

POLICY BRIEF

TERRITORIAL RESILIENCE AND POLICY EVALUATION IN THE CONTEXT OF EU COHESION POLICY

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1. Background

After the global financial crisis of 2008-2014, the term "resilience" has re-emerged in the political context of the European Union (EU), reinforced by the context of the pandemic COVID-19. The epidemic highlighted the fragility of supply chains and the lack of resilience in many sectors and areas of the economy. The geopolitical shock of the war in Ukraine and the instability of energy supplies and, of course, the speeding-up of climate change and loss of biodiversity have also justified a more intensive focus on the concept of resilience. An increased interest in enhancing resilience can be observed in scientific research (Brunetta & Caldarice, 2020)[1] and policy discussion as well.

- The European Commission, for example, has established the post-epidemic **Recovery and Resilience Facility [2] (RRF)** as a core component of NextGenerationEU, which provides nearly €725 billion in grants and loans to EU Member States to *"make European economies and societies more sustainable, resilient and better prepared for the challenges and opportunities of the green and digital transition"*. The RRF emphasised the social dimension of resilience, requiring reforms and investments undertaken by the Member States to mitigate the economic and social impact of the Coronavirus pandemic.
- The full funding framework for EU Cohesion Policy for the period 2021-2027 - and by far the largest single source of funding - is set out in *Chapter 2: "Cohesion, resilience and values"* [3]. As a consequence, the concept of resilience is now embedded in policy and programming frameworks operated by transnational, national, regional and local policy actors.
- The **Territorial Agenda 2030 (TA 2030)** adopts the theme of resilience, stating that *"territorial policies and cooperation on common objectives are essential to increase the resilience of municipalities, regions and countries while strengthening recovery processes"* [4].

However, even though the concept of resilience has been present in the European political vocabulary for more than a decade, there is still no common agreement on

[1] Brunetta, G., & Caldarice, O. (2019). Spatial resilience in planning: Meanings, challenges, and perspectives for urban transition. Encyclopedia of the UN Sustainable Development Goals: Good health and well-being (pp. 1-12). Springer International Publishing. https://doi.org/10.1007/978-3-319-71061-7_28-1

[2] European Commission. (n.d.). Recovery and resilience facility. Retrieved from https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en

[3] European Commission. (n.d.). Spending and revenue (2021-2027). Retrieved from https://commission.europa.eu/strategy-and-policy/eu-budget/long-term-eu-budget/2021-2027/spending-and-revenue_en

[4] Territorial Agenda 2030. (2020). Territorial Agenda 2030: A future for all places. Informal Meeting of Ministers responsible for Territorial Cohesion and/or Territorial Development. https://territorialagenda.eu/wp-content/uploads/TA2030_jun2021_en.pdf

what the term actually means. The current "six pillars" of the RRF, which encompass the EU's entire policy agenda, underpin a flexible interpretation of resilience that still has no real political meaning. For example, the Regulation establishing the RRF states that: "Sustainable and growth enhancing reforms and investments that address structural weaknesses of Member State economies, and that strengthen the resilience, increase productivity and lead to higher competitiveness of Member States, will therefore be essential to set those economies back on track and reduce inequalities and divergences in the Union"[5].

The aim of this policy brief is to provide an analysis and assessment of the concept of territorial resilience in the context of the EU's Cohesion Policy. It includes an overview of the development of the understanding of resilience, the linkage between resilience and policy making, an analysis of relevant EU policy documents and how they deal with the notion of resilience and its territorial governance aspects. It gives an overview of the challenges for development policy practice in building resilience and presents the actual practice of how we can measure resilience. Finally, the policy brief aims to provide guidance for developing long-term, multi-dimensional responses that promote territorial resilience through social, economic and environmental sustainability and the twin transition in the EU.

2. The relation between resilience and policy making

The concept of resilience emerged in the 1960s within ecology and has since expanded into psychology, disaster management and spatial planning. Initially, it was understood as the ability to "bounce back". After the 2010 economic crisis, it meant to return to the pre-shock state and economic growth rate. The ESPON ECR2 project (2012) was a turning point, examining resilience in European regions, emphasising the role of spatial characteristics and governance in economic recovery. Since then, the focus has shifted to transformative and adaptive capacities. Today, resilience involves not only recovery but also a proactive, "bounce-forward" approach to achieve sustainable transitions, especially in response to long-term stressors like climate change and economic decline. The detailed description is included in [Annex 1. The evolution of the understanding of resilience.](#)

Since 2015, the EU's Joint Research Centre (JRC) has integrated resilience thinking into

[5] European Parliament and Council, Regulation (EU) 2021/241 establishing the Recovery and Resilience Facility, Official Journal of the European Union, 12 February 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R0241>

policy frameworks, emphasizing a 'bounce-forward'[6] and transformative systems approach to resilience. However, there is still a **disconnect between this vision and current policies**, which still often focus on short-term economic recovery. Effective resilience requires a **place-based, multi-level approach**, leveraging local resources and ensuring coordination across governance levels. This shift calls for policies that emphasize learning, adaptation and transformation to address interconnected crises and reduce vulnerabilities, ultimately enabling a sustainable and equitable transition. Resilience is best understood as a collective social learning process that relies on human skills and knowledge to reduce vulnerabilities and enhance the ability to absorb, adapt, and transform during disruptions. This approach calls for a territorial, future-oriented policy focus, recognizing that resilience is a multi-level process requiring coordination across various governance levels. To be effective, there must be a shared understanding that takes into account the unique challenges and opportunities faced by different regions—whether rural, urban, or otherwise.

The detailed description is included in [Annex 2. The relation between resilience and policy making](#).

