

How Local Policies Transform Foodscapes, Influence Dietary Shifts, and Reduce Emissions: Insights from Six Mediterranean Sub-Regions in France

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Abstract

Although foodscape planning is increasingly recognized as a critical component of sustainability transitions, it remains an emerging field of research and practice. Existing studies often overlook the multifaceted role that local food planning can play in shaping the physical, economic, and socio-cultural dimensions of foodscapes. This paper examines how recent local food policy initiatives are re-configuring foodscapes across six Mediterranean sub-regions in France. Using a mixed-methods approach, it combines an analysis of locally implemented policies with survey data on evolving food practices. The findings reveal a growing emphasis by local authorities on socio-cultural and cognitive interventions, which are associated with modest dietary shifts aligned with environmental objectives. These results offer insights into how local food planning can more effectively support the adoption of sustainable diets.

Keywords: Food environment, Urban-rural planning, Climate change, Environmental Food Behaviour Index

1. Introduction

The current food system remains largely unsustainable due to its significant contribution to major 21st-century challenges, including climate change (Mbow et al., 2019) and the rise of diet-related diseases such as diabetes and cancer (Thavarajah, 2018). Transitioning toward more sustainable diets is therefore essential to address the public health crisis and substantially reduce greenhouse gas (GHG) emissions (Poore and Nemecek, 2018). Governments at all levels have the capacity to play a pivotal role in initiating this transition (Temme et al., 2020). Yet, despite the profound implications of food systems for both sustainability and public health, food planning at the local level only emerged as a distinct field in the early 2000s (Pothukuchi and Kaufman, 2000). Since then, numerous cities and regions have intensified their engagement in food system transformation by signing international commitments such as the Milan Urban Food Policy Pact (MUFPP, 2015) and the Glasgow Declaration (2021). These initiatives aim to leverage local food planning as a tool to reduce emissions and offer more sustainable food options to local populations. However, limited research has examined how such policies concretely transform local foodscapes, influence food environments, or shape residents' eating habits.

The High-Level Panel of Experts on Food Security and Nutrition defines food environments as “the physical, economic, political, and socio-cultural context in which consumers engage with the food system to acquire, prepare, and consume food” (HLPE, 2017). In academic research, the term foodscapes is increasingly preferred, as it emphasizes the territorial dimension of food environments and how they are actively shaped by local practices, political institutions, and economic systems (Vonthron et al., 2020). Numerous studies have demonstrated that food choices are shaped less by individual decisions alone than by the surrounding foodscapes, including factors such as retail outlets, urban design, and even walkability (Carrus et al., 2018). However, this literature has predominantly focused on the spatial dimension of foodscapes, mapping retail outlets such as supermarkets or fast-food chains using geospatial methods (McKinnon et al., 2009; Herforth and Ahmed, 2015; Vonthron et al., 2020), and evaluating their public health implications (Adam et al., 2016; Liu et al., 2016; Cooksey-Stowers et al., 2017; Wilkins et al., 2019; Méjean and Recchia, 2022). These studies are often situated in urban contexts (Mattioni, 2021; Méjean and Recchia, 2022) and tend to overlook the broader range of tools through which urban and rural planning can shape foodscapes, not only physically, but also economically, culturally, and cognitively. In contrast, cities and municipalities increasingly mobilize a wider set of instruments that extend beyond spatial accessibility (Morgan and Sonnino, 2010; Morgan and Santo, 2018; Mattioni, 2021). For instance, Barbour et al. (2021) demonstrate, in their review of Milan Urban Food Policy Pact signatories, that the most common measures implemented have focused on public procurement, sustainability guidelines in school meal programs, and the promotion of

urban agriculture. In many of these initiatives, the emphasis on promoting local food stands out as a central objective. However, despite its strong symbolic and political appeal, prioritizing local products has shown limited or ambiguous environmental benefits (Majewski et al., 2020), underlining the need for more ecologically robust and evidence-based local policies.

In the French context, local policymakers have several tools at their disposal to influence foodscapes and dietary behavior. These tools include organizing events focused on sustainable food, regulating food advertising, and managing food waste. They also oversee food procurement for public institutions such as school canteens. Additionally, policymakers work to protect farmland and promote short food supply chains, aiming to improve access to local and sustainable products. To coordinate these actions and align them with sustainability goals, a new policy instrument called Territorial Food Projects (Projets Alimentaires Territoriaux, PAT) was introduced in 2014 (Maréchal et al., 2018). These projects aim to promote local governance over both sustainable food production and consumption. Municipalities involved in PATs are required to consult local stakeholders and develop action plans that address various levers of transformation, including local production and distribution, equitable access to sustainable food, and the reduction of food waste. Environmental objectives are also integrated, with actions targeting reduced food waste, development of agroecology, lower food transport emissions, and the promotion of sustainable practices such as reduced meat consumption and increased procurement of organic products, especially in public canteens. These local policies thus have the potential to promote innovative approaches that address not only the physical aspects of food environments but also their economic, socio-cultural, and cognitive dimensions, thereby encouraging dietary transitions with lower environmental impacts. While several studies have demonstrated that PATs contribute to farmland preservation, the development of urban agriculture, and the expansion of local and organic food procurement, their broader impacts on dietary practices and environmental outcomes remain underexplored (Lulovicova and Bouissou, 2024). Consequently, there is an urgent need to evaluate the impact of such local policies on food behaviors more systematically (Hawkes et al., 2017). Existing studies have primarily focused on emblematic or experimental cases, such as school canteens in Galicia (Perez-Neira et al., 2021) or in Mouans-Sartoux (Lulovicova and Bouissou, 2023), which have shown promising results in terms of both diet and environmental impact. However, these cases are often unrepresentative, thus limiting the generalizability of their findings. This research addresses that gap by examining the evolution of local food planning initiatives, and the dietary changes associated with them in six Mediterranean sub-regions of France. We adopt the concept of foodscape as a heuristic tool to explore the spatial, economic, socio-cultural, and cognitive dimensions of food consumption within the studied territory, and to evaluate how local policies may influence these dimensions. The following sections present the study area, and the methodology used to assess recent food planning initiatives, including the development of a food questionnaire and an Environmental Food Behaviour Index. This is followed by an analysis of the potential of these initiatives to reshape various dimensions of local foodscapes, of dietary changes toward environmental sustainability in the study area, and of territorial differences related to the development of local planning approaches.

