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Contested Ecological Transition in Small and Medium-Sized Cities: The Case of Rochefort, France

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Abstract

In Europe, small and medium-sized cities (SMSCs) face significant challenges related to climate change and environmental degradation. In France, recent governmental measures have sought to accelerate the ecological transition (ET) across its national territory, aiming to meet carbon reduction targets and preserve biodiversity. Since the pandemic, SMSCs have been at the forefront of this ET policy, benefiting from support programmes designed to revitalise neglected city centres. However, several studies have already highlighted that, despite being "tailored" to the specificities of each beneficiary city, these programmes are largely inspired by metropolitan models focused on economic growth and territorial competitiveness. This article aims to highlight that the ET directives applied to SMSCs also derive from practices in larger cities, embodying an "institutionalised" conception of ecology as part of broader attractiveness strategies. An investigation conducted in 2021 in Rochefort (France) demonstrates that ET policies are often utilised as tools for enhancing territorial attractiveness, akin to promoting city tourism and industrial development. Using a mixed-method approach that includes semi-structured interviews and mapping workshops, we will analyse the representations and aspirations of inhabitants regarding the future of their living environment. This will help them envision an ecologically sustainable and socially viable trajectory for their city and ascertain whether it differs from ET policies. The objective of this research is to identify alternative action levers beyond national directives for SMSCs concerning ET, distinguishing them by their unique trajectories, thus revealing other comparative advantages, notably their size and scale as primary ecological indicators.

Keywords

bioregion; ecological transition; participatory mapping; small and medium-sized cities; urban ecology



1. Introduction

In Europe, small and medium-sized cities (SMSCs) are experiencing renewed interest (Servillo et al., 2014) and face challenges related to climate change and environmental degradation. However, there are few dedicated studies on these topics, aside from United Nations programs (OECD/UN-Habitat & United Nations Human Settlements Programme, 2022) or national research like in Germany (Häußler & Haupt, 2021). Nonetheless, the European Commission estimates that 21% of the population in Europe lives in towns with fewer than 50,000 inhabitants (Lecomte & Dijkstra, 2023). Urban research tends to focus on large cities and metropolitan areas (Bulkeley, 2010), without always considering the impact of size and their responsibility in such ecological crises (Wagner & Growe, 2021).

In France, government measures have been implemented in recent years to accelerate the ecological transition (ET) nationwide, aiming to meet carbon reduction and biodiversity preservation goals (e.g., the 2021 Climate and Resilience Law and the 2023 Law for the Recovery of Biodiversity, Nature, and Landscapes). Since the health crisis, SMSCs have been at the forefront of this ET, supported by economic funds and technical resources. However, due to the lack of research dedicated to SMSCs, the development model promoted by the state through specific national programmes detailed below is historically inspired by metropolitan planning policies (Fol, 2020).

In light of this context, is there then not a risk of importing practices into SMSC models that may not always be well-suited to meet the social demands for environmental quality, as expressed in France and elsewhere (i.e., Germany, Spain, the United States, etc.; see Descagerra & Moati, 2016)? While there has been a recent surge of interest in France regarding ecological issues applied to SMSCs by public institutions, this article aims to examine, at the intersection of political ecology and critical geography, how SMSCs are addressing climate and ecological issues. It critically analyses the measures implemented based on other representations of ecology, particularly those of the inhabitants, using the case of Rochefort as an example.

Section 2 introduces the theoretical framework of the research. Section 3 presents the case study and survey method. Section 4 discusses some of the results, particularly the residential trajectories of the respondents and the thoughts prompted by the sustained urbanization of the city. Section 5 then details the ecological aspirations of the residents interviewed and their outlooks for the future of their living environment. We conclude by proposing the bioregional approach, which emerges in the survey results as an alternative ecological trajectory for SMSCs.

2. The Ecological Conversion of SMSCs: An Opportunity to Question the Conception of Ecology at Stake

In France, SMSCs have recently gained the renewed attention of governmental authorities with the Action Cœur de Ville (Town Centre Action) programme, implemented in 2017 in 234 medium-sized towns with a total cost of 10 billion euros (CGET, 2017), and the Petites villes de demain (Small Towns of Tomorrow) programme, targeting 1,500 towns with fewer than 20,000 inhabitants with a budget of 3 billion euros. These programmes were initiated following warnings of their neglect (Razemon, 2019) and the Yellow Vest movement (Depraz, 2019). They involve contracts between the state and beneficiary cities aimed at revitalising neglected city centres (e.g., housing restructuring, commercial development, heritage enhancement, and access to public services). ET is



now considered a cross-cutting axis in these programmes (Warnant, 2020). It aims to accelerate energy-efficient building renovations, promote land conservation and achieve "net zero artificialization," contribute to low-carbon mobility, and renature public spaces in SMSCs (Bouvart et al., 2022).

SMSCs are presented as key players in ET policies through adaptation (i.e., resilience) and mitigation (i.e., carbon footprint reduction) policies. In the prevailing narrative, local authorities are encouraged to capitalise on the ET for economic development opportunities and territorial attractiveness levers (Calatayud, 2018). Applying this ecological model, SMSCs are expected to ensure their demographic growth—preferably by attracting well-off populations with an awareness of ecological issues—and their economic competitiveness —by securing investments and skilled jobs and increasing land and property rents. Thus, the conception of ecology embedded in ET is far from being politically and axiologically neutral. These ecological directives indicate a certain biased approach as they lead the SMSCs to adhere to official discourses and institutional policies of green growth and sustainable development, which are largely deconstructed by proponents of urban political ecology. As they remain limited by a lack of resources, SMSCs promptly implement state directives in the absence of other critical ecological narratives.

