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From healthy cities to territories of wellbeing: transforming watershed geographies along the Rhine

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ABSTRACT

This paper presents a critique of city-centric approaches in health and wellbeing planning and offers a conceptual and operational shift towards a territorially grounded paradigm. It argues that focusing on individual cities limits the systemic and relational understanding of health and wellbeing and undermines effective planning responses. We identify three flaws in city-centric planning: spatial-scalar mismatches that obscure where challenges unfold and interventions are needed; urban biases that sideline small, rural, and peripheral places; and functional fragmentation that reinforces siloed, sectoral approaches. In response, we propose what we call 'Territories of Wellbeing', a conceptualization that operates across interdependent regional systems. Using the Rhine watershed as a paradigmatic case, we demonstrate how this 'natural planning region' offers a productive arena for testing such a framework due to its polycentric structure through its shared river geography, long-standing transboundary governance institutions, and socio-ecological interdependencies. By considering the difficulties in moving beyond city-centric models and the challenges of the territorial approach, we explore and introduce three corrective pathways for planning, Comparability and Transferability, Contextual Sensitivity and Satisfier Differentiation, and Adaptability and Participation. These are practical orientations to make planning frameworks responsive to spatial diversity, dynamic interdependencies, and participatory governance across complex territories.

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1. Introduction

In an age of rapid urbanization, cities have a critical role as places where societal promises and problems play out (Caprotti 2018). To steer towards a liveable future within a 'world of cities' (Karuri-Sebina, Haegeman, and Ratanawaraha 2016), many planning efforts focus on sustainable and inclusive development while managing demographic change,

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housing provision, urban mobility, and other transitions. Within this framing, urban planning is increasingly seen as a lever to support health and wellbeing, particularly in response to challenges such as rising inequality, climate pressures, and pandemics (Florida, Rodríguez-Pose, and Storper 2021; Pineo and Rydin 2018). However, the focus on cities as primary units of intervention often comes with important blind spots. As scholars have noted, many frameworks and policies tend to remain confined within urban boundaries, privileging large, visible cities while overlooking broader spatial relations and contexts, thereby conflating the process of urbanization with the traditional city (Angelo and Wachsmuth 2015). This can obscure the relational dynamics that matter for health and wellbeing, reinforce a bias in policy and planning towards urban contexts, and neglect interdependencies that extend beyond city limits.

As a result, current models risk reproducing health and wellbeing strategies that are functionally disconnected from wider socio-ecological systems, prioritizing output and competition between frontrunner cities over equity and collaboration between territories and sidelining the relational dimension of wellbeing or the realities of 'other' places (Fioramonti, Coscieme, and Mortensen 2019). Indeed, initiatives such as the Healthy City (WHO), developed to tackle health-related challenges in cities by proposing planning guidelines for a network of collaborating cities worldwide, exhibit some of the weaknesses of 'methodological cityism' (Angelo and Wachsmuth 2015). By being designed for the scale of action of individual cities, these frameworks have difficulties in scaling up across regions and territories, limiting their role as credible alternatives to steer development (Druijff and Kaika 2021).

In response, this paper argues that a broader and more systemic understanding of spatial planning for wellbeing is needed, that accounts for multiscalar interactions, diverse place types, and the dynamic needs of human and ecological systems. To do so, planning must embrace frameworks that operationalize health and wellbeing goals across multiple territorial scales, adopting a 'zonal' lens based on fluid, interdependent territories rather than a 'nodal' one based on singular cities.

There are several reasons to address this transition. First, the scale of the challenges to health and wellbeing – whether ecological, infrastructural, or societal – is territorial and unbounded, both in nature and in mode of resolution. As such, local interventions depend on larger systems to address the problems and produce effects. However, current planning cycles remain constrained by a spatial-scalar mismatch (Cumming, Cumming, and Redman 2006): they rely on administrative units that fail to capture cross-border, networked geographies through which risks emerge and must be managed. Second, a persistent 'elite city' bias, rooted in urban competitiveness and entrepreneurialism, isolates large, powerful cities as frontrunner crisis 'fixers' (Miller 2020), while neglecting the rest of the territory, particularly smaller cities and non-urban areas. This narrows both diagnosis and solution design. Third, many planning efforts remain locked in spatial, functional and sectoral silos, limiting coordination and systemic insight. But especially in Europe, the prevailing mode of urbanization based on dense webs of medium-sized cities and hinterlands calls for a more integrated approach, not always compatible with the interests, and responsive to the efforts, of singular cities. Consequently, this paper proposes a shift from a city-centric perspective on health and wellbeing within cities towards a 'Territory of Wellbeing' vision based on cooperative and integrated regions.

To elaborate on this critique, we address where such territories of wellbeing can be developed, as different regions in Europe have different resources and capacities, health challenges and spatial settlement patterns. We suggest that the integrated territory of port cities along the Rhine watershed provides an appropriate environment to test the concept of healthy territories in Europe for three reasons that mirror the rationale above: due to their shared river geography, they face common health and wellbeing challenges of territorial scale; their polycentric spatial structure fits the prototypical configuration of interconnected and diverse medium-sized cities lacking a leading centre; and they build a historically integrated and collaborative territory of interdependent settlements belonging to the same 'family' – port cities – with a track record of cooperative planning schemes. By approaching the Rhine watershed as a 'natural planning region' incorporating multiple political, cultural and environmental settings, we explore the advantages and challenges of a territorial wellbeing framework throughout the whole spatial planning cycle, from problem analysis to methodology, visioning, strategizing, implementing and monitoring.

Lastly, we tackle some conceptual and methodological problems related to the new geography of wellbeing. Something is lost when moving beyond the city scale; specifically, data limitations, invisible large-scale dynamics, and the complexity of scales and indicators hamper comparability and transferability, complicate the assessment of what to measure and why, and limit the engagement of communities with concrete site-specific challenges. In response, we advance three corrective pathways that support a territorially grounded approach to planning for health and wellbeing. These orientations, focusing on comparability and transferability, contextual interdependencies, and participation, are conceived as enabling logics for frameworks that can work across place types, spatial scales, and institutional domains. Together, they aim to make health and wellbeing planning responsive to diverse territorial realities, relational interdependencies, and evolving challenges. They support tools that operate across multiple data contexts, integrate material and immaterial need satisfiers, and embed dynamic feedback loops into governance systems. Applied across the full planning cycle, these pathways can enable more inclusive, reflexive, and spatially attuned practices, shifting from static models to living, learning systems.

2. Spatial planning for health and wellbeing in an urbanized world

Health and wellbeing have re-emerged as central objectives of spatial planning, grounded in an understanding of health that extends beyond the absence of disease. This broad conception is not new. The Constitution of the World Health Organization defined health in 1946 as 'a state of complete physical, mental and social well-being', framing it as a positive and multidimensional condition shaped by social and environmental contexts (World Health Organization 1948). This definition embedded a socio-ecological understanding at the institutional foundation of public health, even if its implications for spatial planning were not consistently realized for decades. Contemporary public agencies increasingly translate this understanding into planning language, describing 'healthy places' as environments designed and managed to improve quality of life by enabling healthy, accessible, and affordable choices for all population groups (ARL 2023).