2. Methodology

Study area and policy analysis

France is considered a pioneer in the development of local food initiatives, owing to its strong historical and cultural attachment to local agriculture and food products (Bessière, 1998). Since 2014, the expansion of such initiatives has accelerated through the national policy supporting the development of Territorial Food Projects (PATs), which are local food planning tools implemented at the municipal or regional level. Their main objective is to support the relocation of sustainable agriculture and food systems through coordinated action among public and private stakeholders. These developments provide an interesting context for examining how food planning influences foodscapes.

In the Alpes-Maritimes department, located in southeastern France, agricultural activity has declined in recent decades due to urbanisation and the growth of tourism along the French Riviera (Voiron and Liziard, 2008). Nevertheless, the department stands out with a relatively high number of PATs. One PAT operates at the departmental scale, five at the sub-regional level, corresponding to agglomerations or inter-municipal structures, and three at

the municipal level. Some municipal areas are therefore influenced simultaneously by three PATs operating at different territorial levels: municipal, sub-regional, and departmental. Among these, six initiatives are officially recognised as level 2 by the French Ministry of Agriculture, indicating the adoption of an operational action plan. Two additional projects, currently at level 1, are expected to achieve level 2 status shortly. This configuration makes Alpes-Maritimes one of the most advanced departments in France in terms of PAT deployment. However, two sub-regional areas within the department have not yet engaged in any PAT initiative. Geographically, the western part of the department is more actively involved, with full PAT coverage. In this area, four intercommunalities have formed a collective structure known as CAP AZUR, to coordinate ecological transition efforts, including sustainable food systems, in a coherent and integrated manner (Figure 1). In addition, the southern coastal area of the department is highly urbanised, in contrast with the northern area, which is predominantly rural due to the presence of the southern Alps, characterised by high altitudes and steep slopes. These geographical contrasts may influence food access and perceptions.

