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Analysing the prospects for place-based micro-missions: the role of challenge complexity and regional capacity

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Mission-oriented innovation policies have come to the forefront of debates in both research and policymaking. While attention has focused on top-down, science, technology and innovation missions, research has increasingly begun to explore their spatial and societal dimensions. The concept of micro-missions has been advanced to highlight the potential for smaller-scale, place-based responses to societal challenges. This paper exf the circumstances in which micro-missions are formulated and implementedplores the role of capacity to mobilise and challenge complexity in such missions and highlights the diversity of models for their design. A conceptual framework is advanced and tested with the case of public food micro-missions in Malmö, and strategic implications are identified.

Keywords: micro-missions, innovation, capacity to mobilise, challenge complexity, regional policy

JEL Classifications: O3, O31, R58

Introduction

The advent of mission-oriented innovation policies, or a 'missions approach', represents a paradigm shift in addressing transformative innovation challenges (Hekkert et al., 2020). These policies have garnered increasing attention from researchers and policy practitioners and highlight the directional nature of innovation and the complexities inherent in mobilising actors and resources for long-term challenges (Mazzucato, 2018). Such approaches form part of a wider reappraisal of innovation to address systematic social, ecological and economic challenges (Coenen and Morgan, 2020). Although traditionally focused at national and international policy levels, recent research has begun to investigate the role of regional actors in crafting and executing smaller-scale place-based missions (Uyarra et al., 2023). This has been reflected in the concept of micro-missions, highlighting the potential of actors to develop place-based responses to local challenges, engage local actors, harness local knowledge and create greater legitimacy for social and ecological innovation activities (Henderson et al., 2024a; Morisson and Pattinson, 2023).

The practical delivery of micro-missions, however, has drawn attention to the multiscalar context facing such regionally focused missions, with their attendant complexity and challenges for policy actions (Uyarra et al., 2023), and the potential for interactions between national and more local and regional policy responses. Implementing such place-based strategies in regional contexts is thus not without limitations, including regional actor capabilities and resource constraints (Brown, 2021). Additionally, research has reported inherent tensions and contestations among actors, challenges and potential solutions (Wanzenböck et al., 2020). Yet, by convening actors in participatory processes, research has also shown that the place-based approach to missions can mitigate these tensions and potentially produce creative outcomes (Henderson et al., 2024b). The emerging conceptualisation of micro-missions has not yet, however, reflected on the circumstances where this approach is more or less likely to be successfully realised, nor has it systematically assessed

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the characteristics of the challenge and contexts and the interplay between them.

This paper addresses this gap by seeking to advance the conceptualisation of micro-missions in the regional context as arenas for strategic deliberation about challenges and potential solutions. We propose a novel conceptual framework for understanding micro-missions, emphasising the importance of the capacities within the regional context and the complexity of a challenge as two critical dimensions that inform the approach to be adopted. Drawing on the missions and transformative innovation literature, we distinguish between challenge complexity, where understanding of the nature of the problem, resources and timescale relevant to solutions is more or less contested, and known or unknown. We further consider the capacity of the region to mobilise responses to place-based micro-missions. Our conceptual framing highlights the relevance of challenge complexity and regional capacities in determining the most appropriate approach for designing and delivering micro-missions. This provides an analytical framework for evaluating the potential and limitations of policy development in designing micro-mission interventions to address place-based challenges. We illustrate our conceptual framework with a short case study of the design of food micro-missions in Malmö, Sweden.

The remainder of this paper is organised as follows. We begin by defining the concept of micro-missions in relation to grand-mission approaches to regional innovation policies. We then consider types of micro-missions based on the capacity to mobilise and the nature of challenge complexity, before mapping them against our conceptual framework and applying it to the case of Malmö. The final section ends with some concluding remarks on our conceptualisation and implications for research.

Micro-missions and grand-missions

The missions approach is most commonly associated with national- and supranational-level activities focused on global challenges (Mazzucato, 2018). This research has emphasised the potential to address grand challenges through the transformative possibilities of innovation (Bailey et al., 2019; Schot and Steinmueller, 2018), highlighting the need for social and ecological forms of innovation (Delicado et al., 2023). In contrast to traditional forms of innovation that emphasise funding and support for known challenges, often over a shorter period (for example, R&D grants), missions emphasise the wickedness of the challenges, uncertainty over solutions and the importance of disruptively ambitious but specific and time-bound goals. Attention to the complexity of missions is set against the recognition of the growing urgency to address such challenges, and the requirement for a more transformative approach to innovation policy based on directionality (Schot and Steinmueller, 2018; Wittmann et al., 2021a).

