisciplinary and purpose-oriented, equipping individuals with the skills needed for complex decision-making, including the ability to recognize, interpret, and use the main elements of knowledge that allow decisions to be made for governance for a safer and more resilient future (looking at new academic programs and innovations, but also considering traditional knowledge and experience).

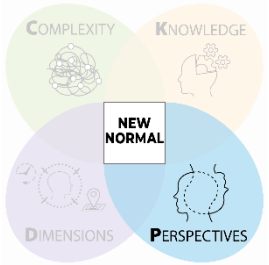
Knowledge for actionable solutions:

- Developing hybrid experts: Foster the development of "hybrid experts" who possess deep subject-matter expertise combined with the ability to navigate decision-making complexities and implement actions effectively.
- Bridging the knowledge gap: Promote clear and effective communication among academia, decision-makers, practitioners, and communities, fostering intersectoral and interdisciplinary collaboration.

Enhancing knowledge accessibility and equity:

- Open access to knowledge: Advocate for open access to knowledge, making it freely available to everyone.
- Tailored knowledge dissemination: Disseminate knowledge in a way that is accessible and relevant to different audiences, including decision-makers, implementers, end-users, communities, and youth and children.
- Planting the seeds of awareness: Educate all levels of society about the importance of understanding complexity and uncertainty.
- Knowledge for balanced optimization: Recognize that knowledge can help identify potential downsides of over-optimization, such as prioritizing economic aspects at the expense of safety.

3.3 Different perspectives while playing the game (governance)



Key question

What is needed to support the "players" in playing the game better to ensure sustainable development and safety?

Outcomes from the discussion

Strong governance relies on integrating diverse perspectives – scientific, traditional knowledge, and public perception of risks. Communication bridges the gap between science and policymaking, while empowering citizens through information access and evaluation skills. Transdisciplinary approaches ensure all stakeholders (actors and spectators) contribute to building a common understanding and achieving shared goals.

Enhancing science-policy interface:

- Science-informed policy development: Promote avenues for science to inform and implement policies. Initiatives like the ResiliEnhance platform can strengthen disaster risk governance by fostering better communication and coordination between scientists and decision-makers.

Integrating diverse perspectives:

- Transdisciplinary approaches: Promote transdisciplinary approaches that incorporate the perspectives, mandates, and knowledge of all actors involved in governance, including scientists,

policymakers, practitioners, communities, and the public (both actors and spectators). Boundary objects, such as multi-risk maps, game tools, and simulations, can facilitate collaboration within these approaches by enabling the integration of diverse viewpoints while maintaining robustness.

- Perception of risks: Recognize people's perceptions of risks and biases that will help establish policies with clear roles and responsibilities between all the stakeholders and close the gap between intention and action in reducing risk.

Shifting risk communication paradigms:

- Natural hazards, not natural disasters: Shift the perspective from "natural disasters" to "natural hazards". The language used to communicate findings significantly influences outcomes.

Effective communication strategies:

- Multi-pronged communication: Develop comprehensive communication strategies that include:
  - Established channels for timely and accurate risk communication, ensuring information reaches both actors and observers.
  - Legal and regulatory frameworks for personal data protection.
  - Measures to prevent the spread of misinformation.
- Strengthened communication infrastructure and citizen empowerment: Invest in strengthening telecommunication systems and technology. Educate citizens on information evaluation, especially regarding social media and warning channels during emergencies. Prior knowledge of reliable sources reduces stress in critical situations.
- Targeted warnings and unified voice: Refine warning and communication strategies to ensure the right information reaches the right people at the right time. Promote partnerships to issue consistent and complementary messages from a single, authoritative source (e.g., government, schools, universities).

Investing in risk reduction:

- Focus on prevention and knowledge-based decisions: Increase investment in prevention efforts guided by multi-risk informed strategies. Advocate for the collection and dissemination of high-quality, timely data for risk-informed and knowledge-based decision-making.
- Risk-informed policies: Develop risk-informed policy recommendations for building safety against multi-hazards, including building codes and land-use planning.

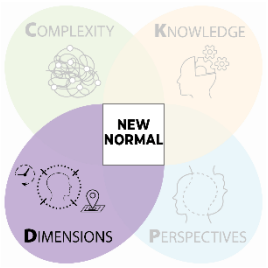
Building long-term commitments:

- Understanding acceptable evidence: Clearly communicate the nature of acceptable evidence, including uncertainties, to policymakers and stakeholders to secure long-term investment and commitment.