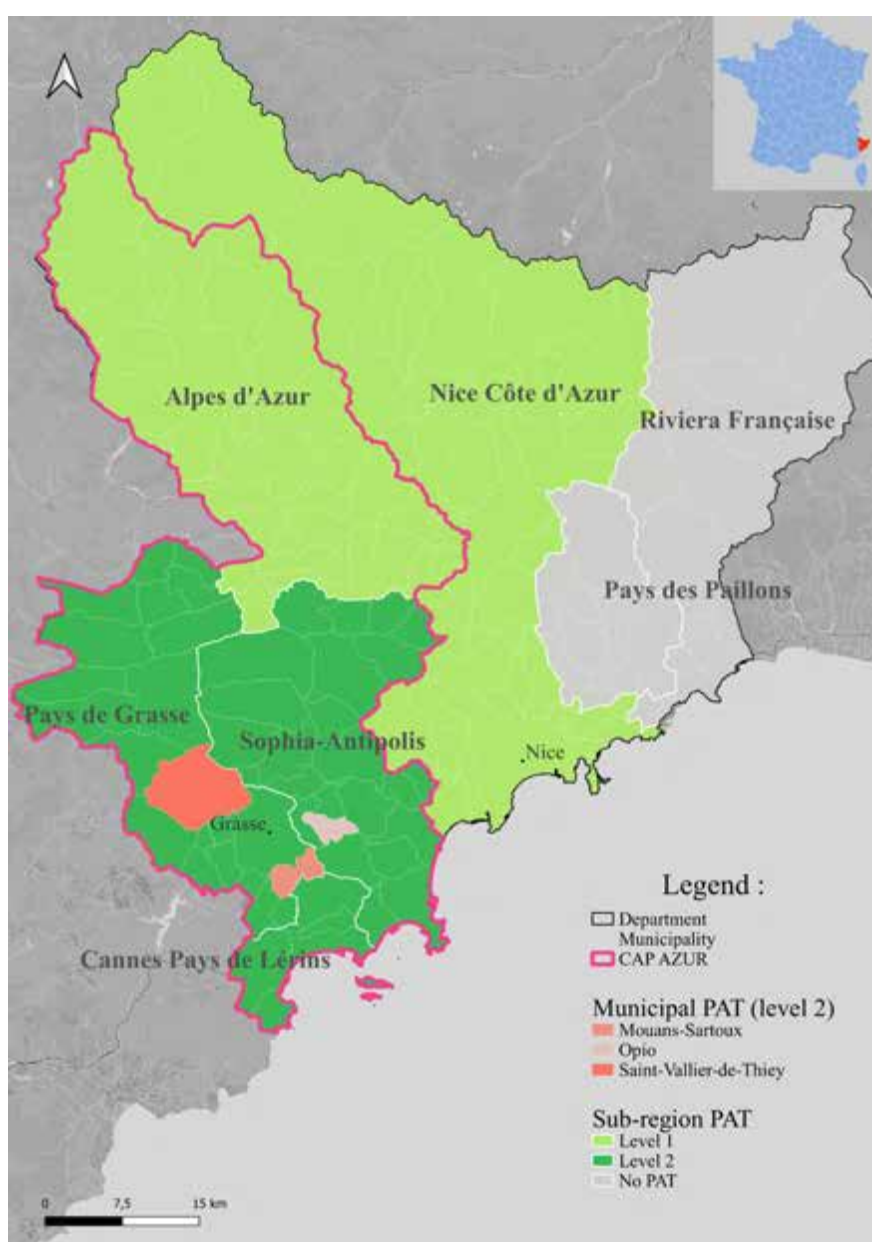


Figure 1. Map of the Department of Alpes-Maritimes and its Food Territorial Projects (PAT).

The scope and nature of food-related initiatives that local decision-makers can undertake through a PAT action plan vary depending on the territorial scale. For example, under French law, municipalities are responsible for public procurement in primary school canteens, while departments manage canteens in high schools. Municipalities also directly oversee local urban planning and are therefore key actors in agricultural land preservation and food retail distribution. Sub-regional authorities typically handle waste management, including food waste, whereas departments are in charge of economic development. Despite these differences, all PATs in the study area share common objectives. They aim to support local, organic, and extensive farming, promote short supply chains, and encourage sustainable dietary practices through educational events, challenges, and policy interventions. For the purpose of the policy analysis, this paper focuses exclusively on territories that are covered by a municipal and/or a sub-regional PAT. The assessment of the departmental PAT is not included, as the objective is to compare the diversity of actions implemented in different local contexts within the same department.

The policy analysis followed a two-step approach. First, a review of existing literature on local food policies was conducted to identify the types of interventions available to local authorities that influence food environments and foodscapes. Key references included works by Morgan and Santo (2018), Sonnino et al. (2019), Barbour et al. (2021), and Brocard and Saujot (2023). This step provided a framework for assessing how local authorities act on the physical dimension of foodscapes, such as market infrastructure or food access, the economic dimension, including subsidies and pricing strategies, and the socio-cultural and cognitive dimensions, through educational campaigns or public food procurement. In the second step, we conducted interviews with local policymakers and analysed the action plans of each PAT. This qualitative investigation aimed to assess the degree of intervention in each of the four foodscape dimensions mentioned above. The findings from this policy analysis are further compared with data on the evolution of local dietary practices in the department, in order to explore any possible links between territory, public action, and dietary change.

Food Questionnaire and Environmental Food Behaviour Index

To examine dietary shifts toward environmentally sustainable practices, we adapted a food behaviour questionnaire developed by Lulovicova and Bouissou (2023). The adapted version collects data on respondents' municipalities, socio-economic characteristics, food purchasing motivations, and self-reported behavioural changes related to environmental sustainability. Evolution is measured over the past five years, corresponding to the launch of most regional PAT interventions. Respondents were asked whether they had participated in locally organised sustainable food events or challenges, frequented municipal farmers' markets, received food aid co-ordinated by local authorities, or were parents of schoolchildren enrolled in institutions where sustainable food supply initiatives had been implemented.

To evaluate the environmental implications of these reported dietary changes, an Environmental Food Behaviour Index (EFBI) was developed. While numerous studies have documented the environmental impacts of changing food consumption patterns (e.g., Scarborough et al., 2014; Aguiar et al., 2021), no single composite indicator currently captures the full spectrum of food behaviours associated with positive environmental outcomes. Existing indexes tend to focus either on nutritional adequacy or broader notions of sustainability, such as the Comprehensive Diet Quality Index (Toujgani et al., 2024), the Diet Quality Index-International (Tharrey et al., 2024), or adherence scores to specific dietary models like the MEDI-LITE Mediterranean Diet Index (Baudry et al., 2023). The EFBI was constructed to capture behavioural changes that are both likely to be influenced by local foodscape transformations and relevant to reducing environmental degradation, particularly in relation to climate change (Culliford and Bradbury, 2021; Marty et al., 2022). Ten food-related behaviours were selected to build the EFBI, based on their documented environmental significance. These include:

- (1) a shift in the types of food retail outlets visited (e.g., from supermarkets to organic shops or fresh markets),
- (2) changes in transport modes used for grocery shopping (e.g., switching from motorised to non-motorised transport),
- (3) reduction in meat consumption,
- (4) reduction in ultra-processed food consumption,
- (5) increased consumption of organic products,

- (6) increased consumption of seasonal products,
- (7) increased consumption of locally sourced products,
- (8) reduced reliance on packaged foods,
- (9) reduction in household food waste, and
- (10) adoption of individual or collective composting practices.

Each behaviour was scored as follows: +1 for a shift toward more sustainable practices, 0 for no change, and -1 for a shift toward less sustainable practices. The final score for each participant therefore ranged from -10 (less sustainable shift across all behaviours) to +10 (more sustainable shift across all behaviours). For example, if a participant switched from using a car to cycling for grocery shopping, but did not change any of the other nine behaviours, they would receive +1 point for the transport indicator, 0 for the others, and a global score of 1. The scoring system does not apply weightings based on the magnitude of environmental impact for each behaviour. Both the composite EFBI and individual behaviour-specific scores were used in subsequent statistical analyses to compare behavioural patterns across territories. The aim was to assess the extent and nature of dietary transformations in relation to sustainability and local context.

