

# Bridging Governance for Resilient Futures

Advancing an Integrated All-Hazards Approach Across Climate Change Adaptation and Disaster Risk Reduction Frameworks

POLICY BRIEF



*SRC – The Societal Resilience Cluster (SRC) of projects is an informal and voluntary subset of the Community for European Research and Innovation for Security (CERIS). It is facilitated by the Crisis Management Innovation Network Europe (CMINE) and is made up of projects working to strengthen societal resilience, disaster risk management, preparedness, and community engagement across Europe.*

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# Foreword

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The world is warming at an unprecedented rate particularly in Europe with global temperatures now nearing 1.5°C above pre-industrial levels. Recent record-breaking wildfires, floods, and other climate-driven extremes are already affecting communities across Europe, underscoring the growing consequences of a warming planet and the urgent need to build resilience, not only to natural hazards, but also to human-made crises such as conflict.

Combined with increasing geopolitical uncertainty, this backdrop makes a compelling case for strong, forward-looking preparedness and response systems.

Strengthening crisis management and preparedness across Europe is a key priority for the European Commission—shifting from reacting to emergencies to being ready for them. This means nurturing a true culture of an integrated all-hazards approach, embedded across society, from schools and communities to governments and businesses as well as between the paradigms of climate change adaptation (CCA) and disaster risk reduction (DRR).

As we navigate the complexities of CCA and DRR, we are confronted not only with challenges, but also with opportunities to better align efforts and drive innovation. This policy brief serves as a guide towards a more resilient future, where communities—and the institutions that support them—co-produce solutions grounded in a whole-of-society approach. Drawing on evidence from 12 European Union-funded projects, it presents a coherent governance roadmap, demonstrating how integration can deliver more effective outcomes across sectors.

Aligned with international frameworks such as the Sendai Framework and the Paris Agreement, as well as EU initiatives including

the Preparedness Union Strategy, the European Water Resilience Strategy, the Communication on Integrated Wildfire Risk Management, and the upcoming integrated framework for European Climate Resilience and Risk Management, this brief focuses on three priorities:

1. strengthening coordination across governance levels;
2. aligning policy frameworks, incentives, and accountability mechanisms and;
3. fostering inclusive governance systems.

While the European Commission has taken steps to further operationalise the results of research projects and launched dedicated calls to support the integration of CCA and DRR, one recommendation to the innovation community stands out: Create bonds and bridges with practitioners, end-users and work even more closely with policy, legal, and governance sciences to better understand entry points and bottlenecks for reform. Bridging the science–policy–operation gap requires moving beyond project-based coordination towards more durable institutional arrangements.

I would like to thank and commend all contributors to these Horizon Europe-funded projects for their collective efforts and forward-looking recommendations. As the Preparedness Union Strategy states, the *“EU’s research and innovation sector has an essential contribution to make.”*

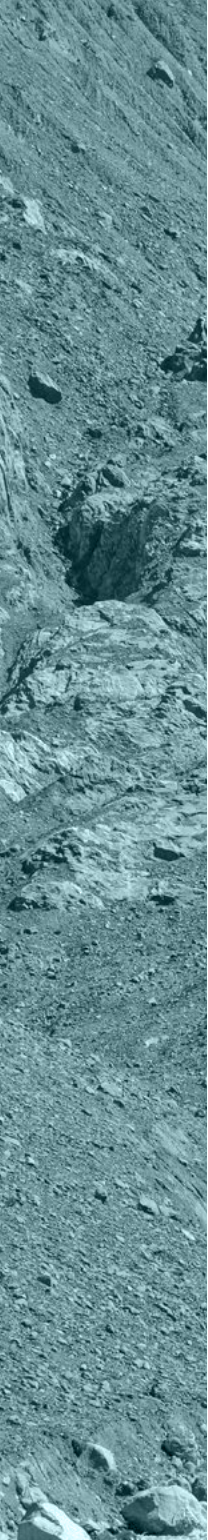
**Let us capitalize on it.**

***Erwan Marteil***

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***Prevention and Preparedness Capacity Building***



# Executive Summary



Europe's capacity to anticipate, manage, and recover from crises increasingly depends on the ability to integrate Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) within coherent, inclusive, and forward-looking governance systems. In an era of compound risks, deep uncertainty, and evolving vulnerabilities, fragmented approaches limit long-term resilience.



