



Contested Urban Green Space Development: Rolling Back the Frontiers of Sustainability in Trondheim, Norway

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Abbreviations

FBH	Folkeaksjonen Bevar Høyskoleparken	TK	Trondheim Kommune
FM	Facility management	UGS	Urban green space
MaP	Multi-actor perspective	UN	United Nations
NTNU	Norwegian University of Science and Technology	UNECE	United Nations Economic Commission for Europe
SDG	Sustainable Development Goals	WCED	World Commission on Environment and Development

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1 Introduction

The growth of urban areas in Nordic countries is largely an issue of spatial re-balancing. Processes of regional growth and decline across the Nordics favour the major centres in terms of population development and economic growth, compared to shrinking rural regions. This poses a potential problem for managing urban growth sustainably, especially when seen as a major development opportunity for municipalities. This chapter delves into current issues of urban green space (UGS) in the debate of urban sustainability, land use and power relations amongst different segments of society. By comparing the normative application of Sustainable Development Goals (SDGs) to planning and actual cases of development involving UGS in Trondheim, Norway, we uncover power imbalances and competing visions of sustainability which have

the potential to serve specific social groups over the public interest.

Green space is a broad concept with social and ecological components, often referring to nature or urban vegetation at various scales (Taylor and Hochuli 2017). In recent decades, UGS has been addressed from the perspective of urban social–ecological systems with increasing emphasis on politics and power dynamics (Campbell and Gabriel 2016), under intensifying contestations of sustainability. Nevertheless, power dynamics have been historically ‘side-stepped’ in European UGS research, creating a need to address environmental justice perspectives and their influence on policy and planning (Rutt and Gulsrud 2016). The ongoing localisation of SDGs into policies with definitive goals and targets opens normative ideals about UGS to scrutiny, revealing complex and sometimes messy social processes governing sustainable urban development. ‘Sustainability’ is termed an empty signifier (Davidson 2010) that loses meaning through multiple interpretations and adaptations towards various social, economic and ecological purposes. It has long been criticised for not being ‘enough’ to solve societal conflicts (Marcuse 1998). Thus, analysing UGS through the lens of sustainability requires the consideration of multiple perspectives and discourses to illuminate the complexity of UGS as a subject and its governance in terms of actors’ roles, interests and power.

Reconciling UGS with high-level sustainability goals often calls for trade-offs within compact city and peri-urban planning (Westerink et al. 2013), pointing to competing visions of and pathways to sustainability. These trade-offs can potentially affect citizens disproportionately, giving rise to spatial injustices—both social and environmental. For this reason, a critical approach must be adopted early on for the analysis of actual planning, development and political decision-making under the guise of sustainability. This is further challenged by contradictory logics of neoliberal urbanism and its effect on restructuring strategies for territorial development and urban transformations (Peck et al. 2009). We refer to several complementary theoretical viewpoints in

our analysis, including critical discourse analysis, the multi-actor perspective and power in transition studies (Avelino 2017; Avelino and Rotmans 2009; Avelino and Wittmayer 2016; Hajer 2005) for issue framing, storyline development and the elaboration of power relations and prevailing values towards UGS.

The chapter proceeds by introducing sustainability policy frameworks from the Nordic perspective on planning, policy and governance, as well as their localisation amidst policies and initiatives framing sustainable urban development and UGS in the case area of Trondheim, Norway. Following, we develop two cases that inform the debate on UGS and competing visions of sustainability—one in the peripheral context of the *grønn strek* or greenbelt focused on the historical Presthus agricultural site, and another in the urban context of the Norwegian University of Science and Technology’s (NTNU) Gløshaugen campus focused on the Høyskoleparken site. Through analysis of these cases, we illustrate social processes affecting the outcomes of contentious development proposals in terms of public and institutional responses.

2 The SDGs as a Normative Framework for Urban Planning and Governance

The ‘compact city’ and ‘sustainability’ concepts have been influential in shaping European urban planning and development (Westerink et al. 2013). Compact city planning applies the principle of urban containment to counteract the negative effects of sprawl. Nevertheless, compact and green city ideals can also oppose one another: ‘if greenspace is deprived, a compact city becomes the antithesis of a green city’ (Jim 2004, p. 312). Therefore, a variety of greening approaches and scales of interventions must be appreciated (Clark et al. 2016), and compactness must be weighed amongst other sustainability goals. In Nordic planning and development, social and environmental justice are highly influential in the prioritisation of sustainability goals. To better understand this, we look at the

key sustainability documents that shape Nordic planning, the United Nations' (UN) *2030 Agenda for Sustainable Development* (Agenda 2030) and SDGs (UN 2015).

The SDGs are widely accepted in the Nordics as a framework for translating global goals into local actions. The Nordic Council of Ministers supports a joint implementation programme of Agenda 2030 which builds upon a longstanding macro-regional approach to sustainable development (Halonen et al. 2017). A review of national readiness for the SDGs showed that the Nordic countries had the highest scores at the outset of Agenda 2030 (Sachs et al. 2016), thanks in part to already high environmental standards. A striking feature of the Nordic approach is that the focus shifts from environmental quality to social cohesion, harnessing Agenda 2030 to reinforce existing priorities related to the Nordic welfare state (Halonen et al. 2017; Nordic Council of Ministers 2019). In line with the Nordic democratic, consensus-based decision-making model and widespread public support for Agenda 2030, policy debates surrounding urban development and green space are often framed through the SDGs to legitimise local plans and proposals. Nevertheless, the concepts of sustainability and sustainable development must be scrutinised in terms of definitions and uses. Following criticism of the original definition, 'meeting the needs of the present without compromising the ability of future generations to meet their own needs' (WCED 1987, p. 43), scholars pointed to a 'grand compromise' (Kates et al. 2005, p. 19) and used sustainability as a 'multi-dimensional bridging concept' (Meadowcroft 2000, p. 381) for creating synergies.

As urban planning took up the mantle of sustainability, it has moved from a bridging concept to what Davidson (2010) calls an 'empty signifier', whereby 'efforts at definition and agreement are haunted by the non-presence of sustainability' (p. 390). Sustainability thus becomes a normative driving principle in planning and policy discourse but has a meaning that is constantly being renegotiated. Competing or renegotiated definitions of sustainability can pose a problem for implementation, as conflicts exist

between diverse political and socio-economic goals (Campbell 1996; Drexhage and Murphy 2010) and between scales of different interests (Abukhater 2009). Thus, we return to the importance of discourses in creating meaning for specific contexts. Walker and Bulkeley (2006) observed that since early stages of implementation, equity and justice have been downplayed in notions of sustainable development. Adopting the perspective of environmental justice enables a framing for research and policy that brings equity, and thereby inclusivity, to the forefront. In urban planning and development, the frame is narrowed to specific political and geographical contexts which set the boundaries for the interpretation of sustainability and related concepts.