The questionnaire was administered between March and May 2025, with distribution coordinated by local authorities. It was disseminated through food-related territorial networks, including urban gardening groups, participants in locally organised food challenges, and parents of school-aged children. It was also shared via social media platforms operated by territorial stakeholders and published in local newspapers. A total of 2,411 fully completed responses were collected. To reduce potential self-selection bias, 60 additional respondents were interviewed in public spaces across the study area. Despite these efforts, the final sample exhibited notable demographic imbalances: women represented 77.8% of respondents (compared to 52% in the general population), individuals aged 35–49 accounted for 38.1% (vs. 22%), and 44.3% held at least a master's degree (vs. 13%). These biases are consistent with prior research showing that women and more educated individuals are more likely to respond to food-related surveys and adopt sustainable food behaviours (Culliford and Bradbury, 2021; Konttinen et al., 2021; Marty et al., 2022). To enhance the representativeness of the descriptive results, raking calibration was applied to adjust sample weights. This statistical method aligns the marginal distributions of gender, age, and education level with those of the local census population, iteratively adjusting the weights to reduce sampling bias (Deville and Särndal, 1992; Deville et al., 1993). Behavioural changes were further analysed by comparing sub-populations across distinct territorial contexts. Comparisons were conducted between participants and non-participants in public sustainable food initiatives (e.g., parents benefitting from sustainable school catering, participants in food- or agriculture-related events, recipients of subsidised sustainable food aid, and regular users of municipal markets), between the western (more intervention-rich) and eastern (less intervention-intensive) parts of the department, and between urban and rural populations, as foodscape accessibility has been shown to influence dietary behaviours (Hawkes et al., 2017; Tharrey et al., 2024). Only changes (positive or negative) in behaviour were included in the analysis; behaviours reported as unchanged were excluded. Due to the non-normal distribution of EFBI scores and the use of independent group comparisons, the Mann-Whitney U test was employed for statistical inference. The statistical analyses were conducted on unweighted data, as the distributions of gender, age, and education level were similar across all sub-populations studied. While these comparisons offer insight into behavioural trends across territories, they do not establish causality. As the data are self-reported and observational, the observed associations should be interpreted with caution and considered indicative rather than conclusive.

3. Results

Systemic Food Planning Assessment

Based on a review of both scientific and grey literature, a list of potential interventions available to local decision-makers was compiled. These interventions target the physical, economic, socio-cultural, and cognitive dimensions of foodscapes. Potential actions on the physical environment include support for local sustainable agriculture, the development of short supply chains, the establishment or improvement of local food markets, organic or environmentally sustainable retail outlets, restaurants, and public canteens, as well as enhanced ac-

cessibility to these infrastructures. Economic interventions encompass measures such as ensuring affordable access to sustainable food products, creating urban gardens to increase the availability of fresh fruits and vegetables, subsidising food aid and community associations, and reducing the cost of higher-quality food in public canteens. Interventions addressing the socio-cultural environment include regulating food advertising, promoting sustainable food offerings, implementing training programs in local institutions, and fostering positive narratives around local, organic, plant-based, and seasonal food consumption. Cognitive interventions, closely linked to the socio-cultural dimension, primarily consist of awareness-raising initiatives and educational campaigns, both within schools and across the broader public sphere.

Within the study area, interventions were identified across six of the seven sub-regions. The sub-region of Pays des Paillons, located in the eastern part of the department, did not exhibit any identifiable policies capable of influencing its foodscape and was therefore excluded from the analysis. Also in the eastern part, the sub-region of Riviera Française, although not engaged in a Territorial Food Project (PAT), introduced some sustainable agriculture-based policies over the past five years, which were included in the assessment. In addition to the analysis of the six sub-regional PATs, three municipalities in the western part of the department that had formally initiated PATs were also examined. In all six sub-regions and the three PAT municipalities, at least one of the potential interventions identified in the literature was implemented over the past five years (Table 1). The most frequently observed actions involved public awareness initiatives related to agriculture and efforts to develop local agricultural production. These were followed by actions aimed at strengthening short supply chains, with the dual goal of reducing both transportation distances and food prices, as well as diverse forms of intervention in school canteens. In the latter, initiatives included educational campaigns targeting pupils, training programs for school catering staff, and sustainability-oriented procurement practices, such as increasing the share of organic and local products and reducing the consumption of ultra-processed and animal-based foods. Urban gardening initiatives were identified in approximately half of the territories studied. These actions involved the allocation of public space and the provision of materials or financial support to local gardening associations. By contrast, interventions in retail environments, such as the regulation of fast-food outlets or food marketing practices, the improvement of food-related infrastructure, and the promotion of affordable food retail options were rare or entirely absent.

Overall, among the various interventions implemented within the PATs and the studied territories, the physical dimension of foodscapes appears to focus more heavily on agricultural production than on consumption spaces, such as food retail outlets. This pattern may reflect both the limited availability of local agricultural supply and the political priority given by local authorities to expanding such supply. Observed economic interventions tend to be indirect, primarily involving the promotion of short supply chains and support for urban gardening. While these efforts contribute to enhancing food system sustainability, they only partially address affordability concerns regarding access to healthy foods. In contrast, the socio-cultural and cognitive dimensions are the most actively developed, with a clear emphasis on information-based strategies designed to raise awareness and reshape food norms. From a geographical perspective, the western part of the department, where most PATs have been implemented, appears to be the most active. These areas displayed a greater diversity of interventions, reflecting a more comprehensive engagement with food system transformation. As nearly all sub-regions include both urban areas in the south and rural zones in the north, no clear distinction could be made between policies implemented in urban versus rural settings.