The spatial dimensions of missions have been underexplored to date (Uyarra et al., 2025). Recent contributions, however, have illustrated the potential for missions to take place at multiple levels, with complex interactions in their governance (Uyarra et al., 2023). This has highlighted the potential for a *regional* missions approach to deliver public investment for economic development (Brown, 2021), and to support European regional development policies for cohesion (Cappellano et al., 2024). Such concepts highlight the potential for mission policies to be designed and enacted in local and regional administrative areas. This bottom-up potential for missions has also been examined in the context of innovation districts addressing societal challenges to revitalise urban areas (Fastenrath et al., 2023).

The *place-based perspective* offers the potential for a proactive approach to mission activities that are agnostic of administrative boundaries. The concept of micro-missions has been advanced in this area, recognising the spatial variegation of places and people in the framing and enaction of such activities (Henderson et al., 2024a). In this context, micro-missions have been conceptualised as smaller-scale activities promoting multi-actor social, economic and ecological innovation to address the complex, multidimensional and systematic nature of contemporary place-based challenges (Henderson et al., 2024a). They seek to harness mission activities that respond to local challenges as part of multiscalar approaches to societal goals. Micro-missions can be situated alongside wider place-based approaches to regional development and policy (Barca et al., 2012; Rodriguez-Pose and Wilkie, 2017). Such approaches emphasise the spatially contingent nature of policies and the potential for them to be mobilised around place-based challenges. In this respect, micro-missions, as place-based actions, can respond to challenges and needs that do not neatly fit within particular geographic or administrative boundaries, or place-blind approaches (Uyarra et al., 2016). They can be contrasted to mission approaches that are based on translating national or international mission goals to regional contexts (Priebe and Herberg, 2024) or approaches that highlight the region as a test-bed for top-down solutions (Uyarra et al., 2023). They further offer opportunities to harness 'small wins' emanating from such missions and to do so proactively. In reflecting the growing importance of directionality in innovation policy, micro-missions emphasise normative goals over traditional considerations of volume and levels of innovation activity (Uyarra et al., 2019). Despite their smaller scale, micro-missions are arguably no less important, with the potential for them to be upscaled to address challenges through accumulating 'small wins' (Bours et al., 2021), although the mechanisms by which

this may be achieved remain uncertain (Storper et al., 2022).

Researchers have argued that the *governance of place-based missions* can involve a wider range of actors than anticipated relative to grand-missions (Wiarda et al., 2023). While grand-missions tend to start with national-level government (Mazzucato, 2018), micro-missions may be led by actors from a range of sources, including the public sector, industry and civil society, and in doing so have multiple goals and policy priorities (Janssen et al., 2023b). Their place-based nature, however, does not preclude multilevel participation in micro-missions, as exemplified by the engagement of the regional state, national state and civil society in public food transitions in Wales (Henderson et al., 2024a). In contrast to top-down mission activities, they are led by place-based actors, responding to bottom-up challenges and contribute towards grand challenge objectives (McCann et al., 2024). Complex scalar linkages form part of such mission processes (Uyarra et al., 2023). In this respect, tensions in the governance of such missions have been noted, with the potential for them to be shaped by wider societal pressures (Wanzenböck and Frenken, 2020). However, they may also act as a 'boundary object' with a role in mitigating the effects of complexity, allowing parties to mobilise around such actions, helping to ensure that they 'have some shared meanings among the participants they convene, yet are open enough to be interpreted differently by distinct actors' (Janssen et al., 2023b, 398).

Grand-missions mobilised at the national level are expected to be resourced accordingly, and this is likely to include access to the latest knowledge and to sufficient expertise to deploy such knowledge. This is less likely with micro-missions that are developed locally and from the bottom-up. Such missions rely on the specific local capacities of actors to access and operationalise knowledge, though in contrast they may have superior understanding of the local context and its requirements. In this respect, local knowledge pertaining to place-based problems is recognised as being important (Barca et al., 2012), yet may also be insufficient, particularly where problem complexity is high (Miguélez and Moreno, 2015). This may concomitantly require efforts to build capacity to recognise problems, understand their causes, and to develop solutions (Uyarra et al., 2025). Such capacity building may benefit from an iterative development of knowledge through experimentation and false starts, with time to reach fruition. In addition, uncertainty can act as a barrier to public and private investments, thus enabling or constraining activities.