This hegemonic culture of ecology, which we describe as "institutionalized," has prevailed for the past four decades and is based on the idea that ecological and climate issues are consensual, reducing responses to managerial governance and technological solutionism (Swyngedouw, 2011). It is manifested through supposedly neutral mechanisms such as communication campaigns (e.g., environmental awareness), fiscal procedures (e.g., carbon tax, tax credits for renovation), and the promotion of technological innovation (e.g., digitalization, circular economy, geo-engineering) without questioning collective needs or lifestyles (Comby, 2019). Critical theories of political ecology have highlighted that in such a conception, existing political, economic, and epistemic power relations are thus concealed (Kalt, 2024).

In France, in particular, this conception of ecology has been primarily diffused through sustainable urban development and planning operations in metropolitan cities (Faburel, 2018). In this context, "metropolisation" corresponds to the increasing influence of large cities, particularly metropolises, and the neoliberal transformation of urbanisation into the dominant spatial and socio-economical reconfiguration of all territories, mainly through centralisation and competitiveness process (Hackworth, 2007). It has drawn on managerial imaginaries of the environment by preventing and concealing caused socio-ecological risks and hazards (Girault, 2019). This has then materialised, e.g., in standardised eco-district projects, promotion of the smart city concept for energy-efficient solutions, and the development of "green" and "blue" infrastructures, often at the cost of increasing property values and more marked gentrification (Anguelovski et al., 2022).

This institutionalized and urban conception of ecology fails to address the impact of metropolitan lifestyles (e.g., accelerated mobility, digitalization of daily life, consumption) on the degradation of both local and increasingly distant environments (e.g., logistics spaces, resource extraction, etc.) and the escalating climate change primarily affecting cities (Ernstson & Swyngedouw, 2018). Moreover, this ecology overlooks the limitations of metropolitan policies, such as the densification of built-up centralities, population concentration, activity polarization, and the artificialization of urban fringes. Research has increasingly highlighted their counter-productivity both in France (Bihouix et al., 2022) and in Europe (Meirelles et al., 2021). More broadly, the metropolitan imaginaries of greatness and artificiality are never directly challenged, despite their perpetuation of unlimited wealth accumulation and the idea of infinite urban growth (Faburel,



2023). This ecological model that is spread through double binds and things left unsaid neutralises any critique that is being duplicated in SMSCs through ET policies. By applying this conception that was originally intended for high-density areas, SMSCs risk reproducing the same socio-ecological effects on their environments (e.g., expansion, polarization, pollution, social exclusion) as observed in metropolitan areas in the short or medium term.

However, SMSCs have several comparative advantages to leverage owing to their territorial unit, in addition to their limited spatial footprint, reduced governance scales, and fewer environmental issues (Giffinger et al., 2007). French SMSCs also experienced a general slowdown in soil artificialization between 2012 and 2018, in the range of 1.1% compared to 5% in the 2000s. They even have proportionally half as much artificialized land as large cities, with 42% of land dedicated to agriculture (Villes de France, 2022). They are a desirable scale for living as a result of their low density by 43% of French people and are identified as the best places to "lead a lifestyle with the least possible impact on the environment and climate change" by 58% of the French population, especially the smallest ones (less than 20,000 inhabitants), compared to 8% for large cities (Gallard, 2021).

In their history, it was as if SMSCs have constituted "places of regulation" for national territorial dynamics (Santamaria, 2012, authors' translation). SMSCs have ultimately been assigned a subordinate role to national and metropolitan policies. As urban historian James J. Connolly wrote: "Smaller cities are merely on the receiving end of developments originating atop the urban hierarchy and that the experiences of people living with them warrant little consideration" (Connolly, 2008, p. 4). Urban geographer Wakefield (2022, p. 930) demonstrates that contemporary environmental challenges may involve rethinking established urban forms and metropolitan lifestyles that embrace new territorial organization:

The 21st century's changing environments and technopolitical adaptive responses may well lead to the destruction of seemingly unquestionable spatial forms like the urban or globally networked urbanization, and birth new, previously unimagined geographies.

Given this, would it not be in their best interest to turn away from the dominant ET narratives preformatted by metropolises and instead conceptualise ecological trajectories that are truly their own and may then give rise to "unimagined geographies"? Some authors identified a "right to not catch up" territorial policies implemented from above (Demeterova et al., 2020). There may be a relation between density, territorial scale, and the type of ecological policies considered, as small towns consume less energy for instance. Could concretely defining the appropriate ecological size of cities be a relevant approach for rethinking the ecologically sustainable scale of places? If we considered their geographical reality and size, which unique ecological conceptions specific to SMSCs would truly incorporate principles of moderation, in step with the lives of those most concerned: the inhabitants?

3. Research Field and Methodology

3.1. Rochefort, the Development of a Small Medium-Sized City Applying Metropolitan Strategies

The survey was conducted in the city of Rochefort in 2021, a sub-prefecture of the Charente-Maritime department (see Figure 1).