This policy brief provides evidence-informed, practice-oriented recommendations to strengthen coherence, coordination, and accountability across CCA and DRR governance frameworks. Drawing on research and policy insights from 12 European-funded projects, it demonstrates that both communities pursue shared objectives, with differences rooted mainly in institutional mandates, time horizons, and governance arrangements. It translates existing policy commitments and project-based knowledge into a coherent governance roadmap for sustained CCA-DRR integration.

Responding to international commitments, including the Sendai Framework for Disaster Risk Reduction, the Paris Agreement, the Global Goal on Adaptation, and with due consideration of existing and forthcoming European frameworks such as the Preparedness Union Strategy, EU Climate Adaptation Strategy, and the integrated framework on European Climate Resilience and Risk Management, this brief advances practical pathways for closing persistent integration gaps across DRR and CCA policy priorities at EU, national, and municipal levels. It focuses on three interconnected areas:

- strengthening coordination and collaboration across governance levels
- aligning policy frameworks, incentives, and accountability mechanisms
- reinforcing adaptive and inclusive governance that enables whole-of-society resilience

Across these areas, this brief promotes the systematic embedding of integrated, all-hazards and scenario-based approaches into planning, preparedness, and investment processes. It highlights the importance of sustained multi-level cooperation, interoperable data systems, shared risk assessments, organizational learning, and participatory governance mechanisms to translate shared objectives into coordinated action.

This brief is primarily intended for European policymakers and public authorities at EU, national, and local levels, while also offering insights relevant to broader international efforts. It serves as a practical reference to support decision-making processes aimed at strengthening coherence between CCA and DRR, enhancing joint learning, and advancing integrated, all-hazards approaches within existing governance and investment cycles.

# Key Takeaways

1

**COHERENCE BETWEEN** climate adaptation and disaster risk reduction is not just a scientific exercise, but a key lever for safeguarding essential services and critical infrastructure, strengthening societal resilience under compound risks and deep uncertainty, and enabling more efficient and effective implementation across sectors.

2

**INTEGRATED, ALL-HAZARDS APPROACHES** should be systematically embedded in risk governance, planning, and investment cycles across levels.

3

**PROGRESS REQUIRES MOVING** beyond project-based coordination towards sustained institutional arrangements, joint learning mechanisms, and interoperable systems that support a shift from response-oriented disaster management to anticipatory and preventive risk governance across science, policy, and practice.

4

**PRACTICAL NEXT STEPS** include establishing collaborative and inclusive governance mechanisms, such as cross-community working groups, running policy labs and joint scenario/stress-testing exercises, and piloting integrated approaches to deliver interventions in priority sectors.

5

**IMPLEMENTATION SHOULD BUILD** on existing European instruments and lessons learned as well as cross-border initiatives, strengthening cooperation rather than duplicating structures.

6

**DURABLE INTEGRATION DEPENDS** on long-term capacity building and organizational learning, inclusive engagement that helps align diverse needs, goals, and knowledge systems, and continuous social learning.

# Scene Setter



Europe's risk landscape is becoming increasingly complex, interconnected, and uncertain. Climate-related hazards such as floods, droughts, heatwaves, and wildfires interact with non-climate-related hazards including earthquakes, technological failures, and geopolitical disruptions. These hazards intersect with evolving patterns of vulnerability, exposure, demographic change, urbanisation, and critical infrastructure interdependencies.