Micro-missions tend to adopt comparatively *less ambitious objectives* than grand-missions (Henderson et al., 2024a). Nonetheless, such an approach may allow for quick wins to be developed and scaled in aggregation to contribute towards a more significant change (Bours et al., 2021); thus, while the place-based focus on specific challenges of people and places may appear modest in scale, this need not negate the importance of outcomes that address the everyday challenges faced nor preclude the scaling up of innovative solutions . Moreover, such an approach does not deny the potential for systematic grand-missions, but instead offers the prospect of a more democratic approach to addressing challenges by ensuring that 'decisions are taken as closely as possible to the citizen' (Wanzenböck and Frenken, 2020, 53). Micro-missions may be a pragmatic response to the constrained funding context faced by many regions and allow a time-bound focus to be adopted. Short-term, temporary approaches to transformative innovation can also help actors manage the complexities associated with contested mission activities, and offer a way to undertake such activities in complex settings. Indeed, it has been argued that clashes of interest, sunk investments and institutional logics are more prominent in established/ongoing innovation processes (Frenken, 2017). Table 1 characterises the main differences between micro- and grand-missions.

This typification of micro- and grand-missions should not be seen as binary. Typologies identify distinctions between phenomena while simplifying and codifying them. Typologising is a well-established analytical approach across the social sciences, forming the basis for both comparative analysis and conceptualisation (Layder, 1998); typologies have been used to good effect in studies of regional innovation systems (Tödtling et al., 2022). In practice, place-based challenges and global challenges are interlinked and interlinkages can also be seen in the governance arena, with Uyarra et al. (2023) suggesting that grand-mission actors may also operate in locally bounded areas to test innovative approaches to missions. Elsewhere, others argue that national governments play an important role in setting the direction and funding of missions at various scales (Walker, 2024). While the concept of micro-missions does not preclude multiscalar engagement, their focus is on local actors working together and leading responses to local challenges (Henderson et al., 2024a).

The missions approach is not without criticism, including arguments that they are overly state-dominant and underemphasise private sector innovation activities and the role of market incentives in such processes (Larsson, 2022). While making some relevant points about the process of missions, such criticism risks underplaying the bottom-up potential for micro-missions and the engagement of a more inclusive range of actors seeking to steer and implement activities to address the challenges facing places. Other criticisms focus on the lack of well-defined capabilities for mission-oriented innovation outcomes (Brown, 2021) and questions over how such missions may be selected (Storper et al., 2022), highlighting the need for further research to better understand the potential of such activities.

Table 1. Micro- and grand-missions.

	Micro-missions	Grand-missions
Challenges	Place-based challenges	Global challenges
Governance	Regional and local leadership	National state and supranational leadership
Local capability to mobilise knowledge (endogenous and exogenous)	Expertise and access to knowledge may not be anticipated	Expertise and access to cutting-edge knowledge anticipated
Scale of challenge	Smaller, bounded, less ambitious	Larger, open, disruptively ambitious

Source: Henderson et al. (2024b); authors' own elaboration.

Implementation barriers have also been noted, with differing levels of resources and competencies among actors (Borrás et al., 2024; Brown, 2021). Varying levels of challenge recognition by actors and differing views about potential solutions can further add to complexity (Delicado et al., 2023). Indeed, there is also the potential for such actions to 'be hindered by low institutional capacity precisely in those regions that need the most help' (Marques and Morgan, 2018, 275). This suggests that actors are likely to vary in terms of their readiness to engage in micro-mission processes, and for there to be different perspectives on such activities.

The urgency of addressing challenges and the patience required to build collaboration, trust and social relations can produce tensions between the time needed for innovations to emerge and calls for bold policy action (Ciplet and Harrison, 2020). In the case of climate change, this is reflected in the systematic nature of threats in areas such as weather, food and water systems (IPCC, 2023). The urgency of addressing such threats has led to calls for immediate action (Radunsky and Cadman, 2021). This contrasts, however, with the long-term and uncertain nature of innovation projects in such areas and the need for support to be gained across multiple political cycles and shifting government support (Fagerberg and Hutschenreiter, 2020). These issues bring into question the potential for all regions to harness a micro-mission approach, but also point to the importance of the circumstances in which micro-missions are formulated and implemented.

In summation, the place-based focus of micro-missions responds to concerns regarding place sensitivity in the missions literature (Uyarra et al., 2025). Understanding of the complexity of the challenge to be addressed is similarly underplayed in the literature, with research tending to emphasise the highly wicked nature of societal and ecological challenges (Wanzenböck et al., 2020); complexity may vary intrinsically with some problems more challenging than others (Ika et al., 2024). Likewise, the abilities of regions to produce coherent responses to such challenges are likely to vary. Thus, analysis of the context and complexity of the challenge for micro-missions has relevance in understanding place-based variations and implications for policy and practice.