Historically, spatial planning and public health developed as closely intertwined fields. Early planning interventions were explicitly health-driven, responding to overcrowding,

industrial pollution, and infectious disease through sanitation infrastructure, housing reform, clean water, ventilation standards, and the regulation of hazardous land uses. Urban form, infrastructure provision, and regulatory planning were primary instruments for protecting population health. This relation weakened in the mid-twentieth century as health governance became increasingly institutionalized within clinical systems, while spatial planning shifted towards functional zoning, modernization, and automobility. Health concerns did not disappear, but became implicit, residual, or confined to environmental regulation rather than shaping core spatial strategies.

Since the late twentieth century, health returned to spatial planning through a different conceptual lens. Rather than focusing primarily on disease prevention and environmental hazards, the emerging perspective emphasized the social determinants of health and the role of living environments in shaping wellbeing. This shift was reinforced by models linking individual health outcomes to broader social, economic, and environmental structures. A key bridge between public health and planning was the layered determinants model, translated into spatial terms through Barton and Grant's Health Map (2006), which situates health and wellbeing as outcomes of interactions between individual features, community bonds, local economies, and the natural and built environment.

Recent interrelated developments broadened the health and wellbeing lens in spatial planning: salutogenic perspectives that focus on designing environments that actively generate health; equity-oriented approaches that foreground the spatial production of health inequalities; and planetary health perspectives that link wellbeing to ecological limits, climate change, and environmental risks suggesting a territorial turn in health inequality research (Borde 2023; Giles-Corti et al. 2016). This expansion has been institutionalized in international guidance, most notably the WHO and UN-Habitat Sourcebook, which frames health, wellbeing, and health equity as cross-cutting objectives of urban and territorial planning across scales, from local environments to regional systems and global ecological processes (UN-Habitat & WHO 2020). For spatial planning practice, this integration implies shifts across domains, scales, and tools. Health and wellbeing become performance criteria across housing, mobility, green and blue infrastructure, environmental quality, food environments, and social infrastructure. Points of concern span from buildings and streets to metropolitan systems and transboundary landscapes such as air – and watersheds, and climate hazard zones. Evidence-led design principles and impact assessment instruments increasingly shape planning guidance, embedding health considerations into decision-making (ARL 2023; UN-Habitat & WHO 2020).

The history of health and wellbeing in spatial planning reveals shifting emphases through which health has been repeatedly reframed in relation to space. But while contemporary concepts articulate an expanded, relational understanding that situates wellbeing across interconnected social, environmental, and territorial systems, the practical translation of these ideas has followed a narrower spatial logic. In the context of late twentieth-century institutional reform, governance rescaling, and sustainability discourses, the city emerged as the most visible, governable, and politically actionable arena in which health and wellbeing objectives could be operationalized. This divergence between relational and multiscalar concepts and urban-scale implementation laid the groundwork for a city-centric turn in health and wellbeing planning.

2.1 City rankings, initiatives and networks

The city-centric turn was shaped by demographic, political and economic trends. In the 1970s, environmental movements framed ecological breakdown as an outcome of capitalist structures, calling for systemic change. By the late 1980s, that critique gave way to a more reformist stance that crises could be managed within existing institutions (Hodson and Marvin 2017). The Brundtland Report was key in making sustainable and healthy development acceptable to global economic actors. The Rio Summit and the Local Agenda 21 locked this approach, shifting the focus from structural critique to local action while avoiding deeper questions about the root causes of environmental, health and societal problems (Holgersen 2025). Meanwhile, neoliberal state restructuring pushed responsibilities either upward (supranational) or downward (local), leaving it to cities to take the lead. This made sustainable urban governance appear feasible and market-compatible, especially through the lens of ecological modernization in the Global North, since sustainability projects could be easily communicated through the media, measured through production-based metrics, and implemented without confronting larger systemic challenges that would arise at larger scales (Hodson and Marvin 2017). This is manifested in various interrelated mechanisms, such as competitive rankings of 'best', 'greenest', 'smartest' or 'most liveable' cities developed through external benchmarking exercises; action-oriented initiatives encompassing local sustainability programmes implemented by cities worldwide (Holgersen 2025); and collaborative thematic city networks (TCNs) (Forbat, de Leeuw, and Simos 2021) that facilitate knowledge sharing, capacity building, and collective action around shared urban challenges.

One of the oldest and most successful TCNs is the 'Healthy City Network' by the World Health Organization, which was launched in 1986. The first International Conference on Health Promotion (1986) was the starting point of the movement (Tsouros 2015), which later became the WHO European Healthy Cities Network. Duhl and Hancock (1988) collected components of health in urban contexts and introduced 11 characteristics of a healthy city, which are considered the pillars of the WHO initiative. They encompass health proper but also social equity, justice, solidarity and inclusion measures, thus making health and planning for health a social matter rather than a sheer medical one, which is important for spatial planners, policymakers and communities (Pineo et al. 2020; Webster and Sanderson 2013). Further models unveiled the connections between health, the environment and the uneven distribution of social, political and economic factors (Dahlgren and Whitehead 1991; Osborn 2022). For more than three decades, this framework influenced the emergence of many new Healthy Cities, since the idea focuses on values and processes instead of outcomes; every city can be a 'Healthy City' if it follows certain principles of political commitment, capacity building, and partnership (World Health Organization 2019), making participation possible regardless of political or geographic constraints. In 2018, the WHO and hundreds of local governments developed a renewed set of pillars for equitable and sustainable cities, which align the Healthy City Vision with the Sustainable Development Goals (United Nations 2015; World Health Organization 2019).

2.2 The limitations of localized planning for health and wellbeing

As the success of the Healthy City initiative shows, a city-centric focus in planning for health and wellbeing offers several advantages. The networks of stakeholders are more easily graspable, the problems are more visible, and the resources to solve them are more manageable, leading to valuable insights and flexible problem-solving at the local scale. Concrete urban challenges and solutions operating at everyday scales trigger civil society involvement and encourage participatory decision-making rather than technocratic black boxes. Localized assessments, such as surveys or participatory evaluations with the civil society, become crucial for understanding how planning interventions affect people in specific contexts. Moreover, in TCNs members can share knowledge, cooperate, and implement new practices, while new partners can join at any time.

Nevertheless, planning for health and wellbeing remains constrained by convenient planning and governance units. This manifests in what has been called 'methodological cityism' (Angelo and Wachsmuth 2015) – an excessive analytical and empirical focus on the traditional city to the exclusion of other spatial realities. This narrow lens distorts not so much how we conceptualize health and wellbeing but rather how we operationalize planning responses, sidelining the interconnected dynamics of peri-urban, rural, natural, and cross-border spaces. The result is a planning process for health and wellbeing that is ill-equipped to handle the interdependent crises of our time – climate change, societal inequalities, ecological degradation. The weaknesses of such an urban-centric perspective can be summarized under three arguments:

(a) Scale of challenges and crises

The first concern involves the scale at which societal and environmental challenges unfold, which involves multiple and interconnected spaces beyond cities. To clarify, the distinction between scales of action is not a division of problems into separate spatial boxes (city vs. region), but a questioning of where health outcomes are experienced, interventions are implemented, and their enabling conditions are produced (Brenner 2019; Healey 2006). Health and wellbeing are lived and often acted upon locally, through housing design, mobility, access to green space, food provision, and social infrastructure (Barton and Grant 2006; Pineo et al. 2020). However, they are embedded in networked systems that extend across the wider territory and must be resolved across interconnected spatial systems shaped by regional labour markets, mobility patterns, ecological processes, and infrastructural networks. As Cummins et al. (2007) show, any single scalar frame is incomplete for addressing the relational processes that determine health outcomes.