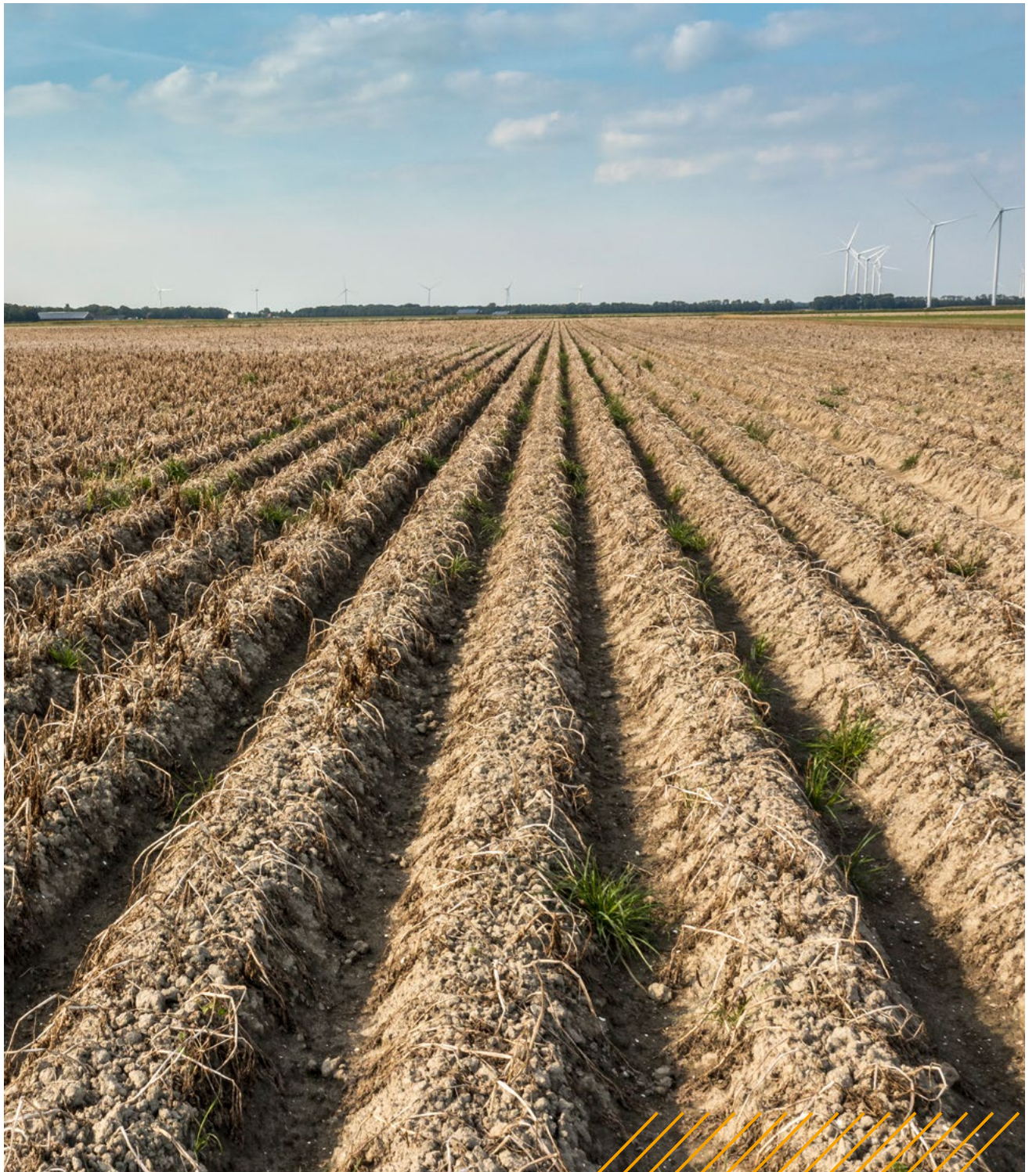
Risks are therefore rarely isolated events; they are compounding, cascading, and systemic in nature. At the same time, important progress has been made through joint risk assessments, cross-border cooperation, and project-based innovation, demonstrating the potential of more integrated approaches when institutional conditions allow.

In this brief, an "all-hazards" approach refers to governance systems designed to address diverse and interacting sources of risk, rather than managing hazards in isolation. Preparing for and managing risks cannot be limited to single-hazard silos or sector-specific planning. Multi-hazard risk dynamics illustrate how hazards interact across spatial and temporal scales, and how risks and impacts propagate through interconnected systems, from energy and transport networks to health systems and supply chains. The EU's TEN-T corridors, for example, demonstrate how cross-border infrastructure is simultaneously exposed to floods, heatwaves, landslides, and other hazards, requiring coordinated adaptation, preparedness, and response strategies that bridge climate adaptation and disaster risk management. This type

of integrated risk governance calls for the coordinated management of hazards, exposure, vulnerability, and capacities across sectors and governance levels, with the aim of strengthening both robustness and adaptive resilience.

At the same time, governance arrangements often remain structured along sectoral, institutional, legal, and temporal boundaries. Responsibilities for adaptation, civil protection, spatial planning, energy, and infrastructure resilience are siloed and may be distributed across ministries, agencies, and governance levels. While important progress has been made in aligning objectives across CCA and DRR, implementation frequently reflects differing planning horizons, mandates, and reporting structures. These differences can limit coherence in risk assessment, investment and policy decisions, and preparedness planning, particularly under conditions of deep uncertainty.