Micro-missions and capacity to mobilise

The missions and wider regional and transformative innovation literature has increasingly emphasised the capacities of regions and their effectiveness in generating social and ecological outcomes (Coenen et al., 2015; Grillitsch et al., 2019). This has highlighted the capacities of actors, institutions and wider systems and their role in shaping the effectiveness of responses to sustainability challenges (Tödtling et al., 2022). The absence of capabilities at the local level can represent an important failure, and be reflected in the limited capacity of public actors, firms and civil society to develop innovative responses to grand challenges (Coenen et al., 2015).

The capacities of regions to mobilise and manage missions have been examined in three broad areas. *Institutional capacity* reflects the ability of actors to mobilise coherent responses to micro-missions. Such capacities reflect the competence and probity of regional institutions and their potential to contribute to the overall direction of micro-mission activities as well as their ability to design policy instruments, supply resources, and to mobilise and coordinate stakeholders (Janssen et al., 2023a). The importance of capacity building in micro-missions has been previously identified in Henderson et al.'s (2024a) assessment of a regional challenge fund with complementary capacity-building activities for the region. In complex societal and ecological challenges, this calls for regional policymakers to work together with multiscalar partners and policies to develop synergies, but also manage trade-offs and tensions in the governance of micro-mission activities (Flanagan et al., 2011). Institutional capacity may be necessary to support the effective management of multiscalar tensions that may be present in the implementation of micro-missions (Wanzenböck and Frenken, 2020). Micro-missions can therefore be situated across a spectrum of settings, some with institutional capacity that enables micro-mission activities while elsewhere such capacities may be relatively weak.

Innovation capacity represents the capacities of firms, universities, public and third sector actors to identify problems and develop new solutions to place-based challenges

Table 2. Regional capacities to mobilise.

Dimension	Low capacity	High capacity
Institutional capacity and coherence	Weak regional institutional capacity to mobilise and limited institutional coherence	Regional institutional capacity to mobilise is well developed and institutions are mature/coherent
Innovation and absorptive capacity	Limited capacity to develop novel solutions	Strong capacity to develop novel solutions
Reflexivity and adaptation	Capacity to reflect and adapt are low	Capacity to reflect and adapt are high

in a micro-mission. This includes the ability to frame problems and develop new solutions (Janssen et al., 2021; Miedzinski et al., 2019), while avoiding such actions being captured by elites or incumbents (Brown, 2021; Hastings-Simon and Tretter, 2023). Innovation capacity also relates to the ability of actors to harness local knowledge sources, and has been linked to spillover benefits for related technologies and the associated resilience at the regional level (Rocchetta and Mina, 2019). Multiscalar sources of knowledge and expertise can be relevant to different stages of micro-missions, including their design and implementation (Wittmann et al., 2021b). As iterative initiatives, micro-missions require the capacity of participants to reflect and adapt courses of action (Miedzinski et al., 2019). This further highlights the importance of absorptive capacity (Miguélez and Moreno, 2015), which reflects the ability of micro-mission participants to not only understand and absorb new knowledge but harness it to produce solutions. Here, the presence of diverse knowledge sources has been identified as vital in such innovation activities (Boschma and Capone, 2015), providing the basis for micro-missions to build on related knowledge in their efforts to develop innovative solutions.

The capacity of a region to reflect and adapt captures the dynamic nature of micro-mission actions. Here, the missions literature recognises the importance of reflexive learning and adapting activities as new knowledge becomes available (Borrás et al., 2024; Coenen et al., 2015; Janssen et al., 2023a). This is particularly important in highly complex mission activities, where the possibility of failure might be higher (Mazzucato, 2018). The regional and place-based perspectives further recognise the importance of history and the path-dependent nature of a region's activities with a danger that it becomes locked into weak development paths (Grabher, 1993). Taken together, these factors suggest that there is no 'one-size-fits-all' model for micro-missions and that such approaches are likely to be deeply influenced by regional contexts. We illustrate these different capacities to undertake micro-missions in Table 2. For illustrative purposes, we differentiate between low and high on each dimension.

A region's potential to harness a micro-missions approach may also be linked to the intrinsic characteristics of the challenge faced. That is, while the region's capacity to mobilise may be important in the success of a micro-mission, it may not fully explain a region's ability to address specific social and ecological challenges. We turn to this issue in the next section.

Micro-missions and challenge complexity

Unlike 'solutionist' approaches that prioritise identifying solutions in advance (Morozov, 2014), the missions approach emphasises the importance of developing a deep understanding of the cultural, social, normative, economic and technological dimensions of challenges (Ghazinoory et al., 2020). This calls for the definition of challenges and their underlying causes (Borrás and Edquist, 2013). Identifying an appropriate and agreed-upon approach, however, is likely to be particularly difficult in the absence of resources (Brown, 2021), and while the complexity of challenges can vary (Ika et al., 2024), wicked challenges may invoke competing interpretations and uncertainty (Delicado et al., 2023). Such complex characteristics may require micro-mission activity to seek multiple solution 'pathways' to minimise risk surrounding the achievement of goals (Walker, 2024).