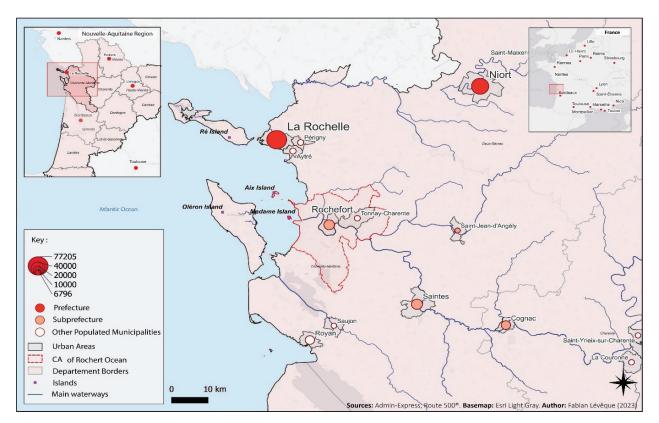


Figure 1. The situation map of Rochefort. The circles refer to the maximum and minimum inhabitants of each SMSC in the area. © UMR Triangle.

Rochefort is located near the Atlantic coast in southwest France, approximately twenty kilometres from La Rochelle. Founded in 1666 as a naval port, Rochefort thrived until the early 20th century (Renard, 1993). Gradually, between the 1930s and 1970s, various fertilizer, automobile, and aeronautics industries settled in, accommodating a large and unskilled local workforce. Deindustrialisation has been less severe in Rochefort compared to other SMSCs (Hamdouch et al., 2017), on account of proactive municipal policies. Nevertheless, the city has been slowly losing inhabitants. Its current population stands at 23,000, down from 36,000 at the beginning of the 20th century (Soumagne, 1982). The social composition of the city is notably shaped by this relatively sustained industrial presence (employees, 16%, workers, 13%). Retirees (34%) are the most strongly represented category, attracted by the oceanic climate that results in the city facing a significant aging population.

For these reasons, as indicated by the Plan Local d'Urbanisme (Ville de Rochefort, 2020), abbreviate below as PLU, the city suffers from a "major image deficit." For the past decade, Rochefort has implemented territorial marketing strategies to attract an additional 4,000 inhabitants by 2040. The municipality targets active young households, couples with children, and "higher socio-professional categories, those with purchasing power...and in recent years, the negative image of Rochefort has been fading" as the mayor argued in the local press (Charov, 2020). Rochefort particularly aims to attract professionals such as executives, self-employed professionals, and members of creative classes (Florida, 2004) bored by larger cities.

To achieve this, Rochefort focuses on tourism development, heritage rehabilitation, cultural and recreational activities (festivals, adventure parks), and the extension of the thermal spa facilities. The objective is to



attract both external flows and capital, especially as the city already has suitable infrastructure (hotels, tourist accommodations) to host more tourists. Rochefort's "place branding" strategy (Andersson, 2015) extends beyond its tourism and residential economy to include reindustrialisation efforts through the national programme Territoires d'industrie, addressing supply chain issues post-Covid-19 crisis and the war in Ukraine (Gros-Balthazard & Talandier, 2023). Thus, Rochefort aims to position itself as a city with a modern industry, driven by its rapidly booming local aeronautics sector.

Like most SMSCs, it is evident that ambitions of growth and expansion are a more desirable goal for Rochefort than a path of stagnation or even degrowth, which would be perceived as a failure (Bell & Jayne, 2006). However, Rochefort's urban growth objectives and economic strategies, although tailored to the size of its territory, are largely inspired by practices of metropolises over the past thirty years, such as employed heritage preservation and tourism promotion to act as primary attractiveness levers (Faburel, 2018). In its planning document, the Rochefort Ocean Agglomeration Community (CARO), which is a conurbation authority of 25 municipalities including Rochefort, aims to become a regional hub within a Central-Atlantic metropolitan network. This ambition aims to capture national flows and thus be able to host the sought-after "metropolitan economic functions" to enhance the competitiveness of Rochefort before other regional metropolises (e.g., Nantes, Bordeaux).

As in metropolises, growth ambitions are not contradicted by ET policies driven by the ACV programme. In 2021, the CARO signed a "CRTE," which refers to a contract usually aimed at facilitating economic recovery, ET, and territorial cohesion, to fund, in Rochefort, projects mainly supporting industrial sectors: the development of circular economy through the Circule'R association (i.e., recycling of industrial waste from industries) and thermal renovation of buildings. The CARO also promotes renewable energies with the deployment of rooftop photovoltaics and a solar power plant. The start-up VoltAero will soon establish production lines in Rochefort for hybrid aircraft, thereby supporting future air mobility solutions. In Rochefort, it includes the creation of an environmental awareness space, "green and blue corridors," and a flood prevention programme. The latter focuses on sustainable rainwater management by developing permeable parking spaces and "urban cool islands." Furthermore, a major project to redesign city green spaces is under study to ensure "ecological corridors," strengthen the existing "canopy," promote "soft mobility," and display the "connection to the river" (Ville de Rochefort, 2020).