Putting sustainable development into effect refers to the 'vexed' issue of governing, as '[s]ustainable development does not just 'happen' in an automatic or preordained way. It needs to be carefully discussed, openly debated, and possibly even centrally planned' (Jordan 2008, p. 19) through collaborative, participatory processes in which multiple stakeholders interact. New systems of governance are needed to guide and steer these collaborative processes towards a satisfactory level of consensus. The common approach in governance theories emphasises the plurality of actors, seeing as there is no single actor with enough steering capacity to determine the strategic actions of the others (Healey 1992; Kickert et al. 1997; Morçöl 2006; Vabo and Røiseland 2008). Likewise, there is no single goal that can be used to measure effective planning and decision-making (Klijn 1996). Actors' inconsistent interests or conflicts, and subsequent influence on each other's actions and policy outcomes, make the processes of bargaining, coalition formation and conflict mediation imperative. Following Blanco (2015), as many actors may be forced or convinced to change their attitude and set other goals that may differ from their real interests, new networks will be formed, and actors may play new roles until a particular condition is satisfied. This process can undermine sustainable development rather than facilitate it, reinforcing the need to scrutinise actors' roles and influence.

3 UGS and Development in the Nordics and Trondheim

Nordic countries' state of sustainability is based on different trends to those in the rapidly urbanising world. Thanks to energy resources, abundant natural environment and high quality of life, the Nordics are often seen as global leaders in urban sustainability. The five Nordic countries have some of the most ambitious climate and energy policies in the world, aiming to be 'fossil-free' by 2050 (Sovacool 2017). This is not without contradiction or controversy, however, as can be seen in the cases of the petroleum-based economy in Norway (Norgaard 2011) and offshoring emissions (i.e., carbon leakage) from industrial activities in Sweden and Finland (Næss-Schmidt et al. 2019). To support Agenda 2030, the political action plan and vision for 2021–2024 aims for a green, competitive and socially sustainable Nordic region (Nordic Council of Ministers 2020), based on 12 policy areas mapped to the SDGs including biodiversity, the bio-based economy, sustainable food systems, health and welfare and equality in the green transition, amongst others. Within the social dimension, the action plan supports a 'socially sustainable green transition that does not increase inequalities in Nordic society' (p. 22), while also strengthening shared values of democracy, trust and cohesion underpinning the Nordic region.

Applying the objectives of the action plan to the issue of UGS, the relationship between health and wellbeing, the environment and equality are particularly important for environmental justice and social cohesion in the Nordics. Nevertheless, there is ample evidence of Nordic cities becoming more segregated, e.g., in terms of socioeconomic status and ethnicity (Tunström and Wang 2019). Hence, UGS becomes a political issue. Additionally, since agriculture is supported by the Nordic states as a path to green growth, cultural landscapes and biodiversity (Prestvik et al. 2013), agricultural land conversion to urban uses raises alarms. Urban agriculture can be a solution for local food production and education

in urban areas. Yet in Norway, these come secondary to landscape conservation and maintenance of cultural heritage directly linked to active agriculture and rurality (Daugstad et al. 2006), meaning that Norwegians identify strongly with agricultural heritage even if it is removed from modern lifestyles. Maintenance of agricultural functions therefore also requires political intervention. This draws attention to the peri-urban interface as an area in need of planning, where urban and rural features co-exist (Allen 2003) and where social and ecological movements such as food planning are localised (Morgan 2010).

To encompass various functions of UGS, the concept of green infrastructure is often used in planning (Sandström 2002). Green infrastructure refers not only to protected areas, specifically, but also to the environmental qualities or natural capital inherent to any area, enabling, for example, productive uses such as 'food, feed, fuel and fibre' (Slätmo et al. 2019, p. 1) alongside socioeconomic benefits for communities (Tzoulas et al. 2007). Accordingly, green infrastructure has become part of European spatial planning (Slätmo et al. 2019), reinforcing the need for UGS to support synergistic ecological services and leading towards a 'regenerative' city built on eco-efficiencies (Thomson and Newman 2021). In light of the focus on ecological functions, social issues of equity and justice have generally been absent from this literature (Rutt and Gulsrud 2016), with contributions asking 'whose green city' recently addressing this gap (see Plüschke-Altöf and Sooväli-Sepping 2020; Pungas et al. 2022 in this volume).

Nationally, Norway stands out from its Nordic neighbours for signalling UGS as a specific land-use objective (*arealformål*) with a legal concept (*grønnstruktur*) (Lidmo et al. 2020), thereby incorporating the broader elements of green infrastructure. Legal consideration of green networks has been part of Norwegian planning since 2008, recognizing the positive social and environmental effects of both formal and informal green areas, for example, from natural areas and green corridors to designated recreational areas and parks, private gardens and agricultural areas

(Miljødirektoratet 2008, 2014). Spatial planning at the sub-national level involves regional and municipal strategies and plans as well as detailed (neighbourhood) plans (Lidmo et al. 2020), accounting for overlapping objectives on the same land. In light of the room for ambiguities surrounding what counts as green infrastructure and the protected status (or not) of UGS, environmental and social values can be questioned when faced by development pressures. Social inequalities and environmental justice are also highly subject to the forces of neoliberal urban development that tend to exploit and reproduce spatial inequalities (Peck et al. 2009), pointing to inherent contradictions within planning, development and governance (Swyngedouw 2005; Taşan-Kok 2012) including hidden economic interests (Blanco 2015). Nevertheless, spatial planning plays a key role in upholding compact city aspirations in Nordic countries and the regulation of green areas (Lidmo et al. 2020), and there is a clear interpretation of UGS issues in the Nordic action plan guiding the application of SDGs at the local and regional levels.

Moving towards the lower levels, urban densification is ongoing across the Nordics. Population growth of more than 5% has occurred in Norway's urban centres over the past decade, including the far north (Stjernberg and Penje 2019). At the same time, agricultural lands representing approximately 3% of Norway's land area are found near growing urban areas (Gundersen et al. 2017). Key issues affecting UGS—growth pressures, sustainable planning and green space protection—are addressed through a combination of national and local laws and instruments including the aforementioned *grønnstruktur* (Miljødirektoratet 2008, 2014). The municipal level instruments combine social and spatial elements, indicating that the trade-offs on competing sustainability priorities are often made at the local level, such as through area and zoning plans.

