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Commission

TRANSFORMATION POST-COVID

*Transformative
nations, regions &
cities as vectors for
change*

ESIR Focus Paper

Independent
Expert
Report

Research and
Innovation

Transformation post-COVID: Transformative nations, regions & cities as vectors for change

ESIR Focus Paper

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Transformation post-COVID

Transformative nations, regions & cities as vectors for change

ESIR Focus Paper

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TRANSFORMATION POST-COVID

TRANSFORMATIVE NATIONS, REGIONS & CITIES AS VECTORS FOR CHANGE¹

This ESIR Focus Paper provides a ‘deeper dive’ into the role of nations, regions and cities as vectors for systemic change in the post-pandemic economy and society. It builds on and complements ESIR’s second Policy Brief, which offers guidance on how a ‘protect-prepare-transform’ approach in the post-pandemic Europe can ensure fast learning from innovation by relying on smart and coherent policies, collaborative efforts across levels of government and decentralisation of governance, and most importantly the courage to direct research and innovation at the transformations Europe is facing.

Covid-19 on top of climate change – a state of permanent crisis

Cities and regions, national governments and local councils have been thrown into unprecedented difficulties managing through the onset of COVID-19, trying to find the right balance of protection and stability while seeking to maintain trust. At the same time, they continue to face the immense, looming challenges of structural change and radical transformations needed to address the climate emergency and ensure that both decarbonisation and resilience can be achieved in time, and by design rather than through ongoing disaster.

Some have seized the opportunities that responses to COVID-19 have provided to consolidate changes in mobility and reclaim public spaces for regeneration and ‘rewilding’ and have sought to stay the course in harnessing the power of disruption to accelerate learning and engage citizens in joint efforts to shape a more sustainable future.² Citizens and communities have also shown their ability to radically adapt to new day-to-day dynamics of greater digitalisation and localisation.

However, new strains and successive peaks of COVID are making it difficult to maintain a positive momentum: public transport, for example, is losing ground in

¹ This Focus Paper is based on leading-edge case studies presented and discussed at the European R&I Days in September 2020, as part of the ESIR group’s contribution on post-COVID-19 transformation and R&I policy. ESIR would like to thank particularly the speakers of that session for their valuable contributions (see <https://player.freecaster.com/embed/1367401>).

² For example: Paris with 50km of bike lanes, called ‘coronapistes’, a ban on cars from the Rue de Rivoli to be complemented by four ‘urban forests’ next to major landmarks including the Hôtel de Ville, Gare de Lyon and the Opéra Garnier, and changed building codes to encourage tree planting; or Milan – Strade Aperte – a commitment to transform 35 km of roads into cycling paths and pedestrian zones.

favour of the relative safety of private cars. Supply chains have also seen improvements in circularity, with suppliers opting for local providers as a more stable and secure source. But these gains are being offset by increases in waste as a result of COVID measures for protective packing, wrapping and personal safety equipment based on short product life cycles.

The combination of effects threatens to introduce a state of permanent crisis, with social and behavioural tipping points at its epicentre. Recent outbreaks in civil unrest as cities issue curfews and go back into lockdown are a case in point: protests and riots with no clear political affiliation, opposing the rule of law as it acts to protect the common good, driven by economic hardship and the effects of a mental health and social health pandemic. We come close to a breakdown in the fabric of civil society with an urgent need to bring different generations back together and to involve and co-create more effectively with residents, community groups, small businesses and trade unions in crisis responses and in the process of social and industrial change. And this is but a small-scale precursor of things to come if climate change mitigation and adaptation measures do not step up significantly.

For those in positions of responsibility, sensitive to the fact that cities account for more than 70% of global CO2 emissions and that more than one third of the EU population lives in the regions most affected by climate change, (with a total population of 170 million), the impact of COVID-19 has brought a dangerous delay or an undermining of efforts to tackle the far greater existential crisis of climate change with massive intergenerational implications. At the same time, it has drawn attention to the urgent need to address the future of work for greater resilience and adaptability: to invent new forms of meaningful and sustainable employment – sustainable in all senses – and rethink what we do with our lives.

Above all, the effects of COVID-19, have drawn attention across the political spectrum and to all ages, to the meaning of systemic impacts and the necessity of thinking and of acting in integrated, systemic ways to achieve resilience and health – planetary and human. For that we need new paradigms of research and innovation, applied broadly and in partnership with decision makers and policy makers wrestling with wicked problems and choices on a daily basis. Innovation approaches and efforts need to be designed and deployed in such a way as to enable cities and regions to become vectors for transformative change.