This overview of Rochefort's environmental policies encapsulates the local adaptation of the metropolitan formula for "ET" and "climate resilience." Unlike metropolitan areas, action focuses here on industrial ecology and relies on state contracts and funds (i.e., ACV, CRTE, Territoires d'industrie, etc.). They do not prevent Rochefort from seeking to house new inhabitants: 2,700 housing units are expected to be built over the next 20 years. However, while these ecological developments may contribute to the embellishment of these cities and the well-being of its residents, they also run the risk of perpetuating the same socio-spatial inequalities, including green gentrification (Shackleton et al., 2018) if ET policies do not undergo a more critical approach. Notably, these environmental policies were implemented without involvement by the residents. What future do they envision in terms of ecology for Rochefort? What methods can be employed to bring their sensitivities and representations regarding adaptation trajectories into focus?



3.2. Investigation Protocol: Individual and Group Interviews

This research employed a mixed-method approach, including the analysis of planning and communication documents, semi-structured interviews (n = 30 residents), and two prospective workshops (n = 15 participants) to envision ecological trajectories for Rochefort. The qualitative method addressed the lack of comprehensive data on the social experiences and ecological aspirations of residents in SMSCs. Three city sectors were identified for interviews to target a diverse group of residents from typical urban contexts (i.e., urban centres, suburbs, and residential neighbourhoods) and for their varied urban operations in terms of density (i.e., from 30 to 200 housing units, individual or collective) and functions (i.e., residential, economic, or mixed-use). The investigated urban operations are "Pasteur," which is an urban renewal operation of a former hospital in the city centre; "Chemins Blancs," which refers to a densification project in place of collective gardens in the suburbs; and "Casse aux Prêtres," where an urban sprawl project for housing and economic activities is located on agricultural land. These sectors lose residents more slowly than other parts of the city due to their lower exposure to flood risks, thus attracting urban projects (see Figure 2).

The 30 interviewed residents were predominantly neighbours of these projects, directly impacted by changes in their living environment. The aim was to ascertain their awareness and opinions on the forthcoming changes. Ultimately, half of the interviews involved close neighbours, while the rest included broader neighbourhood residents. Some declined interviews, fearing repercussions from the municipality. Including other residents enabled a wider perspective on urban and economic dynamics beyond the immediate scope of the project.

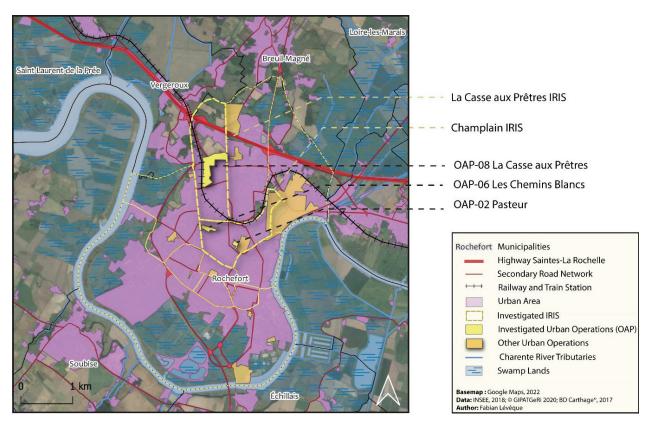


Figure 2. Location map of the selected urban operations. The numbers related to them on this map are those used in the PLU of Rochefort, among 15 others. © UMR Triangle.



The surveyed population was based on the RP2019 census data from the National Institute of Statistics and Economic Studies (INSEE), considered using the IRIS scale. In France, municipalities with at least 10,000 inhabitants are divided into sub-municipal statistical subdivisions of 2,000 inhabitants named "IRIS." This data guided the sampling process for the surveyed population (see Supplementary File, Table 1).

The surveyed population closely aligns with the target profiles outlined in the sampling framework, with some deviations. The 45–59 age group was overrepresented, which is justified by the increase of this particular group in Rochefort between 2013 and 2018. Socio-professional categories like "intermediate professions" and "executives and higher intellectual professions" had a slightly higher representation as these are the primary targets of urban and economic development. The pandemic context and curfew restrictions during interviews limited interactions with retirees aged 75 and over.

The two workshops aimed to broaden themes and issues broached in the interviews and foster collective debate. Participants were initially selected based on socioeconomic criteria, although mobilizing individuals from working-class backgrounds proved challenging (see Supplementary File, Table 2). Gender parity was achieved, and while "intermediate professions" were slightly overrepresented, each socio-professional category was represented at each workshop. The objective was to collectively debate and represent, by using digitally redrawn maps of the territory, two potential trajectories for the Rochefort area by 2040: one following the current direction and another reflecting ecological aspirations and requirements expressed during the interviews. These participatory mapping workshops served as mediation tools for open discussions about the future of their living environment, with the illustrative format capturing residents' emotional connections to the place they live.

4. A "Human-Scale" Town Altered by Urban Transformations and Economic Orientations

At the start of the interview, most residents expressed their affection for their city. They highlighted its heritage sites, a moderately dense urban layout, its pedestrian-friendly streets conducive to cycling, vibrant atmosphere, and residential sociability. They also appreciated the public services available (e.g., the post office, hospital) and cultural amenities (e.g., media library, cinema). Additionally, the natural surroundings, including the estuary and oceanic coast, provide direct experiences of nature and significantly contribute to the residents' quiescence. Natural environments are depicted as open and airy, where "our field of vision is never limited," according to Stéphane, a forty-something resident of the Casse aux Prêtres neighbourhood, or allowing to appreciate the "extraordinary starry skies at night," as described Odile, a translator living in the city centre. These observations align with what social psychology identifies as the revitalisation effects of distant vistas and panoramic viewpoints (Fleury & Fenoglio, 2022) and a mental calm from an ecosophic perspective (Guattari, 1989/2024). The small scale of the city thus allows it to be considered within its broader ecological environment.