Nature-based solutions:

- Restoring nature and infrastructure: Invest in restoring nature-based solutions and local infrastructure.

3.4 Managing the interactions between human and physical dimensions



Key question

What is needed to manage the interactions between human and physical dimensions at different scales, to ensure sustainable development and safety?

Outcomes from the discussion

Effective governance requires recognizing the interconnectedness of human activities and the physical environment. This necessitates flexible approaches that consider interactions across different timeframes (short, medium, long-term) and spatial scales (local, regional, global). Education, interdisciplinary collaboration, and development of adaptable models are crucial for managing these interactions for sustainable development.

Recognizing interconnectedness:

- Sustainable development hinges on interactions: Sustainable development is fundamentally about managing the complex interplay between the human dimension and the physical dimension. It is part of a larger system with multiple interacting dimensions (technological, organizational, economic, etc.).
- Human dynamism is complex: The human dimension is inherently dynamic and interconnected with the physical and other societal dimensions. Complete control is not possible.

Scaling governance for effective action:

- Time and space-sensitive goals: Effective governance requires identifying appropriate scales (temporal – short, medium, long-term; spatial – local, regional, global) for actions, targets, and tools.
- Flexible governance: Governance frameworks need to be flexible to account for interactions between human and physical dimensions across different time and space scales.

Building capacity for effective interaction:

- Education for understanding: Education is a critical tool for fostering a holistic understanding of the interactions between human and physical dimensions (system thinking).
- Interdisciplinary approaches: Encourage and stimulate interdisciplinary approaches to break down silos and promote collaboration across disciplines.
- Tools for testing and learning: Utilize drills, virtual reality exercises, and other tools to test and improve interactions across various spheres and scales.
- Adaptive models and scenarios: Develop and continuously adapt models and scenarios that consider different time and space scales, while incorporating uncertainty inherent to complex systems.

4 ENHANCING RESILIENCE IN THE PHASES OF THE DISASTER RISK MANAGEMENT CYCLE

The Disaster Risk Management Cycle (DRMC) illustrates the ongoing process by which governments and civil and business society plan for reducing the impact of an adverse event to avoid or mitigate a potential disaster, react during and immediately after a disaster, and take steps to recover from a disaster. Appropriate actions at all points in the cycle lead to enhancing preparedness, better preparing for the next iteration of the cycle and avoiding creating new risks.

For this reason, after having identified which are the main characteristics of the "field of action" (see Chapter 3), during the second World Café meeting, the topics of discussion delt with the necessity of enhancing resilience in the phases of the DRMC.

The four tables discussed about the same question, reported below, but considering four different perspectives, i.e. the four purpose phases of the DRMC:

PP – Prevision-prevention

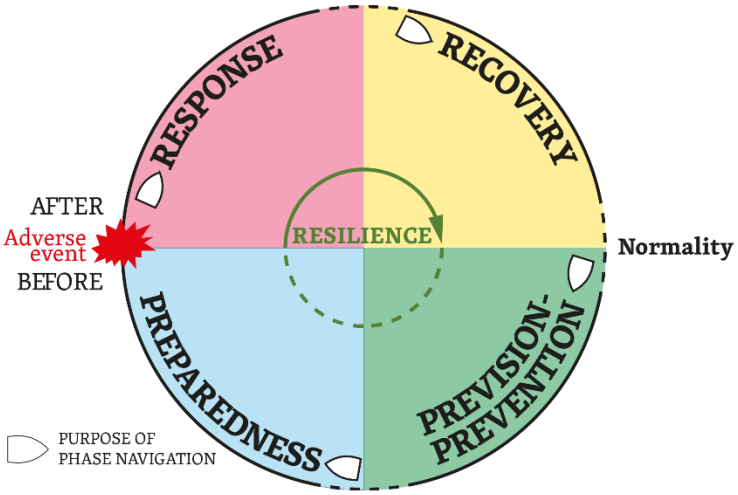
PR – Preparedness

RS – Response

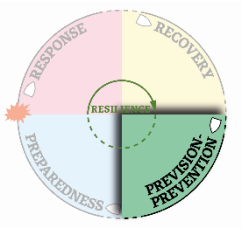
RC – Recovery

As the four phases are different in terms of targets, actors, use of resources, and role of the time, there is not a common way for working in all phases, and it is necessary to contextualize the actions for each phase. The four phases remain nevertheless interconnected and functional with one another. The larger the functional interconnection is, the better would be the resilience of the system.