Trondheim Municipality (Trondheim Kommune (TK)) is experiencing the urban growth and densification trends described above within a relatively abundant agricultural region. In addition to implementing Norwegian planning

standards, Trondheim positions itself as a leader of urban sustainability through local and international partnerships. The municipality is home to the country's largest university, NTNU, making it Norway's innovation hub. In 2019, Trondheim was granted the status of the Geneva UN Charter Centre of Excellence on SDG City Transition (UNECE 2019), supporting the UN's work in smart sustainable development. While work in this area is just beginning, Trondheim demonstrates its ambition to lead in SDG implementation, which logically extends to the core issues of urban planning and land use (TK 2020a). The Centre of Excellence status builds upon a prior formalised collaboration between Trondheim and NTNU, using the city as a living lab and learning community (TK 2020b). The main campus at Gløshaugen occupies a location in the city where the university is a key stakeholder in local initiatives involving both innovative projects and efforts to increase the uptake of sustainability practices. Social innovation is given a prominent position alongside the technological in sustainable urban development pilot projects (Baer et al. 2021). Alternatively, the municipality is involved extensively in partnerships with a wide range of stakeholder groups as well as international consortia. Together, the university and municipality initiatives aim to uphold the sustainable urban development agenda.

While not formally associated with the SDG work, Trondheim is also working intensively to facilitate and support urban agriculture outside the realm of the conventional agricultural sector (TK 2020c). Both housing associations and public entities such as schools and kindergartens have received start-up grants to initiate small-scale urban agriculture projects. In order to give these often inexperienced urban farmers access to necessary knowledge, the municipality finances a resource centre for urban agriculture at Voll Gård (Voll Farm Foundation) (see Fig. 2). The municipality has also established public orchards in several areas of the city and is increasingly integrating urban agriculture in the development of public green spaces (Pers. Com 28.10.2020). When justifying this development, the

municipality refers not only to potential benefits for the environment but also to how this may affect social cohesion in local communities:

Trondheim Municipality wants to facilitate the cultivation of food in the city. Food cultivation in the city is not only positive for the climate and environment, but can also increase individuals' quality of life and be a source of unity in the local community. (TK 2020d).

4 Methodology

Two cases are selected to illustrate the constellations of stakeholders, discourses and values surrounding UGS in Trondheim, Norway. At the heart of the sustainability issue underscoring UGS is the issue of land use change, which has been studied from multiple perspectives including sustainability transitions, regimes and governance, amongst others. We draw in particular from the literature on the multi-actor perspective (MaP) in sustainability transitions (Avelino 2017; Avelino and Wittmayer 2016) and discourse coalitions (Hajer 2005) to draw conclusions about power relations and their potential to shift discourses in sustainable development. From transition studies, we deal with power struggles between dominant (incumbent) and upcoming niche regimes (Avelino and Rotmans 2009) that reflect constellations of actors constructing certain discourses within a landscape (i.e., societal system). In this study, that landscape is Trondheim, where there is a regime representing business as usual—that is, the usual stakeholders exercising their power through the expected structures and practices. In a stable societal system, this implies that stakeholders maintain their political allegiances to produce a discourse that supports their desired outcome. On the other hand, stakeholders that understand the system can shift allegiances strategically through political deliberation without disrupting the system itself, such as when democratic coalitions are formed based on political issues rather than ideology.

The approach applied here is underpinned by Hajer's (2005) argumentative turn in discourse analysis, acknowledging that participatory

planning practices have a performative element in the staging of deliberations which introduces bias. This criticism of participative planning and deliberation in policymaking, such as existing in Norway, is supposed to unfold in fair and democratic processes. Hajer describes discourse formation as a process with frontstage and backstage activities aimed at influencing the course of events. Shifts in discourse and discourse coalitions produce uncertainty that opens up opportunities for change, supporting Avelino and Rotmans' (2009) idea of rising niche regimes in transition studies.

We present two cases from Trondheim's urban core and periphery as examples of how stakeholder constellations and discourses shaped the outcome of development proposals threatening UGS. In the following section, both cases are developed in a narrative style that highlights Hajer's 'dramaturgy of policy deliberation' (2005). The constellations of stakeholders are analysed using the MaP (Avelino and Wittmayer 2016), which allows for the possibility of shifting power relations, although the use of the two cases at relatively similar points in time calls for a short-term perspective that precludes the possibility of suggesting systemic power shifts. The MaP distinguishes between three types of actors (sectoral, individual and organisational) in four sectoral levels (state, community, third sector/non-profit and market) (Fig. 1). Avelino and Wittmayer argue that sectors can be discursively framed as actors (i.e., having agency) but are also institutional contexts in which more specific collective interests and individual actors operate. Individual actors have roles and thereby contribute to the discourses in a different way from sectors and organisations. These can be, for example, politicians operating within governments in the state sector, or residents operating in households in the community.

The cases are mainly informed by two doctoral research projects on university campus development planning (Gohari 2019) and farmland preservation (Vinge 2020) in Trondheim. Both projects were based on intensive qualitative research employing interviews, field notes, minutes of public meetings and analysis of public

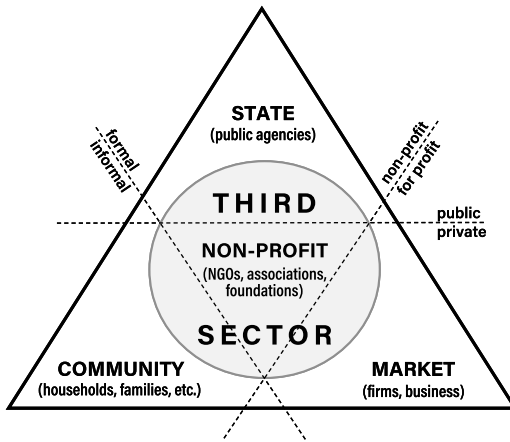


Fig. 1 Multi-actor perspective (MaP) model of sectors (Source Avelino and Wittmayer 2016, © Taylor & Francis, Ltd., www.tandfonline.com. Used with permission)

documents. Together, the projects collected 50 interviews ranging from 60 to 90 min in length, of which 25 interviews concerning university campus development were conducted from October 2015 to April 2016, and 25 concerning farmland preservation were conducted from February 2014 to November 2015. Qualitative data analysis tools (e.g., NVivo) were used for coding and analysis in both studies. Three supplementary interviews were conducted in October 2020. All interviews were conducted under complete confidentiality according to the Norwegian Centre for Research Data guidelines. While the question of UGS was not the particular focus of either of the original studies, the works provided fruitful grounds for exploring the discourses and values surrounding the topic.