These characteristics align with qualities long highlighted in SMSCs, often dismissed by French geographers as fantasies (Michel, 1977). Contrary to this, we believe that discussing them provides insights into the geographic and community living in Rochefort that residents describe positively. What emerges is a "human-scale" city, as many respondents expressed, indicating an interest in the size of liveable places, contrasting with unsustainable, oversized scales that have become standard. Far from being ashamed of living in a non-metropolitan area, residents expressed a sensitive attachment to a place



whose proportions are deemed ideal for a pleasant life, guiding the development of a different ecology from the SMSCs perspective.

However, the residents did not romanticise their living place or engage in the concealed promotion of their area to the researcher. Issues such as poverty, socio-spatial fragmentations, and healthcare inequalities were addressed in the interviews. Some respondents from modest backgrounds, predominantly residing in the residential neighbourhood of Casse aux Prêtres, expressed feelings of boredom and isolation, acknowledging successful urban developments but lamenting eroded social ties, disappearing non-commercial activities, and rising living costs of the city. Younger residents expressed their desire to leave Rochefort for larger cities to pursue their studies. Therefore, it is important to accept these social realities, common to most cities regardless of their size, due to urbanisation and population concentration.

Accordingly, some residents faced difficulties in accessing housing, both for renting and purchasing, drawing on their own residential experiences. The city's PLU aims to address this issue by building at least 133 new homes per year to stabilise its current population, but an average of 190 units per year is expected by 2041 to accommodate even more residents. The difficulties are due to increased secondary residences (up by 5% between 2006 and 2016) and vacant properties (up 2.13% for the same period). Rochefort, the sixth most visited thermal city in France, has many apartments that have been purchased in recent years and converted into vacation rentals for spa clients, limiting access for permanent residents. However, the municipality is aiming for 27,000 residents and plans to build new homes by densifying the existing urban fabric through the "Bimby" approach (i.e., "build in my backyard") and building renovations (derelict sites, vacant property).

Some respondents supported urban growth plans on the condition that the renovation of vacant properties and urban brownfields were prioritised before densifying inner city natural spaces or sprawling on agricultural lands. Therefore, the objections in the suburb and on the outskirts cannot, as the residents argued, be considered to be "nimbyist" (i.e., "not in my backyard"). Several testimonies highlighted the significant coastal urbanisation in recent years, that does not resolve permanent residents' housing issues. This perspective on limiting urban development was shared by residents who faced accommodation difficulties. Others pointed out the homogenising, undifferentiated, and highly dense contemporary urban fabric that could lead to neighbourhood incivilities or road congestion. Urban and human density is increasingly rejected, as reflected in opinion surveys showing a desire to move to much less dense areas (L'ObSoCo, 2023). Consequently, there are fears concerning new projects that would densify and develop new urban spaces, revealing visions that differ from aspirations for growth and territorial attractiveness expected by local authorities.

Another reason for rejecting dense and artificial urban forms lies in the residential trajectories of the respondents. Half of them have lived in a large city or a metropolis, describing experiences of suffocation due to confined, dense and verticalized spaces with accelerated, constant movement (Antonioli et al., 2019). "I led a breathless life," reminisces Véronique, a former Parisian now feeling better in an apartment in the city centre. Others remember long transit hours and noise disturbances from living nearby nocturnal businesses (e.g., bars and restaurants). Anne-Sophie worries about "facing the same issues we already experienced" in Lille, the Euro-metropolis in northern France, from where she moved out eight years ago to find "serenity" in a house in the suburbs.



Concerns regarding the homogenisation and denaturation of the area also lead to scrutiny around tourism development policies, seen as contributing to the same dynamics of standardisation and artificialisation as urban development. Rochefort aims to attract beach tourists and encourage them to stay in hotels in Rochefort. To this effect, a digital sound and light show named *Oceana Lumina* has been displayed every summer evening since 2021. This initiative aims to double tourist attendance by 2025, also banking on a maritime history-themed amusement park, a newly created electro-music festival in 2019, and a cinema festival in 2020. While some respondents view tourist influx positively for street activity, many criticise the substantial investment costs that total 25 million euros and argue these events overemphasise superficial aspects, promoting Rochefort as a hub of "entertainment" and consumption. Many projects have proven under-attended and unprofitable: Oceana Lumina attracted about 13,000 visitors in the summer of 2022, below the expected 40,000.

Several residents feel excluded from these tourist-focused initiatives, perceiving them as catering primarily to urban audiences, e.g., it was hoped that the renovation of the former "Quai aux Vivres" building would benefit the community, yet it instead became prestige apartments with a Michelin-starred restaurant on top and a luxury hotel. This urban project operates as a "flagship" due to tax incentives for attracting socially selected populations. Valerie, a fifty-year-old employee, finds it "pretty, what they've done, but it's reserved for a certain class of people" and feels marginalised. Consequently, most residents call for policies that are less focused on attractiveness and other wealthy external residents, and more focused on their social situation and environmental aspirations.