Resilience is highly dependent on the groundwork laid beforehand. The following sections will begin by outlining the outcomes associated with the phases of resilience-building (PP and PR), before delving into the phases where resilience is used (RS and RC). It is important to note that valuable insights can be gained for building resilience (PP and PR phases) by reflecting also on how resilience has been used in past RS and RC phases.



4.1 Governance for acting in the prevision-prevention phase



Key question

Recognizing that an adaptive and intersectoral approach is needed for ensuring sustainable development and safety, what governance mechanisms, capacities and tools need to be in place in the Prevision-Prevention phase of the DRMC?

Outcomes from the discussion

The prevision-prevention phase focuses on **proactively reducing the risk** of disasters through comprehensive planning and implementation of actions, initiatives, and research. It involves comprehensive risk assessments, scenario planning, and mitigation strategies. Public awareness is fostered through education, while collaboration between scientists and policy-makers is crucial. Flexible regulations and incentives encourage risk reduction practices at all levels.

The main objectives of the prevision-prevention phase are to:

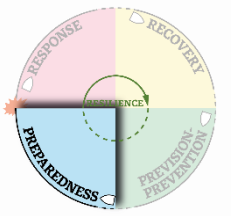
- **Understand disaster risk**: Conduct risk assessments to identify and characterize potential hazards, analyse vulnerabilities, exposed values, and capacities, and estimate the potential consequences of disasters.
- **Reduce disaster risk:** Identify and assess potential threats and develop mitigation strategies.
- **Promote risk awareness:** Foster public education and collaboration to create a culture of risk reduction.
- **Build a flexible management framework:** Implement adaptable regulations and incentives for long-term risk management.
- **Address climate change:** Integrate climate considerations into disaster risk reduction efforts.

The prevision-prevention phase key activities are:

- **Comprehensive Risk Assessment and Scenario Planning:**
  - Conduct regular multi-hazard risk assessments to identify potential scenarios and areas of vulnerability and with higher exposed values. Address the need to assess risk from a holistic and multi-hazard perspective.
  - Develop mitigation strategies based on the "what-if" approach, considering various possibilities and potential impacts, focusing on the identification of possible future scenarios.
  - Address potential risks proactively, even if not immediately apparent.
  - Define an acceptable risk (and non-acceptable) trying to link this with the values of the society.
- **Comprehensive Education and Public Awareness:**
  - Promote a culture of risk awareness and risk reduction. Develop educational programs that foster a comprehensive understanding of risks and how to reduce them.
  - Raise public awareness through clear communication and transparency, promoting a national culture of risk reduction.

- **Stakeholder collaboration and expertise:**
  - Establish national intersectoral platforms to facilitate collaboration between scientists, policy-makers, and the public.
  - Facilitate collaboration (knowledge bridging) between science and decision-making.
  - Bring together scientists, first responders, and other stakeholders to develop a common language and translate scientific information into actionable recommendations (e.g., impact-based forecasting).
  - Invest in academic programs that produce well-rounded disaster risk reduction experts.
- **Flexible regulations and incentives considering the context:**
  - Develop flexible regulations informed by experts to support effective governance throughout all phases of disaster risk management.
  - Implement incentive programs that motivate communities and individuals to adopt risk reduction practices.
  - Plan, define policies, and establish technical and financial measures considering anticipation and adaptation to the context, as well as the application to different levels and scales, both in time and space.
- **Climate change integration:**
  - Address climate change as a major factor influencing disaster risk.

4.2 Governance for acting in the preparedness phase



Recognizing that an adaptive and intersectoral approach is needed for ensuring sustainable development and safety, what governance mechanisms, capacities and tools need to be in place in the Preparedness phase of the DRMC?

Outcomes from the discussion

The preparedness phase focuses on building the ability to effectively respond to and recover from potential adverse events, particularly those considered highly likely. It lays the groundwork for effective response to disasters. It is a proactive phase that focuses on building capacity, establishing plans, and securing resources before an adverse event occurs.