Information from interviews was triangulated using additional media analysis and policy reviews. Triangulation allows a richer and stronger array of evidence than can be accomplished by any single method alone (Yin 2009) while using multiple sources and types of data is important for ensuring construct validity. The main forum for documentation of the public debates was *Adresseavisen*, the largest local newspaper, which maintains a collection of news and editorials from which the key arguments and turns in the debate were traced. Furthermore,

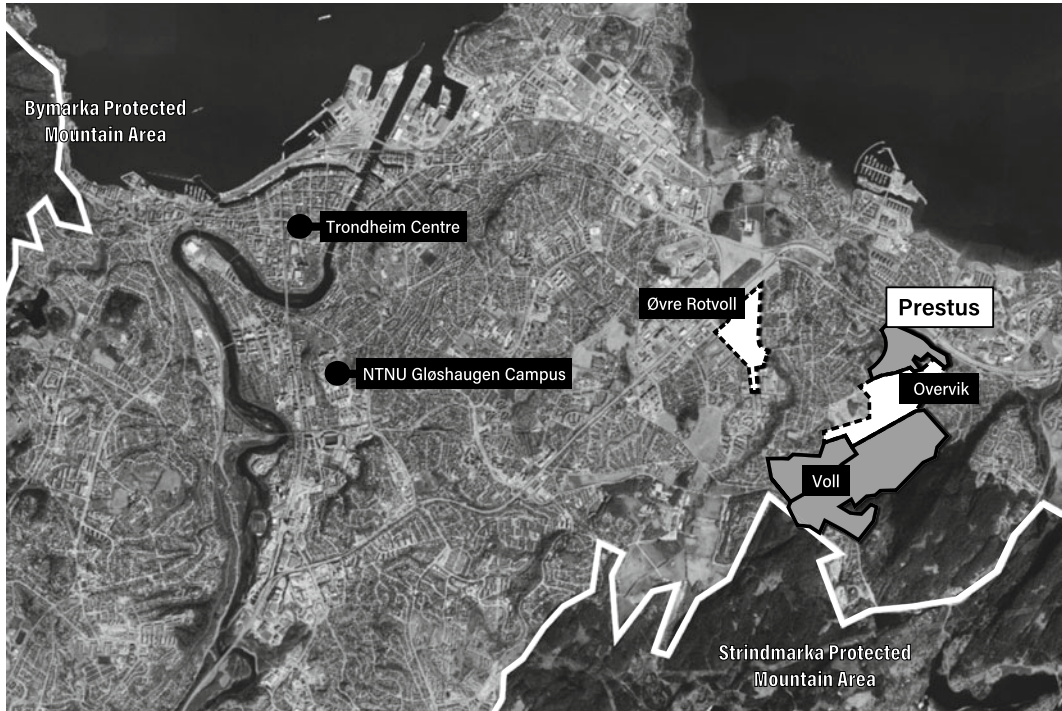
policies and plans from the municipality were used to ground the official development plans. All sources are cited in the cases below.

5 Cases

Presthus

The first case is based on the notable green space action of Trondheim Municipality to establish the *grønn strek* or greenbelt and its relation with urban agricultural areas. This urban growth boundary, originally decided in 2015 and updated in 2020, has become an important tool for managing the city's spatial development. Like the *grønnstruktur* concept in national legislation, it serves multiple aims for promoting the compact city and protecting the surrounding agricultural lands for local food production (TK 2016). Here the societal value of urban or peri-urban agriculture is brought to the fore as a strategic area for Trondheim's long-term sustainability. While the majority of green structure areas surrounding Trondheim are already protected forested mountain areas, the added value of the greenbelt especially concerns enclaves of high agricultural value within the urban area. Attention can be drawn to the Presthus and Øvre Rotvoll areas, which are recognized for historical-cultural value, and others further east along the E6 highway, Ranheim/Være, that have been marked as 'high priority' for protection (Map 1). These areas are under high development pressure due to their proximity to the urban centre and transportation corridors, while the soil quality can be easily degraded due to urban and industrial encroachment.

The case of protected Presthus Gård, in relation to unprotected neighbouring Overvik, exposes how mobilisation around a concrete urban agriculture project influenced the political process determining Overvik's development and created new coalitions around how to govern land at the urban periphery. A central topic in this narrative is the balancing act of local politicians who try to combine competing



Map 1 Trondheim urban area with Presthus case, protected Voll area, and formerly protected Overvik and Øvre Rotvoll areas. (Authors' own with open files from Kartverket)

sustainability interests that have resonance in national and international discourses around climate policies and food security, with biodiversity entering the picture in recent years. As seen, the greenbelt did not resolve all of the paradoxes faced by local politicians when it comes to land use and development:

A city, a municipality, cannot on its own control the centralization trend, so it means that we are in that pinch. We must facilitate the growth that comes away, and at the same time take into account cultivated land, soil protection, nature areas and so on ... In some contexts, I argue that we should have legally binding regional area plans. Because you often see in a city like Trondheim, that if you do not allow for a certain development in Trondheim, because you think it will be wrong to facilitate it, then it comes to the neighbouring municipality instead. (politician, public sector, 02.10.2020).

Property developers as well as actors outside Trondheim also invoke the argument that projects will be lost to neighbouring municipalities if opportunities are not seized (Østraat 2016; Paus

2020). Since there is a clear economic motivation for most local politicians to ensure that their municipality receives property tax and potentially increases the income tax base from new housing, this is a strong leverage point for market actors that cannot be countered without the regional dimension.

Despite the seeming consensus surrounding the greenbelt, the political landscape in Trondheim has been quite divided (Kringstad 2019). A broad red-green coalition held the dominant positions in the city led by a Labour Party mayor during five subsequent periods, with the conservative and right-wing parties in opposition. When it comes to city development, however, the Labour Party has been known to form a majority with the opposition, following a more liberal line than their coalition partners. This resulted in less land being protected in the greenbelt (Adresseavisen 2016a). Needless to say, this strategic manoeuvring created much frustration and tension within the coalition (Adresseavisen 2016b; Lundemo 2020).

The current narrative plays out during the unfolding of a political scandal where a leading local politician from the Labour Party was exposed for influencing the decision-making process around the greenbelt while being excluded due to having private interests in several contested areas. These processes surfaced through a series of critical articles from the local newspaper, *Adresseavisen* (2016c; 2017a; 2017b). According to other local politicians, it is likely that these cases would have remained hidden without this critical journalism. While the formal investigation concluded that no illegal behaviour had taken place, the popularity of the Labour Party in Trondheim dropped significantly compared to their earlier levels, and several politicians holding central positions in the city council were excluded or left the political arena altogether (Adresseavisen 2018a).