The opportunities and challenges of COVID-19 recovery and the European Green Deal – protect | prepare | transform

The EU Recovery and Resilience Funds, combined with the broader policy agenda and economic commitments of the European Green Deal³ and Horizon Europe, offer a

³ Including for example the InvestEU programme, which has been designed to create a single EU investment support mechanism for internal action for the 2021-2027 MFF and to contribute to the green transition in various ways, including through investment targets and the Just Transition Scheme.

much-needed opportunity to support cities, regions and national governments to play a leading role in post-COVID transformation and to 'build forward better'. The combination of large-scale funding and directional policy can complement and accelerate the efforts cities, regions and national governments are already making to protect citizens and the economy in the short term, and at the same time sow the seeds of transformative systemic change to promote systemic modernization and prosperity in the long term. The European Commission recognised the need for setting new priorities to better orient funding, launching ambitious joint initiatives and developing common approaches between policies in its September Communication 'A New ERA for Research and Innovation' [COM(2020)628 final].

But there are a number of challenges associated with deploying recovery funding to ensure that it achieves a transformative effect rather than inadvertently driving the opposite or triggering a series of counterproductive effects. The scale of funding being made available at short notice is unprecedented; the speed of planning and implementation expected is beyond the readiness and current capabilities of most administrations and in many places in tension with public funding machinery and protocols; and the number of 'shovel-ready' programmes and implementation platforms designed and poised to achieve truly systemic, transformational change are very few. So, while the aspirations and intentions for such recovery funding are exactly what is needed, the reality of deploying it through a complicated, multilayered bureaucracy across multiple jurisdictions under pressure of time will make it very difficult to fulfil those aspirations.

Some of the specific challenges and pitfalls emerging from the planning and project preparation process so far highlight the following three areas for careful attention:⁴

1. Synergies and capability building to overcome misalignment and political separations

- *Horizontal collaboration is not common practice.* Existing practices and frameworks in national and subnational government departments are not set up to facilitate and enable collaboration and synergies across sectors and departmental siloes. The capabilities required to create and sustain initiatives that cross traditional boundaries, departmental budgets and decision-making practices, therefore requiring multi-sided governance, are rare, and need building.
- *Lack of political alignment and effective collaboration between national and subnational levels* in European member states. In a number of cases, commitment to green transition priorities and readiness to catalyse social

⁴ Please also refer to Transformation post-COVID: Mobilising Innovation for People, Planet and Prosperity, [ESIR Policy Brief No. 2](#), 2021.

and industrial change is either misaligned between national and sub-national actors or in open tension. The situation of the capital cities of the Visegrad 4 is a case in point. Funds risk being captured by vested interests and deflected towards less than transformative, participatory outcomes.

2. Joint programming mechanisms and capabilities that allow a build for large, complex cross-cutting challenges and systemic interventions

- *R&I infrastructure, design principles and institutional expectations need reworking.* Research and innovation actions are typically sought and framed as singular projects or programmes, categorized into sectors and technology readiness levels (TRL), selected through open calls with overdetermined success criteria, and funded through departmental budget lines. There are few methods and frameworks in operation at EU or MS level that are designed to select for and support the necessary components and approaches to sustain systems innovation. As a result, many of the proposals being collected and put forward for recovery funding ‘portfolios’ are predetermined standalone initiatives with few degrees of freedom to test, fail fast and learn, whereas more emergent, systemic proposals are being split out into sectoral interventions.
- *Very few systemic and transformational initiatives are ready to be funded.* Many initiatives being put forward for EU recovery and resilience funding portfolios are projects with incremental effects because, in many cases, they are existing or past proposals being pulled into the mix under pressure of time. Few proposals are already designed to reflect and engage with the complexity of large-scale transformation and social change aligned to 1.5 degree objectives since these take time to scope and build.
- *Implementation support for systems innovation actions exists but is not mainstream.* Systemic approaches to research and innovation need orchestration in partnership with local actors. Management consultancies are providing analytics and cost benefit analyses for EU Recovery and Resilience planning but they lack the in-field influence and agency on the ground to build a sturdy model for ecosystem cooperation, access to networks, and experience in place-based transformation to design and support practical, embedded and scalable systems transformation programmes. Some best practices or capabilities exist but are unevenly distributed and not systematically leveraged in the process of structuring and supporting implementation and capability building.
- *Impact frameworks are not yet developed and in place* to make sense of the value of initiatives outside of the classic frameworks of cost benefit analysis, ROI and emissions avoided associated with single technologies, nor are they ready to provide fit-for-purpose guidelines to encourage and make sense of

risk taking and exploration, observe and to track systemic change, social and behavioural tipping points, and emergence of new paradigms for economy and society.