Many local planning interventions therefore depend on wider coordination to be effective and equitable. For example, active mobility or public transport improvements at neighbourhood level require coherent regional mobility corridors and governance arrangements that align service provision, pricing, and land-use policies across municipalities, rather than privileging metropolitan cores alone (Calthorpe 2011). Similarly, locally sourced food initiatives contribute to wellbeing but cannot ensure sufficiency and resilience without regional production, distribution, and logistics systems that connect urban demand with peri-urban and rural capacities (Sonnino, Marsden, and

Moragues-Faus 2014). Green spaces at neighbourhood scale deliver important physical and mental health benefits, yet their ecological functioning, climate-adaptation potential, and accessibility depend on their integration into larger multifunctional green and blue corridors (Ahern 2011).

Other health-relevant challenges are impossible to address at the level of single cities. Housing affordability and overcrowding are produced through regional housing markets, labour mobility, and commuting systems that link multiple areas, requiring coordinated planning rather than isolated municipal action. Environmental health risks such as air and water pollution, flooding, and heat stress are shaped by upstream land use, regional transport patterns, and cross-border industrial activities, meaning that locally experienced health impacts often originate beyond local jurisdictions. The climate crisis has intensified these dynamics by increasing the frequency of heat waves and droughts and affecting the availability of food and clean water, further exposing the mismatch between administrative boundaries and the spatial extent of health risks.

This gap between the relational spatial scales at which health-relevant problems unfold and the rigid inherited territorial units through which they are governed has been widely criticized as a barrier to effective coordination and intervention (Marin, Molinero, and Arcaute 2024). Rather than replacing neighbourhood-scale action, a territorial view can enable collaboration across municipalities, support more equitable allocation of resources and funding, and ensure that local health-oriented measures are not undermined by uncoordinated actions elsewhere in the territory.

(b) Bias towards 'struggling giants'

Although the UN New Urban Agenda explicitly refers to 'human settlements' and is formally addressed to all levels of government, health and wellbeing planning in practice continues to privilege core cities, frequently neglecting peripheral, secondary, and rural areas and reinforcing a renewed urban imperative (Scruggs 2016). This reflects a bias towards the capacity of large, primary cities to promote health and wellbeing, while other places are left behind. These cities have the political and economic resources to act and the size and visibility to capture the attention of academics, policymakers, and the media, leading to statements in popular books that 'the world's great cities are fixing the climate crisis' (Miller 2020). In this competitive mindset, operationalizing health and wellbeing capacities relies on the initiatives of these frontrunners, framed as role models (see e.g. the Arcadis Healthy Sustainable City Ranking (2022) where 11 out of the top 20 cities are capital cities), over-representing them in sustainability research (Kendal et al. 2020).

As a result, peripheral or second-tier cities and rural areas are overshadowed and experience underinvestment in functions and infrastructure, lack of human capital, and weakened political importance (Pendras and Williams 2021). Yet, their more manageable size and infrastructure capacity, and more limited pressure of global economic actors on land use and development priorities may help these areas promote healthier urban environments than in large global cities. One example is health-oriented urban-rural linkages, such as the emerging vision of sustainable city-region food systems (van der Gaast, van Leeuwen, and Wertheim-Heck 2020). In contrast, many large cities with the ability to invest in healthy environments experience strong infrastructural

pressure, inequalities, congestion, pollution, and other physical and mental health risks. They are 'struggling giants' (Kantor et al. 2012) facing negative externalities of growth. Furthermore, many city-focused rankings use criteria (e.g. congestion, density, public participation) that provide an advantage to wealthy, compact, and data-rich cities, penalizing sprawling or less affluent cities or rural regions (McManus 2012), making those places fall even more behind rather than including their strengths and capacities.

(c) Polycentric urbanization modes

The third argument for shifting to a territorial perspective on health and wellbeing is rooted in Europe's predominantly polycentric urban structure, characterized by an interconnected network of medium-sized cities, rather than large, monocentric ones. With about 5000 towns and 800 cities, polycentric urban regions are often considered the appropriate arena for governance, policymaking, spatial planning and sustainable development (Meijers, Hoogerbrugge, and Cardoso 2018). But this development type creates difficulties for local governments to achieve coherent planning beyond core–periphery patterns and administrative boundaries. Metropolization processes, turning fragmented urbanized regions into coherent systems through institutional, functional and spatial integration (Cardoso and Meijers 2020), discourage a centralist culture of political and economic dominance by a core city in favour of more horizontal regional integration. Networked medium-sized cities in such contexts aim for tighter relations at higher scales to share capacities, access amenities, and mitigate the impacts of density and congestion on wellbeing, compared to monocentric systems.

This type of network integration is different from the 'networks' created by TCNs such as the Healthy City. The latter are club-type networks (Sandler and Tschirhart 1997), joining forces to tackle common goals and share practices, but often developing similar rather than complementary assets – they aim to replicate best practices to support their own development. The focus is on the progress of the individual members of the network, rather than integration. Moreover, club-type networks are not connected in the spatial sense, as they are not necessarily part of the same territory. In contrast, polycentric urban regions are web-type networks, focusing not on individual cities but on the geographical territory they build, and on economic and functional complementarity rather than similarity (Meijers 2005). By sharing a common geography, the members of such networks have a stake in their collective success, from the shared advantages of railway connections to the shared risks of flooding or drought. As a result, coordinated planning becomes necessary to drive positive change, based on both the need and the incentive to cooperate (Cardoso and Meijers 2017).

2.3 Towards territorial health and wellbeing: scale, place, system

The limitations of city-centric health and wellbeing planning become particularly visible when examined through the phases of the planning cycle, where prevailing approaches tend to reproduce spatial-scalar mismatches, place biases, and functional fragmentation. These practical constraints limit the capacity of planning to address the structural determinants of health and wellbeing. At the stage of problem understanding, framing health challenges through administratively bounded units (neighbourhoods or cities)

emphasizes individual behaviours and localized interventions. While appearing actionable, measurable, and manageable, this misrepresents underlying health-relevant processes that are diagnosed through territorially enclosed lenses. These limitations are reinforced during framework development. Planning tools, models, and assessment frameworks are calibrated to administrative units and sectoral competences, neglecting relational geographies and dynamics. In the assessing and measuring phase, indicator sets privilege city-level visibility and data availability, leaving blind spots on territorial linkages such as upstream–downstream relations, infrastructures, or regional accessibility patterns. Health and wellbeing are thus measured as attributes of individual places rather than outcomes of territorial systems. The cumulative effect is territorial myopia. Local health improvements may trigger displacement or redistribution rather than generalized wellbeing gains, while fragmented mandates and bounded funding instruments limit coordinated responses to cumulative and cross-border risks. These insights have

Table 1. Systemic constraints in the planning cycle for health and wellbeing under localized/city-centric paradigm: spatial-scalar mismatch, elite city bias, and functional fragmentation.