3. Analysis of relevant EU policy documents

The EU's Cohesion Policy is a complex set of instruments that supports the development of regions, the reduction of economic, social and territorial disparities, sustainable development and the green transition through various funds and programmes. For the period 2021-2027, the EU has set five policy objectives for Cohesion Policy

(1. Smarter Europe; 2. A greener, carbon-free Europe; 3. A better-connected Europe; 4. A more social and inclusive Europe; 5. A Europe closer to citizens: promoting local development, empowering cities and communities.)

In order to understand whether the EU takes territorial resilience into account in the policy documents, the following policies were analysed and evaluated.

- 1.) Cohesion Policy 2021-2027
- 2.) Urban Agenda for the EU (2016)
- 3.) European Green Deal (2019)
- 4.) Smart Specialisation Strategy (S3) (2020)
- 5.) Circular Economy Action Plan (CEAP, 2020 March)
- 6.) EU Biodiversity Strategy for 2030 (2020 May)

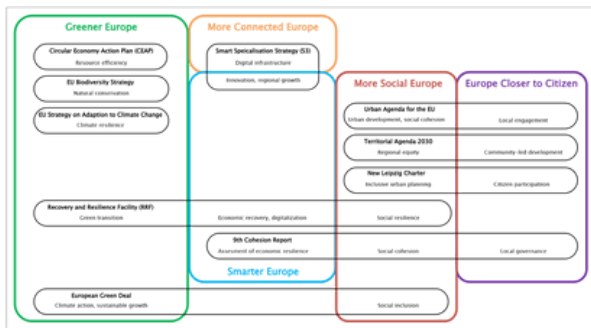
[6] Giovannini, E., Benczur, P., Campolongo, F., Cariboni, J., & Manca, A., Time for transformative resilience: The COVID-19 emergency, EUR 30179 EN, Publications Office of the European Union, 2020, <https://doi.org/10.2760/062495>

- 7.) Territorial Agenda 2030 (2020 December)
- 8.) New Leipzig Charter (2020 December)
- 9.) Recovery and Resilience Facility (RRF) (2021)
- 10.) EU Strategy on Adaptation to Climate Change (2021 February)
- 11.) 9th Report on Economic, Social and Territorial Cohesion (2024 March)

The short description of these documents is in [Annex 3. Short description of EU policy documents analysed](#)

The documents listed above all contribute in some way to the implementation of EU Cohesion Policy, supporting its objectives in different areas. The following matrix shows how each EU policy relates to the different objectives of Cohesion Policy. In the matrix, the intersection points are provided with specific links detailing how a particular strategy contributes to a specific objective of the Cohesion Policy.

Fig.1. Interlinkage of EU policies analysed and Cohesion Policy objectives



3.1. Interpretation of resilience in each policy document

Most documents mention resilience, either explicitly or implicitly, but its interpretation varies. Resilience is sometimes presented as an action in response to a crisis or shock (e.g. RRF) while in other documents it is considered rather a skill to react to any future shocks (e.g. the New Leipzig Charter, EU Urban Agenda etc.).

It can also be noted that the general trend across these EU policies is a stronger emphasis on adapting to and transforming in response to future challenges, particularly related to climate change and sustainability, rather than merely absorbing

disturbances.

Among the documents relating to climate issues, the EU Green Deal promotes climate change mitigation towards net-zero emissions by 2050, while boosting the economy, improving people's health and quality of life, caring for nature, and strengthening social and territorial cohesion. It sets a broader goal of transforming the EU economy towards sustainability through comprehensive policies across sectors. The EU Strategy on Adaptation to Climate Change has a "build back better" approach that emphasises proactive adaptation and long-term economic diversification. Similarly, the Circular Economy Action Plan and S3 promote flexibility and innovation in economic models. Moreover, the European Green Deal supports also absorptive capacity in sectors like energy and agriculture by promoting climate-proofing and resilience-building measures. Likewise, the EU Biodiversity Strategy for 2030 enhances absorptive capacity by protecting and restoring ecosystems, which act as buffers against environmental shocks. Other policies, such as CEAP provide moderate contributions, focusing more on sustainability rather than immediate recovery to pre-crisis conditions.

Related to the territorial and urban aspects, the New Leipzig Charter and Urban Agenda for the EU exhibit strong contributions to adaptive capacity by promoting flexible governance models and encouraging cities to adjust to socio-economic and environmental challenges. On one hand, it is also true that both documents emphasise transformative capacity as well, empowering cities through integrated strategies and multi-level governance for a more sustainable and resilient future. On the other hand, the EU Adaptation Strategy 2021 offers a robust framework for adaptation through early warning systems, sustainable practices, and cross-border cooperation to help regions adjust to climate impacts. The S3 and 9th Cohesion Report emphasise regional flexibility and adaptation through innovative responses to climate change and socio-economic shifts. **The EU Biodiversity Strategy** is particularly notable for enhancing adaptive capacity, encouraging nature-based solutions, and managing adaptively to allow ecosystems to adjust to changing environmental conditions.

However, it can be also concluded that, over time, there has been an increasing shift towards a transformational understanding of resilience in documents, including those with a territorial and economic perspective.

The EU-level policies seem to focus mostly on territorial transformative capacity. In this respect, the main purpose of the RRF is to support EU countries' recovery from COVID-19. To achieve this, RRF is explicitly and intentionally transformative, directly supporting the green and digital transition as well as system-level reforms.

The New Leipzig Charter promotes transformative capacity, especially by promoting the transition to carbon-neutral cities and leveraging crises for sustainable urban development. The European Green Deal is also transformative, with its focus on green technology, renewable energy, and circular economies, positioning regions for long-

term sustainable development. The EU Adaptation Strategy and Biodiversity Strategy contribute to transformative capacity by promoting systemic shifts in climate resilience and land-use practices, supported by innovative solutions. The 9th Cohesion Report emphasises transformative capacity through structural changes, smart specialisation, and green transitions.