Recent crises, including the 2021 Western Europe floods and the 2024 floods in Valencia, as well as successive European heatwaves and wildfires, have illustrated how gaps between early warning systems, spatial planning, public



health preparedness, and emergency response coordination can amplify societal impacts. Such events underline that risks are experienced by communities as interconnected and systemic, even when governance processes continue to treat them separately.

Fragmented communication, overlapping reporting requirements, and inconsistent risk messaging can also generate confusion and erode trust among citizens, practitioners, and decision-makers. Addressing these challenges requires more than improved data or modelling capacities. It demands governance arrangements that enable interoperability across institutions, shared risk assessments, coordinated planning cycles, and inclusive engagement with civil society, private actors,

and communities. Indeed, to be truly impactful, such arrangements must be informed by and supportive of regional and local contexts, needs, vulnerabilities, knowledge and experience. This also requires aligning policy priorities and actions to local understandings and awareness of risks, contributing to a shared culture or preparedness.

Integrated approaches must bridge short-term preparedness and response with long-term adaptation and transformation, while remaining flexible enough to adapt to diverse and unforeseen developments. In this evolving context, strengthening coherence between CCA and DRR is not merely a matter of institutional alignment; it is a prerequisite for safeguarding vital societal functions, maintaining public trust,



and enhancing Europe’s collective resilience.

To address these challenges, the following sections of this document provide policy recommendations across three key areas. First, we outline concrete actions which should be taken for enhancing communication and coordination across different sectors and governance levels. This includes establishing cross-sectoral and cross-institutional liaison

**International cooperation  
for developing countries  
to reduce their disaster risk  
and disaster losses**

# DRR Day



INTERNATIONAL DAY FOR  
**DISASTER**  
RISK REDUCTION

roles, multi-risk coordination platforms and initiatives, and communication protocols. Second we call for alignment across CCA and DRR policy frameworks. This requires the development and promotion of coherent and harmonised reporting and monitoring arrangements, embedding scenario-based stress testing and foresight methods into policy cycles, and the strengthening of impact, accountability, and feedback mechanisms around policy implementation. Third, we highlight that effective CCA-DRR governance requires adaptive, inclusive, and innovative policy structures that consider and support local dynamics, including vulnerability and risk conditions, knowledge systems and experience, and community-driven initiatives and solutions.

For each section, we first provide an overview of key actions that should be implemented in phased and mutually reinforcing manners, alongside short examples from SRC projects of these actions in practice. Thereafter we outline specific recommendations addressing four levels for policy actors: international and EU; national; regional and local; and projects and research. This is done to show the interdependencies and conditions needed across levels for the effective implementation of the recommendations.

Ultimately, the recommendations defined under these three sections are interrelated and fundamental for advancing an integrated all-hazards approach across CCA and DRR frameworks.



# Enhancing Communication and Coordination Across Governance Levels

## What does it mean?

Strengthening communication and coordination requires sustained horizontal and vertical collaboration across sectors and governance levels, from European and national institutions to regional authorities and local practitioners and communities. It involves creating shared understanding of evolving risks, aligning information flows, and ensuring that multi-hazard risk knowledge is consistently interpreted and applied in planning, preparedness, and response processes.

Effective coordination goes beyond information exchange. It requires institutionalized mechanisms for joint learning, collective sense-making, and continuous dialogue among authorities, technical and scientific experts, civil society organizations, and community representatives as well as the general public, particularly under conditions of deep uncertainty and rapidly changing risk profiles.

## How to put it into practice?

1. Embed liaison and secondment roles across European, national, regional, and local institutions, as well as across ministries, agencies, and operational bodies, to facilitate mutual understanding, trust-building, and knowledge transfer (“policy champions”), and to build capacities for knowledge co-production.
2. Establish (and consolidate existing) national and regional multi-risk coordination platforms and initiatives that bring together authorities and practitioners responsible for CCA and DRR policy priorities.
3. Develop cross-sectoral and cross-organizational communication protocols that strengthen both horizontal collaboration and vertical information flows, including procedures for sharing risk assessments, early warnings, and scenario analyses for multiple hazards and risks.
4. Promote shared terminologies, interoperable data standards, lessons learned, and joint analytical frameworks to support consistent interpretation of multi-hazard risk information across fields and governance levels.
5. Strengthen capacities for translating technical risk information into decision-relevant formats that can be used by planners, emergency managers, community-facing organizations, and representatives (boundary spanners) from the local communities.
6. Build long-term institutional commitment to anticipatory planning, preparedness and adaptation investments, even in the presence of competing political, financial, and organizational pressures.