The *Adresseavisen* series covers other developer-led projects where informal contacts between local politicians and private actors have been put under scrutiny. The Overvik area, being one of the largest properties that was omitted from the greenbelt, has been in focus, not only because it is a large project involving many acres of agricultural land, but also because of the way the plan was approved by the city council. Due to the controversial nature of this project, the Ministry of Finance was involved in approving the development, but with clear signals to develop a priority list where all properties approved for housing purposes should be ranked according to a set of given criteria. Such a list was, however, not developed in 2014 when the permission was given for the property developers, Overvik Utvikling, to proceed with their plans to develop the area, but was launched by the administration in 2018 (Adresseavisen 2018b).

As a part of their development, Overvik Utvikling wanted to build a central road and a planned school outside the already regulated area on the neighbouring farmland, including the Presthus property owned by The Norwegian Agricultural Purchasing and Marketing Co-operation (Felleskjøpet) (Adresseavisen 2016d). The justification given for this move was to secure a climate-friendly transport system in the

area. In the words of a consultant involved in the planning process:

We were to make a plan for the municipality, and we should do it according to the plan program. You should reach the zero-growth goal, and then it was, almost the whole plan is just about mobility. We looked at solutions all the time, and no matter how you turn it around, it (the road) had to cross Felleskjøpet. (consultant, private sector, 16.10.2020).

As a former experimental farm for grain, Presthus now houses a kindergarten and a local volunteer centre. Although not initially engaged in the Overvik property development project, the board of Felleskjøpet made a decision to take active ownership over the farm that previously had been leased to the largest owner at Overvik who wanted to transform his farm into housing. Here in the words of one informant centrally involved in the process from Felleskjøpet:

That was when the board took a stand, said no, we will take care of this as a fantastic opportunity to develop the image of Norwegian agriculture—to be in dialogue with the urban population and use Presthus as a showcase for agriculture. And then develop this with urban agriculture, which was identified as a strong trend. (employee, third sector, 12.10.2020).

Then followed a sustained effort to mobilise other stakeholders such as local agricultural organisations, political parties and parent committees in the district. With central involvement from Voll Gård and external architects, a new concept study was developed to highlight the potential of Presthus as an urban agricultural centre—also supplying a wide array of services for the local community including a bakery and craft brewery. Consultants were hired to make alternative plans for the road structure, challenging the position from Overvik Utvikling that the road over Presthus was the only viable option (Adresseavisen 2016e). The people in the area were also invited to a neighbourhood day on the farm, with skiing, a farmer's market, torchlight procession and local pub night. Media were used actively to communicate the benefit of the new initiative and the negative consequences that a road over their land would have for them (Kvam 2018).

The new plans for the Presthus farm were very well received by the local community at neighbouring Ranheim, creating strong advocacy for the project. This also increased the pressure on the politicians in the city council:

They cheered a lot on this here and pushed on the labour union, or the local Labour Party team in Ranheim, to the extent that the local Labour Party wrote a letter to their city council group insisting that Presthus must be allowed to develop itself as a resource to the population, and not just fall victim to such commercial development in the neighbourhood. And I think that was a bit important to turn (the city council). (employee, third sector, 12.10.2020).

It is difficult to conclude which factors were the most important in this process, and other informants also point to the critical remarks from the county governor as an important reason for the outcome. Nevertheless, the Trondheim Building Council ultimately decided to locate both the school and road inside the already regulated area of Overvik (Adresseavisen 2018c). In the aftermath of the Presthus case, this scandal-fraught development is currently being reconsidered by the Labour Party that originally approved it, citing current knowledge about the climate crisis and the possibility for more centralised development in the city (Rasmussen et al. 2020). It is now a likely outcome that large parts of the Overvik property will remain agricultural land, and that most of the original plans for real estate development will not be realised in the foreseeable future. Furthermore, if the new position taken by the Labour Party in the Overvik case also signals a new course in the long term, the red-green parties will be united in securing a stricter line for protecting agricultural land in Trondheim.

The main actor groups identified in the Presthus case are illustrated in Fig. 2a according to the MaP model. These include actors from all sectors: from state, politicians and public administration; from market, local media and a real estate developer; from the third sector, the formally organised Voll Farm Foundation (Voll Gård) and Norwegian Agricultural Cooperative (Felleskjøpet); and from community, the

informal local Labour Party group and community members.

Høyskoleparken

NTNU has its main campus at Gløshaugen, approximately one and a half kilometres from the central square. From a prominent hilltop overlooking the centre, it occupies a prime location and is a main focal point of the city. The green hillsides flanking the campus are a highly visible part of Trondheim's green structure in this area. Map 2 shows the NTNU Gløshaugen campus which is ringed by the delineated green space comprising Høyskoleparken, Elgeseter Park and Høgskoledalen. These spaces are collectively referred to as Høyskoleparken in the public discourse.

The Gløshaugen campus is undergoing a planning process to co-locate several campuses of NTNU from different areas of the city at this main campus, transforming the area to accommodate 10,000 more students and 2,000 more employees by 2030 (TK 2019). The current plan recognizes the landscape and biodiversity values of green connections, ecological corridors and blue-green structures, as well as designated 'park' areas for nature, community and sports activities. In principle, the green areas that form a natural ring around the campus should all be preserved. Specifically, Elgeseter Park will be upgraded, including up to 20% developed for residential use; Høgskoledalen will be further developed as a sports park; and Høyskoleparken will be planned for increased use with strengthened ecological functions. While acknowledging the green values in these areas, the plan provides for other potential uses such as residential or university buildings, which should be compensated with increased ecological quality of the remaining park. This case follows how these park areas came to be protected and recognized as a vital part of the university campus environment. The longer view over campus planning reveals a lengthy process fraught with controversy and reversal of decisions to develop the park.