From an overall perspective, the Territorial Agenda 2030 is oriented towards the transformative approach while the rest of EU policies are more or less concentrated at all the three capacities. The EU Biodiversity and the European Green Deal incorporate all territorial resilience capacities equally.

3.2. Resilience aspects of territorial governance

To understand how European policies interpret territorial resilience, it is crucial to examine its spatial dimension. Governance is a key issue in the documents analysed, but it is much stronger in EU-level documents than in international documents. One of the most important elements is the emphasis on multi-level governance to address complex challenges.

The Territorial Agenda stresses the importance of **vertical coordination**, emphasising a place-based approach across all levels of governance.

The New Leipzig Charter promotes multi-scalar approaches for inclusive urban policies, which requires coordination between different levels of governance (local, regional, national and EU levels). Cohesion policy promotes a balance between levels of governance and the 9th Cohesion Report calls for reforms to ensure balanced territorial development. The RRF addresses multi-level needs, involving international, national and local authorities, while the European Green Deal and the EU Climate Change Adaptation Strategy also emphasise multi-scalar approaches to sustainability and resilience, recognising that local challenges often require regional or national solutions. Similarly, the Cohesion Policy 2021-2027 supports multi-level governance to integrate different territorial dimensions.

European policies also favour decentralised governance. The EU Urban Agenda and the RRF emphasise the division of responsibilities between different levels, giving urban authorities and Member States flexibility in managing resources. The European Green Deal and the 9th Cohesion Report further promote decentralisation, allowing regional and local authorities discretion in implementing policies while maintaining EU-wide objectives.

It is important to underline **horizontal coordination**, which also plays an essential role: strong interconnections are highlighted, not only within regions and municipalities, but also with other territories.

The New Leipzig Charter and the EU Urban Agenda emphasise partnerships and cross-

sectoral cooperation as essential to address urban challenges and promote good governance. Sectoral cooperation is also promoted in the EU's climate change adaptation strategy and Cohesion Policy, which encourage cooperation between sectors such as agriculture, health and urban planning to overcome administrative barriers.

Multilevel governance encourages broad participation, as seen in the Smart Specialisation Strategy and the Territorial Agenda 2030, which call for the involvement of the public, civil and private sectors. Public participation is seen as key to implementing subsidiarity and ensuring stakeholder cooperation.

Resilient governance is linked to innovation and flexibility. The New Leipzig Charter sees cities as innovation hubs, while the RRF and the European Green Deal promote research and innovation for climate resilience. Flexible governance models, as outlined in Cohesion Policy and S3, adapt to new challenges and enable regions to respond to evolving needs, such as climate and digital transitions. Flexibility also supports place-based policies, as seen in the RRF and the European Green Deal, allowing Member States to tailor responses to their specific circumstances.

Finally, **proactive governance models** are encouraged in the New Leipzig Charter, the EU Urban Agenda and the RRF, **promoting forward-looking strategies** to anticipate future challenges such as climate change and technological transitions.

Functionality is another important spatial dimension, going beyond administrative boundaries to focus on real territorial needs. The Territorial Agenda and the New Leipzig Charter highlight functional regions and partnerships, emphasising cross-border cooperation to manage urban development. The RRF and S3 promote functional approaches by encouraging cross-regional coalitions for green and digital transitions.

3.3. Thematic dimensions of resilience based on the nature of the impact of shocks

At this point, the thematisation is not based on the nature of the disturbance itself, but on the nature of its consequence (e.g. high house-prices cause demographic regression, where an economic reason leads to a social effect).

The policy analysis emphasizes three key dimensions: **economic, ecological, and social resilience.**

1.) **Economic Resilience:** The Territorial Agenda 2030 focuses on reducing economic disparities and promoting equitable development, while the New Leipzig Charter stresses the need for diversified economies that create jobs and foster sustainable urban growth. The RRF promotes long-term economic stability, and the European Green Deal aims to transform the EU economy for sustainability. The EU Strategy on Climate Adaptation integrates climate resilience into economic planning, while the

CEAP introduces incentives for circular economy practices.

2.) Ecological Resilience: The EU Strategy on Climate Adaptation promotes nature-based solutions for land use and infrastructure, while the EU Biodiversity Strategy 2030 focuses on protecting natural ecosystems through expanded protected areas. The CEAP also supports sustainable practices, stricter waste regulations for biodiversity protection.

3.) Social Resilience: European policies address societal challenges like demographics, education, and health. The New Leipzig Charter promotes inclusive, socially balanced urban neighbourhoods, while the EU Urban Agenda tackles social inequality. The EU Adaptation Strategy emphasizes social equity in climate adaptation, and S3 fosters stakeholder collaboration for social cohesion. Cohesion Policy 2021-2027 focuses on social inclusion, poverty reduction, and access to health care for marginalized groups

4. Challenges of development policy practice in building resilience

Resilience has been criticised and has faced many shortcomings when moving from theory to practice. Despite the increasing attention to resilience, its territorial implementation and the required ambition are still lagging. This is partly due to a lack of harmonising scientific and practice-led knowledge through co-development, to support informed and science-based decision- and policymaking, and to enable different territories to evolve and innovate (Caldarice et al., 2021)[7]. Based on a deeper understanding of implementing resilience, practical realities highlight some critical knowledge gaps.