Table 1. Local government interventions across foodscape dimensions in Alpes-Maritimes. Yellow fields indicate implemented interventions; dimensions are grouped by territorial and geographical level.

Indicate implemented interventions, dimensions are grouped by territorial and geographical level.														
Territorial level	Geographical situation	Authority	Physical environment						Economic environment					
			Support local sustainable agriculture	Create or improve local food markets	Promote organic or sustainable retail outlets	Provide sustainable meals in public canteens	Regulate fast-food outlet density	Improve access to food infrastructures	Support affordable and sustainable retail outlets	Establish urban gardens	Subsidise sustainable food for disadvantaged groups	Develop short supply chains	Implement equitable prices of sustainable meals in canteens	
City-level	West (CAP AZUR)	Mouans-Sartoux												
		Saint-Vallier-de-Thiery												
		Opio												
Sub-regional-level		Pays de Grasse												
		Sophia-Antipolis												
		Cannes Pays de Lérins												
		Alpes d'Azur												
		Nice Côte d'Azur												
		Pays des Pail-lons												
		Riviera Française												

Territorial level	Geographical situation	Authority	Socio-cultural environment				Cognitive environment	
			Restrict advertising of unhealthy or unsustainable foods	Promote sustainable food in schools and institutions	Foster positive narratives around sustainable food	Train and mobilize food actors in public institutions	Strengthen sustainable food education in schools	Raise public awareness about sustainable diets
City-level	West (CAP AZUR)	Mouans-Sar-toux						
		Saint-Vallier-de-Thiery						
		Opio						
Sub-re-gional-level		Pays de Grasse						
		Sophia-Anti-polis						
		Cannes Pays de Lérins						
		Alpes d'Azur						
		Nice Côte d'Azur						
		Pays des Pail-lons						
		Riviera Francaise						

Environmental Behaviour Shift and Territorial Differences

The political efforts observed in the department to promote more sustainable food systems appear to have been accompanied by modest behavioural changes among the population. These dynamics are illustrated in Figure 2. According to the weighted sample, 56.7% of respondents reported at least one positive change in their food-related practices, 36.8% reported no change, and fewer than 10% indicated a negative shift across the ten assessed behaviours. The weighted global score, corresponding to the mean number of positive behavioural changes, was 2.02. Most individuals adopted between one and six environmentally beneficial behaviours, although a small number declared improvements across all ten. Negative changes were relatively rare, and no respondent reported more than eight regressions (Figure 2a).

Among the most frequently reported positive changes was a reduction in the consumption of ultra-processed foods, declared by 39.4% of the weighted sample, followed by a decrease in the intake of animal-based products (31.3%). A substantial proportion of respondents (ranging from 19.7% to 30.1%) also reported a shift toward organic, local, and seasonal products, a reduction in the use of food packaging, and the adoption of composting practices. In contrast, changes in mobility practices related to food shopping remained limited: a large majority of respondents (91%) continued to rely primarily on motorised vehicles. Similarly, transitions toward alternative food retail outlets (such as organic stores or fresh markets) were infrequent, with 79.9% of respondents reporting no change in these behaviours. The most common negative shifts involved a reduction in the consumption of seasonal and organic products, observed in 6.4% and 6% of respondents, respectively (Figure 2b)