The main objectives of the preparedness phase are to:

- **Enhance community resilience**: Empower communities to anticipate, prepare for, and withstand disasters.
- **Develop response capabilities**: Build the skills and knowledge necessary for effective response.
- **Secure essential resources**: Pre-position critical supplies and funding to facilitate a swift response.

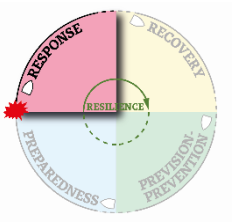
Key activities in the preparedness phase include:

- **Build response capacity:**
  - Conduct frequent and assessed multi-hazard simulation exercises and evacuation drills with community participation. Include realistic exercises/simulations to test plans and identify areas for improvement.

- Support capacity building processes at the community level to identify gaps and validate plans.
- Implement a continuous monitoring program to identify potential threats, assess risks, and trigger corresponding countermeasures based on pre-established protocols.

- **Effective communication**
  - Establish a multi-level communication system through volunteers, street wardens, and local leaders. This system should reach a wider population, including those without personal communication media.
  - Implement a centralized coordination system to facilitate communication among all actors and develop a unified response strategy.
  - Develop a comprehensive communication plan: this plan should outline protocols for information sharing among stakeholders, public warnings, and updates during a disaster event.
- **Prepare resources:**
  - Develop and establish minimum preparedness actions.
  - Pre-position medical teams (for quick triage treatment), food and non-food items dispatches, and cash for rapid deployment (cash directly to the most vulnerable has a transformational impact).
- **Secure funding and investment:**
  - Coordinate donors to request and fund integrated action, promoting flexible and pooled funding mechanisms.
  - Identify gaps in available funding for DRR in humanitarian contexts and create a guide to funding resources.
  - Invest in anticipatory action models to predict potential humanitarian impacts and pre-identify mitigation actions.
- **Develop preparedness plans:**
  - Develop comprehensive preparedness plans that consider various scenarios.
  - Emphasize adaptability and flexibility to account for unforeseen circumstances.
  - Involve multi-stakeholder participation to ensure diverse perspectives and knowledge are incorporated.
- **Engage stakeholders:**
  - Government collaborates with key stakeholders (private sector, civil society, academia) to leverage diverse expertise for planning of actions, necessary means, communication, and training across all levels (decisions, logistics, administration, operations).
  - Local communities and volunteers are actively engaged in preparedness efforts.
- **Promote international cooperation:**
  - Foster multi-country and international cooperation to address disaster risk reduction and resilience.

4.3 Governance for acting in the response phase



Recognizing that an adaptive and intersectoral approach is needed for ensuring sustainable development and safety, what governance mechanisms, capacities and tools need to be in place in the Response phase of the DRMC?

Outcomes from the discussion

The response phase is characterized by **urgency.** Time is of the essence, demanding immediate action. Most effective actions rely on thorough preparation completed in the preparedness phase. Overall, the response phase demands pre-established plans, adaptable tools, and a focus on understanding and stabilizing the situation, with flexibility, and prioritized and coordinated actions.

The main objectives of the response phase are to:

- **Limit human and economic losses**.
- **Stabilize the situation**.
- **Secure people, assets, and the environment** after the occurrence of an adverse event.
- **Manage the effects** of the event.

Effective response requires the following key activities:

- **Understand and stabilize the situation:**
  - Identify priorities and needs to support effective resource allocation.
  - Take steps to stabilize the situation to minimize further damage and create a safer environment for responders and survivors.
  - Constantly monitor the situation to identify response gaps, anticipate potential events and identify cascading effects.
  - Collect only essential information to avoid information overload ("as much as enough" criterion). Utilize quick and adaptable survey tools for offline or resource-limited environments.
  - Continuously assess the situation and its characteristics to guide further actions.
- **Leverage flexibility** to respond effectively despite unforeseen circumstances.
- **Implement prioritized and coordinated actions:**
  - Implement a coordination strategy with regular information meetings.
  - Clearly assign roles and responsibilities to all responders involved in the response, also to avoid duplication of efforts.
  - Regularly convene all actors (incl., responders, scientists, academia) to:
    - Prioritize actions based on urgency and criticality.
    - Share knowledge and potential emergency scenarios.
    - Ensure coordinated efforts across all stakeholders.
    - Facilitate technical discussions among specialists.
    - Prepare response strategies through scenario planning.
  - High need for coordination: Response can be transboundary, requiring different organizations and expertise to work together in a coordinated way.
  - Lead to be taken by local authorities, supported by higher levels as needed (the principle of subsidiarity).