Planning Cycle Phase	Spatial-Scalar Mismatch (Scale)	Elite City Bias (Place)	Functional Fragmentation (System)
Problem Understanding and Structuring	**Misdiagnoses:** Administrative boundaries misrepresent where problems emerge, leading to partial understandings and spatial injustice.	**Urban Templates:** Definitions reflect big-city concerns, ignoring diverse place-based determinants of wellbeing.	**Disconnection:** Fragmented system components are misunderstood as isolated issues, hindering shared framing across scales.
Method & Framework Development	**Inflexibility**: Tools and models are locked into administrative units, limiting capacity to work across relational geographies.	**One-Size Tools**: Methods are calibrated for large cities, making them poorly suited to small towns and rural areas.	**Institutional Rigidity:** Frameworks reinforce sectoral silos, missing chances for inter-systemic or inter-city logic.
Assessing & Measuring	**Blind Spots:** City-level data omits territorial linkages (e.g. ecological flows, mobility corridors, cross-border pollution).	**Skewed Benchmarks**: Indicators privilege cities with high capacity and visibility, excluding other context-specific metrics.	**Isolated Metrics:** Assessments ignore shared infrastructures and interdependencies crucial for territorial wellbeing.
Analyzing & Synthesizing	**Fragmented Insight:** Inherited boundaries block feedback analysis across nested systems (e.g. planet–watershed–region–city).	**Comparator Bias:** Global cities set baselines, masking alternative trajectories or realities of smaller territories.	**Siloed Synthesis:** Governance/data divisions prevent joining up sectoral or spatial information into coherent analysis.
Visioning & Strategizing	**Territorial Myopia:** Visions are city-centric, often ignoring bioregional strategies or polycentric potentials.	**Competitive Distortion:** Planning focuses on outcompeting peers rather than fostering shared wellbeing across places.	**No Shared Roadmap:** Lack of collective framing across places undermines integrated, multi-nodal planning and sharing of gains and burdens.
Governing & Implementing	**Mismatched Mandates:** Crises and challenges exceed city limits, but institutional power and funding stay confined.	**Resource Centralism:** Large cities monopolize capacity and tools, delaying interest and implementation in less dominant areas.	**Governance Gaps:** Fragmented authority prevents collaboration, coordination, and scaling of shared solutions.
Monitoring & Adapting	**Incomplete Signals:** Indicators miss cross-scale effects; adaptive learning is blocked by spatial disconnection.	**Biased Success Narratives:** Flagship cities dominate reporting, sidelining issues in other regions.	**Broken Loops:** Feedback doesn't reach across regions or between nested jurisdictions, preventing whole-system learning.

impacts on the planning cycle, as seen in Table 1. Each phase is shaped by scale mismatches, spatial biases, and functional disconnections that lead to misaligned problem definitions and frameworks and fragmented implementation, limiting the capacity to respond to health and wellbeing challenges in a systemic and integrated way.

In summary, while cities, local communities and local governments play a vital role in addressing health and wellbeing, the value of city-centric approaches is undermined when they neglect the spatial interdependences and relational scope of the challenges that matter for health; when the selective bias towards large, data-rich cities neglects the voices, challenges and capacities of other places and communities; and when the reliance on the interests of single places neglects the value of complementarity and integration enabled by the polycentric systems. Adding a territorial and multi-scalar dimension to health and wellbeing planning can help face the scale and nature of the challenges, give a voice to all types of places, and exploit the available capacities across regions. We therefore propose the territorial-regional level as the suitable 'scale', the diverse mix of urban and non-urban environments and communities as the suitable 'places', and integrated web-type networks as the suitable 'system' to move from 'healthy city' vision to a concept of 'Territories of Wellbeing'.

To explore how to make this conceptual argument spatially specific and operationalize it for planning, we now ask where (in Europe) such a vision can be developed, implemented and sustained. We investigate the networked territory along the Rhine watershed as a region that fulfills the conditions for the shift stated above, in terms of scales, places and systems.

3. River geographies along the Rhine

Health and wellbeing planning frameworks are not entirely compatible with inherited boundaries based on administrative, morphological, or functional characteristics. We suggest that, as a general case, large, transnational watersheds are useful alternatives for our purposes. Watersheds are not used here as geodeterministic units where actors passively navigate, but as examples of relational arenas, where overlapping political, economic, societal, and environmental dynamics intersect and generate concrete and interconnected processes that constrain health and wellbeing. Watersheds have long been recognized as meaningful geographic and political units for coordinated action (Parkes and Horwitz 2025). As ecologically coherent territories, they provide an effective frame for regenerative interventions that generate ecosystem and human health co-benefits, supporting integrated responses to environmental degradation, social vulnerability, and wellbeing challenges (Wessells 2010; Whitmee et al. 2015). The Rhine watershed encompasses a dense and interdependent web of environments shaped by water as a physical and cultural connector of people, goods, ecosystems, and knowledge. Its complex governance structure, ecological interdependencies, and socio-spatial diversity make it a paradigmatic laboratory (Flyvbjerg 2006) for exploring to what extent a networked, multi-scalar, and territorially grounded geography can support the operationalization of Territories of Wellbeing in the European context.

3.1 Reviving natural planning regions

A watershed constitutes a spatially bound geophysical unit in which surface water and groundwater converge into a single collecting river system. These hydrological

characteristics have long structured settlement patterns, economic activities, political relations, and social dynamics, leaving a lasting imprint on both urban and non-urban landscapes (Rutte and Van Mil 2022). Historically, rivers and watersheds functioned as conduits for the circulation of people, goods, and knowledge, fostering shared environmental experiences, socio-economic interdependencies, and forms of collaboration among communities living within the same basin, often more strongly than with geographically proximate areas outside the watershed (Jenkins et al. 2018). Following Geddes' conception of the river basin as a 'natural planning region' (Geddes, 1923 in Tyrwhitt 1951), watersheds delimit a territorially coherent unit of investigation in which many of the environmental, social, and infrastructural determinants of health and wellbeing are simultaneously produced and experienced across scales. They do not determine social or health outcomes but are understood as historically contingent spatial arenas where environmental and social processes co-evolve.

In the Rhine context, this territorial logic has been partially institutionalized through cooperative frameworks such as the River Contracts of the 1980s, the European Water Framework Directive. However, the implementation of watershed-based governance remains uneven and constrained. While the Water Framework Directive formally adopts the river basin as the unit of management, it preserves national administrative structures and sectoral competences, resulting in incremental and operational adjustments rather than a transfer of political authority to basin-level institutions or the public (Moss et al. 2020). As a result, coordination across the basin continues to be shaped by path dependencies in national governance cultures, fragmented responsibilities, and persistent tensions between basin-scale objectives and sectoral or national priorities (Rowbottom et al. 2022). This reflects a broader challenge: although rivers are recognized as ecological systems requiring integrated management, governance arrangements follow container-based territorial logics that do not align with the spatial production of health-relevant exposures. The Rhine exemplifies this tension. Despite long-standing institutions such as the Central Commission for the Navigation of the Rhine and the International Commission for the Protection of the Rhine, coordination is fragmented across jurisdictions, policy domains, and infrastructural regimes.

At the same time, the territory has been occupied by dense and long-standing networks of traders, industrial actors, port authorities, municipalities, and national governments, enabling transnational flows of capital, labour, infrastructure, and institutional cooperation that operate across formal governance boundaries (Boon, Klemann, and Wubs 2020). These river networks contributed to the emergence of a polycentric settlement structure and functional interdependencies among port cities along the basin. Watersheds are therefore continuously produced through interactions between water flows, infrastructures, ecological relations, governance arrangements, economic systems, and cultural practices (Boelens et al. 2025). This relational understanding reflects the cross-scalar geographies through which many determinants of health and wellbeing are generated. As intermediate governance spaces, watersheds can enable networked forms of collaboration in which shared risks and capacities are addressed through joint monitoring, coordinated investment, and collective learning, while still allowing local interventions to remain context-sensitive.