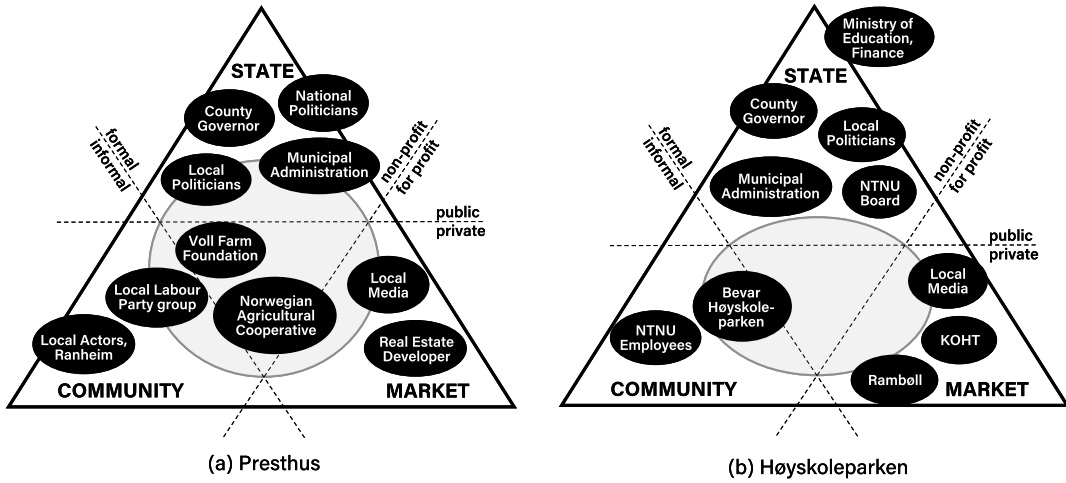
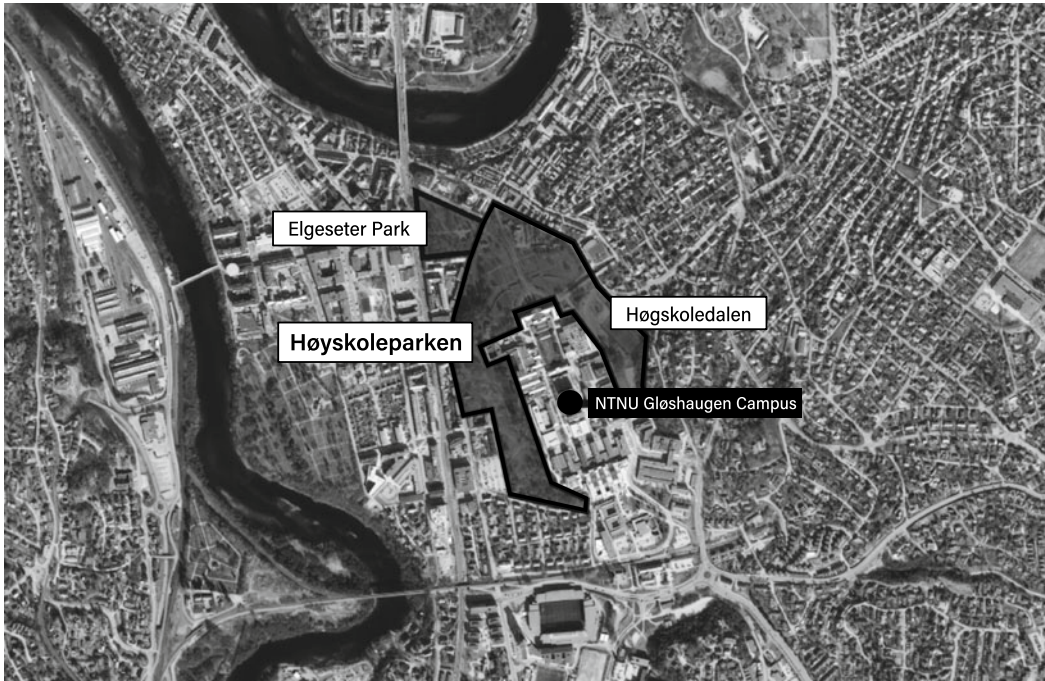


Fig. 2 Multi-actor perspective (MaP) models of Presthus and Høyskoleparken cases



Map 2 NTNU Gløshaugen campus with surrounding green spaces, Høyskoleparken, Elgeseter Park and Høgskoledalen. (Authors' own with open files from Kartverket)

The scientific and physical merger of different faculties and departments of NTNU was initiated by the Ministry of Education in 1996, and several developments from 2000 to 2002 started the process of centralising NTNU activities at Gløshaugen. The construction of a new Natural

Sciences Building from 1997 to 2000 created 62,000 m² of space to co-locate the scientific departments from satellite campuses at Lade and Rosenborg. This showed that there could also be enough space at Gløshaugen to move the Social and Humanities faculties from the Dragvoll

campus, located approximately four and a half kilometres away from Gløshaugen. The Natural Sciences Building notably replaced the green transition zone on the south side of the campus without raising a significant public debate on UGS.

From 2002 to 2006, NTNU and Trondheim Municipality worked together on the co-location of Dragvoll and Gløshaugen, but employees resisted the plans due to competing logics and motivations behind co-location. Namely, markedly different academic cultures between the social sciences-oriented Dragvoll campus and the natural sciences-oriented Gløshaugen campus left doubt amongst employees that physical proximity would result in more successful collaborations (Gohari 2019). Moreover, the focus of the co-location debate on facilitating collaboration overshadowed contentious issues such as the municipality's involvement in university affairs and the seemingly needless loss of well-functioning facilities at Dragvoll. The NTNU Board dismissed the plan in May 2006. From 2006 to 2012, NTNU followed a two-campus model based on Gløshaugen and Dragvoll. In 2012, the local–regional government from the Social Democratic Party re-opened the subject of campus co-location, gaining political and financial support from the Ministries of Education and Finance (both from the Social Democratic Party) as well as institutional support from NTNU's leadership. The Ministry of Education assigned a consulting engineering group, Rambøll, to do the feasibility and quality assurance study. Based on the results of the report, NTNU organised an idea and planning competition for the co-location project in 2016. On 17 October 2017, the winning proposal by KOHT Architects indicated intensive building on the grounds of Høyskoleparken including Elgeseter Park and the western slope, which was in accordance with the competition brief. The plan thus drew heavy public and political opposition until the planning process associated with the competition was shelved in April 2019.

At its peak, opponents of the park development used the municipality's and university's own arguments for development in favour of

preservation, insisting that preservation of the park was crucial for positioning NTNU and Trondheim Municipality as an innovation and sustainability hub while noting the availability of alternative sites for development accommodating tens of thousands of square metres of built space only a few minutes' walk away (Fremo 2019). This civil architect and planner summed up the core of the debate:

Urban development is about value choice, something must be prioritized over something else. That is the big challenge for Trondheim's politicians now. (ibid).

From this high point, the municipal council decided to regulate the campus areas through an 'Indicative plan for public spaces and connections in the Elgeseter area', designating the intended uses of the green areas surrounding Gløshaugen. The wider area in question includes residential, commercial and institutional buildings to the west of the campus as well as one of the main thoroughfares to the city centre. Since the detailed planning began within the Elgeseter area, attention has shifted to the specific locations of new buildings and their impacts on the green space as a whole, but the issue has not been put to rest. Citing new commitments to the SDGs, the public action group Folkeaksjonen Bevar Høyskoleparken (FBH, Preserve Høyskoleparken) issued a statement in September 2020 to the Trondheim Building Council, politicians, municipal director, NTNU and the Norwegian Directorate of Public Construction and Property (Statsbygg) to reignite the public debate surrounding the continued contradictions between sustainability goals and planning:

In Framtidsbilder Trondheim Centre 2050, the inhabitants ask for more parks and a better living environment in the centre for families with children and everyone. New knowledge says 'quiet areas' such as Høyskoleparken mean a lot to public health, and that biodiversity is seriously threatened. Park = sustainability and diversity! (FBH 2020).