- Managing **knowledge sharing and communication** effectively:
  - Identify and share essential knowledge among responders, scientists, and academia. Information overload can hinder effective response.
  - Raise awareness of potential emergencies and post-event actions.
  - Focus on communication: Develop clear key messages for communities and donors.
- **Conduct debriefings** to update expertise and capitalize on knowledge and lessons learned.
- **Utilize technology for response mapping.**
- **Manage resource effectively:**
  - Secure essential resources like funding and specialized personnel.
  - Implement flexible resource allocation strategies.
  - Ensure resources are mobilized to respond to needs.
- Actions depend heavily on **preparedness efforts**, such as:
  - Training and informing the population for self-protection.
  - Establishing monitoring systems for real-time situation updates.
  - Setting up a flexible and adaptable response organization, with clear roles and responsibilities assignments.
  - Developing adaptive scenarios through drills to improve individual and community response, including consideration for worst-case scenarios.
  - Identifying critical assets and their characteristics (location, amount, availability, etc.).
- Preparing flexible legislation that allows for context-specific solutions during emergencies.

4.4 Governance for acting in the recovery phase

Recognizing that an adaptive and intersectoral approach is needed for ensuring sustainable development and safety, what governance mechanisms, capacities and tools need to be in place in the Recovery phase of the DRMC?

Outcomes from the discussion

The Recovery Phase focuses on **rebuilding** communities and infrastructure in a way that enhances resilience and improves upon pre-disaster conditions (**build back better**). The Recovery Phase should be a process that continuously adapts to changing contexts, fostering continuous learning and improvement. This dynamic approach should also consider the dimension of time, ensuring plans and actions remain relevant as circumstances evolve.

The main objectives of the recovery phase are to:

- **Build Back Better**: Rebuild infrastructure and communities with a focus on improved resilience and long-term sustainability (e.g., safer construction, greener practices).
- **Adaptive recovery**: Foster continuously adaptable plans and actions to address changing contexts and evolving needs.
- **Social and economic wellbeing**: Support the social and emotional recovery of individuals and communities alongside physical reconstruction.

Key activities include:

- **Shared vision and collaborative governance:**
  - Establish a shared vision for a desired future normality that is safer, more resilient, and greener, considering the long-term needs of the community.
  - Foster collaboration among decision-makers, practitioners, communities, and all stakeholders to define common goals and responsibilities.
  - Involve communities in local-level decision-making to ensure their needs and perspectives are addressed, considering both immediate and long-term recovery needs.
  - Foster the identification of new solutions and actions that address both immediate and long-term needs.
- **Effective communication and monitoring:**
  - Implement clear and transparent communication strategies to keep all stakeholders informed and engaged.
  - Continuously monitor the effectiveness and efficiency of recovery actions, adapting plans as needed to address changing needs and contexts.
  - Utilize real-time data and mapping tools to identify ongoing needs and guide resource allocation.
- **Addressing social recovery:**
  - Recognize that recovery encompasses not just physical reconstruction but also social and psychological healing.
  - Be aware that relocation could be needed and take into account the needs (physical and social) deriving from the various actions implemented.
  - Provide support services that address the social and emotional well-being of affected communities.
- **Comprehensive planning and resource mobilization:**
  - Define plans and actions considering the context in which they have to be implemented, being aware that the context could change also suddenly.
  - Identify objectives and resources, and plan actions (missions and components) considering a timeline that considers both short-term and long-term needs.
  - Ensure the continuous assessment of resource needs (financial, technical, and human) for recovery efforts. Efficiently mobilize resources to meet these evolving needs.
  - Monitor resource allocation and utilization and track how resources are being assigned and used throughout the recovery process to ensure efficiency and effectiveness.
  - Develop clear plans that outline recovery objectives, resource allocation, and implementation strategies, with a timeline that considers both short-term and long-term needs.
- **Building Back Better and building memory:**
  - Reconstruct infrastructure and housing with a focus on improved safety and disaster resilience.
  - Integrate memory-building initiatives into the recovery process to learn from past experiences and inform future preparedness efforts.

5 FINAL RECOMMENDATIONS

In addition to the discussions on the characteristics of the new normality and governance actions during the Disaster Risk Management Cycle, the meeting of the ResiliEnhance platform concluded with several key recommendations for transforming governance and enhancing resilience to disasters for sustainable development.