In this sense, 'Territories of Wellbeing' do not replace neighbourhood-scale action, but amplify it by providing the spatial, institutional, and relational frameworks to

articulate health- and wellbeing-oriented interventions across settings. This is neither limited to riparian cities nor defined solely by the physical watershed. Rather, the watershed is used methodologically as an analytical container because it provides a coherent frame within which relevant hydrological, environmental, economic, and infrastructural processes unfold. It is a porous territory, whose various logics operate at multiple and often misaligned scales. But a contained study area remains necessary for systematic analysis, and the watershed offers a meaningful compromise between ecological coherence and analytical tractability. River–hinterland connections operate through shared dependencies and constraints that propagate longitudinally across the basin. Accordingly, the 'territory of wellbeing' is defined as the set of interacting spatial arenas and hydrological, economic, environmental, infrastructural, and institutional processes that jointly shape the conditions for health and wellbeing (Figure 1).

3.2 The watershed as a territory of wellbeing: scale, place, system

Against this background, we elaborate on the three key arguments for the transition to a Territory of Wellbeing paradigm, to explain how they converge and become visible in the Rhine watershed.

3.2.1 Scale: shared challenges and conflicts across the watershed

Port cities create networked territories that are gateways for knowledge exchange, economic prosperity, and innovation (Hein and Schubert 2021). Nonetheless, the infrastructures supporting the global economic operations of ports and the accommodation of

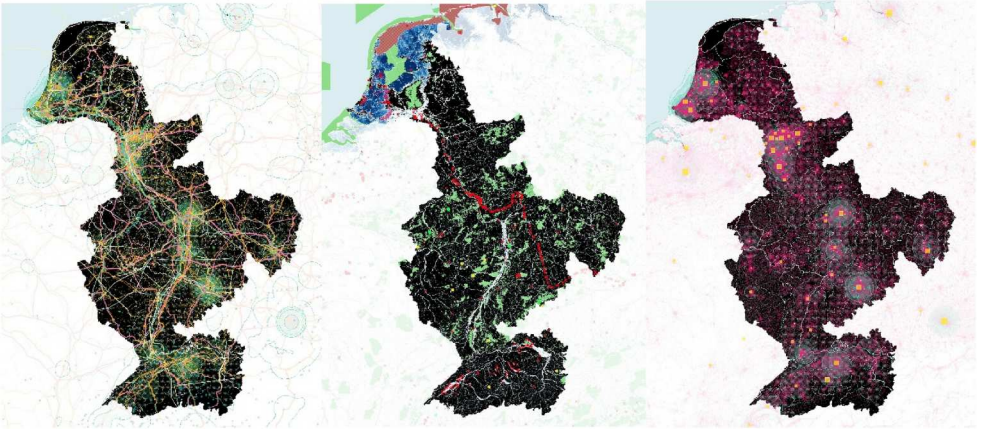


Figure 1. Spatial data layers illustrating regional interdependencies across infrastructural–economic, environmental–risk, and demographic–urban dimensions. The left panel combines administrative units (NUTS 0–3, LAU) with infrastructure, transport, energy, industrial activity, metropolitan degree, and built-up areas. The middle panel presents environmental, cultural, and risk-related layers, including NO_2 pollution, protected and heritage areas, river networks (Strahler order), and coastal and fluvial flood hazards (RP10). The right panel shows demographic and urban structure indicators, including city population size, metropolitan degree, and degree of urbanization. Together, the panels demonstrate the misalignment between administrative units and the relational organization of territories (by Authors).

functions necessary for the expanding region can lead to conflicts. When global/regional elites make decisions over local spaces whose stakeholders lack a comparable political voice, spatial imbalances emerge. That makes the regional system collectively implicated in locally occurring socio-spatial and economic injustices (Savoldi 2021), pollution (Merk 2013), spatial and environmental conflicts (del Saz-Salazar et al. 2012), and extractive industries (Hein 2022).

Disasters like the 1986 Schweizerhalle in Basel, a fire in the chemical storehouse Sandoz Ltd., which discharged approximately 1250t of chemicals into the Rhine and affected several cities and regions, revealed the shared challenges to health and wellbeing which mobilize the regional rather than the urban scale and became a turning point for the environmental vitality of the Rhine (Giger 2007). The Convention of the Rhine (1999) grants legal personality to the International Commission for the Protection of the Rhine (ICPR), originally created in 1950. It applies to surface and groundwater in the river catchment area and aims for multilateral cooperation in the sustainable development of the ecosystem. It became an important channel to address other water-related issues, such as flood mitigation (Zonneveld and Wandl 2015). Yet, pollution problems still occur, as heavy metals from historic mining near Mechernich, North Rhine-Westphalia, continue to enter the Veybach and Erft and are transported via the Rhine towards the distant delta (Land NRW 2026). This ongoing contamination contributes to sediment, soil, and potential food chain pollution in downstream areas, including the Port of Rotterdam (SedNet 2004).

Currently, the Rhine is facing climate change impacts with multi-scalar origins, impacts and modes of resolution. Within a year, the region suffered devastating flood events in 2021, and droughts affecting navigability in 2022. However, strategies that focus exclusively on the economic vitality of the area using techno-managerial methods, e.g. suggested dredging of the Rhine at bottlenecks, seem inadequate in addressing these socio-ecological challenges (Muller and King 2022). Therefore, the Rhine Ministerial Conference adopted its Rhine2040 programme, which sets more integrated and shared social, economic and ecological goals (Sanders and Van De Grift 2022).

The Rhine also reveals interconnected socio-economic challenges tied to its post-industrial legacy. Many towns once anchored in river-based coal and steel economies, such as Germany's Ruhr region, now face structural decline, unemployment, and political tension. This has translated into a surge of right-wing populism, as redevelopment efforts prioritize metropolitan hubs and neglect struggling communities. Simultaneously, urban waterfronts, once industrial zones, are reimagined through green and smart city agendas as strategic sites for economic development, city branding, and housing demand. Yet, their regeneration is shaped by global financial interests, and generic sustainability agendas (Tommarchi 2025). These patterns expose how selective city-centric regeneration efforts can deepen territorial inequalities, highlighting the need for a planning lens that accounts for environmental and social wellbeing across the entire river system.

3.2.2 Places: regional integration through water and port cities

Shared river geographies are complex socio-ecological systems. Their polycentric features, variety of legal, economic and political incentives, and cultural and historic proximity promote operational linkages and evolve adaptive capacities (Da Silveira and

Richards 2013). As the most significant waterway in Europe, the Rhine played an enormous role in the emergence of cities along the water and the development of a transnational region at the centre of the EU. Economic interactions between port cities have shaped networks and clusters of industrial activities, as well as logistical flows along water- and land-based infrastructures. The Rhine became subject to different sets of principles to maintain balance between the major national powers of Europe, leading to the foundation of the Central Commission for Navigation of the Rhine (CCNR), the world's oldest international institution still in practice. Free navigation, commerce, and river channelization were part of plans to facilitate prosperity, communication and interaction between nations.