Four dimensions of challenge complexity can be identified, reflecting their intrinsic features that in turn may shape the capacity to mobilise. *Understanding* the nature and causes of a challenge is an important stage in the mobilisation of a micro-mission (Ghazinoory et al., 2020). While some challenges can be well understood, for instance, where technologies are available or similar challenges have been addressed in related circumstances elsewhere, they may not be known (e.g. black swan events) or subject to high levels of complexity and contestation (Pinheiro et al., 2025; Wanzenböck et al., 2020). This suggests that micro-missions may similarly vary according to whether the understanding of the nature of the challenge and knowledge relevant to solutions is more or less shared or contested. It may also result in differing perspectives on the scale of the challenge and the mission's ambition. *Resources* represent an important element in the capacity of actors to respond to challenges through micro-missions, including financial, human and environmental resources (Brown, 2021). Here, adequacy of resources may vary sig-

nificantly according to the nature and scale of the problem, with low-complexity micro-missions requiring more moderate and identifiable resources. For highly complex challenges, the need to mobilise resources at scale and with a divergent set of actors is likely to make it more difficult to mobilise and act effectively. *Solutions* may vary according to the degree to which they are recognised and shared. Here, there may be multiple potential solutions and significant contestation about the preferred approach (Wanzenböck et al., 2020), with the potential for these to have multiscalar dimensions (Uyarra et al., 2023). Furthermore, the enactment of micro-missions requires not only identifying potential solutions, but also implementation and evaluation (Wittmann et al., 2021a), where additional complexity may ensue. *Timeframe* is our final dimension. This reflects the temporal nature of micro-mission processes. Here, micro-missions are likely to require a longer duration for solutions to emerge where there is significant uncertainty or contestation.

In reviewing the literature addressing a mission approach at the regional level, we can thus identify two key aspects that will inform the practicalities of mission design. These are the nature of the specific regional capacities to mobilise micro-mission activity and the complexity of the challenge to be addressed. It follows, therefore, that micro-mission challenges will vary according to the capacity to mobilise and complexity with implications for the shape and pace of activities. These dimensions of capacity to mobilise and challenge complexity are anticipated to be interdependent, with the potential for different combinations of high and low capacity to mobilise and challenge complexity. Figure 1 indicatively illustrates these interdependencies within the framework and identifies various prospective links between institutional capacity and coherence, innovation and absorptive capacity, and adaptation and change, on the one hand, and understanding, resources needed, potential solutions and timeframe of the challenge, on the other.

This highlights the important role of regional policy in convening participants and mobilising mission activities around shared understanding and agreed objectives; doing so effectively may require a wider range of actors and more inclusive approach than associated with traditional policies for innovation (Wiarda et al., 2023). Likewise, both regional and wider multiscalar actors may be needed in support of mission activities at the regional level, where such funding is recognised as playing a role in reducing the risks for private actors to engage in such activities (Mazzucato, 2018). Further independencies are evident in the link between innovation and absorptive capacity and possible solutions, reflecting the importance of recognising and mobilising knowledge in developing novel responses to complex challenges. Finally, both innovation and absorptive capacity and adaptive and change capacities play a role in the timeframe of a micro-mission.

The next section examines the interlinkage between regional capabilities and challenge complexity in relation to an illustrative case example.

Applying the framework — climate-smart food in Malmö, Sweden

Malmö, Sweden's third-largest city, provides an illustrative example of a micro-mission seeking to build a sustainable public food system. Distinct from top-down, nationally coordinated grand-missions, the Malmö initiative emerged from municipal leadership and grassroots experimentation. It was characterised by local actor mobilisation, pragmatic goal-setting and iterative adaptation — all hallmarks of a micro-mission as conceptualised in Henderson et al. (2024a) (Table 1). Unlike grand-missions driven by national governments and large-scale funding instruments (Mazzucato, 2018; Uyarra et al., 2023), Malmö's activities were initiated and coordinated locally, with multiscalar collaboration emerging over time.

The city's Policy for Sustainable Development and Food (approved in 2010) set ambitious targets for 100% organic public food provision and a 40% reduction in greenhouse gas emissions by 2020 (compared to 2002) (Malmö stad, 2023). These goals built on early initiatives by school chefs experimenting with organic ingredients, highlighting the bottom-up and iterative nature of the process. However, as it became clear that targets would not be met, city officials engaged more actively with schools, parents and suppliers to co-develop a more sustainable pathway, illustrating the dynamic and participatory nature of micro-mission governance (Morgan 2025b).