The meeting issued key recommendations for:

- Tailoring governance approaches to specific contexts.
- Systematizing data and transforming it into actionable knowledge for decision-makers.
- Moving from "understanding" to decision-making through effective communication and knowledge transfer.
- Recognizing the strategic role of communication in facilitating informed decision-making.
- Taking action and adapting to change.
- Acknowledging that actions can generate new problems, requiring continuous feedback and adaptation to the ever-changing context.
- Emphasizing the importance of creating a material sharing platform to support improved governance.
- Collaborating with pilot actions and ensuring open access to the results of these collaborations.

Beyond these recommendations, the discussions yielded several further considerations with the potential to significantly impact future endeavours. Notably, the CEI area was identified as a potentially valuable location for experimentation with collaborative approaches to disaster risk management. This region could serve as a designated space for fostering formalized partnerships between UNESCO Chairs, other scientific institutions within the UN system, and a diverse range of international, national, and local stakeholders. Such a collaborative environment would facilitate the exchange of best practices and the development of novel solutions through the implementation of pilot projects.

Furthermore, the meeting emphasized the importance of establishing a network of stakeholders who have already formulated their viewpoints on these issues. By uniting these diverse voices and perspectives into a network, a powerful resource could be created to propel future initiatives forward. This network would enable the exchange of knowledge and expertise, fostering collaboration and the identification of shared goals amongst a broader range of actors.

Finally, the Udine Chart emerged as a potential point of reference for consolidating the key findings from the discussions. This document (see Annex I) is not a simple summary; rather, it would serve as a comprehensive synthesis that translates the core discussions into a key framework for future action. The Udine Chart could function as a roadmap, guiding stakeholders and decision-makers towards a more resilient future by outlining a strategic course of action.

6 NEXT STEPS

Building on the momentum of the ResiliEnhance Program launch event, the participants agreed to pursue their collaborative research approach forming the basis of the ResiliEnhance Platform, through concrete activities including:

1. retrospective post-event analyses of real disaster governance case studies using an evidence-based approach - the first case study considered by the participants will be the reconstruction after the 1976 earthquake in the Friuli area (Italy);
2. participation to regional events to introduce and provide updates on the Resilienhance Program and Platform;
3. development of a comprehensive framework that integrates all the key themes and concepts discussed to ensure a holistic understanding and establish a common language for the ResiliEnhance Platform activities;
4. creation of the ResiliEnhance Platform repository to enable experts to share resilience-related documents between each other.

A second meeting to acknowledge the progress made by the Platform as well as to define the next activities will be organised in 2023.

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ANNEX I
THE UDINE CHART

RESILI platform ENHANCE

Enhancing the Resilience to Disasters for a Sustainable Development

Project Co-financed under Friuli Venezia Giulia Regional funds (L.R18/2011) - CEI-FVG operative programme 756/2021

The Udine Chart

from the first meeting of the RESILIENHANCE Platform

24-25 October 2022

Udine, Italy

We, the members of the RESILIENHANCE platform, having considered the background and motivations of the RESILIENHANCE programme (https://unescochair-sprint.uniud.it/en/resilienhance-program/):

Thank the Central European Initiative, the Friuli Venezia Giulia region, and the University of Udine, for enabling the Programme of which this Platform is an essential part.

Thank the UNESCO Chair on Intersectoral Safety for Disaster Risk Reduction and Resilience at the University of Udine for convening this event that officially launched the Platform, and express gratitude to the International Centre for Mechanical Sciences (CISM) for co-organizing and hosting it.

Recognize that enhancing resilience and reaching the Sustainable Development Goals of the 2030 UN Agenda, and the targets established in the Sendai Framework for Disaster Risk Reduction 2015-2030 and the Paris Agreement, require accounting for aspects such as complexity, uncertainty, and the systemic nature of risk; and therefore, a transformation of existing governance.

Consider that those goals and targets are part of a continuous process that is exposed to constant changes, and could face potential disruptions and unexpected developments.

Understand that the systemic dimension and the complexity to reach the goals and targets require an intersectoral approach at different space (e.g., local, national, regional and global) and time scales (i.e., short-, medium, and long-term);

Acknowledge the need for knowledge co-creation through a science-policy-society interface; and aim, as RESILIENHANCE platform, to offer a space that facilitates interdisciplinary and intersectoral exchanges for enhancing resilience and sustainable development.