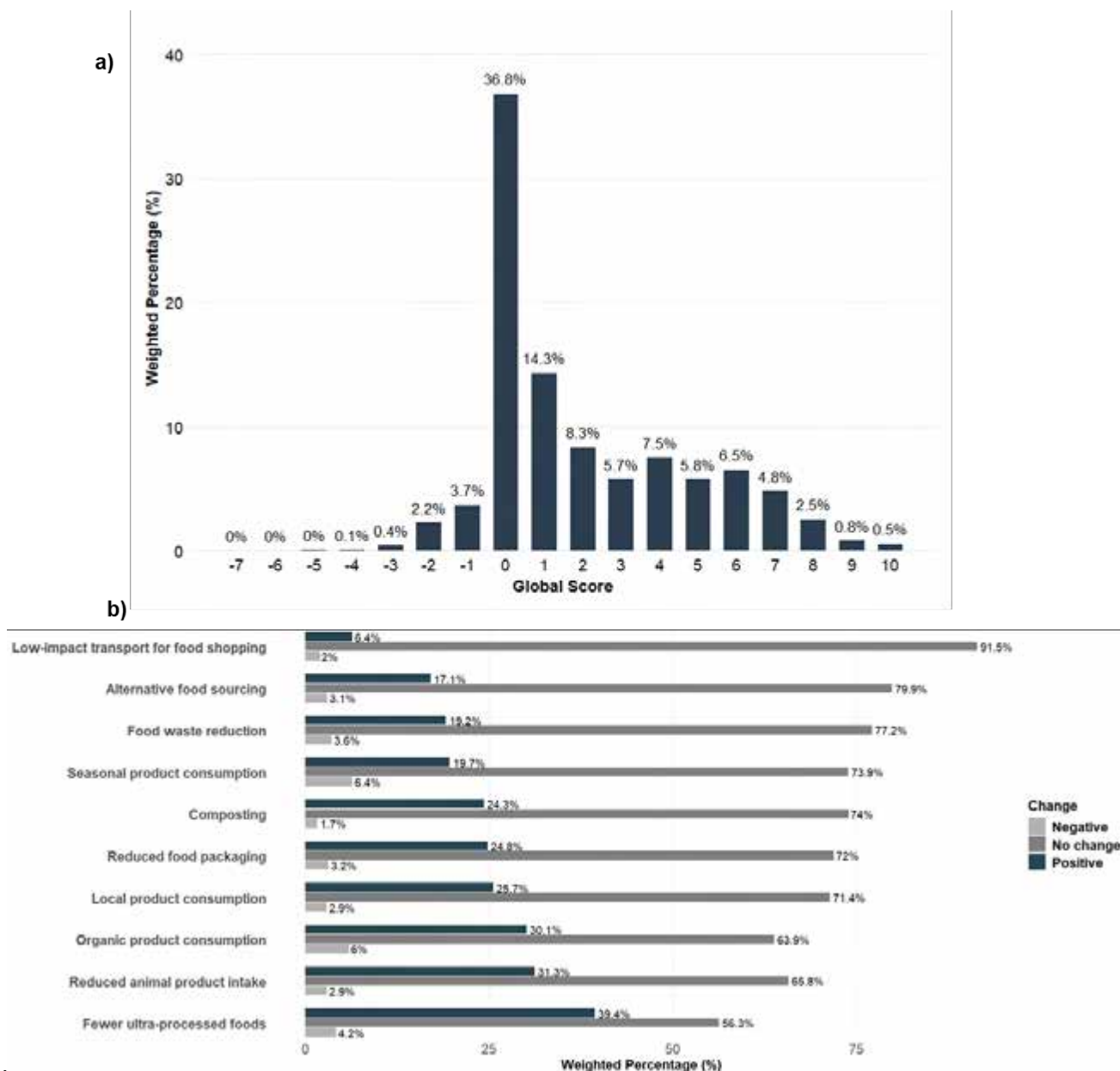


Figure 2. Environmental Food Behaviour Index: (a) Weighted distribution of global scores, with 0 representing no change, and positive or negative values indicating the total number of environmentally beneficial (positive) or detrimental (negative) behavioural changes reported. (b) Weighted percentage of respondents reporting negative, no, or positive changes for each of the ten assessed environmental behaviours.

Statistically significant variations were identified across different sub-populations within the department. As illustrated in Figure 3, the degree of behavioural change differed according to individuals' exposure to local food-related policies and their location within the territory. Three comparative sub-group analyses were conducted:

- (a) respondents benefiting directly or indirectly from local interventions (e.g., parents of schoolchildren),
- (b) residents of the western sub-regions, characterised by a more dynamic policy environment, versus those in the less advanced eastern sub-regions, and
- (c) urban versus rural populations.

The first comparison revealed substantial differences in the evolution of food-related behaviours between individuals benefiting from local food policies and those who were not. Statistically significant differences were observed in seven out of ten behavioural categories, as well as in the global score summarising the total number of positive changes. Although shifts towards low-impact transport for food shopping and increased consumption of organic and seasonal products did not show statistically significant differences, average scores for these behaviours remained consistently higher among policy-exposed respondents. This trend also reflects a lower prevalence of negative or unchanged behaviours, and a higher proportion of positive changes within this group (Figure 3a). In contrast, the west-east comparison revealed minimal differences. Residents of the western sub-regions, where food policies are generally more advanced, exhibited slightly higher average scores across all behaviours, including the global index score. However, these differences were not statistically significant overall. Only two behaviours showed significant variation: greater adoption of low-impact transport in the east, and more widespread composting in the west. Overall, the magnitude of difference between eastern and western regions was notably smaller than that observed in the policy exposure comparison (Figure 3b). Conversely, the comparison between rural and urban populations revealed clear differences in behavioural change patterns. Statistically significant disparities were observed in several areas, including the use of low-impact transport for food shopping, reduced consumption of animal products and ultra-processed foods, increased consumption of organic and seasonal products, and composting practices. For most behaviours and the global index score, urban respondents reported higher levels of positive change, although not all differences reached statistical significance. Among the significant changes, urban residents generally scored better, except for composting, where rural residents reported more substantial improvements (Figure 3c).