The first challenge is to integrate the different and conflicting understandings of resilience, to communicate and effectively support decision-making. Despite common critiques, both academics and practitioners agree on the latest conceptualisation of resilience, emphasising 'forward-looking' approaches, including flexibility, adaptation, and transition in the face of short- and long-term changes. Nevertheless, robustness and safety-driven measures remain dominant in urban planning policy practice, indicating a huge gap between theory and practice (Chelleri & Baravikova, 2021)[8]. Even current adaptation planning is ineffective (see Olazabal et al. 2021[9], Reckien et

[7] Caldarice, O., Tollin, N., & Pizzorni, M. (2021). The relevance of science-policy-practice dialogue: Exploring urban climate resilience governance in Italy. *City, Territory and Architecture*, 8, Article 9. <https://doi.org/10.1186/s40410-021-00137-y>

[8] Chelleri, L., & Baravikova, A. (2021). Understandings of urban resilience meanings and principles across Europe. *Cities*, 108, Article 102985. <https://doi.org/10.1016/j.cities.2020.102985>

[9] Olazabal, M., & Ruiz De Gopegui, M. (2021). Adaptation planning in large cities is unlikely to be effective. *Landscape and Urban Planning*, 206, Article 103974. <https://doi.org/10.1016/j.landurbplan.2020.103974>

al. 2023[10], Farkas et al. 2024[11]). It is necessary to integrate planning and practice better together and to put transformative capacities into practice, which may require new incentives as well as improved planning practices and mindsets.

The second challenge focuses on how to **define and reinforce the co-benefits potentially produced by resilience, integrating general and specific resilience**. General resilience is about the overall resilience of a system to uncertain situations, while specific resilience focuses on specific risks and improves certain aspects of resilience. The importance of different scopes lies in the fact that specific improvements can undermine overall effectiveness. A systems approach is needed to take effective action, and finding synergies between actions must be a key priority (Buzási & Csizovszky, 2023)[12].

The third challenge focuses on how to develop an operational system for measuring and assessing resilience practically. In recent years, different resilience measurement approaches have been developed, while only a few measures resilience for non-specific risks, try to cope with multidimensionality, capture uncertainties, foster collaboration with stakeholders, and lead to the development of plans for enhancing resilience.

Lastly, the fourth challenge concentrates on **how to take into account multi-level governance for resilience, i.e. how different governance levels can work together on resilience issues**. Multi-level governance for territorial resilience requires vertical integration of national policies with local action and horizontal integration to enhance collaboration between local administration, stakeholders and civil society. Equity issues are also vital considerations, since resilience is highly unequal (Meerow, Pajouhesh and Miller, 2019). In this perspective, horizontal integration explores “whose resilience”, demanding whether the concept of resilience is able to address social equity and effectively involve communities in the process (Anguelovski et al., 2016).

5. Measuring resilience

As well as the terms of resilience has been constantly evolving, the method of measuring has also been subject to continuous professional debate. While some authors recommend the use of univariate indicators based on GDP per capita or employment rates (Cellini and Torrisi, 2014; Fingleton et al., 2012; Lagravinese, 2015), others prefer the use of composite indices based on the difference of variables that can affect the degree of economic vulnerability (Modica and Reggiani, 2015). However, this

[10] Reckien, D., Buzási, A., Olazabal, M. et al. (2023). Quality of urban climate adaptation plans over time. *npj Urban Sustain* 3, 13. <https://doi.org/10.1038/s42949-023-00085-1>

[11] Farkas, R., Csizovszky, A., Beszedics-Jäger, B. S., & Buzási, A. (2024). Heatwave vulnerability and climate policy assessment in Central Europe: A comparative study of Hungarian and Slovak cities. *Urban Climate*, 56, Article 102073. <https://doi.org/10.1016/j.uclim.2024.102073>

[12] Buzási, A., Csizovszky, A. (2023). Urban sustainability and resilience: What the literature tells us about “lock-ins”? *Ambio* 52, 616–630. <https://doi.org/10.1007/s13280-022-01817-w>

will only be successful if not only the economic aspect of resilience is considered. As the concept of resilience has developed and become more complex, so has the methodology of measurement. The inclusion of other factors in the measurement indicates additional difficulties for the profession.

Other approaches, coming not from the field of regional (economic) resilience but from urban and territorial resilience, emphasised that resilience is such a complex phenomenon that it cannot be directly measured by a single indicator. For a 'new compass' of territorial resilience, it is necessary to clarify a common concept, taking advantage of the boundary object nature of the concept and form a shared understanding between all actors. Therefore, it is essential to target the **trade-offs** identified in the literature, through collective negotiations to minimise unintended consequences. This includes careful consideration of resilience for whom, what, where, when, and why both during the planning and implementation phases. This approach helps to take into account the **socio-economic consequences of resilient transformations** as well, paying particular attention to equity aspects.

The resilience dashboards developed by the JRC are already designed to provide a holistic assessment of resilience in the EU and its Member States. In relation to ongoing societal transformations and challenges ahead, the dashboards assess resilience as the ability to make progress towards policy objectives within challenges.

Through a broad set of **indicators**, the resilience dashboards assess the relative strengths and weaknesses of countries. They also help Member States to identify areas for further analysis and potential policy actions. The indicators cover the following dimensions: social and economic, green, digital, and geopolitical.

NB: Although in the section 3.3, Thematic dimensions of resilience based on the nature of the impact of shocks, we identified three key dimensions - economic, ecological and social resilience -, this dashboard applies a different understanding of the relevant dimensions. It illustrates well that there is still no comprehensive and consistent definition of resilience, which is also reflected in the different resilience dashboards.

The JRC dashboards include a selection of indicators that show:

1. Capacities - enablers and/or opportunities to navigate the transitions and face future shocks;
2. Vulnerabilities - obstacles or aspects that can worsen the negative impact of the challenges related to the green, digital, and fair transitions.