3. Implementation support grounded in participatory governance and community building

- *EU resource flows do not currently come with steps to amplify the agency of city and regional governments and local institutions.* In addition to issues with design principles and frameworks, EU institutions and frameworks over-specify when seeking to fund leading edge research and innovation and thus end up hindering emergence of transformational moves locally. Overly prescribed approaches to R&I pathways and deliverables create path dependencies that are too slow, limit the uncovering or emergence of ‘new’ and untested solutions, and reinforce existing cultural biases towards ‘proven solutions’.
- *Greater local ownership and participation is desperately needed.* One of the key learnings from the ongoing experience of COVID-19 is the critical importance of building a greater sense of ownership and agency in emergency response initiatives, so that European citizens see and have a sense of meaningful connection to the investment of time, money and effort in innovations and interventions that transform our ways of living, the future of work and ensure greater resilience. Mounting pressure to fix the immediate economic pain of those suffering from the effects of the pandemic risks being in tension with pursuing the disruptions needed for fast emissions abatement. Furthermore, the scale of funding now being made available risks complacency about the need to close the gap between ambitious objectives and good intentions and the reality of innovation-led change on the ground. Participatory decision making and close partnership for example with trade unions, small business owners and community representation could solve for this but are not currently included in the processes and planning timeframes for recovery funding. This means that the opportunity to build wider civic understanding and inspirational narratives around collective effort is being lost.

Leading from the front – learning from pioneering efforts in place-based actions

While there are significant structural challenges facing transformative change, a number of cities, regions, national governments and partnerships have demonstrated their capability to innovate and develop solution approaches. Through ‘case studies in motion’ that encapsulate the learnings from cities, regions and industrial clusters implementing transformative processes to address climate change (and doing so through the midst of the COVID-19 crisis), this brief distils invaluable insights and

implementation approaches that the EU Green Deal and COVID recovery funding can learn from and apply.

The following insights emerge from progress made so far by partnerships like Viable Cities, EIT Climate-KIC, and Vinnova. Specifically, what follows reflects learnings with respect to:

- how can cities and regions be effective in the implementation of the recovery packages and exercise more agency to overcome existing biases?
- how to shape and harness research and innovation and setup R&I processes and mechanisms to achieve transformative change?
- how to support local communities/citizens to develop a tolerance for testing and learning from experimentation, and make sense of linkages between the overall systems changes needed and concrete projects at the community level?

DESIGN: Don't run straight to solutions.

Leading the way in circular economy by 2030

Slovenia

The Slovenian government aims to become the world leading circular economy country while creating new jobs by 2030. In an unprecedented cross-sectoral and cross-disciplinary effort, the key government stakeholders and Ministries have explored which activities should be directed by the Government and which co-designed with and carried out by local and regional stakeholders to develop a systemic programme of work. Support from the EIT KICs has combined design, financing and implementation to bring 10 Ministries together, strengthening inter-ministerial cooperation, to commit to transform and decarbonize the economy together. By investing in careful policy planning innovation design and planning, economic analysis and collaboration before initiating investment, the programme is being set up with a coordinated and coherent national approach working across siloes and with local communities, companies and stakeholders from across different sectors and value chains, coordinated by a National Centre for Circular Economy Innovation.

Take time to understand, to think in systems, look at interdependencies, think through barriers to change and attractors for the status quo. Design is key and scope matters. A bold vision mobilises imagination and will – this should be the underpinning logic of the Horizon Europe Missions.⁵ Success depends on investing time and effort to map and discuss what is at stake, to create a shared framework around what is needed, what will likely create resistance and where sources of acceleration and facilitation might come from. Implementation approaches need to design for unintended consequences and for unpredictable outcomes. This means

⁵ Mazzucato, M, 2018, *Missions: A Problem-Solving Approach to Fuel Innovation-Led Growth*, European Commission Directorate General for Research and Innovation.

building projects with industrial and social stakeholders in such a way that the structure or construction of the project itself can bring about transformation. Create the conditions for collaborative and coordinated thinking across ministries and departments, building a shared intent strong enough to hold space for transformation and to insist on coherence between words and actions over time.