The *capacity to mobilise*, as conceptualised in Table 2, encompasses *institutional*, *innovation* and *reflexive* capacities. These dimensions were central to Malmö's ability to interpret, coordinate and adapt efforts across actors and over time. As illustrated in Figure 1, they are also closely linked to the specific dimensions of *challenge complexity*.

Malmö's *institutional capacity* was strong, with the city playing a central coordinating role, convening actors from schools, procurement units, catering teams and local suppliers to design and implement the mission. This facilitated the emergence of a shared *understanding* of the problem and enabled mobilisation of *resources* from both municipal and national levels, including support from the Swedish Environmental Protection Agency (United Nations Department of Economic and Social Affairs — Sustainable Development, 2021). The ability to align actors around a shared vision further sustained the delivery of the mission. This strategic coherence was visible in the development of Climate-Friendly Meals policies, which introduced new procurement criteria and public menu standards across Malmö's institutions (ICLEI, 2025).

Innovation capacity was built through training programmes and pilot interventions, such as courses for

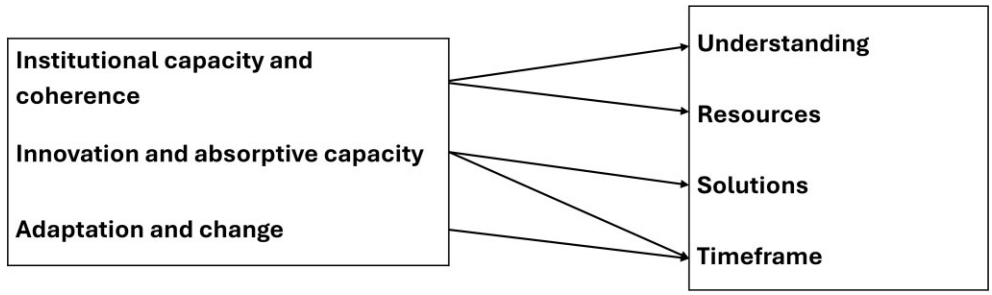

Figure 1. Interdependencies in the capacity to mobilise and challenge complexity.

preschool chefs on plant-based diets and sustainable cooking practices. These initiatives helped develop practical *solutions*, such as redesigned menus and targeted food waste strategies, while fostering local experimentation. Malmö also demonstrated *absorptive capacity*, developing local skills, harnessing knowledge from external partners (e.g. Vinnova and other municipalities) and embedding it in novel solutions to the city's school food requirements (Morgan, 2025b). These activities have enabled Malmö's school kitchens to successfully implement fresh, scratch-cooked meals as part of a broader pedagogical approach to food, nutrition and sustainability (Malmö stad, 2025).

Reflexive and adaptive capacity became increasingly visible over time. The city responded to challenges such as parental resistance to plant-based meals and logistical bottlenecks in organic supply chains by adjusting its communication strategies and procurement practices. These adaptations extended the *timeframe* of the mission, requiring continuity across political administrations and ongoing stakeholder engagement. This iterative learning was critical for maintaining legitimacy and momentum as conditions evolved. The city's efforts have also gained international recognition. Malmö has been described as a 'beacon of good practice' in the global conversation on universal school meals, highlighting its leadership role in linking public food with broader societal goals (Child in the City, 2025).

The Malmö mission exemplifies a high degree of *challenge complexity*, as defined in Table 3 and illustrated in Figure 1. All four dimensions — *understanding*, *resources*, *solutions* and *timeframe* — were present and evolved throughout the mission lifecycle.

Understanding of the food–climate challenge was initially fragmented and contested (Morgan, 2025b). While Malmö's sustainability ambitions were well-articulated, there was no consensus on how food system transformation should unfold at the local level. Tensions between nutritional goals, climate targets and stakeholder values led to divergent understanding of the problem across municipal departments, schools and parents. The city's ability to negotiate between these framings — integrating health, environmental and educational perspectives — was essential for translating ambition into action.

The mobilisation of *resources* required to address this complex challenge was incremental and multilevel in character. Material resources such as organic food supply, funding for training and staff capacity were not fully in place at the mission's outset (ICLEI, 2025). Rather, Malmö had to leverage external grants, develop procurement partnerships and build organisational skills in real time. As visualised in Figure 1, the city's *institutional capacity* was essential in coordinating the orchestration of these distributed resources.