And yet, this powerful region lacks a single, dominant large city, comparable to London, Paris, or other leading capitals. The Rhine watershed is an integrated l system of cities, towns, peri-urban and rural areas, industries, corridors, and productive spaces, characterized by strong functional connectivity and long-standing cooperation (Da Silveira and Richards 2013). Beyond basin-wide coordination through the International Commission for the Protection of the Rhine (ICPR), this integration is reinforced through cross-border eurodistricts and EGTCs in the Upper Rhine, Interreg-funded cooperation programmes, and EU-level infrastructure governance such as the Rhine–Alpine and North Sea-Rhine-Mediterranean TEN-T corridors, which align transport, logistics, environmental standards, and regional development. With more than 70 million inhabitants living, working, and consuming within its catchment area, over one billion tonnes of freight transported annually, and approximately 19% of EU GDP generated along the corridor, the Rhine represents one of Europe's most economically and infrastructurally integrated territories. This is mirrored in exceptionally high levels of intercity commuting within Rhine metropolitan regions, which rank among Europe's most interconnected labour-market areas. Together with port alliances and river navigation institutions, these networks extend cooperation needs beyond water management into mobility, air quality, economic coordination, and spatial planning, providing an existing territorial governance fabric that can be mobilized for health and wellbeing-oriented strategies.

3.2.3 System: a history of polycentric urbanization modes

The settlement pattern along the Rhine is an example of the dense mesh of medium-sized cities typical of Europe, whose seeds were sown as far back as the eleventh century, when merchant activities triggered the rise of many medieval cities in Europe. Polynucleation is deeply rooted in North-West Europe's path dependence, and rivers have been essential infrastructures in preparing suitable sites for this type of settlement, as they provided water, fertility, transport, connectivity, and availability of goods and people in a variety of places simultaneously, beyond the usual reachability of non-river cities at these times (Gingrich, Haidvogl, and Krausmann 2012).

Rivers and their catchment areas were not only connectors or facilitators, but also boundaries and structuring elements of territorial organization. Riparian cities in pre-industrial times often emerged on one side of the river, making the water a natural boundary determining economic and population patterns, helping to sustain territorial power (Winiwarter et al. 2016). The north-west axis between Flanders and northern Italy along the Rhine became a major circulation and trading axis. In contrast to the

Champagne route, where towns were quickly overpowered by the centralist forces of the King of France, the Rhine axis retained a dense urban network and became an economic powerhouse. The integration into transnational trade and relations, including main ports and the hinterlands of inland port cities, developed mercantile city-networks relatively independent from the centralizing forces of nation states. These networks, combined with an emerging regional identity, created path dependencies that maintained the polycentric pattern and the regional integration incentive during the time of industrialization, nation-state formation, and conflicts such as WWI and WWII, up until the era of supranational organizations today.

3.3 Synthesis: integrated territories and collaborative networks within watershed geographies

Watersheds represent natural planning regions where not only economic and infrastructural interdependencies but also health and wellbeing challenges unfold. Both urban and non-urban environments along the Rhine share those challenges through their common river geography, while being an example of a polycentric and cooperative system with a high level of economic, spatial and administrative integration, and cultural and historical proximity. They share economic interests, exchange knowledge and drive innovation, but also face common risks related to their spatial context and need to develop joint responses. The watershed structured the development of such a polynucleated and interconnected territory. Globalization, increasing flows of goods, people and innovation, drive urban and regional growth even further, which creates risks for health and wellbeing. However, the history of forward-looking cooperation between ports, industries, cities, regional, national, and supranational governments, based on institutions with a long track record of collaboration, can help develop common policies to create healthier environments for all.

Consequently, this region materializes the scale, place and system arguments for moving towards a territorial approach to health and wellbeing planning and testing the opportunities and limitations of such a framework. Therefore, in combination with the previous table showing the limitations of city-centric health and wellbeing planning, we now use the Rhine to highlight the potential advantages of the territorial approach across the same stages of the planning process (Table 2).

4. Operationalizing territories of wellbeing

Despite their potential, current territorial planning initiatives within the Rhine rarely transcend economic, infrastructural, or environmental management domains. There is still no integrated territorial effort for collaborative, cross-border, and intersectoral researching, planning, and governing of health and wellbeing. The difficulties in implementing such a framework can be approached by listing what is lost when moving beyond the city scale and reflecting on which mitigation measures can be adopted. There are three key weaknesses of the territorial paradigm compared to existing frameworks. The first is data. The urban scale tends to have good and complete datasets, managed by a limited number of stakeholders, as well as relatively clear and mutually agreed indicators for various health and wellbeing satisfiers, from local air quality to

Table 2. Territorial response to systemic constraints in the planning cycle for health and wellbeing.

Planning Cycle Phase	Spatial-Scalar Awareness (Scale)	Inclusive Place Perspective (Place)	Cross-System Thinking (System)
Problem Understanding & Structuring	Health and wellbeing challenges unfold across **interconnected, trans-boundary scales.** Their **regional embeddedness** cannot be diagnosed from an urban-only perspective.	Investigating the region shifts attention to a **network of second-tier cities and smaller towns**, making visible a broader range of wellbeing determinants beyond main centres.	The watershed case illustrates how social, ecological, and economic issues are **interlinked**, encouraging a shift from sectoral framings towards a **systemic understanding of territorial wellbeing**.
Method & Framework Development	The watershed offers a **relational geography** that breaks sectoral silos and supports the development of tools operating across **nested and networked spaces**.	The region's **polycentric structure** prompts the design of methods that are adaptable to **diverse urban, peri-urban, and rural realities**.	Existing governance platforms show the **institutional foundations** for linking infrastructural systems, enabling **integrated frameworks**.
Assessing & Measuring	The approach enables indicators that **reflect cross-scale processes**, such as upstream – downstream linkages, ecological corridors, and cross-border flows.	It encourages **context-sensitive indicators** that value the contributions of places beyond the dominant cities, enabling **fairer territorial benchmarking**.	The region invites the identification of **shared infrastructures and interdependencies** (ports, ecosystems, mobility) which can serve to link wellbeing across domains.
Analyzing & Synthesizing	The Rhine helps establish an **analytical frame that connects local events to regional dynamics,** from floods to economic decline, capturing multi-scalar causality.	It supports exploring **alternative urban trajectories** based on cooperation rather than competition, and on spatial integration rather than hierarchy.	Long-standing governance arrangements and shared territorial histories allow **synthesized knowledge across systems and sectors**, offering a model for integrative analysis.
Visioning & Strategizing	Territorial planning opens up **bioregional and corridor-based strategies** rooted in shared risks, ecological foundations, and distributed capacities.	The polycentric and transnational structure promotes **shared visions across cities**, countering competitiveness and supporting **mutual wellbeing goals**.	Initiatives shared across the watershed show how **sectoral strategies can evolve towards integrated planning**, combining environmental, economic, and social priorities.
Governing & Implementing	The Rhine provides a real-world testbed for **multilevel and cross-border governance**. Existing institutions can align with ecological and functional scales.	The governance system includes cities of all sizes, encouraging **inclusive implementation practices** that don't rely on dominance by large urban centres.	Existing cooperative structures illustrate **how fragmented authorities can be coordinated** through shared agendas and long-term collaboration.
Monitoring & Adapting	The region highlights the need for systems that **capture spatial interdependence and anticipate change**, such as hydrological or socio-economic shocks.	It underscores the importance of **inclusive monitoring**, assessing success across places, not just in highly visible cities, supporting **territorial cohesion**.	The institutional memory and cooperative history support the development of **shared feedback loops**, for **adaptive governance** and long-term learning across the system.

surveys on social cohesion. This makes cities manageable units for comparability and transferability, especially when part of TCNs sharing practices and goals. Another strength of city-centric views is the ability to determine clear planning goals and ways to recognize success. Despite contextual adjustments, it is relatively straightforward to develop assessment metrics for the 11 Healthy City features in the WHO model and agree on a relatively stable hierarchy of priorities. Finally, the city scale usually implies

an engagement with concrete challenges visible in everyday experience, as well as proximity with the actors and systems responsible for solving them. This enables civil society engagement and adds democratic legitimacy to decisions.