ENGAGE: Establish agreements around social protection through engaging a diverse system of actors from the outset.

Shaping a just transition through participation

German Confederation of Trade Unions (DGB)

The German Commission on Growth, Structural Change and Employment brought together trade unions, industry, coal regions, academia, politicians, NGOs and energy companies to shape the structural change resulting from the coal phase out. The negotiations and joint work of all stakeholders involved resulted in a host of instruments designed for a just transformational process, including adjustment allowances, retraining local workforce, and financial structural aid for the region to support the transition towards new industries (hydrogen, renewables). This shows how important engagement is to design instruments for a just transformational process as well as the critical intersection between innovation policy and labour policy.

A political agenda based on collaboration and experimentation needs a common framework for action that visualises what is at stake and initiates processes of co-determination from the outset – citizen agency, co-authorship, participatory decision making and governance. Research and innovation in social change and community activation provide methods and precedents for engagement that go well beyond current mode of consultation, surveys, citizen assemblies. Ministerial collaboration can be proxied with sufficient density and diversity of civil society and industrial actors. Involve social partners in the process, because they have the local knowledge of value creation and job creation to support authorities in the regions to decide which projects. Collective bargaining and social dialogue create reliable perspectives for workers, essential to resolve tensions and de-risk implementation of change. Social protection schemes play a key role.

PORTFOLIO: Take a systemic approach.

Do not assume that this is about individual winning solutions or predictable applications of existing solutions. Work with implementation platforms capable of designing and assuring systemic approaches and outcomes. Large-scale transformation of places, value chains, industries and societies is highly complex and creates extreme uncertainty. A portfolio approach is effective to manage inherent uncertainty and complexity. This represents a substantive difference in approach with respect to the standard practice of: competitive call | proponent | single project. It starts with connecting innovation to place-based or value-chain based needs and real-world challenges. It anticipates the need for solutions and innovation actions intervening on multiple levers simultaneously, designed to engage with and catalyse

complex change dynamics, including social systems change. It searches out multiple, diverse solutions relevant to different change challenges and selects a combination of solutions that is as much about the relationships among them as about the individual solutions themselves. Connect innovation initiatives to one another through dynamic management and sense making of initiatives in a place-based or value-chain based portfolio so that cross-pollination, spillovers, synergies and exponential change can be achieved.

Accelerating urban transformation with a portfolio of connected innovations

Madrid City Deep Demonstration

Madrid City Council is working on a Deep Demonstration portfolio that encompasses sustainable mobility, nature-based solutions and green infrastructure, regulatory sandbox for new urban development and energy efficiency in buildings. Senior officials from multiple departments in the city are working together with academia, private companies and social actors to co-create and co-design connected interventions. The portfolio approach has produced an economic case for the decarbonisation of Madrid which considers the cost and benefits (direct and indirect) and highlights that environment, quality of life, health, job creation (70,000 jobs) and prosperity in the city are linked together in the path towards climate neutrality.

FEEDBACK: Close the loop.

User experience and innovation experience and evidence is critical – including insights from engagement with communities and local stakeholders – to generate options for decision making and to provide policy and regulatory inputs.

Guiding decision making with innovation-led arguments for change

City of Leuven Deep Demonstration

Selected in 2020 as Europe's most innovative city, Leuven 2030 has been a driver for re-framing how city government, universities and knowledge institutions, businesses, and citizens support deeper engagement as an enabler of innovation while also fostering better alignment for building the capabilities and governing processes critical to systemic interventions. This effort has been a multi-year investment, reinforcing the value of investing in discovery and learning through practice and to feedback these learnings into transformative processes. Mobility discussions anticipate the future, not replicate yesterday's best practices. Business districts embrace innovation collectively and open up to new cross-cutting options for scaled actions, city government consider neighbourhood-based actions rather than individual properties to achieve scaled impacts.

This should be complemented by studies on the economics of action, including risk avoided and opportunity cost. A systems innovation portfolio such as described above – tailored to specific places, value chains, sustainability challenges – provides evidence-based arguments for change, pointing to both possibility and necessity. Connecting such place-based innovation and value-chain innovation through feedback loops to decision making, policy and investment realises the transformative

value of innovation. Systems innovation portfolios such as described above also offer investment intelligence and opportunities for large-scale capital to come alongside and create scaling dynamics.

IMAGINE: Listen and envision.