## Project examples:

Experiences from the **DIRECTED** project demonstrate how practitioners (such as first responders, civil protection agencies, water boards) can lead transdisciplinary multi-stakeholder partnerships (**Real World Labs**) that improve communication and coordination across governance levels by co-designing solutions, for example, tabletop exercises, data and modelling platforms, while also building long-term knowledge co-production capacity of these champions to support wider integration of CCA and DRR activities.

And experiences from the **MYRIAD-EU** project showed how integrated multi-hazard risk assessment and scenario-based approaches can support coordination across sectors and governance levels by making risk interdependencies explicit and translating them into actionable insights for planning, preparedness, and adaptation decision-making.

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## Enhancing Communication and Coordination Across Governance Level *(continued)*

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### Actions for policymakers

#### ◆ INTERNATIONAL AND EUROPEAN LEVELS

- ✦ Promote transnational learning networks for exchanging good practices in integrated and inclusive risk governance.
- ✦ Support transdisciplinary partnerships and practitioner/policymaker (knowledge co-production) capacity development within EU research and innovation funding programmes to foster future champions.

#### ◆ NATIONAL LEVELS

- ✦ Establish cross-ministerial and multi-agency planning units responsible for coordinating adaptation, civil protection, spatial planning, health, energy, and infrastructure resilience policies.
- ✦ Institutionalise regular joint risk assessments and scenario exercises across ministries and agencies.
- ✦ Strengthen institutional arrangements that support multi-level governance, including liaison roles, joint planning processes, and regular coordination between national, regional, and local authorities to ensure coherence and coordination across multiple hazards.
- ✦ Promote and coordinate funding calls and project selection criteria to prioritize integrated, multi-sectoral initiatives.





### ◆ REGIONAL AND LOCAL LEVELS

- ❖ Facilitate coordination platforms that bring together multiple stakeholders including but not limited to, municipal planners, emergency services, environmental authorities, infrastructure operators, and community organizations, where relevant from local to regional levels.
- ❖ Promote collaborative preparedness and long-term climate change adaptation planning that integrates local knowledge with scientific risk assessments, including uncertainty and ambiguity associated with climate change scenarios.

### ◆ PROJECTS AND RESEARCH

- ❖ Incentivize transdisciplinary research consortia and transdisciplinary stakeholder engagement and knowledge co-production processes (e.g., Living Labs).
- ❖ Support co-development of open-source, maintainable and interoperable tools, shared and open-access data infrastructures, and participatory risk assessment methods.
- ❖ Ensure projects build on legacy outcomes, support local ownership of solutions, and strengthen partnerships and joint objectives between research projects, public authorities, practitioners, and private sector to enhance knowledge transfer and long-term uptake.
- ❖ Develop capacity building and training programmes that foster the interdisciplinary skill sets needed to support collaboration across research, policy, and practice communities.





## Aligning Policy Frameworks, Incentives and Accountability

### What does it mean?

Aligning policy frameworks requires coherence between strategic objectives, implementation instruments, monitoring systems, and accountability mechanisms of CCA and DRR across governance levels. It involves reducing contradictions between policies, strengthening complementarities among funding streams, and creating institutional incentives for sustained systemic collaboration.

Effective alignment recognizes that adaptation and disaster risk management operate across different time horizons, administrative systems, and financing cycles. It therefore requires mechanisms that enable coordination between short-term preparedness and response priorities and long-term adaptation and transformation objectives, supported by sustained financing and investment frameworks, while remaining responsive to emerging risks and uncertainty.

### How to put it into practice?

1. Promote coherent reporting and monitoring arrangements under global and European frameworks, reducing duplication and enhancing comparability.
2. Integrate CCA and DRR objectives into existing policy frameworks and planning cycles (such as national adaptation strategies and disaster risk management plans) to align shared goals, indicators, and monitoring mechanisms.
3. Harmonize terminology, risk concepts, and vulnerability frameworks across policies and guidance documents to support consistent interpretation and reporting across multiple hazards.
4. Align legal frameworks, funding instruments, incentives, and monitoring systems, where feasible, to encourage cross-ministerial and sectoral projects and sustained collaboration between national, regional, and local actors, and to reduce administrative fragmentation.
5. Systematically embed scenario-based stress testing and foresight methods into policy design, evaluation, and revision cycles to assess how strategies perform under compound risks, long-term change, and deep uncertainty.
6. Align technical guidance, capacity-building programs, and advisory services across CCA and DRR policy frameworks to support the coordinated implementation of integrated, all-hazards risk governance approaches at national, regional, and local levels.
7. Strengthen mechanisms for assessing policy impacts and learning by documenting and scaling successful practices, including through peer review processes, pilot evaluations, and knowledge-sharing platforms, and studies (e.g. comparative and longitudinal analyses).
8. Strengthen accountability and feedback mechanisms that connect national policy frameworks with local implementation and community perspectives.