Recognize that the intersectoral approach adopted in the two-day first meeting of the Platform provides a useful tool for supporting the required governance transformation towards a safer, greener, and more resilient future in the process of sustainable development.

RESILI ENHANCE platform
Enhancing the Resilience to Disasters for a Sustainable Development
Project Co-financed under Friuli Venezia Giulia Regional funds (L.R18/2011) - CEI-FVG operative programme 756/2021

Highlight the importance of strengthening governance by ensuring the knowledge-bridge between science and decision-making/practitioning, for a better and more efficient mainstreaming of the interdisciplinary approach, in order to enhance resilience to disaster risk and sustainable development.

Concur to work on the development of collective knowledge through interdisciplinary and intersectoral exchanges, policy briefings, scientific papers, discussion forums, etc., focusing on strengthening governance mechanisms, starting from those already in place, to facilitate decision-making process and the implementation of actions.

Agree to jointly collaborate on the design, development, and implementation of specific and contextualized actions that can be proposed to build and strengthen capacities to recognize, interpret, and use the main elements of knowledge that allow making evidence-based and risk-informed decisions, and taking appropriate actions towards enhancing resilience and sustainable development.

Foresee that the RESILIENHANCE platform's outcomes will be shared openly and made accessible to everybody, with the aim to support the transformation in governance by enhancing the science-policy-society interface.

Foster dialogue with the Central European Initiative and its participating Member States, UNESCO and its UNITWIN/UNESCO Chairs Programme, the European Science and Technology Advisory Group (E-STAG) of UNDRR, local governments, and other forums.

The RESILIENHANCE platform members are confident that the aforementioned institutions, networks and groups will continuously support this platform.

Members of the RESILIENHENCE platform (24-25 October 2022):

- **Lucille Anglès** (Coordinator for the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector, Paris, France)
- **Ingrid Belčáková** (Chairholder of the UNESCO Chair on Sustainable Development and Ecological Awareness, Technical University of Zvolen, Slovakia)
- **America Bendito Torija** (Consultant on Disaster Risk Reduction, SC/DRR, UNESCO HQ, Paris)
- **Daniela Di Bucci** (International Relations and Activities Unit of the Italian Civil Protection Department Presidency of the Council of Ministers, Rome, Italy)
- **Margherita Fanchiotti** (Save the Children, Haiti)
- **Carlo Fortuna** (Program Manager of the Central European Initiative, Trieste, Italy)
- **Stefano Grimaz** (Chairholder of the UNESCO Chair on Intersectoral Safety for Disaster Risk Reduction and Resilience, SPRINT-Lab, University of Udine, Italy)
- **Petra Malisan** (Program Coordinator of the UNESCO Chair on Intersectoral Safety for Disaster Risk Reduction and Resilience, SPRINT-Lab, University of Udine, Italy)
- **Jadranka Mihaljević** (Head of the Department of Engineering Seismology, Institute of Hydrometeorology and Seismology of Montenegro)

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- **Matjaž Mikoš** (Chairholder of the UNESCO Chair on Water-related Disaster Risk Reduction, University of Ljubljana, Slovenia)
- **Ferenc Miszlivetz** (Chairholder of the UNESCO Chair on Cultural Heritage and Sustainability in Kőszeg, University of Pannonia, Hungary)
- **Sebastien Penzini** (Deputy Chief, UN Office for Disaster Risk Reduction (UNDRR), Brussels, Belgium)
- **Aldo Primiero** (Civil Protection of Friuli Venezia Giulia Region, Italy)
- **Chiara Scaini** (Researcher at the National Institute of Oceanography and Applied Geophysiscs, Italy)
- **Zvonko Sigmund** (Member of European Science & Technology Advisory Group E-STAG, UNDRR, Faculty of Civil Engineering, University of Zagreb, Croazia)
- **Jasmina Stankova** (Head of the Administration and Services Department - Institute of Earthquake Engineering and Engineering Seismology (IZIIS), Ss. Cyril and Methodius University, Skopje, North Macedonia)
- **Janusz Szpytko** (Chairholder of the UNESCO Chair on Science, Technology and Engineering Education, Krakow, Poland)
- **Veronica Tofani** (Program Coordinator of the UNESCO Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards, University of Florence, Italy)
- **Jair Torres** (International senior consultant on disaster risk reduction, resilience, sustainability and adaptation, Paris, France)
- **Dimiter Velev** (Director of the Science Research Center for Disaster Risk Reduction, University of National and World Economy (UNWE), Sofia, Bulgaria)

ANNEX II
KEY INFORMATION ON THE MEETING

The launching event of the ResiliEnhance program was held in Udine on 24 and 25 October 2022 in the form of networking and experience sharing event.