Establish the conditions for human-led, community enabled change. Narratives that support change are social conversations over time, strong enough to hold communities through turbulence, doubt, and transition. Human systems create meaning through these narratives and are structured by it. We need multiple acts of imagination and for that we need to bring research and innovation in art and science back together – to intuit, represent, narrate our way forward just as much as we calculate and engineer. Deep listening, futures literacy, deliberative processes, and depiction of possibilities in a way that makes the future accessible and desirable are social innovation approaches that can help motivate interest in and co-authorship of new types of meaningful work and job creation. The New European Bauhaus, for example, offers a powerful opportunity to capture the public imagination for transformation and make that compelling in local contexts and cultures through aesthetics, style, uplifting spaces, beautiful innovations and images of the meaning and value of alternative ways of working and being – ultimately spaces for practical experimentation and participation in sustainable living and design made tangible, accessible and attractive.

Deep demonstration and deep listening

City of Rybnik

The Polish city of Rybnik is at the heart of the largest coal-producing area of the EU: Silesia, where over 10% of the population work in entities connected to the mining industry. To shape alternative futures and identities for the region, the Rybnik360 project implemented a deep listening process. Through over 200 in-depth interviews, 900 surveys, 9 workshops and other initiatives, the process mapped over 2800 arguments that represented different perspectives of citizens and stakeholders and helped shape the design of the “magic triangle” comprising policy innovation, future literacy and the future of work. 93 innovation ideas were created together with participants. Such a listening process and engagement with stakeholders helps them to imagine alternative futures and participate/feel ownership in the transformation processes taking place in their city and region. Identification of new business sectors has led to a whole new concept for the city itself and its urban space and has prompted residents to become catalysts for change.

EMPOWER: Focus on capability, mindset and capacity over and above furnishing individual solutions

Transformative change will happen through a capability to adopt and engage in ongoing change, not simply solutions made available. Policy, incentives, investment and effort need to recognise that. Capability needs to be modelled on the characteristics of anti-fragility – redundancy, slack, “a budget of flexibility” (Gregory

Bateson), modelled on what we see in the natural world. This could equally be applied through policy frameworks to R&I – to prepare for change, generate options and alternatives for resilience. Paying for capability is an investment with ongoing, slow but steady release return – hard to account for in short term cost-benefit analyses and efficiency logic, but demonstrable in terms of building assets for societal resilience over the long term.

Empowered to experiment and learn

Gipuzkoa Provincial Council

The Gipuzkoa Provincial Council in the Basque country launched the Etorkizuna Eraikiz (Building the Future) Programme to activate its community in shaping and preparing for rapid transformational changes in the region by ‘connecting to citizens’ interests, co-designing solutions and turning them into public policy. The programme does so by combining 30 experimental projects with mechanisms for collaboration and learning through 8 reference centers and a dedicated think tank. It includes open budgets and 0.7 million annually of citizens’ projects. These mechanisms of the EE Programme work effectively to build capabilities locally to adopt and engage in ongoing change through the collaboration and learning mechanisms, while the experimental projects innovate and test new solutions. The next step in the programme is a review of the portfolio to create a greater emphasis on systemic transformation.

COLLABORATE: Promote and support radical collaborations.

At the moment R&I frameworks and approaches tend to drive competitive dynamics, or at very least each organisation operating alone or through limited consortia arrangements – each competing for funding. These conditions represent a huge opportunity cost.

Radical collaboration in action

Viable Cities

Viable Cities originated in Sweden with 11 cities. As an outcome of deep reflection on the innovation needs of cities through the European Mission on Smart and Climate-Neutral Cities, cities and regions in Sweden, Austria, Spain are collaborating in a radical approach to replication and scaling, wherein those cities and their regional and national government partners seek to work together rather than compete for resources in a traditional dynamic. Movement building with innovation partners and local communities is understood and deliberately sought as being essential to scaled impacts. This collaborative approach not only could lead to real acceleration through closely linked efforts, but also makes shared learning through innovation a core part of the endeavour.

Europe could be significantly more powerful and achieve significantly more if encouraged and supported to combine efforts and bring together complementary research and innovation capabilities for a common purpose – a mutualization

approach. The S4+⁶ approach being proposed by the JRC, deepening smart specialization to encompass sustainability, inclusivity and transformative change offers a reinforcing framework for regional efforts in cooperation and mutual learning.

GOVERN: Use polycentric or multi-actor governance frameworks to enable the creation of public private value and address inequalities.