Potential *solutions* to the food–climate problem were neither singular nor uncontested. While some technical options (e.g. plant-based menus, food waste reduction) were clearly linked to emissions reduction, their implementation encountered resistance. For instance, parents questioned the nutritional adequacy of new school meals (Child in the City, 2025), while some catering staff were reluctant to alter long-standing routines. These disputes revealed cultural and behavioural dynamics that shaped how solutions were received and interpreted across stakeholder groups.

The mission unfolded over an extended *timeframe*. Although Malmö's sustainability goals were formalised in 2010, foundational efforts had begun earlier through chef-led experimentation. Over more than a decade, the mission expanded and evolved, linking to national programmes and adapting its focus in response to emergent challenges (Morgan, 2025a). Maintaining momentum across political cycles required long-term commitment, administrative continuity and embedded learning mechanisms. These conditions highlighted the relevance of *reflexive capacity*, particularly in sustaining direction under uncertainty and maintaining stakeholder buy-in.

Taken together, these dimensions reinforce the idea that *challenge complexity* is not static but interacts dynamically

Table 3. Challenge complexity.

Dimension	Low complexity	High complexity
Understanding	Challenge is well defined and understood	Challenge is poorly understood or defined
Resources	Scale of challenge and resources needed are moderate and known	Scale of challenge and resources needed are not known and may be significant
Solutions	Potential solutions and the preferred course of action are identifiable	Potential solutions may be difficult to identify and there may be uncertainty/contestation over both alternative possible solutions and the preferred course of action
Timeframe	The time required to address a low-complexity challenge-solution is shorter	The duration of timeframe for complex challenge-solutions is longer

with the capacities available to mobilise action. Malmö's case illustrates how the evolution of problem understanding, the negotiation of contested solutions and the sequencing of resource mobilisation all require governance approaches capable of managing uncertainty, conflict and change over time (Uyarra et al., 2025).

Malmö's case underscores the importance of *capacity to mobilise* with *challenge complexity* in the enactment of micro-missions addressing an important societal challenge. The initiative's success rested not only on institutional strength or innovation, but on the city's ability to coordinate across these dimensions over time. Through reflexive adaptation, stakeholder engagement and localised experimentation, Malmö's experience demonstrated that complex sustainability challenges can be addressed through micro-mission strategies that balance ambition with proactive action.

Figure 2 provides a stylised map of the potential for micro-missions and is intended as a tool to reflect on challenge complexity and regional capacities, and to inform strategic consideration of the implications for such an approach.

Regions faced with low capacity to mobilise and high challenge complexity are likely to have limited potential to address societal and ecological goals through a micro-mission approach. Such regions may be faced with high levels of uncertainty, contestation and limited capacities to address particularly wicked problems in the region. This was the position that Malmö faced in the 1990s, as it sought to transition towards a greater focus on sustainability in the city's development. The requirement for multiscalar actors from different policy domains to engage in such missions may also present difficulties, including allocating responsibilities across a mix of roles and identifying resources (Borrás and Edler, 2020). The risks of micro-mission failure are high in such circumstances, and thus, efforts and resources may be better directed towards other innovation challenges. Should action be demanded, this may warrant capacity building among innovation actors, alongside efforts to build a better understanding of the nature of the challenge. It is recognised, however, that the lack of capacity to mobilise can make it difficult to address issues such as lock-in to development paths and reproduction of extant regional policy approaches (Grabher, 1993; Martin, 2010).

Regions characterised by low or limited capacities to mobilise and low challenge complexity may be able to address known challenges through a micro-mission policy approach but are likely to focus on building context factors in a region, such as institutional and innovation capacity and availability of assets. The difficulties in developing a micro-mission approach may be especially significant in regional contexts where there are complex, multilevel policy responsibilities (Henderson et al., 2024b). Such challenges may also be particularly acute in less-developed regions, where institutional and actor capacities are limited. In such contexts, the potential to develop responses to low-complexity challenges may still be possible through tentative efforts to build coherence. This may include, for example, small-scale experiments using existing networks, such as those of a 'small wins' approach to addressing societal and ecological challenges (Bours et al., 2021), or activities such as foresight studies to support the process of relationships between regional actors.

In regions characterised by high capacity and high challenge complexity, these factors may enable it to address such challenges through micro-missions, particularly where there is pre-existing understanding of a challenge. Regional capacity to mobilise may include the ability to convene actors, promote positive attitudes towards risk and innovation and manage contestation in developing a solution. This may enable regional policymakers to set the overall direction of mission activities, provide an enabling role in the development of micro-missions and guard against particular groups capturing the mission process. Malmö's success in developing successive micro-missions in partnership with the city, school catering staff, suppliers and Vinnova highlights how this capacity to mobilise can be developed through iterative action by place-based and scalar actors.

