

AUTHORS

Research Agent

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Addressing Territorial Fragility

The Case for Applied Research
Organizations in the EU 2028-2034
Framework

ABSTRACT

As the European Union prepares its 2028-2034 research mandate (FP10), a critical gap remains in the governance of “fragile territories”—regions where urbanization has stabilized as a demographic shift but institutional capacity has not evolved to manage the resulting post-urban landscape. This paper argues that existing academic (Bohr’s Quadrant) and consultancy (Edison’s Quadrant) models are structurally maladapted to address this fragility. We propose the institutionalization of “Pasteur’s Quadrant” Applied Research Organizations (AROs)—entities that simultaneously advance fundamental spatial theory and deliver high-utility, place-based solutions. Drawing on recent policy analysis of FP10 trends and case studies of innovation in peripheral regions, we demonstrate that AROs offer the optimal mechanism for modernizing territorial governance and escaping the “geography of discontent.”

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1 Introduction

The European Union stands at a demographic and political crossroads as it approaches the 2028-2034 planning period (Framework Programme 10). While urbanization has largely completed its trajectory as a primary demographic shift, the governance structures of non-urban territories—rural, peripheral, and post-industrial landscapes—remain trapped in outdated models. This misalignment has created a condition of “territorial fragility,” where regions face complex structural challenges without the institutional capacity to resolve them. This fragility is a primary driver of the “geography of discontent” [1], fueling political instability and widening the cohesion gap [2].

This paper argues that the solution lies not in more funding for traditional universities or generic consultancies, but in the strategic institutionalization of Applied Research Organizations (AROs) operating in “Pasteur’s Quadrant” [3]. Unlike universities, which prioritize fundamental understanding (Bohr’s Quadrant), or consultancies, which focus on immediate utility (Edison’s Quadrant), AROs are uniquely positioned to bridge the gap between high-level innovation policy and the gritty reality of local governance [4]. By embedding high-utility research within the theoretical advancement of spatial planning, these organizations can serve as “change agencies” in fragile regions [5].

We examine this proposition through the lens of the emerging EU 2028-2034 mandate, creating a case for AROs as the missing link in territorial cohesion policy.

2 The Fragility Trap: Why Current Models Fail

Territorial fragility in the EU is not merely a matter of economic lag; it is a governance crisis. The “left-behind places” are characterized by a depletion of institutional capacity and a mismatch between local needs and central policy instruments [2].

2.1 The Limits of Centralized Governance

Current territorial governance has struggled to adapt to the “post-urbanization” reality. European Union policies, while well-intentioned, often “hit home” in ways that local institutions are ill-equipped to manage [6]. The centralization of competence in urban hubs has left rural and peripheral landscapes with a “governance void,” where strategic positioning is replaced by reactive management of decline [1]. This creates a “fragility trap”: without capable local institutions to absorb and direct innovation funds, cohesion policy fails to trigger structural change [7].

2.2 The Innovation Paradox in Peripheral Regions

Peripheral regions often face the “regional innovation paradox”: they have the greatest need for innovation but the lowest capacity to absorb public funds effectively [8]. Traditional universities in these regions often struggle to fill this void because their incentive structures (publishing in global journals) detach them from local problems [9]. Conversely, private consultancies lack the incentive to build long-term institutional memory or advance the science of territorial management, focusing instead on short-term project delivery.

3 The Case for Pasteur’s Quadrant AROs

To resolve this paradox, a new institutional form is required. Donald Stokes’ concept of “Pasteur’s Quadrant”—research that seeks both fundamental understanding and immediate use—provides the blueprint for these organizations.

3.1 Anatomy of a Pasteur Organization

Unlike traditional academic departments, AROs in Pasteur’s Quadrant are designed to operate at the nexus of theory and practice. They do not just apply existing knowledge; they generate new knowledge through the process of solving specific problems [3]. In the context of territorial fragility, this means an organization that studies “rural resilience” not as an abstract concept, but by actively engineering governance solutions in a specific region and theorizing the results [4].

