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Emergency preparedness in governance under expanding structural risks: Protecting society from high-impact disruptions

ESCP Impact Paper No.2026-21-ENG

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Abstract

This article examines how changes in risk affect emergency preparedness. Risks increasingly develop across systems, extend across regions and can exceed response capacity. Existing preparedness frameworks are evolving but remain uneven and not fully aligned with the scale, interaction and speed of current risks. The article shows that emergency preparedness operates as a mechanism of risk allocation. Decisions taken in advance determine how exposure to disruption is distributed across institutions, services and populations. Where emergency preparedness is not integrated into governance, allocation occurs at the point of impact, leading to uneven outcomes with more severe effects where capacity is limited. Drawing on recent developments in the United Kingdom and the European Union, the article argues that emergency preparedness needs to be integrated into governance design. This requires earlier and more explicit decisions on responsibility, coordination, capacity and financing, supported by cross-border cooperation, public-private coordination and population preparedness. The article concludes that preparedness should be treated as a core governance function that secures capacity before disruption occurs rather than relying primarily on reactive responses afterwards.

Keywords: emergency preparedness, risk allocation, governance design, systemic risk, coordination

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Systemic risk and the expanded scope of disruption

Risk exposure across advanced economies is shaped by geopolitical tension, energy dependence, climate pressure, digital vulnerability and trade exposure operating within highly integrated systems. This structure increases the likelihood that disruption affects multiple areas at the same time and extends beyond the point of origin.

This is reflected in major events over the past decade. The COVID-19 pandemic disrupted health systems, supply chains and public finances across countries. The war in Ukraine disrupted energy supply, trade flows, public finances and, within affected regions, health systems. In both cases, disruption happened across sectors and borders at the same time.

Risk assessments reflect these developments at national, European and global levels. The UK National Risk Register (2023, 2025) identifies dependencies across infrastructure, supply chains and public services. At the European level, Joint Research Centre analysis (2025) identifies cross-border and systemic risks and calls for a more anticipatory approach. At the global level, the World Economic Forum Global Risks Reports (2024, 2026) identify interacting disruptions and compounding crises. Recent escalation in the Middle East occurred after the latest national, European and global risk assessments were released. It illustrates how risk can intensify rapidly and interact with existing pressures, including ongoing conflict in Ukraine, energy systems and trade flows. This increases the relevance of previously identified dependencies and places pressure on the timeliness of preparedness decisions.

Technological factors reinforce these pressures. Cyber threats are consistently identified among the highest-impact risks and have increased in frequency and scale in the context of ongoing conflicts. They can affect critical infrastructure, public services and communication systems, often with limited warning and across multiple locations.

Taken together, these dynamics increase the likelihood that the scale and breadth of disruption exceed available response capacity. In higher-impact scenarios, core functions cannot be maintained within existing arrangements. This increases the demands placed on preparedness, particularly in relation to timing, coordination and capacity of public services, infrastructure and supply systems.

Preparedness in existing governance frameworks

Preparedness frameworks focus on maintaining the functioning of essential systems under disruption. National risk assessments define response capabilities in relation to critical services, including energy, transport, healthcare and communications. Planning focuses on the ability to respond to and recover from disruptions affecting these systems.

In the United Kingdom, the National Risk Register (2025) structures preparedness around acute risks requiring an emergency response. It identifies priority scenarios and defines response arrangements in relation to disruption of critical services and infrastructure. The approach incorporates more frequent updates and revised risk assessments compared with earlier editions, including changes in the likelihood assigned to disruption of global

oil trade routes. Emergency preparedness remains organised around discrete events and response capacity within specific services and infrastructure.

At the European level, the Preparedness Union Strategy (2025–2029) places greater emphasis on anticipation, coordination and preparedness integrated across policy areas. It sets out a detailed action plan covering foresight, crisis coordination, protection of critical functions, population preparedness, public-private cooperation and civil-military arrangements. The plan includes specific measures such as the development of an EU-wide risk and threat assessment, crisis coordination platforms, stockpiling strategies, minimum preparedness requirements and population-level guidance. These actions are scheduled for implementation over the period 2025 to 2027, with some elements extending beyond this horizon.

Emergency preparedness frameworks are evolving, but important limits remain. In the United Kingdom, preparedness remains closely linked to identified scenarios and response arrangements. At the European level, the framework is broader and more integrated, but many of its measures depend on phased implementation over time. In both cases, preparedness is not fully aligned with the scale, interaction and speed of evolution in current risks.

Preparedness as a mechanism of risk allocation

Preparedness determines how exposure to disruption is distributed before disruption occurs. Decisions taken in advance define which institutions and services absorb the effects of disruption and what capacity is available when they are put under pressure.

Where preparedness is integrated into governance and aligned with the scale and interaction of current risks, resources, coordination and response capacity are organised in advance. This allows the effects of disruption to be absorbed within existing arrangements and reduces the need for reactive adjustment at the point of impact. Where this is not the case, exposure arises where no suitable arrangements are in place, and responses to high-intensity disruption are organised in real time, often under limited coordination and capacity. This becomes visible in how the shock of disruption is absorbed across public institutions, firms and households. During the COVID-19 pandemic, shortages of medical equipment and disruptions to supply chains exposed limitations in stockpiling, coordination and surge capacity. Energy disruptions following the war in Ukraine highlighted dependencies on external energy sources and the challenges of rapid adjustment. These examples illustrate how insufficient preparedness can shift disruption costs to governments, firms and households.

Public institutions operate under budgetary and coordination constraints when multiple services are affected. Firms face operational disruption and financial pressure within supply and liquidity structures that may not hold under prolonged disruption or large-scale conflict. Households absorb shocks affecting access to essential goods, services and income, often without sufficient buffers to sustain them over time. Exposure is therefore uneven and increases with the scale and duration of disruption, especially where core functions cannot be maintained. These outcomes reflect not only the disruption itself, but how preparedness has been structured in advance.