Finally, in regions with high capacity to mobilise and low challenge complexity, there is a comparatively strong ba-

Figure 2. Implications for a micro-missions approach.

sis for implementing a micro-mission approach. Such regions may have the capacity and assets to address known challenges, but also address more ambitious and challenging micro-mission activities. In this respect, they may be able to harness regional context dimensions to act as vanguards at the forefront of national and international grand-missions, supporting the testing of global solutions at the local level (Uyarra et al., 2023), and aligning such activities to particular innovation assets or demand conditions in the region. Although the challenges addressed by Malmö are arguably highly complex (addressing the challenges of healthy eating and sustainability of the food chain), addressing them through small 'bite-sized' actions represents an approach to managing such complexity.

The framework offers value for both researchers and practitioners of micro-missions by highlighting the interrelationships between capacity to mobilise and challenge complexity. Such insight offers the potential for building an approach to micro-missions that incorporates important attributes/factors that govern their effectiveness. It could also support decisions regarding investment in capabilities to address challenges more effectively and encourage micro-missions to support learning over time.

Conclusions

The spatial dynamics of the missions approach has gained significance in research and policy practice debates (Uyarra et al., 2025). Within this agenda, micro-missions have been proposed as an elaboration of the missions concept, representing purposive actions to address place-based social and ecological challenges (Henderson et al., 2024a). These actions represent smaller-scale actions co-created by sub-national actors that have a stake in mission outcomes, including the state, private sector, universities and wider civil society. They contrast with top-down, (grand) missions, which adopt a largely spatially blind approach (Uyarra et al., 2023). The circumstances in which such mission activities are conducted, and their policy implications remain an open question (Storper et al., 2022). In this paper, we explore these issues by conceptualising micro-missions according to capacity to mobilise and challenge complexity and identifying inter-relationships between these. We draw out the strategic implications

of different combinations for regions seeking to enact a micro-missions approach to assess the potential and limitations of micro-missions in practice. In doing so, we contribute to research examining micro-missions as well as the wider governance of the mission processes (Uyarra et al., 2023; Wanzenböck and Frenken, 2020) and growing recognition of the diversity of approaches to such initiatives (Wittmann et al., 2021b).

To illustrate the framework's utility, we provide a brief case of Malmö and its public food micro-mission actions. This case highlights key features of the framework, and illustrates the role of local actors responding to a place-based challenge through a portfolio of time-bound actions (Wise, 2024) to interactively produce social and ecological outcomes from its food activities (Morgan 2025b; Uyarra et al., 2025). It illustrates the framework's complexity attributes in key areas such as understanding of the challenge (e.g. the city municipality building awareness and skills and managing parental tensions around plant-based food options), resources (sourcing funding from within the city and at the national level) and its iterative development of solutions for preschool meal provision. It further highlights the role of multiple capacities at the institutional level to mobilise actors and develop a coherent response to the challenge, alongside working with partners to co-create solutions iteratively and adapting to the changing context (catering teams, procurement officers and suppliers). Indeed, rather than remaining passive, the case illustrates how a region can respond to a challenge proactively by assessing both its capacity weaknesses and identifying activities that address the complexity of the challenge over time. In this respect, our research underscores the value of adopting a temporal lens when examining micro-missions, highlighting that mission framing is rarely fixed, but instead evolves over time in response to complex and shifting challenges (Uyarra et al., 2025).

Based on our analysis of the framework and case, we identify policy design insights for regions seeking to develop micro-mission approaches. This responds to calls for research to explore the scaling of missions in local areas (Storper et al., 2022) by developing practical implications to enable policymakers to attune their efforts to both the complexity of challenges and their capacity to mobilise. This suggests routes for researchers and policymakers to evaluate possible approaches to address societal and ecological challenges. While the literature has recognised different, 'ideal type' grand-mission approaches (Wittmann et al., 2020, 2021b), adopting this framework in micro-missions underscores that there is likely to be a diversity of mission design and enactment at the regional level. Indeed, future research may be able to examine micro-missions in different regional contexts, where the challenges and circumstances of missions could also increase the risk of failure. That is, there is no one-size-fits-all approach to missions that is likely to be successful, as recognised in wider innovation studies (Tödtling and Trippl, 2005). The framework highlights that micro-mission design needs to be adapted to a region's context and its institutional dynamics and place-based characteristics, alongside the development of activities that address challenge complexity through an understanding of both the challenges and possible solutions. In presenting our framing of micro-missions, we recognise that it represents a somewhat stylised picture of possible approaches. Its value is not necessarily in prediction but rather that it encourages consideration of the diversity of mission approaches and suggests different routes to successful implementation of such an approach over time that may help strengthen the preparedness of a region to innovate.

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