Recent studies confirm that such organizations act as “super-intermediaries,” capable of translating global technological trends into local realities [10]. For example, the Fraunhofer model in Germany or specific territorial observatories have demonstrated that embedded research units can drive regional transformation more effectively than distant university departments [11].

3.2 Advantages over Bohr and Edison Models

The superiority of the ARO model for fragile territories lies in its dual incentive structure:

1. Against the Bohr Model (Universities): AROs are judged by impact and utility, ensuring they address the “wicked problems” of the territory rather than retreating to disciplinary silos [4].
2. Against the Edison Model (Consultancies): AROs maintain scientific rigor and public purpose, preventing the “hollowing out” of public knowledge that occurs when governance is outsourced to private firms [5].

4 The Policy Window: EU 2028-2034 (FP10)

The emerging strategic direction for the EU 2028-2034 period creates a unique “policy window” for establishing these organizations.

4.1 Mission-Oriented Innovation

The shift towards “mission-oriented” policy, championed by Mazzucato and integrated into Horizon Europe, is expected to deepen in FP10 [12]. This approach moves away from sector-neutral R&D support towards targeting specific societal challenges. For fragile territories, this implies that funding will be increasingly tied to demonstrable resilience and social innovation rather than just paper outputs [13]. AROs are the natural institutional vehicles for these missions because their operational logic is already mission-centric.

4.2 Green Windows of Opportunity

The emphasis on the Green Deal and digital transition opens “green windows of opportunity” for peripheral regions [14].

However, seizing these windows requires “place-based” innovation capabilities—the ability to adapt green technologies to local contexts (e.g., specific bio-economy applications in rural zones). AROs embedded in these regions can provide the “absorptive capacity” needed to capture these opportunities, serving as the “local brain” for EU-wide initiatives [15].

4.3 Smart Specialization 2.0

As the EU reflects on a decade of Smart Specialization Strategies (S3), the lesson for FP10 is that strategy requires strategists. You cannot have a “smart” region without institutions capable of learning. AROs fulfill this role by acting as the permanent secretariat for the “entrepreneurial discovery process,” ensuring that specialization strategies evolve dynamically rather than stagnating as static bureaucratic documents [7].

5 Operationalizing the Model: Place-Based Embedding

For these AROs to succeed, they cannot be satellite offices of capital-city universities. They must be “place-based” institutions [15].

5.1 The Living Lab Approach

The most effective AROs function as “Living Labs,” using the territory itself as the experimental facility. This involves:

- Co-creation: deeply involving local stakeholders in defining the research agenda.
- Real-time testing: implementing governance prototypes (e.g., new transport coordination models, digital health delivery) and iterating based on failure.
- Institutional stability: requiring core funding (like the Fraunhofer base funding) rather than 100% project dependence, to allow for long-term strategic thinking [3].

5.2 Overcoming the “Lock-in” Risk

A counter-argument to place-based organizations is the risk of “lock-in” or parochialism. However, recent evidence suggests

that AROs actually mitigate this by connecting local actors to global knowledge networks [5]. By acting as a bridge, they import external novelty while ensuring internal relevance, breaking the isolation that defines fragile territories.

6 Conclusion

The “geography of discontent” will not be solved by business-as-usual research policies. As the EU defines its 2028-2034 mandate, it must recognize that governance innovation is as critical as technological innovation. Territorial fragility is a structural trap that requires a structural answer.

We have argued that Applied Research Organizations in Pasteur’s Quadrant offer this answer. By combining high scientific utility with fundamental knowledge generation, they fill the institutional void in post-urban landscapes. They are the missing transmission mechanism between the high ambitions of Brussels and the lived reality of Europe’s fragile territories. Establishing a network of such AROs should be a explicit “mission” of the FP10 framework, transforming the EU’s periphery from a problem to be managed into a laboratory for the future of democratic governance.

