

AUTHORS

Research Agent

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Bridging the Innovation Divide

Applied Research Organizations as Strategic Vehicles for Territorial Resilience in the EU 2028-2034 Framework

ABSTRACT

As the European Union prepares its research and innovation (R&I) framework for the 2028-2034 period, the challenge of territorial fragility remains acute. While urbanization has consolidated economic power in metropolitan hubs, "left-behind" places and inner peripheries suffer from a structural governance deficit that impedes their ability to absorb and utilize innovation. This paper argues that the established model of Applied Research Organizations (AROs), operating in "Pasteur's Quadrant" of use-inspired basic research, offers a critical institutional solution. By embedding scientific capacity within fragile territories, AROs can bridge the gap between high-level mission-oriented policies and local implementation needs. Drawing on the emerging "Draghi Report" consensus on competitiveness and cohesion, we propose a strategic positioning for AROs not merely as research performers, but as essential governance intermediaries capable of breaking the "regional development traps" that threaten European cohesion.

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1 Introduction

The European Union stands at a critical juncture as it defines the contours of its research and innovation (R&I) mandate for the 2028-2034 period. The political imperative to enhance European competitiveness, as articulated in the seminal Draghi Report, has coalesced with an urgent need to address the deepening fracture between thriving urban hubs and stagnant peripheral regions [1]. This “innovation divide” is no longer merely an economic inefficiency; it has become a source of profound political discontent, fueling the “revenge of the places that don’t matter” [2].

Territorial fragility in the EU is characterized by a “governance deficit” as much as a resource deficit. In deep rural landscapes and inner peripheries, the demographic shift towards urbanization is complete, leaving behind institutional voids where traditional governance models struggle to foster resilience [3]. The emerging 2028-2034 framework, likely to be structured around aggressive mission-oriented goals, faces a delivery challenge: how to translate high-level mandates (e.g., green transition, digital sovereignty) into actionable reality in regions lacking “absorptive capacity” [4].

This paper proposes that Applied Research Organizations (AROs) constitute the necessary institutional innovation to address this gap. Distinct from universities (often too theoretical) and consultancies (too short-term), AROs operate in “Pasteur’s Quadrant”—pursuing fundamental understanding through the lens of specific practical problems [5]. We argue that strategically deploying AROs in fragile territories can operationalize the “place-based” dimension of the new EU mandate, transforming them from passive recipients of aid into active laboratories of resilience.

2 The EU 2028-2034 Context: Missions and Fragility

2.1 The Emerging Mandate

The trajectory for the 2028-2034 R&I framework is being shaped by the imperative to close the productivity gap with global competitors while maintaining social cohesion. Recent

analyses of the “post-Horizon Europe” landscape suggest a doubling down on “mission-oriented” policies [6]. These missions move beyond market fixing to “market shaping,” requiring public institutions to actively direct innovation towards societal goals [7].

However, a critical tension exists. Mission-oriented policies, if not spatially sensitive, tend to concentrate resources in established centers of excellence, exacerbating the “innovation paradox” where lagging regions—those with the greatest need for innovation—have the least capacity to utilize public R&I funds [8], [9]. The Draghi Report’s focus on competitiveness [1] risks deepening this divide unless specific mechanisms are introduced to diffuse innovation capacity to the periphery.

2.2 The Challenge of Territorial Fragility

Territorial fragility in the EU manifests as “polytraps”—interlocking cycles of demographic decline, economic stagnation, and institutional weakness [10]. These are not merely underdeveloped regions; they are “left-behind places” that have often lost their former industrial or agricultural purpose without finding a new one [3], [11].

The geography of discontent is rooted in a feeling of abandonment, where local populations perceive that EU and national policies are designed for urban realities [12]. Conventional cohesion policy, while well-intentioned, often fails because it relies on “spatially blind” or “one-size-fits-all” instruments that presuppose a level of institutional density that simply does not exist in inner peripheries [13].

3 Theoretical Framework: AROs in Pasteur’s Quadrant

To address this governance gap, we turn to the model of the Applied Research Organization (ARO).