The transformational challenges in front of us have in large part to do with relations to, use of and protection of commons – access to food, land use, air quality, access to clean water, sustainable energy for all, a vibrant natural environment and healthy biodiversity. This would suggest the need for explicit recognition of the importance to design for public value creation woven together with private value creation. This implies reaching into the heart of redefining accepted norms and notions of value, departing from core economics and cost-benefit thinking and rethinking rule making for long-term interests and responsibilities (e.g. accounting laws and solvency). To realise this requires appropriate governance – more nuanced, multi-dimensional and explicitly long-term. This is not about picking the usual suspects in governance bodies and organisations but about working with local, culturally appropriate institutions and communities and investing in significant capability building on the ‘how’ of such approaches (see for example Demos Helsinki and the *Untitled* initiative). It would also suggest an explicitly governed, legally binding commitment to protect the rights and resources of future generations.

Creating new value through tripartite agreements in Castilla y Leon

CCOO Industria

As part of the government's Just Transition Strategy for coal regions, tripartite agreements were signed between the regional authorities, mining companies and electricity companies in Castilla y Leon. Together these agreements detail mechanisms that continue to create value both for public and private stakeholders after the closure of local mines. These include social plans for employees, renovation of closed mines to attract tourism and reactivation of mining regions through business and infrastructure projects. Through the tripartite agreement these mechanisms are embedded into legally binding commitment in the long term.

Recommendations for the Implementation of EU Recovery and Resilience Funds

In a European context these recommendations would mean *strengthening the role of regions, cities and communities* in direct governance of investment in

⁶ Smart Specialisation Strategies for Sustainability with a strong sensitivity to inclusiveness. We note also that in some countries ESIF takes a transformative role in ensuring a high level of public investment in infrastructures and more territorial cohesion across the EU.

implementation and of transformation using approaches outlined above – strengthening expectations, relationships with one another through shared governance, acknowledging that citizen and community identity – through which transformation is achieved and must engage. It is necessary to build alliances with companies, trade unions and civil society to co-create innovation in the fields like sustainable mobility, decarbonisations of the city sectors and activities.

MAKING IT PRACTICAL

‘Deep Demonstrations’ or ‘Transition Super Labs’

In order to deploy EU Recovery and Resilience Funds effectively, cities, regions and communities need practical frames and support for action that facilitate funding support, impact monitoring, live learning and responsive decision making so as to enable the testing of solutions on the ground with a sense of ownership and direct participation from citizens and administrators alike, and a focus on ‘real’ problems. Deep Demonstrations or Transition Super Lab approaches provide such frameworks for partnership, technical assistance and community engagement.

Case studies like Slovenia, Madrid and Gipuzkoa, point to the importance of reinforcing and systemically linking existing efforts and initiatives, anchored in a needs-based analysis, and then identifying gaps and opportunities for complementary activities, linking all initiatives through a portfolio structuring to policy co-design and the 2030 agenda. They have highlighted the need for systematic onboarding and capability building for all stakeholders engaging in the process and a collective action approach to knowledge sharing, with facilitated access to cohort learning and exchange with other regions and cities – there is strength and moral support in numbers.

They evidence the critical role of orchestration with a focus on impact assurance, economic analyses showing benefits and co-benefits dynamically, funding administration, and direct linkage of learnings from innovation actions to decision making and planning. Best case examples show the emergence of a multi-sided dialogue and engagement whereby a common framework for action is used by citizens and administrators alike to propose ideas, take initiative and review outcomes together.

This is a time of fragmentation and metamorphosis, in which new paradigms of research and innovation are needed, applied broadly and in partnership with decision makers and policy makers wrestling with wicked problems and choices on a daily basis. We need to direct the power of research and innovation to identify new and different assumptions, values, practices, standards and behaviours across all industrial, social and economic fields to enable the scale and pace of transformation we need.

The sudden injection of EU Recovery and Resilience Funds and an understandable focus on how to invest for speed of response must not undermine the importance of making transformational policy shifts that trigger long term transition in traditional innovation frameworks, including an urgent need to integrate systemic design principles in the new MFF and the setting of targets in the operational programmes. It is critical to embed systems thinking deep into the existing EU policy framework at

this moment, and to build dynamic capabilities in public administration to wield it, given the opportunities presented by a unique combination of two of the largest funding instruments to be strategically aligned to real transformation.



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ESIR is a high-level expert group that provides evidence-based policy advice to the European Commission on how to develop a forward-looking and transformative research and innovation policy.

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