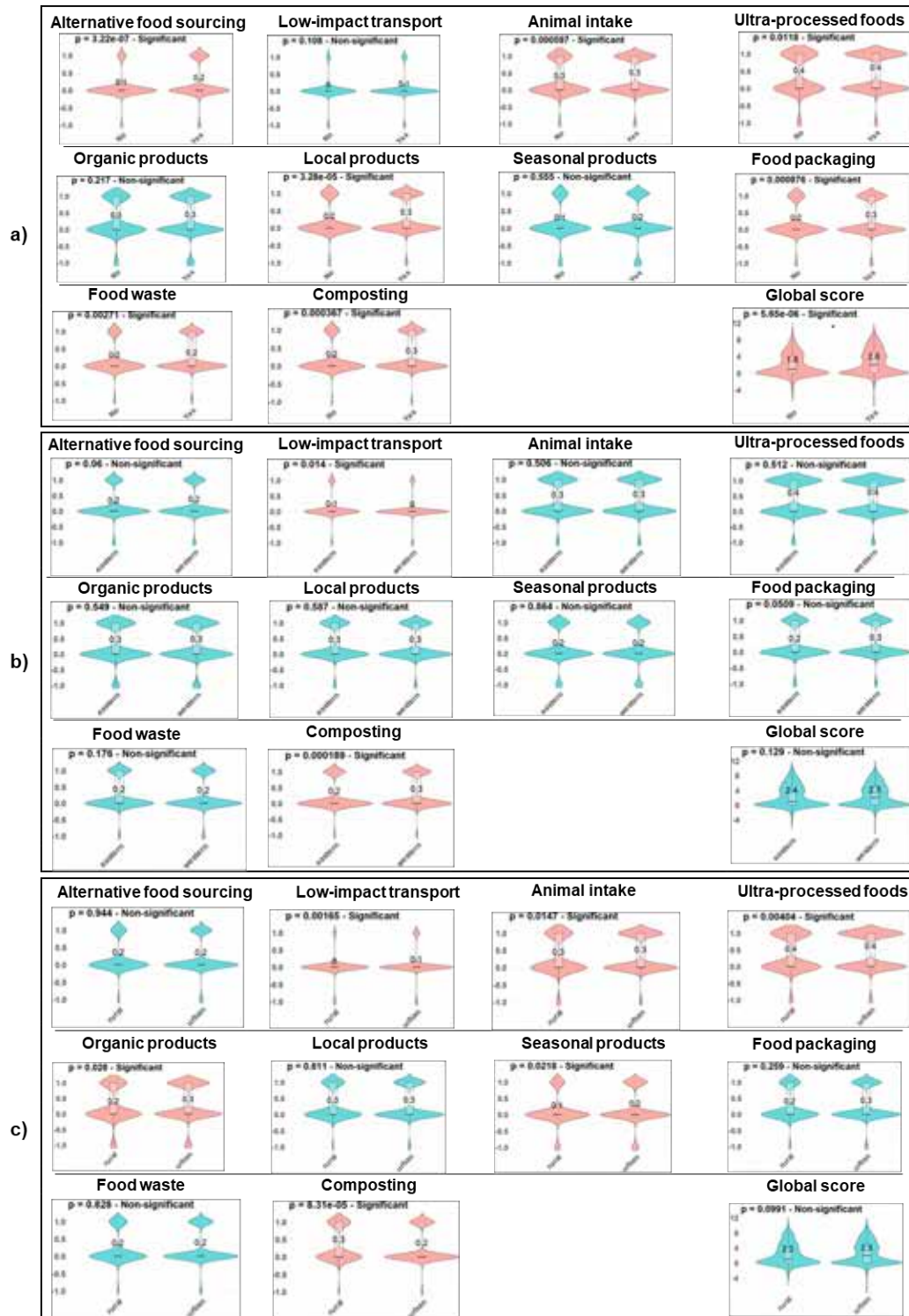


Figure 3. Differences in behavioural change scores across three comparisons: (a) Participants exposed vs. not exposed to local food policy interventions, (b) Residents of western vs. eastern sub-regions, and (c) Urban vs. rural inhabitants. Violin plots show the distribution of individual scores (-1 = negative change, 0 = no change, $+1$ = positive change) for each behaviour. Plot width reflects response density; mean scores are marked. The global score (ranging from -8 to $+10$) represents the average number of behavioural changes per respondent within each group. Statistically significant differences ($p < 0.05$) are shown in pink, non-significant ones in blue.

4. Discussion and Conclusion

As revealed in the initial qualitative analysis of local public policies, recent strategies increasingly aim to foster a culture of sustainable eating through awareness campaigns, educational initiatives, school canteen programs, and the development of local food networks. This shift underscores the growing recognition that sustainable food planning cannot rely solely on supply-side measures but must also engage with consumption practices and the social norms that underpin them. Some territories, particularly at the municipal level, appear to be specifically targeted by initiatives designed to construct a positive narrative around sustainable food. This observation is consistent with findings from previous reviews of national public policy interventions (Capacci et al., 2012; Temme et al., 2020; Macura et al., 2022; Ran et al., 2024), which show that informational approaches and educational programs, especially in schools, are the most widespread. Our results are therefore not surprising, given that local initiatives are often embedded within broader national frameworks (Barbour et al., 2021). However, while existing studies on foodscapes predominantly focus on spatial features and the development or transformation of food outlets, the informational and symbolic levers deployed in the studied territories remain relatively underexplored. These interventions tend to rely on non-intrusive, “soft” policy instruments such as informational campaigns, which, although well-intentioned, may not be considered sufficient to trigger substantial behavioural change (Capacci et al., 2012; Mattioni, 2021). By contrast, more tangible, physical foodscape interventions identified in the study area occur at the level of agricultural production, through support for local farming or urban agriculture initiatives. Such changes to the built environment can serve as sources of knowledge and awareness, potentially encouraging healthier and more sustainable food choices (Liu et al., 2016). Nevertheless, like information-based interventions, their broader impact on environmentally relevant consumer behaviours remains largely unexplored and warrants further investigation.