The workshop was be hosted by the International Centre for Mechanical Sciences (CISM), in Palazzo del Torso in Udine.

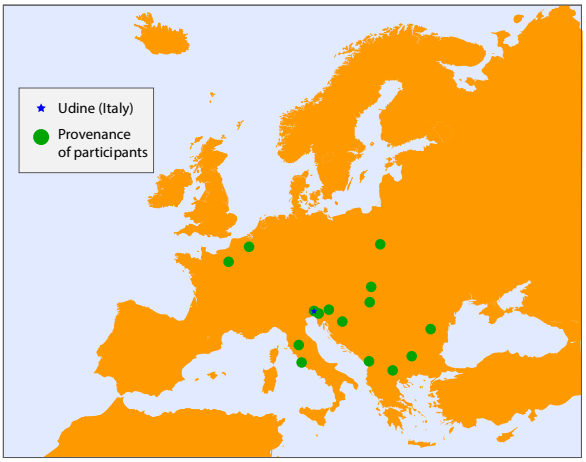
Agenda of the launching event of the Resilienhance Platform

DAY 1 – Monday 24th October 2022	
8.30-9.00	Registration and welcome to participants
9.00-9.50	Opening remarks - UNESCO Regional Bureau for Science and Culture in Europe (Head of Science Unit – Jonathan Baker) - UNESCO HQ – SC/DRR (Chief of Diaster Risk Reduction Unit – Soichiro Yasukawa) - United Nations Office for DRR (Regional Deputy Chief - Sebastien Penzini) - Friuli Venezia Giulia Region (Regional Councillor for Labour, Training, Education, Research, University and Family – Alessia Rosolen) - Central European Initiative (CEI Deputy Secretary General - Nina Kodelja) - University of Udine (Rector – Roberto Pinton)
9.50-10.10	Resilience in the UN Agendas
10.10-10.30	*Coffee break*
10.30-11.00	Introduction on the expert meeting: goals/topics/organization
11:00-12.30	Introduction of Session 1: challenges in acting within DM cycle and Resilience frameworks
12.30-14.00	*Lunch*
14.00-15.30	Session 1 World Cafè: Exploring the field of action. Round tables (part 1)
15.30-15.45	*Coffee break*
15.45-17.00	Session 1 World Cafè: Exploring the field of action. Round tables (part 2)
17.00-18.00	Plenary session: presentation of outcomes of the round tables and general discussion

DAY 2 – Tuesday 25th October 2022	
8.45-10.30	Session 2 World Cafè: Enhancing resilience in the phases of the Disaster Risk Management Cycle. Round tables (part 1)
10.30-10.45	*Coffee break*
10.45-12.30	Session 2 World Cafè: Enhancing resilience in the phases of the Disaster Risk Management Cycle. Round tables (part 2)
12.30-14.00	*Lunch*
14.00-15.00	Plenary session: presentation of outcomes of the 4 tables and general discussion
15.00-15.30	Draft of expert recommendations
15.30-15.45	*Coffee break*
15.45-18.00	Final discussion

Participants

The two-day event bring together participants from the following UNESCO Chairs, Category II centers, UN and other organizations and institutions.



- **Lucille Anglès** – Coordinator for the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector, Paris, France
- **Ingrid Belčáková** – Chairholder of the UNESCO Chair on Sustainable Development and Ecological Awareness, Technical University of Zvolen, Slovakia
- **Maria De America Bendito Torija**– Consultant on Disaster Risk Reduction, SC/DRR, UNESCO HQ, Paris
- **Daniela Di Bucci** – International Relations and Activities Unit of the Italian Civil Protection Department Presidency of the Council of Ministers, Rome, Italy
- Margherita Fanchiotti – Save the Children
- **Carlo Fortuna** – Program Manager of the Central European Initiative, Trieste, Italy
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Published with the support of:

International Centre
for Mechanical Sciences

ISBN: 978-88-85137-49-3