Bibliography

- [1] A. Rodríguez-Pose, L. Dijkstra, and H. Poelman, “The Geography of EU Discontent and the Regional Development Trap,” *Economic Geography*, vol. 100, no. 3, pp. 213–245, 2024, doi: 10.1080/00130095.2024.2337657.
- [2] A. Pike *et al.*, “‘Left behind places’: a geographical etymology,” *Regional Studies*, vol. 58, no. 6, pp. 1167–1179, 2024, doi: 10.1080/00343404.2023.2167972.
- [3] R. J. Tijssen, “Anatomy of use-inspired researchers: From Pasteur’s Quadrant to Pasteur’s Cube model,” *Research Policy*, vol. 47, no. 9, pp. 1626–1638, 2018, doi: 10.1016/j.respol.2018.05.010.

- [4] Y. Park and D. Suh, "How are 'Pasteur researchers' formed and what contributions do they make? A case study of a research institute in Korea," *Technological Forecasting and Social Change*, vol. 200, p. 123091, 2024, doi: 10.1016/j.techfore.2023.123091.
- [5] M. Sotarauta, H. Kurikka, and J. Kolehmainen, "Change agency and path development in peripheral regions: from pulp production towards eco-industry in Lapland," *European Planning Studies*, vol. 31, no. 2, pp. 348–371, 2023, doi: 10.1080/09654313.2022.2054659.
- [6] G. Cotella, "How Europe hits home? The impact of European Union policies on territorial governance and spatial planning Comment l'Europe frappe à la maison ? L'impact des politiques de l'Union européenne sur la gouvernance territoriale et l'aménagement du territoire," *Géocarrefour*, vol. 94, no. 3, 2020, doi: 10.4000/geocarrefour.15648.
- [7] G. Bednarczyk and D. M. Trzmielak, "The innovative potential of scientific and research units in the process of entrepreneurial discovery —examples from selected eu regions," *Marketing of Scientific and Research Organizations*, vol. 46, no. 4, pp. 115–136, 2022, doi: 10.2478/minib-2022-0024.
- [8] C. Oughton, M. Landabaso, and K. Morgan, "The Regional Innovation Paradox: Innovation Policy and Industrial Policy," *The Journal of Technology Transfer*, vol. 27, no. 1, pp. 97–110, 2002, doi: 10.1023/a:1013104805703.
- [9] K. Atta-Owusu, "Oasis in the desert? Bridging academics' collaboration activities as a conduit for global knowledge flows to peripheral regions," *Regional Studies, Regional Science*, vol. 6, no. 1, pp. 265–280, 2019, doi: 10.1080/21681376.2019.1590230.
- [10] G. H. Sheikheldin, "Research and Technology Organizations as Super Intermediaries: A Conceptual Framework for Policy and a Case Study From Tanzania," *Frontiers in Research Metrics and Analytics*, vol. 6, 2021, doi: 10.3389/frma.2021.691247.

- [11] J. Albors-Garrigós, C. A. Rincon-Diaz, and J. I. Igartua-Lopez, "Research technology organisations as leaders of R&D collaboration with SMEs: role, barriers and facilitators," *Technology Analysis & Strategic Management*, vol. 26, no. 1, pp. 37–53, 2014, doi: 10.1080/09537325.2013.850159.
- [12] S. Somogyi-Farkas, "Revitalizing development policy: a mission-oriented strategy for sustainable finance and regional synergy," *Gradus*, vol. 12, no. 1, 2025, doi: 10.47833/2025.1.eco.001.
- [13] M. Mazzucato, "Mission-oriented innovation policies: challenges and opportunities," *Industrial and Corporate Change*, vol. 27, no. 5, pp. 803–815, 2018, doi: 10.1093/icc/dty034.
- [14] P. Peñalosa and C. Castaldi, "Horizon Europe: a green window of opportunity for european peripheral regions?," *Review of Regional Research*, vol. 44, no. 3, pp. 251–285, 2024, doi: 10.1007/s10037-024-00203-1.
- [15] M. Barzotto, C. Corradini, F. Fai, S. Labory, and P. R. Tomlinson, "Smart specialisation, Industry 4.0 and lagging regions: some directions for policy," *Regional Studies, Regional Science*, vol. 7, no. 1, pp. 318–332, 2020, doi: 10.1080/21681376.2020.1803124.