The choice of the indicators was made with a forward-looking perspective, informed by strategic foresight. The indicators are strongly linked to relevant megatrends[13]- long-

[13] European Commission. (n.d.). Megatrends hub. Retrieved from https://knowledge4policy.ec.europa.eu/foresight/tool/megatrends-hub_en

term driving forces that will most likely have a significant impact on Europe's future. The detailed dashboards for the EU and non-EU countries are complemented by **synthetic resilience indices**. These aim to illustrate the overall relative situation of resilience capacities and vulnerabilities across the four dimensions. The dashboards highlight the challenges and opportunities ahead and help to guide societal transformations towards a more sustainable development path. As such, they are an important step towards an integrated approach to measuring people's well-being beyond GDP.

Policy recommendations

There are a wide range of recommendations that can be formulated in the context of resilience as a policy issue, considering that it is a complex and multidimensional concept that involves many different disciplines and allows for multiple interpretations. The complexity of the concept and the fact that it can be applied in many different contexts requires that different political, economic, social and ecological aspects are taken into account.

Every decade, a crisis or event emerges that represents a major shock for the EU as a whole or for its smaller or larger regions, so resilience should not only be an important analytical criterion for researchers, but also an important policy objective for policy makers.

At the same time, it is important to avoid reducing resilience to a buzzword that can mean anything and everything in order to justify other objectives. Resilience is not an activity that takes us back to an earlier state or trajectory, but a capacity to respond to the (as yet unknown) challenges of the future. Like all competences, it can and should be strengthened. A real policy discussion on the real content of the term of resilience is therefore needed.

Based on the aforementioned, we would like to make a few points for this discussion:

1.) EU policies should be clearly aligned with the most advanced scientific understanding of the concept of resilience. This requires a comprehensive common understanding that takes into account the different needs and challenges of different areas. The concept of resilience must go beyond merely restoring economic growth and promote sustainable, social, inclusive, just and innovative systems.

EU policies should be designed based on the common definition of resilience and focus on long-term and multidimensional responses to mitigate long-lasting instability and crises.

This needs to be addressed primarily at EU level, firstly by promoting cooperation between research institutions and policy makers to continuously update knowledge on

resilience. This will result in the development of EU-wide guiding to ensure that policies are in line with the latest scientific research on resilience. The establishment of a common framework will help to ensure that the concept is used and embedded consistently both at EU level and then at Member State level. This will require research funding for resilience studies and coordination of policy harmonisation.

In order to promote long-term, multidimensional responses to crises, the EU in collaboration with Member States and regional authorities, should focus on fostering policies that emphasize sustainability, equity, and systemic change, rather than short-term recovery. Investments should be directed towards long-term projects that address challenges like climate change, social inclusion, and resilience. This will require a combination of EU funding, national budgets and private investments.

2.) By strengthening the territorial approach and using local resources, the vulnerability of each area to external shocks can be reduced. **In designing policies to effectively address challenges at local and regional level, efforts should be made to ensure stronger horizontal and vertical coordination between relevant actors.** The EU, national and regional authorities should work closely with each other to ensure effective coordination between stakeholders. By creating cross-level collaborations and incentivizing cooperation through shared projects, the EU can build stronger resilience frameworks.

3.) The development of integrated planning and risk management systems is the cornerstone of resilience. To achieve this, **policy development should aim to strengthen cross-sectoral cooperation**, i.e. promote closer collaboration between different sectors such as agriculture, urban planning, water management, health and education. As with horizontal and vertical coordination, there is a need for effective cooperation between the different stakeholders. Sectoral agencies, industry partners, and civil society organizations need to collaborate more closely to address resilience challenges.

4.) To measure and evaluate resilience in practice in a common way, **effective and standardised measurement framework across the EU is needed to be established and laid down at EU policy level** that can handle multidimensional problems and uncertainties. The issue definitely requires a solution at EU level.

5.) As with all effective policy objectives, the effectiveness of policy design to increase resilience can be greatly enhanced if supported by **effective monitoring and policy evaluation systems** that can measure the different dimensions of resilience. Just as shocks can come from different sub-sectors of society (epidemics, financial system instability, co-distributive explosions due to excessive unevenness...), the consequences

can be multidimensional (persistent growth disadvantages, increasing poverty, depletion of natural resources), so the concept of resilience should be measured along several dimensions and even in several dimensions at the same time. By using real-time data, these systems can provide insights that help refine policies for better outcomes. Resources required would include advanced monitoring systems and data analytics platforms.

6.) Due to the territorial characteristic of the resilience building, EU policies need to **enhance regional and local capacity building by** introducing funding mechanisms specifically for regional authorities to develop resilience strategies tailored to local conditions and by promoting training programs to build capacities at the regional and local levels with the focus on integrating resilience into existing policy frameworks. Regional authorities and local governments should also focus on enhancing their capacity to respond to region-specific shocks.

7.) In one hand, shocks can have an asymmetric impact on regions (e.g. floods may occur in river basins, droughts may affect agricultural areas most, and the disaster of industrial plants may also cause significant difficulties in the surroundings of industrial areas). On the other hand, each region may be differently sensitive to shocks and their consequences (e.g. regions located in the economic centre may be less vulnerable to financial crises than peripheral economies dependent on them). Territorial resilience is therefore not a homogeneous notion, so the degree and nature of **preparedness should be region-specific**, i.e. the resilience of the territory itself needs to be addressed. The lack of resilience of one region can cause serious problems for other regions due to territorial spill-overs.