The continued pressure by the public action group suggests that government intervention and legitimation of the planning process will not be enough to satisfy the local community,

consisting of the employees and concerned citizens of FBH, who are focused on the outcome. At present, the municipality's planning process has created the framework for NTNU and Statsbygg to put concrete plans on the drawing board once again, which, by indication of the revival of FBH, will surely be put to close public scrutiny.

The key actors involved in this case are situated in the MaP diagram in Fig. 2b. These include politicians and public administration from the state, regional and local levels, the NTNU Board and employees, local media, engineering and architecture consultants and FBH, which, with more than 3,700 followers on social media in 2018, qualified as one of the largest public action groups in Trondheim's history (FBH 2018).

6 Discussion

As Westerink et al. (2013) discuss, sustainability trade-offs are often found between environmental criteria and social constraints. As planning in Norway allows for overlaying land use objectives and the consideration of social and spatial issues at the municipal level (Lidmo et al. 2020), we uncover competing priorities of urban development and green space provision in central and peripheral locations of Trondheim. These priorities can be identified as, in the Høyskoleparken case, university consolidation for innovation and sustainability advancements and enhanced university–municipality collaboration, both supporting international competitiveness, which conflict with the preservation of social and ecological functions of the UGS. In the Presthus case, competing priorities pertain to economic gains from private real estate development based on a change in land use, justified by a 'regionally sustainable' pattern of development, against the social and ecological preservation of a culturally and environmentally significant agricultural landscape. As expected, these are framed on one side by compact city aspirations and, on the other side, environmental justice arguments of access to green areas, which

relate to contradictory logics of neoliberal urbanism in restructuring institutional and spatial landscapes (Peck et al. 2009; Taşan-Kok 2012).

The regional and local scale perspectives put forth by different discourse camps both make claims on sustainability. The task faced by policymakers and practitioners serving the public interest is to determine which, if not both, is a legitimate claim on sustainability and fulfils the democratically determined objectives surrounding UGS. Thus, it is necessary to be critical of urban governance processes, power dynamics and the neoliberal logic of development that planning is subjected to under the guise of social inclusion. This can be a challenge due to the hidden dynamics of stakeholder interactions and the ever-growing role of the private sector, even in the Norwegian context that has long favoured a deliberative, consensus-based approach. Uncovering the roles of different actor groups and their engagement in the UGS proposals is crucial to expose weaknesses in the sustainability discourses being constructed by various actors involved in the processes.

To further the discussion on the cases and trends, we consider the findings in terms of the roles of actor groups specified according to the MaP approach and, finally, reflect on the implications for the sustainable governance of UGS through enhanced collaboration.

State Sector: The state sector actors identified in the two cases include ministries (education and finance), regional and local governments, politicians, the municipal administration including planners, and NTNU as a public university represented by its board. The public sector roles in urban development are highly shaped by the Planning and Building Act. Hence, the responsibility for planning rests on the local and regional authorities. In Norway, the role of planners (and also the municipality) is to safeguard planning laws and processes, while an increasing number of development proposals affecting UGS will be initiated by the private sector. By virtue of this relationship, there can be a natural tension between public and private actors and, moreover, conflicting motivations for green space development, as public actors are

tasked with balancing social and environmental with economic interests. There can be perceived conflicts of interest when politicians have ties to urban development (e.g., Overvik, which increased scrutiny over neighbouring Presthus), or when state institutional actors have to manage and develop public assets (e.g., the university's interest in developing adjacent green areas). When political tensions boil over, we see deference from the local to regional or national levels of government to regulate the planning process, such was also the case in a recent controversial smart city development in Bergen (Gohari and Larssæther 2019). As Mäntysalo and Saglie (2010) discuss, if the local government resorts to drafting agreements and planning future schemes with the developers before beginning official public consultation processes, a severe contradiction of the planning law's principles of inclusion and participation may be the consequence. In the Høyskoleparken case, the municipality stepped in to regulate the planning process of the campus area; in the greenbelt, the intervention of the regional and national level indicates the unsatisfactory outcomes of the local process. The involvement of higher levels of government to achieve the public's interest is shown to restore legitimacy to processes that have lost the public's trust.

Market Sector: Market actors identified in the two cases include private local media (e.g., *Adresseavisen*), on the one hand, and engineering and architecture consulting firms (e.g., Rambøll, KOHT) and real estate developers (e.g., Overvik Utvikling), on the other. These two have different roles in the public discourse. The first is as a filter (who enters the process) representing the goals and interests of others, providing a forum for all actors while disregarding his/her own goals. While technically a commercial actor, *Adresseavisen* has played an instrumental part in changing the narrative through its critical journalism in the Presthus case, exposing hidden power games involving huge economic resources and leading politicians operating on both sides of the table. The second role is as a promoter, who prioritises the initiated case in his/her actions and prompts and develops it further to achieve the

desired outcome, in these cases for promoting urban development. As shown by the cases, the former has been a vital forum for enabling dissenting and marginalised groups to contribute to and eventually sway the public discourse. The latter group uses the concept of sustainability to promote their projects as a condition for social acceptance and public appeal creating new values, even though the environment and viability of the agricultural enterprises could stand to become degraded.

Community Sector: The community sector is represented by citizen groups in various forms, both formally and informally organised. Here we also address the third sector, since those organisations at play in the cases are community-oriented. From the Presthus case, Voll Farm Foundation (Voll Gård) and the Norwegian Agricultural Cooperative (Felleskjøpet) are third sector, formally established, private, non-profit groups. The former has been an instrumental proponent of the urban agriculture movement. Local community actors from Ranheim represent the informal side. From the Høyskoleparken case, FBH rose as an informal movement to mobilise public opposition to development in the park. Both types of organisations have proven to be effective in shifting discourses towards conservation and protection, involving heavy use of the local media, primarily *Adresseavisen*. NTNU employees who organised informally to oppose campus co-location, as well as park development, could also be considered in the community sector.