## Project examples:

*Experiences from projects such as **FutuResilience** demonstrate how joint scenario assessments and exercises and stakeholder platforms can help align institutional timelines, strengthen coordination, and promote anticipatory governance between planning, adaptation, and civil protection authorities.*

*Another example: the stress test methodology from the **PARATUS** project helped decision-makers assess decisions to be implemented for both short- and long-term decision-making and planning across various sectors.*



## Aligning Policy Frameworks, Incentives and Accountability *(continued)*

### Actions for policymakers

#### ◆ INTERNATIONAL AND EUROPEAN LEVELS

- ✦ Develop integrated reporting and monitoring mechanisms that support coherent tracking of progress across the Sendai Framework, the Paris Agreement, and related European instruments such as the Climate Adaptation Strategy, the Regulation on the Governance of the Energy Union and Climate Action, and future mechanisms.
- ✦ Support open platforms for joint evaluation, peer learning, and data exchange among Member States, building on existing EU-wide and cross-border initiatives in climate adaptation, DRR, and disaster risk management.

#### ◆ NATIONAL LEVELS

- ✦ Align National Adaptation Plans and disaster risk management strategies (such as flood risk management plans linked to the EU Floods Directive, or other hazard specific plans) within coherent policy frameworks with shared objectives, timelines, and reporting requirements.
- ✦ Implement legal and policy pathways across institutions to facilitate the harmonization of national risk assessments, adaptation strategies, climate and energy plans, disaster risk management plans, and civil protection doctrines within joint integrated resilience frameworks.
- ✦ Establish integrated national data and knowledge platforms and analysis frameworks, accessible across ministries, that link CCA and DRR data, building on EU tools such as Copernicus and Eurostat.
- ✦ Require systematic use of scenario analysis and stress testing in major infrastructure, spatial planning, and resilience investments.





### ◆ REGIONAL LEVELS AND LOCAL LEVELS

- ❖ Align regional development plans, land-use regulations, and emergency management strategies to reflect integrated risk assessments.
- ❖ Establish coordination mechanisms to translate national policy objectives into context-specific implementation pathways.

### ◆ PROJECTS AND RESEARCH

- ❖ Develop and test open-source, transparent and non-proprietary integrated policy assessment tools that combine climatic, environmental, social, and economic dimensions of risk.
- ❖ Support comparative and longitudinal analyses of governance arrangements to identify conditions under which integration is most effective, transferable, and scalable.
- ❖ Facilitate transdisciplinary partnerships and build capacity of policy/practitioner champions to liaise between research projects, ministries, and implementing agencies to enhance policy uptake.
- ❖ Include governance and legal expertise in future project proposals to investigate administrative barriers in DRR/CCA and to support in targeting EU or national policies more effectively.





## Strengthening Adaptive and Inclusive CCA-DRR Governance

### What does it mean?

Strengthening adaptive and inclusive CCA-DRR governance requires developing policy and institutional structures that are responsive to changing local contexts, vulnerabilities, knowledge systems, and dynamic risk conditions. It involves recognizing that “whole-of-society” resilience is co-produced by communities including public authorities, civil society organisations, and private actors, and that effective risk governance must remain flexible under conditions of deep uncertainty, compound risks, and unforeseen crises.

This approach emphasizes the integration of social vulnerability assessments, local capacities, community-building, and experiential knowledge into preparedness, adaptation, and response systems, ensuring that policies are both grounded and adaptable. It is sensitive to gaps between scientific and policy priorities (and jargon), and regional and local understandings and concerns around risks, and promotes innovative, artistic, and bottom-up forms of engagement.