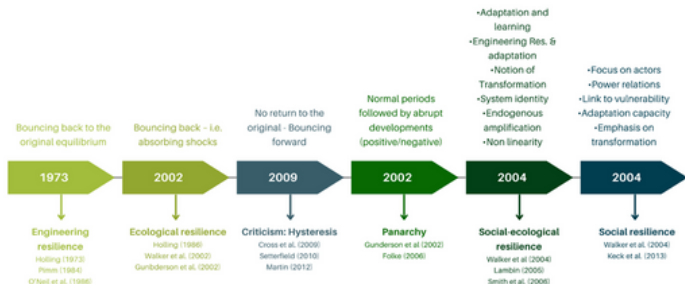
8.) Depending on whether we want to make spatial units resilient to an expected or known shock, we can develop specific or general resilience capabilities:

- while specific resilience problems are usually related to a strong external exposure to the efficient use of a local resource and can be improved by developing and investing in this resource
- general resilience is about increasing the capacity to respond to all foreseen and unforeseen shocks, which means strengthening the governance capacity to respond quickly and effectively to emerging shocks by strengthening vertical (multilevel governance) and horizontal (partnership) cooperation.

Annex 1. The evolution of the understanding of resilience

The term resilience is derived from the Latin verb “resilio”, which means to leap back, retreat, recoil and rebound (Folke, 2016)[14]. Resilience entered the scientific discussion in the 1960s in the field of ecology and has undergone fundamental changes over the last decade; it has been integrated into psychology, disaster management, systems thinking and engineering, and most recently, in spatial planning and territorial governance. However, the term’s meaning varies across contexts and disciplines (Moser et al. 2019)[15].

Fig.2. Changes in the concept of resilience.



Source: Based on Manca et al. 2017,[16] p. 4

The primary definition of resilience, so-called **engineering resilience**, was based on the idea that there is a “static equilibrium” in which resilience is the ability to absorb disturbances, i.e., rebounding. From this approach through **ecological** and **socio-ecological resilience**, the term shifted toward a more leaping forward interpretation followed by the appearance in the social world as co-evolutive resilience (Simin Davoudi (2012)[17], focusing more on continually changing processes.

[14] Folke, C. 2016. Resilience (Republished). *Ecology and Society* 21(4):44. <https://doi.org/10.5751/ES-09088-210444>

[15] Moser, S., Meerow, S., Arnott, J., & Jack-Scott, E. (2019). The turbulent world of resilience: Interpretations and themes for transdisciplinary dialogue. *Climatic Change*, 153(1), 21–40. <https://doi.org/10.1007/s10584-018-2358-0>

[16] European Commission: Joint Research Centre, Benczur, P., Giovannini, E., & Manca, A. (2017). Building a scientific narrative towards a more resilient EU society: Part 1, A conceptual framework. Publications Office. Retrieved from <https://data.europa.eu/doi/10.2760/635528>

[17] Davoudi, S., Shaw, K., Haider, L. J., Quinlan, A. E., Peterson, G. D., Wilkinson, C., & others. (2012). Resilience: A bridging concept or a dead end? Reframing resilience: Challenges for planning theory and practice. *Planning Theory & Practice*, 13(2), 299–333. <https://doi.org/10.1080/14649357.2012.677124>

In 2012, following the economic crisis, the ESPON ECR2[18] project explored for the first time the territorial applicability of the concept of resilience at EU level, looking at why some European regions have proved more resilient to economic shocks than others. 'Resilience' was defined as the "ability of a regional economy to withstand, absorb or overcome and internal economic shock"[19]. This study very much reflected the 'bounce back' interpretation of resilience in the context of economic crisis and recession, in an effort to return to pre-shock growth rates.

This research also highlighted, among other things, the importance of **spatial characteristics for resilience** outcomes and the complex interrelationships between resilience characteristics within places. The role of government in promoting resilience outcomes is also important, in particular through activities to strengthen resilience systems.

Subsequently, its application to urban planning and spatial policy gained importance, and the concept of resilience moved beyond recovery and adaptation to a **focus on transformative capacities** as well (for example, in the definition of urban resilience (Merrow et al., 2016)[20]. This interpretation is capable of "*aiding the decision-making process of identifying vulnerabilities and improving the transformation of socio-ecological and technological systems*" (Brunetta et al., 2019)[21].

All understandings of resilience share the common thread that it refers to a system's ability to respond systemically and dynamically to 'disturbances' that affect them. Disturbances - usually but not exclusively endogenous - are categorised as shocks (sudden or intense, e.g., earthquakes, pandemics, wars) and (long term) stressors (e.g., climate change, ageing, gradual economic decline).

However, within the academic literature, and with the multiple, interlinking environmental, social and economic crises that Europe now faces, there is growing recognition that a more evolutionary interpretation of resilience is required, which would allow regions, not only to resist and adapt to crises, but to 'bounce forward' to transition towards renewed sustainable systems. This perspective emphasises the **necessity for long-term, transformational and multi-dimensional responses** to long-lasting instability and disruptions.[22]

[18] ESPON. (n.d.). Economic crisis: Resilience of regions (ECR2). Retrieved from <https://archive.espon.eu/programme/projects/espon-2013/applied-research/ecr2-economic-crisis-resilience-regions>

[19] ESPON & Cardiff University. (2013). Analytical approach of the applied research project within the ESPON 2013 Programme. European Regional Development Fund. Retrieved from <https://www.espon.eu>

[20] Meerow, S., Newell, J. P., & Stults, M. (2016). Defining urban resilience: A review. *Landscape and Urban Planning*, 147, 38–49. <https://doi.org/10.1016/j.landurbplan.2015.11.011>

[21] Brunetta, G., Ceravolo, R., Barbieri, C. A., Borghini, A., de Carlo, F., Mela, A., Beltramo, S., Longhi, A., De Lucia, G., Ferraris, S., & others. (2019). Territorial resilience: Toward a proactive meaning for spatial planning. *Sustainability*, 11(8), Article 2286. <https://doi.org/10.3390/su11082286>