In contrast, prioritizing health and wellbeing in large, networked territories requires analyzing dynamic risks and challenges, gathering capacities that lie beyond immediately recognizable actors, and relationally assessing various satisfiers of health and wellbeing in a systemic approach with spatially and temporally varying parameters. Frameworks must operate at multiple spatial scales, across urban, rural and natural settings, include many indicator categories and identify the multiple relations between them. In this context, rather than prescribing a framework, our analysis points to several corrective pathways that could guide future work towards a territorially grounded understanding of health and wellbeing that may mitigate these weaknesses. These orientations are not conclusions, but rather 'analytical openings', points of departure for frameworks capable of addressing health and wellbeing in complex geographies.

4.1 Comparability and transferability

Approaches that do not capture relational geographies may lead to misdiagnosed problems, inadequate or skewed measures, and non-transferable outcomes, e.g. when policy models are overly generic or specific to one city. To address these flaws, we can operationalize territorial health and wellbeing through modular, transferable tools that adapt to scale diversity, allow indicator layering and build systematic flexibility across scales and locations. Working with spatial, temporal, quantitative and qualitative data across large territories presents immense challenges, including inconsistent data availability, incompatible indicator systems, scale mismatches, and difficulties of harmonizing diverse territorial realities. Additionally, collecting and integrating qualitative insights at scale is resource-intensive, ethically complex, and often risks flattening contextual meaning during aggregation or spatialization (Estes, Elsen, and Treuer 2018). Therefore, we need a mix of universality and contingency in assessment, which recognizes that the same fundamental need can be measured in multiple ways depending on context, data availability, and stakeholder preferences. Rather than uniform indicator types for comparison and ranking, a flexible approach enables cross-territorial understanding while respecting contextual diversity. For example, a small town without granular statistical data can assess wellbeing via participatory and contextual tiers, while urban regions with dense data infrastructure can rely more on direct and proxy metrics.

The OECD Handbook on Constructing Composite Indicators (Nardo et al. 2008) emphasizes how proxies can represent abstract or hard-to measure wellbeing concepts such as 'community cohesion' or 'sense of safety'. Similarly, the ESPON Territorial Indicators report (2012) combines core indicators with optional or region-specific proxy variables, allowing for spatial harmonization while maintaining flexibility in data-poor contexts. Indeed, many approaches emphasize identifying context-dependent satisfiers, recognizing that even in the absence of direct data, similar needs can still be meaningfully assessed through locally appropriate indicators (Max-Neef, Elizalde, and Hopenhayn 1991). Scholars have argued for the use of hybrid indicators to estimate need satisfaction under conditions of limited data availability (Valentin and Spangenberg 2000). Others

rely on proxies to approximate the realization of wellbeing goals in data-scarce or complex environments (Alkire 2002).

A geo-spatial dashboard system can link each indicator to a confidence level – for instance, robust data, proxy-based, or local estimates (IAEG-SDGs 2025). This enhances transparency and supports methodological integrity across different contexts. Importantly, dashboards can also include crowdsourced data layers, allowing practitioners and civil society to contribute with local proxies to fill gaps, thus supporting participatory diagnosis (Goodchild 2007; Kitchin 2016). By combining spatial layers with user interaction, filtering and benchmarking tools, dashboards make health and wellbeing assessments scalable and accessible, facilitating cross-territorial learning, real-time feedback loops, and grounded planning (Young and Kitchin 2020). This enhances the entire planning cycle, revealing relational challenges in problem structuring and enabling adaptive responses in monitoring. They allow territories to be meaningfully included in assessment and decision-making.

4.2 Contextual sensitivity and satisfier differentiation

Health and wellbeing spatial planning is inherently complex because it involves interdependent needs that interact with broader ecological, spatial, and social systems. Challenges in one domain cannot be addressed in isolation, as actions often trigger unintended consequences elsewhere. These dynamics reflect the characteristics of wicked problems: they are complex, lacking definitive formulation; interdependent, as solving one part may worsen another; unresolvable by simple fixes, with no single 'true' solution; context specific, embedded in local social, political, and ecological realities; and evolving, meaning that attempts to solve them often reshape the problem itself or create new ones (Rittel and Webber 1973).

The assumption that the same metrics and solutions can be applied universally is a common flaw in the planning cycle, as planners often rely on standardized indicators or flagship interventions coming from 'role model' cities without adapting them to specific conditions. The result is benchmarking that applies urban metrics to rural or peripheral regions, replicates solutions that ignore local identities and capacities, and overlooks intangible emotional, cultural, or environmental dimensions that affect wellbeing outcomes. Instead, we can treat health and wellbeing as part of a dynamic, non-hierarchical system, whose parameters interact through bundled need satisfiers, which may reinforce, inhibit, or distort each other (Max-Neef, Elizalde, and Hopenhayn 1991). Actors navigate this system within constraints of time, resources, and environmental boundaries, and make decisions based on heuristics. Their choices feed back into the system over time (Millward-Hopkins 2022) creating a complex environment where wellbeing is shaped by evolving behaviours, trade-offs, and structural conditions. Planning can therefore adopt flexible and iterative models that capture the diversity and the feedback between actions, outcomes, and experiences (Foramitti 2023), moving beyond static models of utility. These include mapping how interventions ripple across different wellbeing factors, using maps to link interventions to outcomes, and considering time to capture immediate versus long-term effects. They help identify trade-offs, prioritize actions with cross-need benefits, and trace spatial spillovers. Such an approach enhances the planning cycle by uncovering interdependencies, shifting the focus from isolated

indicators to a logic of bundled need satisfaction, and identifying interventions that generate synergies across multiple wellbeing needs. Implementation becomes more coherent, as actions are aligned across sectors and planners can track not just sectoral performance, but evolving outcomes over time, making planning more responsive and just.

4.3 Adaptability and participation

A final pathway focuses on the lack of adaptability and participatory responsiveness across the planning cycle. Many large-scale frameworks remain top-down, overly linear, resistant to change, and too complex for participatory engagement, even as social conditions, environmental stressors, and territorial priorities evolve rapidly. This rigidity reveals itself at all stages: problem structuring often misses lived realities; strategies are locked into long-term frameworks that fail to adjust to demographic changes, ecological shocks or paradigm shifts; and monitoring mechanisms remain disconnected from people's actual experiences. As a result, feedback loops are broken, participation is often symbolic or absent, especially in rural, peripheral, or marginalized environments, and planning becomes brittle, losing legitimacy and effectiveness.

Embracing adaptive and participatory logics allows for continuous learning, co-production, and territorial responsiveness. Health and wellbeing planning is a dynamic negotiation between people, institutions, and environments, driven by experiential and systemic knowledge as well as inclusive, informed, and authentic dialogue (Innes and Booher 2018). Territorial or urban labs can serve as ongoing platforms for experimental codesign and diagnostics, amplifying local knowledge while linking it to broader territorial patterns. Digital infrastructures, especially spatial dashboards, offer tools for enabling feedback and adaptive governance at scale (Young and Kitchin 2020). Unlike static monitoring, dashboards can project wellbeing indicators across nested scale, from watersheds down to neighborhoods, decoupling analysis from rigid administrative units and allowing for contextual layering of indicators, including participatory inputs (Kitchin 2016). Features like zoomable maps, confidence scoring, participatory input fields, and dynamic visualizations make relations visible and enable transparent negotiation between goals, needs, and actors across governance boundaries.