### How to put it into practice?

1. Strengthen understanding of how communities adapt and prepare for, respond to, and recover from crises at local levels, including through indigenous and local knowledge systems, community-based systems, nature-based solutions, artistic mediums, and informal support networks.
2. Support and enable existing and emerging community initiatives, rather than replacing or centralizing them, by providing institutional backing, technical assistance, and flexible funding mechanisms.
3. Create enabling environments for grassroots innovation by reducing administrative barriers, fostering local transdisciplinary partnerships bridging science, practice and community, and promoting experimentation and learning across regions.
4. Institutionalize mechanisms for continuous engagement with diverse communities, including marginalized and at-risk groups, in preparedness, response, and recovery planning.
5. Integrate participatory scenario exercises and stress-testing methodologies, including those developed within European research projects, to better understand dynamics among societal vulnerabilities, institutional capacities, and response pathways under diverse, changing, and uncertain conditions.
6. Promote citizen science, community monitoring, and participatory data collection to complement formal risk assessments and enhance situational awareness.

## Project examples:

Examples from projects like *SYNERGIES* have developed tested approaches for integrating scenario-based social vulnerability assessments into preparedness planning, demonstrating how vulnerability findings can be translated into capacity needs across governance and coordination structures while reflecting local contexts and diversity.

*RESILIAGE* has validated specific community-based approaches including how social and cultural practices to heritage can strengthen adaptation and DRR capacities.



## Strengthening Adaptive and Inclusive CCA-DRR Governance *(continued)*

### Actions for policymakers

#### ◆ INTERNATIONAL AND EUROPEAN LEVELS

- ❖ Promote adaptive governance principles within CCA and DRR frameworks, including requirements for participatory risk assessment and scenario-based preparedness planning.
- ❖ Support transnational learning platforms and pathways for integrated CCA-DRR policy that enable the sharing of community-based and locally grounded practices that can be transferred, scaled, and sustained.
- ❖ Continue to require that civil society organisations are part of EU research and innovation funding consortia and receive adequate funding to meaningfully engage in projects.

#### ◆ NATIONAL LEVELS

- ❖ Integrate decentralized and networked governance structures into national preparedness and adaptation strategies, with explicit roles for community actors and intermediary organizations.
- ❖ Establish funding instruments that support grassroots initiatives, social innovation, and locally led resilience building.



## SECTION 3

**◆ REGIONAL LEVELS AND LOCAL LEVELS**

- ❖ Pilot innovative, locally tailored approaches to population engagement that strengthen a “culture of risk”, by supporting community-building initiatives, regular local exchanges, and targeted awareness actions including innovative and artistic communication mediums, ensuring people are heard, informed, connected, and empowered.
- ❖ Ensure that “all-hazards” approaches remain sensitive to hazard- and context-specific vulnerabilities by grounding capacity developments in scenario-based social vulnerability assessments.
- ❖ Facilitate transdisciplinary co-creation processes that translate (social) vulnerability assessments into locally relevant action plans for CCA and DRR.

**◆ PROJECTS AND RESEARCH**

- ❖ Develop and test participatory simulation, stress-testing, and foresight tools that integrate social, institutional, and technical dimensions of risk.
- ❖ Strengthen collaboration between research consortia, local authorities, and civil society to ensure that innovations are transferable and scalable.



# Contributors



Develops a multi-risk, impact-based approach to disaster risk management, helping decision-makers understand interconnected climate and hazard risks across sectors and regions in Europe.



Fosters a culture of disaster preparedness by engaging responders, citizens, civil society, authorities, researchers, educators, and businesses in collaborative preparedness actions.



Supports climate adaptation for critical infrastructure through a decision-support toolkit, multi-hazard risk assessment framework, technical guidance, and practical demonstration use cases.



Uses satellite Earth observation technologies to better understand cascading and compounding multi-hazard events, translating scientific advances into actionable insights and community tools.



Increases preparedness among first and second responders for multi-hazard events, helping reduce the sectoral impacts and cascading risks linked to complex disasters.



Tests new approaches for managing risks linked to extreme climate events through ten demonstrators across Europe, bringing together experts, policymakers, practitioners, and communities.



Strengthens Europe's economic and social resilience by supporting the rapid use of policy-relevant research and innovation through co-created FutuResilience Labs.



Develops a decision support system for disaster risk management that considers interacting natural hazards, cascading impacts, and future climate change in a people-centred way.



Uses a collaborative knowledge base, VR serious gaming, a mobile app, and learning tools to improve and assess disaster preparedness across diverse users.



Develops governance, data-sharing, and AI-supported tools to improve cross-sector coordination for disaster resilience, tested through innovation hubs across Europe.