[22] Based on our ongoing joint research with Politecnico di Torino conducted in the ESPON TERRES project

Annex 2. The relation between resilience and policy making

Since 2015, the Joint Research Centre (JRC) has been working intensively to integrate resilience thinking into policy-making, including the development of a **conceptual framework for vulnerability and resilience**. The JRC's work also supports a 'bounce-forward'[23], transformative systems approach to resilience, which integrates **not only technical and technological change, but also cultural change, behavioural change and institutional reform**. As part of their work, they have developed resilience dashboard[24] for a **holistic assessment of the EU's resilience**, including the 'Beyond GDP' initiative, which aims to put Europe on a sustainable social development path. As a result, the Strategic Foresight Report 2020[25] formulated a transformative concept of resilience as "a new compass for EU policies", where resilience is defined as "the ability not only to withstand challenges but also to manage transitions in a sustainable, equitable and democratic way".

However, there is currently a discrepancy between the concept of resilience in the JRC's concept and the concept of resilience in official policy communications, as for example in the Strategic Futures 2021 report[26]. This continues to reflect the emptiness of the concept and the fact that very often, once the immediate impact of a crisis has passed, the recovery of pre-shock economic growth rates becomes the main short-term policy objective. At the same time, the commitment to long-term, transformative resilience paths is rapidly declining.

The renewed emphasis on the concept of resilience in the EU policy and programming literature, and the multiple crises Europe is facing, means that a more rigorous debate on the definition of the concept and its actual meaning is needed. One of the main questions remains how the concept can be made to operationalise in practice within territorial governance practices. For example, the RRF Regulation notes that: 'Lack of resilience can also lead to negative spill-over effects of shocks between Member States or within the Union as a whole, which is a challenge for convergence and cohesion within the Union'[27]. However, it is not specified anywhere what exactly it means to

[23] Giovannini, E., Benczur, P., Campolongo, F., Cariboni, J., & Manca, A. (2020). Time for transformative resilience: The COVID-19 emergency (EUR 30179 EN). Publications Office of the European Union. <https://doi.org/10.2760/062495>

[24] European Commission. (n.d.). Resilience dashboards. Retrieved from https://commission.europa.eu/strategy-and-policy/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en

[25] European Commission. (2020). 2020 strategic foresight report. Retrieved from https://commission.europa.eu/strategy-and-policy/strategic-foresight/2020-strategic-foresight-report_en

[26] European Commission. (2021). 2021 strategic foresight report. Retrieved from https://commission.europa.eu/strategy-and-policy/strategic-foresight/2021-strategic-foresight-report_en

[27] European Parliament and Council. (2021). Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility. Official Journal of the European Union. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R0241>

achieve resilience. What is real, however, is that resilience puts the focus on coping with crises and transformation for avoiding/ mitigating the effects of crises rather than on promoting economic growth.

It is clear from the literature that there is a **strong link between resilience and a place-based, territorial perspective**. This is particularly in the context of increased relying on **local resources** to reduce vulnerability to external shocks. This also anticipates the importance of joint horizontal and vertical **coordination between actors** in multi-level governance.

Although cohesion policy documents at EU level tend to be more transformative, it is suspected that at lower territorial levels the concept of 'bounce back' is more prevalent in many places. This approach does not promote for evolutionary reform and structural transformation as a response to non-linear, interconnected and intersecting crises (e.g. war, energy insecurity, food insecurity, inflation, climate disasters, etc.). This raises important questions for public authorities in designing adaptation and response policies: if "bouncing back" is no longer possible, the question is "towards what" should we move on? Addressing this complexity and uncertainty will be a key policy challenge for the coming decades. Rather, resilience should be understood as a **collective social learning process that uses human skills and knowledge** to reduce vulnerability by strengthening the capacity to absorb, adapt and transform in the event of disruption. This requires a growing emphasis on a **territorial and future-oriented approach to policy development that recognises that resilience is a multi-level process requiring vertical and horizontal coordination in linking local and local resources**[28]. However, for the concept to be useful, a comprehensive, shared understanding is needed that knows the different opportunities and challenges of different rural areas, cities, towns and regions.

[28] ESPON. (n.d.). Territorial futures. Retrieved from <https://archive.espon.eu/territorial-futures>

Annex 3. Short description of EU policy documents analysed

1.) **Cohesion Policy 2021-2027:** Seeks to reduce regional disparities and promote territorial, social, and economic cohesion across the EU. It also aims the promotion of sustainable development and the promotion of green and digital transition in the European Regions. It enhances territorial resilience through climate adaptation and disaster risk management, focusing on risk assessment and preparedness for future challenges.

2.) **Urban Agenda for the EU (2016):** Seeks to improve the quality of life in cities by addressing key urban challenges, focusing on social inclusion, sustainability, and resilience. It strengthens urban resilience by promoting multi-level governance and cross-border cooperation to ensure cities can adapt to climate, social, and economic pressures. The Urban Agenda provides the framework for EU urban policy, aiming to develop urban areas and promote sustainable urban growth. It contributes to the objective of Cohesion Policy to improve the quality of life in urban and peri-urban areas by reducing territorial disparities.

3.) **European Green Deal (2019):** A comprehensive strategy aimed at achieving climate neutrality by 2050 by reducing greenhouse gas emissions and promoting sustainable practices. It focuses on climate and environmental resilience, integrating mitigation and adaptation strategies, and strengthening resilience across all sectors. These aims are closely aligned with the objectives of Cohesion Policy, in particular in the fight against climate change and environmental sustainability.

4.) **Smart Specialisation Strategy (S3) (2020):** Aims to drive regional innovation by encouraging regions to focus on their strengths and align with broader EU goals. It supports regional resilience by fostering innovation, adaptability, and sustainable development through interregional cooperation. S3 aims to increase the competitiveness of regions and helps Cohesion Policy to stimulate economic growth and reduce territorial disparities by building on the regions' specific strengths.