Despite experiencing problems like other forms of participation, namely biased representativeness of the more skilled, networked and vocal societal groups, incorporating both digital and physical collaboration platforms into health and wellbeing planning enhances every stage of the planning cycle. It uncovers local knowledge and enables diverse definitions of wellbeing, enriching the diagnostic phase. In strategy and visioning, it fosters legitimacy through co-created, context-specific pathways. Implementation becomes more responsive, allowing for iterative adjustments based on lived realities and shifting conditions. Finally, monitoring evolves into a dynamic territorial learning process, where feedback is meaningfully integrated, ensuring that plans remain aligned with the health and wellbeing of all people and places involved.

Table 3 relates the flaws of the city-centric planning paradigm discussed in Table 1, to the transformative responses enabled by the corrective pathways.

Table 3. Transformative role of corrective pathways in the health and wellbeing planning cycle (C&T – Comparability and Transferability, CS&S – Contextual Sensitivity and Satisfier Differentiation, A&P – Adaptation and Participation).

Planning Phase	Flaw: Scale/Place/System	Corrective Pathway & Transformative Response
Problem Structuring	**Spatial-Scalar Mismatch**: Misdiagnosis due to relying on administrative boundaries rather than relational geographies.	C&T: Introduces modular indicators and relational mapping. CS&S: Frames needs as interdependent bundles, not siloed issues. A&P: Surfaces lived experience, avoiding expert-defined blind spots.
	Elite City Bias: Assumptions based on large-city norms ignore other place types.	CS&S: Recognizes territorial diversity in how needs are defined and satisfied. A&P: Enables place-specific framing through participatory input.
	Functional Fragmentation: Issues framed sectorally miss systemic interconnections.	CS&S: Reveals cross-sectoral interdependencies. A&P: Brings actors together to co-define problems across boundaries.
Framework/Method Development	**Inflexibility**: Tools rigidly follow jurisdictional logics, missing real-world flows.	C&T: Builds cross-scalar flexibility into tools/indicators. A&P: Incorporates user-driven feedback into tool design.
	One-Size-Fits-All Tools: Calibrated for cities are unsuitable elsewhere.	C&T: Supports context-flexible indicator systems. CS&S: Encourages diverse satisfier types beyond urban norms.
	Institutional Rigidity: Silos instead of cross-domain synergies.	CS&S: Promotes a systems-based understanding. A&P: Opens institutional processes to multiple actors, thereby enabling integration.
Assessment & Measurement	**Blind Spots**: Data omits territorial flows (e.g. commuting, pollution).	C&T: Links indicators to relational and spatial flows, not just locations.
	Skewed Benchmarks: High-capacity cities dominate indicator frameworks.	C&T: Allows benchmarking based on multiple tiers (proxies, narratives, metrics). A&P: Crowdsources input in data-poor areas.
	Isolated Metrics: Misses interdependencies between indicators	CS&S: Maps system-wide trade-offs and complementarities.
Analysis & Synthesis	**Fragmented Insight**: Inherited units block nested feedback (e.g. region–city–watershed).	CS&S: Encourages nested territorial analysis. C&T: Allows aggregation across functional geographies.
	Comparator Bias: Global cities set the bar, masking other trajectories.	C&T: Enables multi-path comparisons, not just rankings. A&P: Integrates alternative narratives into the synthesis.
	Siloed Synthesis: Data and governance remain split.	CS&S: Fosters inter-scalar and intersectoral understanding.
Visioning & Strategy	**Territorial Myopia**: Bioregional or polycentric strategies	CS&S: Proposes territorial wellbeing visions.

5. Conclusion

Since cities are parts of larger and interconnected territories, limitations (shared risks) and opportunities (complementary capacities) to satisfy health and wellbeing must be upscaled and cross-scaled beyond local boundaries. In this paper, we explored the implications of such rescaling by investigating the Rhine watershed and sketched a framework

for wellbeing-oriented planning pathways that operate across multiple scales and spatial settings. What we call 'Territories of Wellbeing' is a reconceptualization of Healthy City paradigms that captures the wider spatial interdependencies impacting health and wellbeing, prioritizes a spatially just distribution of measures, builds upon the capacities of networked regions, and facilitates the development of integrated strategies. This shift requires overcoming three constraints in the planning for health and wellbeing, namely spatial-scalar mismatches that conflate risks and interventions with administrative boundaries, big city biases that sideline less prominent places, communities and narratives, and functional silos that neglect systemic ecological, infrastructural and economic relations.

Using the watershed as a suitable environment to work towards that vision, we examined the specificities of the region to illuminate how planning can respond to these flaws. The territorial perspective brings into focus three critical advancements for health and wellbeing planning:

- Spatial-scalar awareness restructures how problems are diagnosed and interventions designed, enabling work across nested geographies recognized as interdependent and co-constitutive.
- An inclusive place perspective expands the planning lens beyond urban centres, making visible the specific challenges and capacities of other places and actors in the wellbeing landscape.
- Cross-system thinking bridges policy and governance domains allowing planners to capture the trade-offs, complementarities, and feedback loops essential for long-term territorial wellbeing.

To steer this transformation, we proposed a set of corrective pathways that respond to the flaws of existing frameworks and can mitigate potential weaknesses of the territorial approach:

- Comparability and Transferability (C&T) introduce flexible, modular indicators and cross-scalar benchmarking tools that can work across jurisdictional divides and accommodate diverse data realities, enabling better territorial learning and accountability.
- Contextual Sensitivity and Satisfier Differentiation (CS&S) shift attention from standardized metrics to diverse, situated forms of need satisfaction, revealing interdependencies between sectors and enabling more nuanced framings of wellbeing across places.
- Adaptability and Participation (A&P) embed participatory mechanisms and multiscalar feedback into every phase of the planning cycle, democratizing problem framing, method development, monitoring, and implementation.

Further research needs to dive deeper both into the new challenges of the territorial paradigm and the potential of the three corrective pathways by systematically evaluating what the emerging alternative offers in relation to existing frameworks and how planning practice can actively start adopting this perspective. This requires tackling an issue that this paper cannot yet respond to, namely governance. The discussion in the previous

section implicitly suggests that the obstacles to integrated health and wellbeing planning are mostly technical and regulatory. However, planning depends on existing spatial boundaries of territorial sovereignty, which provide a foundation for citizenship and democratic legitimacy. Governing territories without such fixed boundaries as proposed here, through 'soft spaces' or other similar concepts, is notoriously hard and can even sabotage the principles stated here as key; for instance, who else but existing governance actors collects and manages data, defines the scope of civic participation, or joins the dialogues about context-specific indicators? It is therefore likely that Territories of Wellbeing will need to pragmatically rely on a network of spatially bounded actors that were not designed for the purposes of the new fluid paradigm, and whose willingness to cooperate is uncertain. While this paper advanced the idea from analytic and conceptual perspectives, further research will need to tackle the normative dimension. This can help identify concrete entry points to operationalize the research, planning, and governance of Territories of Wellbeing across spatial and institutional contexts.

Disclosure statement

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