Although the emergence of local sustainable food policies is increasingly well documented, the behavioural transformations associated with them are more difficult to measure. The results of the second step of our analysis demonstrate encouraging signs of behavioural shifts toward greater sustainability in the study area. The most commonly observed changes concern the reduction of ultra-processed and animal-based food consumption, two behaviours with high potential for improving both health and environmental outcomes (Kesse-Guyot et al., 2021). To a lesser extent, significant increases in the consumption of organic, seasonal, and less-packaged products may also contribute to biodiversity preservation, greenhouse gas emission reductions, and natural resource conservation. Despite this, it remains difficult to directly attribute these changes to the expansion of local food planning initiatives. The findings illustrate that behavioural differences are most pronounced among respondents who report having benefited from local policy interventions, primarily parents of schoolchildren, highlighting a potential correlation between policy exposure and behavioural change. It may be hypothesised that recent efforts by local authorities to promote sustainable food publicly are contributing to the emergence of a collective imaginary around environmentally responsible consumption, which, in turn, is helping to shift norms and practices (Robinson et al., 2014). Yet, no substantial differences were found between the western, more policy-active part of the department and the eastern sub-regions, suggesting that positive changes in the overall population may be concentrated within specific social groups. Only two behaviours, low-impact transport and composting, showed significant differences between the west and the east. This can be attributed to the fact that the western sub-sample includes a higher proportion of rural residents, who exhibited lower positive change in transport habits but greater improvements in composting. These patterns are consistent with the rural-urban comparison. Both differences can be explained by spatial inequalities: first, limited access to food retailers in rural areas may reduce the feasibility of low-emission transport modes; second, the greater uptake of composting may reflect increased access to gardens in these areas. Beyond these, our analysis also revealed that an increase in consumption of organic and seasonal foods and reductions in animal and ultra-processed foods, were less frequent in rural areas. These findings corroborate previous research highlighting more pronounced shifts in urban food environments (Hawkes et al., 2017; Tharrey et al., 2024), further underscoring spatial disparities in access to sustainable food transitions. Overall, territorial disparities appear to be non-negligible, suggesting that, beyond known cultural or motivational differences (Guiné et al., 2021), regional and political contexts may also play a significant role in shaping dietary change.

Nonetheless, some behavioural patterns remained consistent across all population segments, regardless of territorial or socio-demographic characteristics. This may reflect broader societal shifts in favour of less processed, more plant-based, and fresher diets, as has been observed in national surveys for parts of the French population (Kesse-Guyot et al., 2021). The absence of clear differences between the policy-rich western sub-regions and the eastern ones also aligns with findings suggesting that informational interventions are only significantly effective when combined with changes in the physical and economic environment, and when implemented in a coordinated, multi-level, and multi-setting approach (Temme et al., 2020; Macura et al., 2022). This level of integration is not yet present in most parts of the studied territory. Consequently, echoing calls from other scholars and practitioners, we argue that to achieve more substantial and widespread progress toward sustainability, local decision-makers must move beyond “soft” informational tools that place the burden of change primarily on individuals. Instead, they should consider implementing more “structural” or “hard” policies that reshape the food environment itself or ideally, a combination of both (Hiller-Brown et al., 2017; Mozaffarian et al., 2018; Mattioni, 2021). These may include regulatory measures (e.g., limits on fast-food outlets and their advertising), economic incentives (e.g., subsidies for sustainable retail infrastructure and improved access to sustainable products for disadvantaged populations), or spatial interventions (e.g., integrating food access considerations into zoning plans). Such actions could complement existing measures and awareness campaigns and make sustainable choices more accessible and default.

It is important to note, however, that our results are based on self-reported data, which may be subject to social desirability bias and intention-action gaps that must be considered when interpreting the findings (Blanke et al., 2022). Although we observed higher positive scores among participants exposed to local food policies, causality cannot be assumed. Individuals already interested in sustainable diets may be more likely to be aware of or benefit from such policies, introducing a potential selection bias. Moreover, food behaviours are shaped by a complex interplay of factors, including socio-demographic variables, personal histories, identities, values, cultural norms, and health events (Furst et al., 1996; Dubuisson-Quellier and Gojard, 2016), and cannot be attributed to policy levers alone. Access to sustainable food is also not evenly distributed, and current interventions may benefit some groups more than others. This is particularly evident in the urban-rural disparities identified in this study. Food planning should therefore be viewed as a means of enabling equal access for all, rather than as a set of prescriptive behavioural instructions. This preliminary assessment thus calls for further research to deepen the analysis of food category-specific changes, explore comparisons across population subgroups, examine underlying motivations, and estimate potential environmental impacts (e.g., GHG emissions). Future research could also compare findings with national or European datasets, such as the NutriNet-Santé cohort (Toujgani et al., 2024). A longitudinal or quasi-experimental design would likewise be valuable in assessing causal relationships and the long-term influence and diffusion of local food policies.

To conclude, this study highlights the central role that local food planning can play in advancing sustainable food systems and contributing to broader climate goals. Our findings show that foodscapes are not static; they are co-produced through public interventions, individual behaviours, and spatial inequalities. Local food planning can serve as a lever to reshape these landscapes over time. While planners and municipalities increasingly recognise the importance of integrating food systems into both urban and rural planning agendas, substantial gaps remain in understanding how to effectively influence food behaviours. Addressing these gaps is essential for achieving long-term environmental, health, and social objectives. Although the concept of the foodscape is still evolving in the literature and the hypotheses emerging from this study require further testing, this research offers novel insights into the complex interrelations between food, place, and people. By examining how regional food policies intersect with environmental goals and behavioural change, it contributes to the growing body of scholarship calling for systemic, place-based approaches to food planning. These findings can help align regional food strategies with broader frameworks such as the EU Green Deal and the Paris Agreement and offer actionable pathways for cities and regions committed to advancing food sustainability in the context of climate change.

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