Supports first responders and empowers citizens through user-friendly tools and community-based approaches that strengthen resilience in crises, disasters, and heritage-related contexts.



Aims to reduce vulnerability to extreme weather by improving interoperability in data, models, communication, and governance across disaster risk management and climate adaptation.



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CMINE, the Crisis Management Innovation Network Europe, connects Europe's crisis and disaster risk community by bringing together projects, practitioners, researchers and policymakers to share knowledge, strengthen collaboration and support the uptake of preparedness and resilience solutions.



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## Selected references

- ◆ Atun, F., et al. (2024). *Forensic Analysis of Historical Disasters to Develop Quantifiable Multi-hazard Impact Chains Models*. In: Erberik, M.A., et al. (eds) *Proceedings of the 7th International Conference on Earthquake Engineering and Seismology*. ICEES 2023. *Lecture Notes in Civil Engineering*, vol 401. Springer, Cham. [https://doi.org/10.1007/978-3-031-57357-6\\_40](https://doi.org/10.1007/978-3-031-57357-6_40)
- ◆ Clark, N., et al. (2025). *Strengthening all-of-society approaches for disaster resilient societies through competency building: A European research agenda*. *International Journal of Disaster Risk Reduction*, 121, 105345. <https://doi.org/10.1016/j.ijdr.2025.105345>
- ◆ Cocuccioni, S., et al. (2024). *The Use of Impact Chains to Describe Complex Cause-Effect Relationships Within a Systemic Multi-sectoral and Multi-hazard Risk Assessment*. In: Erberik, M.A., et al. (eds) *Proceedings of the 7th International Conference on Earthquake Engineering and Seismology*. ICEES 2023. *Lecture Notes in Civil Engineering*, vol 401. Springer, Cham. [https://doi.org/10.1007/978-3-031-57357-6\\_38](https://doi.org/10.1007/978-3-031-57357-6_38)
- ◆ Cumiskey, L., et al. (2025). *Capacity development for locally-led knowledge co-production processes in Real World Labs for managing climate and disaster risk*. *International Journal of Disaster Risk Reduction*, 125. <https://doi.org/10.1016/j.ijdr.2025.105398>
- ◆ FutuResilience policy roadmap with the concept of resilience profiles and last section on recommendations: <https://zenodo.org/records/17987185>
- ◆ Hochrainer-Stigler, S. et al. (2026). *Operationalising Systemic Multi-Hazard and Multi-Risk Assessment: Lessons from the MYRIAD-EU Framework*. iScience. [https://www.cell.com/iscience/fulltext/S2589-0042\(26\)00310-X](https://www.cell.com/iscience/fulltext/S2589-0042(26)00310-X)
- ◆ Orru, K., et al. (2025). *Social vulnerability triage: A dynamic scenario-based system for disaster planning and response*. *Journal of Risk Research*, 1–22. <https://doi.org/10.1080/13669877.2025.2522660>
- ◆ Parviainen, J., et al. (2025). *The Risk-Tandem Framework: An iterative framework for combining risk governance and knowledge co-production toward integrated disaster risk management and climate change adaptation*. *International Journal of Disaster Risk Reduction*, 116, 105070. <https://doi.org/10.1016/j.ijdr.2024.105070>
- ◆ Quevauviller, P. (2026) *Art-Science fusion to enhance community-building and societal resilience to water-related disasters*, *Journal of Integrated Disaster Risk Management*, (forthcoming).
- ◆ Schweizer, P.-J. (2021). *Systemic risks – concepts and challenges for risk governance*. *Journal of Risk Research*, 24(1), 78–93. <https://doi.org/10.1080/13669877.2019.1687574>
- ◆ van Westen, C., et al. (2024). *Development of a Platform for the Generation, Visualisation and Quantification of Disaster Impact Chains*. In: Erberik, M.A., Askan, et al. (eds) *Proceedings of the 7th International Conference on Earthquake Engineering and Seismology*. ICEES 2023. *Lecture Notes in Civil Engineering*, vol 401. Springer, Cham. [https://doi.org/10.1007/978-3-031-57357-6\\_39](https://doi.org/10.1007/978-3-031-57357-6_39)
- ◆ Ward, P. J., et al. (2026) *Reducing Risk Together: moving towards a more holistic approach to multi-(hazard-)risk assessment and management*. <https://nhess.copernicus.org/articles/26/1325/2026/>