As disruption extends across regions and affects multiple domains, available capacity becomes insufficient to absorb the impact. Access to energy, healthcare, mobility and basic goods depends on capacity available at the point of impact.

Preparedness therefore operates as a mechanism of risk allocation. It determines whether disruption is absorbed through capacity organised in advance or transferred to institutions, services and households with limited capacity to respond. Where this allocation is not defined explicitly in advance, it is determined at the point of impact by available resources and the ability to coordinate and respond. In such cases, exposure develops unevenly, with more severe effects where capacity is limited. In higher-impact scenarios, where disruption affects core functions and response must be immediate, the absence of preparedness in advance limits the ability to protect basic needs and safety, with consequences that may be severe and, in some cases, irreversible.

Emergency preparedness in governance decision-making

Decisions on emergency preparedness define how exposure to disruption is distributed across institutions, services and populations, and what capacity is available when disruption occurs. Preparedness therefore moves from response functions into core governance decisions.

These decisions require priority and timely implementation. The scope of disruption can extend across regions, affect multiple domains and develop where response capacity cannot be expanded in real time. Preparedness that is delayed or implemented gradually remains exposed to risks that are already materialising.

Preparedness frameworks differ across countries and regions in how they are structured and implemented, and these differences create distinct constraints. In the United Kingdom, a scenario-based approach requires integration across policy areas and earlier alignment with cross-border and multi-domain disruption. In the European Union, a framework based on phased implementation faces pressure on timing, as measures scheduled over several years may not match the evolution speed and interaction of current risks.

Preparedness depends on decisions on responsibility, coordination and capacity across public authorities and essential services. Responsibility for maintaining essential functions needs to be defined clearly. Coordination across institutions and sectors must be organised in advance, and capacity must be secured before disruption occurs.

Coordination also extends across borders. Disruption develops across regions and affects interconnected systems, which requires alignment between countries in preparedness planning, information sharing and operational response. The effectiveness of preparedness depends on the extent to which governments coordinate and build on existing arrangements, including cooperation between the United Kingdom and the European Union in areas where risks and response requirements are shared.

These decisions are taken under clear constraints. Public budgets are allocated to immediate and visible needs, while preparedness requires allocating resources to uncertain events that may not materialise within the decision horizon. As disruption increases in scale and interaction, the cost of insufficient preparedness rises, including loss of essential services, prolonged economic disruption and impacts that cannot be reversed once they occur. This strengthens the case for treating preparedness as a core public function and protecting it within budgeting processes.

Financing needs to support preparedness in advance of disruption. Investments in infrastructure, stockpiles, coordination systems and public guidance compete with other spending priorities and are often deferred where risks are uncertain. Deferral increases

exposure. Financing mechanisms that support ex ante investment, including public borrowing linked to clearly defined preparedness objectives, can facilitate earlier allocation of resources and improve transparency in how preparedness is funded.

Communication is a core component of emergency preparedness. It defines how risks are understood, how responses are organised and how responsibilities are shared across institutions, firms and the population. Without clear and timely communication, preparedness remains incomplete. Effective communication requires accessible and actionable information on risks, expected responses and individual roles, including guidance on how to prepare, what resources to secure and how to act under disruption. Clear expectations and consistent information support coordination and enable timely action. Firms contribute through business continuity planning, supply-chain resilience and participation in critical infrastructure arrangements. Citizens contribute through basic preparedness measures and engagement with official guidance. Population preparedness forms part of the overall system's resilience. Basic household preparedness, awareness of emergency procedures and access to reliable information can reduce pressure on public services and improve the ability of communities to function during disruption.

Preparedness therefore requires explicit decisions on how disruption will be absorbed across public institutions, firms and households. Practical implementation may include minimum preparedness requirements for critical services, strategic stockpiles, cross-sector crisis coordination mechanisms, public-private cooperation arrangements and dedicated financing for preparedness investments. The precise design will differ across countries, but the underlying objective remains the same: securing capacity before disruption occurs rather than relying on reactive adjustment afterwards. Where these decisions are not taken in advance, exposure is determined at the point of impact by available resources and the ability to respond. This leads to uneven outcomes, with more severe effects where capacity is limited. Given the scale, interaction and evolution of current risks, emergency preparedness cannot be treated as a residual function of response. It is a core element of governance that defines how disruption is managed before it occurs.

Conclusion

Risk exposure has increased in scale, interaction and speed, with disruption extending across systems and regions and, in higher-impact scenarios, exceeding response capacity. Preparedness frameworks are evolving, but remain uneven and not fully aligned with these developments.

This creates a clear case for prioritising emergency preparedness within governance. The cost of insufficient preparedness increases with the scale and interaction of disruption, including loss of essential services, prolonged economic disruption and impacts that cannot be reversed once they occur. These consequences extend beyond emergency management. For citizens, preparedness influences access to healthcare, energy, food, transport and communications during disruption. For firms, it affects operational continuity and financial stability. For governments, it shapes the ability to maintain essential services and public confidence. Emergency preparedness therefore needs to be integrated into governance planning. Decisions on responsibility, coordination, capacity and financing determine in advance how exposure to disruption is distributed. Where these decisions are not taken, allocation occurs at the point of impact and develops unevenly, with more severe effects where capacity is limited.

These outcomes directly affect the ability to maintain access to essential services, protect basic needs and ensure safety in a context of disruption. Emergency preparedness should therefore be treated as a core function of governance. Decisions need to be taken early and at a level consistent with the scale and interaction of current risks, when coordination and capacity can still be organised and outcomes shaped.

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