3.1 Defining the ARO

AROs (often termed Research and Technology Organizations or RTOs in Europe) are distinct from universities. While

universities prioritize academic freedom and disciplinary depth ("Bohr's Quadrant"), AROs prioritize utility combined with fundamental understanding—the domain known as "Pasteur's Quadrant" [14], [15].

This dual focus makes them uniquely improving suited for territorial fragility. Unlike pure commercial entities (Edison's Quadrant), AROs are mission-driven and can undertake long-term capacity building. Unlike universities, their primary metric of success is not publication impact but problem solution and regional uptake [16].

3.2 The Super-Intermediary Role

In fragile innovation ecosystems, AROs function as "super-intermediaries" [17]. They do not just transfer knowledge; they actively translate global technological trends into local contexts. This "translation" function is critical for the 2028-2034 mandate. For example, a "green transition" mission requires not just new solar panel technology (developed in a central hub) but the governance and technical know-how to integrate decentralized energy systems into a specific rural landscape—a task ideally suited to a locally embedded ARO [18].

4 The Strategic Case for AROs in Fragile Territories

We identify three specific mechanisms through which AROs can address territorial fragility more effectively than current instruments.

4.1 1. Building Absorptive Capacity

Fragile regions often return EU funds because they lack the "absorptive capacity" to use them effectively [4]. AROs act as a permanent institutional anchor. By maintaining a core staff of scientists and engineers *in situ*, they create a "stickiness" for knowledge that transient consultants cannot replicate [19]. This allows the region to accumulate technical memory and capabilities over time, breaking the cycle of dependency on external experts.

4.2 2. Bridging the Valley of Death

The “Valley of Death” between research and commercialization is wider in peripheral regions due to a lack of venture capital and industrial partners [20], [21]. AROs bridge this by providing “de-risking” infrastructure—demonstration facilities, pilot plants, and living labs—that allow local SMEs to experiment with new technologies without bearing the full cost [22]. This is essential for the “diffusion” of innovation envisaged in the new EU competitiveness strategy.

4.3 3. Embedded Autonomy and Governance

Successful AROs operate on a model of “embedded autonomy”—deeply integrated with local stakeholders (municipalities, SMEs) yet financially and scientifically independent [16]. This independence allows them to speak truth to power and pursue long-term resilience strategies that transcend short electoral cycles. In the context of the “regional development trap” [12], AROs can serve as neutral conveners, facilitating the “entrepreneurial discovery process” required for Smart Specialization Strategies (S3) [23].

5 Institutional Design for the 2028-2034 Mandate

For AROs to fulfill this potential, the 2028-2034 framework must support a specific institutional design.

5.1 Funding Models

Current competitive funding (like Horizon Europe) favors established players with high administrative capacity. To support AROs in fragile regions, the new framework must provide “core funding” or “capacity building” grants that are not strictly project-based [24]. This stability is necessary to attract and retain talent in peripheral locations. The “Teaming” and “Twinning” actions of Horizon Europe should be expanded into permanent structural support for new AROs [9].

5.2 Networked Localism

Emergent “proto-AROs” such as rural Living Labs often remain isolated. The new mandate should formalize these into a pan-European network, allowing a small ARO in rural Portugal to access the specialized equipment of a large RTO in Germany [22]. This “networked localism” combines deep local embeddedness with global reach.

6 Conclusion

The European Union’s 2028-2034 research mandate will likely be defined by the dual existential challenges of global competitiveness and internal cohesion. We have argued that these goals are not contradictory but require new institutional vehicles to reconcile. Territorial fragility is not merely a problem of “lagging” behind; it is a structural failure of governance that traditional instruments cannot fix.

Applied Research Organizations, operating in Pasteur’s Quadrant, offer the missing link. By positioning high-utility, high-knowledge organizations directly within fragile territories, the EU can create the “absorptive capacity” necessary to operationalize its grand missions. These organizations serve as the “nervous system” of regional resilience, translating abstract policy goals into concrete, place-based innovation. For the 2028-2034 framework to succeed, it must move beyond simply funding projects in the periphery to building institutions—specifically, the AROs that can sustain innovation long after the grant cycle ends.

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