It is therefore unsurprising that many residents questioned the relentless pursuit of demographic growth, directly challenging the issue of Rochefort's size limit. In the early 20th century, the city welcomed an additional 13,000 inhabitants with a much smaller spatial footprint than today. At the time, the city extended only to the fringes of working-class suburbs. Moreover, these contained city block centres hosting food-producing gardens that have partially densified since that time. Nicolas, a self-employed gardener in his thirties residing in the suburbs, reflects: "When do we stop building, expanding our cities...? Maybe Rochefort has reached its maximum population because it has been losing residents for a long time." The issue of limiting the number of (new) residents seems relevant, resonating with some reviews (Paquot, 2020) and analyses on the appropriate ecological and democratic size of human settlements (Faburel, 2023). Growth objectives through attractiveness policies appear ineffective, as Rochefort continues to lose inhabitants, reaching historically low population levels in 2021.

These findings raise fundamental concerns about attractiveness policies that make the city reliant on external factors and question the territory's autonomy. What alternative vision of the city and its surroundings do residents then yearn for?

5. Going Back to Basics to Draw an Ecological Future for Small Cities

By first examining the motives of appreciation and residential trajectories of a small medium-sized city, this research has highlighted attempts to take a step back from metropolitan ways of life and urban development. Two-thirds of the respondents, including individuals who have spent their entire lives in Rochefort, find there to be a sense of "togetherness," an atmosphere of "peace and quiet," a "love of life," or a feeling of "great serenity." This desire to live in a relaxing environment, which could hastily be labelled as a withdrawal,



takes on a political character when observed as a desire to no longer contribute to the acceleration of the world's pace. However, this quest for tranquillity and deceleration would be made possible precisely due to the moderate size of Rochefort. This is exemplified by Benoît, a healthcare executive, who previously lived in a larger medium-sized city before moving to Rochefort in 2015. He was already aware of environmental issues, but added:

Since we've moved to Rochefort, we've completely changed our way of life. We've transitioned to a lifestyle where we try to consume as little as possible...if we had been in a larger city, I'm pretty sure it would have been much more difficult.

As a family, they now prefer to go for a nature walk near the river rather than spend their free time shopping. This shift underscores the fact that living in a small town can influence the adoption of more ecological lifestyles and nurture sensitivities and values that differ from those dominant in metropolitan areas.

The pursuit of ecological limitation and voluntary sufficiency (Gorge et al., 2015) is evident among other social groups. For instance, a precarious worker and his wife strive to live simply: "We try to live in a simpler way, with less. We don't have much money, so we try to live with the bare minimum. No waste, no excessive consumption, we go to upcycled, second-hand shops. It's better this way." Their choice to reside in a small town with accessible shops and public services helps them cut unnecessary expenses. They may even own a small house with a garden and dream of living in a wooden house in the future. However, they currently live in a part of the city that is devalued due to its proximity to a chemical fertilizer company, accused of polluting the surrounding water and soil. This example and others underscore the environmental and health issues of the Rochefort region, including the management of industrial legacies and agricultural practices. The issues of land sealing and water pollution were addressed by Jean-Paul, a former welder, who lamented the degradation of local streams where he used to fish as a child: "Grasses used to float, we could see the bottom of the river, but now there's no life left." Chemical agriculture is thus called into question, along with its exportation abroad via the commercial port, once again raising the issue of dependency of the territory on globalized markets. The emergence of such topics during the interviews also reflects, far from any idealization, a genuine concern emphasizing the need for collective action to restore a healthier and lively environment for the whole population.

In this light, the quest for food autonomy emerges in the interviews as pivotal for fostering an ecologically sustainable and socially viable future. Gilles, in his fifties, earns a living cultivating a vegetable croft in the suburbs, initially driven by trade but also in an effort to be self-sufficient. He suggests that the municipality should acquire agricultural land to establish similar small farms like his, thus generating non-decentralizable jobs and serving the interest of the community. He envisions local agriculture that observes natural cycles to enhance local consumption. This aligns with Odile's concern about food security and ethical consumption. It would prevent "the poor living in Rochefort from eating things from Lidl, produced by slaves in poor countries," as she argued. Nonetheless, this direction hinges on sustaining current population levels to ensure their subsistence and cease attracting new residents. At the time of research, Rochefort's Territorial Food Strategy plan had not been implemented or even discussed. Despite its ambitious goal to achieve 30% of total food consumed to be locally produced for 2026, compared to 4% in 2020, it does not address the consumption of animal protein, for instance, which is a significant source of greenhouse gas emissions. Residents expressed a revival of local knowledge and popular techniques like hedge cultures and hand-crafted weaving, reflecting a broader "return to the roots" theme, spanning all social backgrounds.



These intentions are even more evident in the two cartography workshops involving two distinct groups of seven to nine participants respectively. While the first collective map depicted a densification of central and peripheral neighbourhoods in a uniform, grey landscape, with increased surveillance of tourist sites and new "theme parks" together with an eco-district and sporadic cycle paths. This "metropolized" vision of Rochefort was rejected by the participants who were quite aware of current attempts to greenwash the city, even if some participants would appreciate having more secure cycle paths. The second map (see Figure 3) immediately integrates well-documented risks of marine submersion and floods, like many coastal cities in the world that are home to 11% of the world's population (Glavovic et al., 2022). Participants foresee the climate challenges that will arise when the continued damming of the Charente River that today facilitates the city's expansion (although submerged areas, and thus non-buildable, are already delimited in PLU) becomes obsolete. Seawater would "naturally" penetrate inland and guide land management. The rise of the sea level was spontaneously depicted by both groups, as if its inevitable nature had already been internalised with quite marked apprehension.