5.) **Circular Economy Action Plan (CEAP, 2020 March):** Aims to promote the transition to a circular economy by improving resource efficiency, reducing waste, and fostering sustainable production. It contributes to economic and environmental resilience, focusing on long-term sustainability through circular practices. The Plan promotes the development of a sustainable economic model that contributes to the green transition of Cohesion Policy, in particular through improved waste management and resource efficiency.

6.) **EU Biodiversity Strategy for 2030 (2020 May):** Focuses on restoring biodiversity and protecting ecosystems to ensure environmental sustainability. It promotes ecological resilience by supporting ecosystem restoration and nature-based solutions, which indirectly enhance territorial resilience by protecting regions from environmental shocks. It supports the environmental sustainability objectives of Cohesion Policy, in particular in the area of nature-based solutions and maintaining ecological balance.

7) **Territorial Agenda 2030 (2020 December):** Aims to promote fair and green development by strengthening the territorial dimension of sectoral policies through cooperation across governance levels. It emphasizes territorial resilience by supporting nature-based solutions and the creation of functional regions, ensuring adaptability to changing needs across urban-rural areas. It focuses on the territorial dimension of Cohesion Policy, promoting balanced territorial development and reducing regional disparities, in particular by supporting rural and underdeveloped regions.

8) **New Leipzig Charter (2020 December):** Focuses on sustainable urban development, providing a framework for cities to promote social equity and environmental sustainability. It highlights territorial resilience, adaptability, integrated planning, and flexible governance, emphasizing public participation and learning from past disturbances to strengthen local and regional response capacity. It promotes sustainable urban development and integrated urban policy, in line with the objective of Cohesion Policy to improve the sustainability and liveability of urban areas.

9) **Recovery and Resilience Facility (RRF) (2021):** Provides financial support to help EU Member States recover from the pandemic and drive green and digital transitions. It enhances economic and social resilience by supporting recovery efforts, promoting sustainable, competitive, and inclusive growth, and improving preparedness for future shocks. It is directly linked to Cohesion Policy as it supports economic recovery and resilience building in the post-COVID-19 period, with a particular focus on the green and digital transition.

10) **EU Strategy on Adaptation to Climate Change (2021 February):** Aims to build a climate-resilient society by 2050 by promoting faster, smarter, and more systemic adaptation measures. It enhances climate resilience through nature-based solutions, proactive adaptation measures, and preparedness for climate-related disruptions. This strategy aims at adapting to climate change by promoting the environmental objectives of Cohesion Policy, in particular the protection of regions most affected by climate change.

11) **9th Report on Economic, Social and Territorial Cohesion (2024 March):** The report

assesses the impact of Cohesion Policy in the EU regions, presenting achievements and challenges in reducing economic, social and territorial disparities, thus providing a basis for the development of future cohesion policies. It also highlights emerging challenges like climate change and demographic shifts. It addresses territorial resilience by focusing on regional disparities, economic recovery, and climate adaptation, promoting place-based approaches and multi-level governance to strengthen regional capacity.

Annex 4: Interlinkage between EU policies and the five objectives of cohesion policy

4.1 The different EU policies aligned with the five objectives of cohesion policy

Smarter Europe

- Smart Specialisation Strategy (S3)
- Recovery and Resilience Facility (RRF)
- 9th Cohesion Report

Greener Europe

- European Green Deal
- Circular Economy Action Plan (CEAP)
- EU Biodiversity Strategy
- EU Strategy on Adaptation to Climate Change
- Recovery and Resilience Facility (RRF)

More Connected Europe

- Smart Specialisation Strategy (S3)

More Social Europe

- European Green Deal
- Urban Agenda for the EU
- Territorial Agenda 2030
- New Leipzig Charter
- Recovery and Resilience Facility (RRF)
- 9th Cohesion Report

Europe Closer to Citizens

- Urban Agenda for the EU
- Territorial Agenda 2030
- New Leipzig Charter
- 9th Cohesion Report

4.2 EU policies and their links to Cohesion Policy objectives

1.) European Green Deal

- Greener Europe: Green transition, climate action, sustainability.
- More Social Europe: Promotes social justice alongside green transition.

2.) Smart Specialisation Strategy (S3)

- Smarter Europe: Innovation, research and development, economic transformation.
- More Connected Europe: Digital infrastructure and regional competitiveness.

3.) Urban Agenda for the EU

- More Social Europe: Urban development, social inclusion.
- Europe Closer to Citizens: Local development and community engagement.

4.) Circular Economy Action Plan (CEAP)

- Greener Europe: Promotes circular economy and resource efficiency.

5.) EU Biodiversity Strategy

- Greener Europe: Nature conservation, ecosystem restoration.

6.) Territorial Agenda 2030

- More Social Europe: Regional cohesion and balanced territorial development.
- Europe Closer to Citizens: Community-led development.

7.) New Leipzig Charter

- More Social Europe: Integrated urban planning, social inclusion.
- Europe Closer to Citizens: Strengthening the role of cities in community engagement.

8.) Recovery and Resilience Facility (RRF)

- Smarter Europe: Economic recovery, digital and green transition.
- Greener Europe: Supports sustainable development and climate protection.
- More Social Europe: Enhances social resilience.

9.) EU Strategy on Adaptation to Climate Change

- Greener Europe: Climate resilience and adaptation.

10.) 9th Cohesion Report

- o Smarter Europe: Economic growth and innovation capacity.
- o More Social Europe: Social cohesion and equality.
- o Europe Closer to Citizens: Community engagement and local development.

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