Following this second projection, the central question attempts to answer how to ensure good living conditions for today's 23,000 inhabitants, rather than urbanizing the last available spaces to accommodate an additional 4,000 inhabitants by 2040 (i.e., 1st scenario discussed). The growth and expansion of the city would gradually yield to new paradigms and spatial configurations based on the satisfaction and relocalisation of fundamental needs to reduce dependencies and their socio-environmental impacts. Unlike

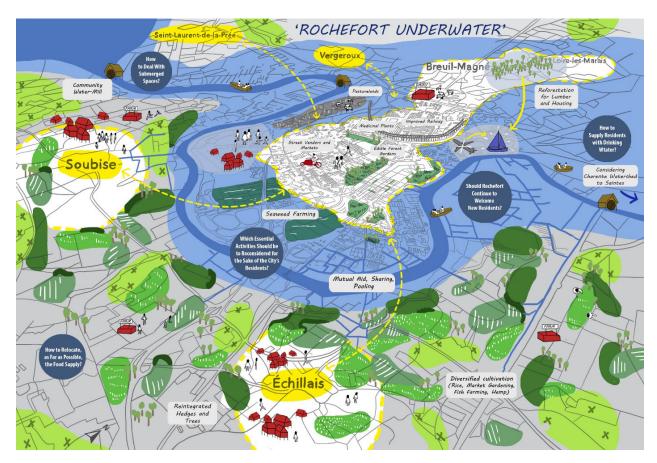


Figure 3. This digitally redesigned map summarises the participants' proposals for the second scenario, eventually named by them "Rochefort underwater." Drawn by Fanny Ehl, PhD student. © UMR Triangle.



large cities where urban agriculture is confined to the remnants of available spaces (e.g., gardens on brownfields, green roofs), the open territory of Rochefort, accessible to surrounding municipalities, is viewed as a fertile ground for achieving food autonomy. This includes cultivating a diverse array of crops directly in the soil and restoring historic forests on higher lands. Some emerged lands would be devoted to subsistence practices, while others would be dedicated to land-sea cultures adapted to the abundant presence of water. The envisioned agricultural landscape has been meticulously designed to enable a variety of purposes according to permaculture principles: food (e.g., vegetables, seaweed, fish farming), construction and heating (e.g., wood, hedges), clothing, material, and medicine (e.g., hemp). This relocalisation strategy resonates as it fosters a return to traditional forms of agriculture: "A few kilometres away, there were fortified farms to supply the arsenal with fresh produce," Jean-Paul mentioned in his interview. Among the survey respondents and participants, those who grew up in the countryside or others, such as people who have had cancer and other illnesses, expressed their desire to promote healthier agriculture. The green spaces in Rochefort's city centre would be transformed into nourishing gardens, and the historic mills along the Charente River could be renovated for grinding grains, crushing nuts, and producing paper, echoing their historical roles in the region.

Turning to housing, certain submerged areas would no longer be habitable. Consequently, residents would congregate in existing habitations and renovated vacant properties, reside in lightweight, transportable, or stilted dwellings, or relocate from the coast to inland areas. Participants also drew attention to the importance of mutual assistance and cooperation, primarily emphasizing the need to pool resources, symbolized by the groups of individuals depicted on both sides of the map. Displayed using arrows, interdependence would be reaffirmed among residents of different municipalities on the coastal plain, fostering a departure from polarizing and competitive dynamics at work today. Essential needs such as ways of living and relationships would thus be relocalised to foster closeness in order to rebuild a political community. This existence, however, is not perceived as a form of autarky, as the strategically elevated rail would continue to facilitate exchanges with surrounding areas, although participants shared the idea that long-distance transport would be reduced to strict necessity and is less conducive to permanent mobility.

However, this new spatial configuration does not claim to be exhaustive: For instance, it fails to detail the thought and political process needed to achieve it and partially represents the conflicting elements that were debated during the workshops regarding the future of industry in the area (e.g., should heavy aerospace productions be reconverted into small units for sail-powered river transport, or should the companies be dismantled to reclaim new land?), the necessity of maintaining economic attractiveness policies (e.g., what happens to the municipality's fiscal resources? How would this new reorganization be financed?), or the knowledge of urban planning (e.g., what should be done with the skills of urban planners in territorial planning? Should they be used to serve this second vision?). Throughout the workshops, participants were divided between enthusiasm for reinventing their living environment, concerns about imagining their future in a region directly affected by rising sea levels, and practical questions regarding ways of living that truly foster an ecological resilience.

The workshops provided an opportunity for participants to collectively think about the future of their living environment and to experience, in the process, what participation and even self-determination could entail, albeit with some unresolved issues including conserving sources of drinking water in the face of the progress of brackish waters. The workshops aimed to assert political positions, and present a "realistic



ideal" of environmentally-conscious lifestyles of inhabited places, thereby directly addressing the importance of maintaining a "human-scale" territory with attention to size and limit issues (Garcia, 2018) in an ecological perspective.

Understanding the ever-evolving limits of a revitalised place can therefore guide inhabitants towards sustainable forms of living, grounded in ecological knowledge of the surroundings. The bioregional perspective could epitomize this. As Berg (1978) put it:

A society which practises living-in-place keeps a balance with its region of support through links between human lives, other living things, and the processes of the planet—seasons, weather, water cycles—as revealed by the place itself....It involves becoming native to a place through becoming aware of the particular ecological relationships that operate within and around it.

Furthermore, the more moderate the concentration and polarization of inhabitants in a territory, the greater the likelihood that this ecological perspective could become a reality in a short while. The bioregional geography of the Charente River plain was spontaneously designed by workshop participants, albeit without explicitly using the term, foreshadowing alternative geographic frameworks aimed at preserving what still thrives in inhabited places, with responsible dimensions aligning with self-sustaining ecological environments and their socially cultivated capacities (i.e., the primary definition of any bioregion).

Size and scale thus emerge as primary indicators to address the socio-environmental ills prompted by urbanized societies and to imagine viable and vibrant rural bioregions, anchored in geographical settings that have historically fostered culture (e.g., valleys, uplands, islands, etc.) and that could ultimately reduce the ecological footprints of lifestyles driven by consumption and acceleration. In this perspective, small towns and inhabited areas with populations of less than 30,000, including rural villages down to hamlets, subdivided into even smaller communities for political organization and decision-making (e.g., villages, neighbourhoods), would prove to be a territorial framework prone to inspire a geography that is more attuned to the ecological exception of environments and the forms of life that could unfold therein (Giard et al., 2021).

6. Conclusion

Urban systems consume 70% of planetary resources and 80% of global energy. These figures are well-known, yet they often fail to differentiate the responsibility of cities based on size and scale issues. Reports like those from the IPCC frequently prompt critical examinations of metropolitan territorial organization as an accelerator of contemporary crises and barely assess prevailing environmental planning models like ET, spread across various urban contexts, from large cities to small and medium-sized towns, as a unified response to ecological crises. We hypothesise that these issues are interconnected and that it is essential to reconsider the role and trajectory of SMSCs by critically taking a step back from metropolitan policies and the associated spatial organisation rationale.

This expansive yet interconnected theoretical framework prompted our research in Rochefort, a "small medium-sized city" with 24,000 inhabitants. We investigated how residents perceive and interpret recent local urban-metropolitan development and their own ecological aspirations for their living place. Our



findings reveal a sense of dignity in living in a "human-sized" city characterised by lower density and a sparse population, fostering convivial human relationships and a consistent connection to natural spaces. This deliberate choice contrasts with increasingly unliveable metropolitan areas and unsustainable lifestyles. However, this feeling of satisfaction coexists with concerns for socio-economic difficulties (e.g., social precarity, spatial disparities) and environmental issues (e.g., urban sprawl, agricultural pollution). Ultimately, the size of the city and reduced density shape forms of life that emphasise aspirations for simplicity and sufficiency, manifested across many life trajectories. These principles could potentially inform local public policies.

Our research aimed to translate these ordinary experiences and affects associated with living in such a town into a new geography and community organization through participatory mapping. The most surprising aspect was that it revealed a vision of territorial planning that was diametrically opposed to the prevailing developmentalist urban approach and its ET policies. This vision highlights a shift towards prioritising simple and basic needs that could be local self-sufficiency implemented within the ecological limits of the area, thereby reducing the human impact on living environments and even promoting their restoration. This conception of ecology at stake, which we named "inhabiting ecology," testifies that ecology is a battlefield and needs to be repoliticised.

This mapping challenges conventional urban development paradigms of growth, competitiveness, and attractiveness, as well as ET policies that mainly aim to limit their environmental effects without fundamentally challenging them and proposing an alternative way of organising territories. The final mapping proposition does not correspond with any technological solutions usually put forward by the institutional conception of ecology, confirming the idea that residents spontaneously considered another direction when meeting as a group, and can conceive what is good for them and the place they live in terms of health and environmental issues. The proposition suggests starting with observing the collective needs and forms of life people want within the framework of biotic resources of places and their regeneration, understanding what they can sustain without being endangered, and planning organisation of the community accordingly. This entails reclaiming food production, thereby regaining material autonomy and democratic capacities for action.

These results suggest a different geographical trajectory for SMSCs on an environmental level, an "ecological bifurcation" that considers size and density issues. Evidently, it raises unsolved questions so far regarding the functioning of political governance, tax system, and even the real estate market. Yet, this research invites smaller SMSCs to break away from territorial organisation that places them at the bottom of the geographical hierarchy, dependent on larger cities and central authorities for leading their own socio-ecological and environmental policies. Due to their limited size and balanced density, SMSCs, alongside other scales of living such as rural towns, villages, and hamlets, represent more underappreciated asset territories to address the ecological crises than metropolises. This potential can be realised by slowing down, relocalising, and thoughtfully re-evaluating essential and ecological ways of living.

According to the conclusions of the TOWN project of the European Territorial Observatory Network, development scenarios around a network of small and medium-sized European towns (less than 50,000 inhabitants) would be particularly effective in terms of resilience and social cohesion compared to large urban agglomerations (Servillo et al., 2014). By embracing a bioregional perspective, SMSCs would lead the



way in seeking alternative planning models that harmonise human activities with inhabited and living environments and foster a fulfilling life.

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Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The data quoted throughout this article are drawn either from the INSEE databases, presented in the urban planning documents of the city of Rochefort, or reported in the press.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

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