The cases covered in this chapter are just two of many local urban development proposals and completed projects that carved green space away from the greenbelt and Høyskoleparken. Regarding the greenbelt, other protected areas including Øvre Rotvoll and Overvik were initially approved for residential development on the grounds that farmland conversion for housing on the urban periphery would support a more sustainable regional growth pattern and therefore be the more climate-friendly option (Vinge 2018). By harnessing the power of the compact city argument and neglecting to involve agricultural and environmental organisations in the process,

the pro-development community was able to influence the public discourse and give the proposal an air of planning legitimacy. On the other hand, our material also shows that the dominant narrative has been challenged and perhaps also transformed by a 'perfect storm' of generally increased awareness around the protection of UGS, local agency and critical journalism. The public discourses surrounding UGS protection have therefore evolved significantly since earlier examples, such as the development of NTNU's Natural Sciences Building in 2000 which removed the southern zone of Høyskoleparken without controversy.

Since the events behind the presented cases, we observe a rising sensitivity and shift in the public discourses towards green space protection, in line with the widespread acceptance of the SDGs in many areas of Norwegian society. Some of this increased sensitivity also relates to the governance transition and the need for the involvement of more actors. Through multi-stakeholder collaboration, participatory planning and active involvement of citizens, it is possible to create a better sense of ownership and commitment, which is important in the context of UGS development. Public participation processes invite citizens to be critical and express disapproval of municipal processes (Klausen et al. 2013), although the outcomes of such processes are not guaranteed. By including more actors sooner, a great deal of opposition, unrest, mistrust and costly deviation from plans could be avoided. Building within existing green areas in Trondheim is becoming less acceptable as the local population becomes more aware of the multiple benefits of UGS, especially regarding economically motivated developments where there are alternative sites and strategies for accommodating growth.

Collaboration for Sustainable UGS Governance

Environment and planning laws create obligations in the municipality to protect green space and ensure public participation. While we do not

analyse whether the requirements have been met in the cases, the two examples point to a need for public participation to ensure the involvement of the relevant parties at the appropriate time. With improved guidelines for public participation, the parties would have a better opportunity to share information and fairly shape the discourses that surround controversial plans and decisions. Moreover, inclusive and collaborative processes focused on various stakeholder groups' interests can improve transparency and bring to light the contradictions of neoliberal urbanism that must be faced by planning and governance systems, as suggested in other Northern European contexts (see, e.g., Berglund 2022; Pikner 2022; Pungas et al. 2022; Sechi et al. 2022 in this volume). Given the lack of public participation observed in the cases that mobilised opposition groups to cause a shift in the prevailing discourses, we consider the possibilities for enhanced engagement in different development contexts.

One trend of enhanced public participation is to involve multiple actors from the early stages of planning through so-called 'co-creation', a collaborative approach with roots in product and service development together with users and consumers, that is generally associated with social innovation (Voorberg et al. 2015). Co-creation has emerging applications in urban planning and governance, involving multi-sector consortia for tackling complex urban problems while fostering a group dynamic that is open to knowledge sharing, learning and experimentation (Puerari et al. 2018). Also of relevance, the deep engagement of citizens that embeds local knowledge and community perspectives into urban planning processes has been shown to improve decision-making (Glackin and Dionisio 2016). Experience from Norwegian municipalities shows the benefit of early and long-term engagement (Klausen et al. 2013).

Extending the logic of co-creation to urban governance, an emerging approach is that of urban facility management (urban FM) for the long-term sustainable management and user orientation of the built environment (Temeljotov Salaj and Lindkvist 2020; Lindkvist et al. 2021). Facility management has heretofore been focused

on buildings to the exclusion of their surroundings, yet discourses around urban greening have created a precedent for partnerships between government, developers and citizens (Jim 2004). The focus of urban FM extends to public–private–people partnerships as part of the co-creation and co-maintenance of public space. Partnerships are established to overcome specific sectoral interests, ensuring the sustained economic viability and investments needed to maintain UGS without compromising environmental quality, recalling the problem of common area degradation (Ostrom 1996). For example, property owners and managers can be incentivized to invest in UGS as a public good and draw benefits from the ecosystem services produced, embedding partnerships into the governance structure.

As an intermediary in the development process, urban FM can engage citizens in formal and informal networks and groups for climate mitigation and adaptation, respond to the importance of social strategies to achieve behavioural changes, and follow and lead participatory processes through all levels of participation: inform, consult, involve, collaborate and empower (Temeljotov Salaj et al. 2020). The nature of urban FM allows the full achievement of stakeholder participation. The task to deliver services to citizens, businesses and public institutions requires urban FM to have an effective collaboration with these partners, where managers' day-to-day interactions with end-users provide an opportunity to have closer contacts and improve mutual understanding of challenges and solutions, thereby building a trustful relationship. Through this approach, new stakeholder configurations emerge for sustainable urban development, especially in brownfield sites where existing users and new investors bring in a more diverse range of stakeholders. An extended form of facility management is indeed at work at the NTNU Gløshaugen campus by virtue of the scale of the grounds, buildings and diversity of uses and users that come under a traditional facility management system. Intentions aside, by adopting an urban FM approach that takes into account the wider community, the university

board and administration would be made more accountable to citizens regarding the uses, development and management of its grounds, including Høyskoleparken.

In the peripheral setting, a multi-actor shared governance model has not yet emerged. However, on the topic of UGS, we can learn from the successes and failures of greenbelt management. Here, there are governance challenges with addressing multiple policy goals that converge on UGS. Even successful greenbelt strategies produce mixed outcomes such as leapfrog development or environmentally damaging levels of tourism and recreation (Macdonald et al. 2021). Greater governance capacity is needed to achieve policy goals and integrate them with supporting policies and frameworks. Evidence suggests that collaborative and integrated approaches, in the case of greenbelts, are better suited to implementation at higher levels of government (ibid). This runs contrary to the Norwegian regulatory environment. Still, the trend could be seen that planning and decision-making processes in the Presthus and Høyskoleparken cases improved for the public interest with the intervention of higher levels of government.

7 Conclusion

As the cases of urban and peripheral UGS in Trondheim show, on the one hand, uneven power to shape discourses led to decisions that could be considered far away from the public interest in terms of land use and UGS, albeit in the name of sustainability. On the other hand, our material also shows how targeted action from the community can change this unfortunate course of events by forging new alliances and introducing alternative narratives that may produce a lasting transformation of the existing landscape. We cannot ignore the crucial role of local media to give voice to these communities and third sector actors. Effective forms of public participation exist or are latent and able to be activated through formal and informal networks, alluding to the strength of social and democratic values

underpinning the Nordic approach to sustainability. Given the experiences in these ongoing processes, however, public participation could be fostered more intentionally and followed up with collaborative governance networks to safeguard UGS.

Between the urban and peripheral cases, improved public participation could emerge in different ways. In the Høyskoleparken case, urban FM has potential as a strategy for taking public, private and citizen needs into account for the long-term sustainability of the campus area and its integration with central Trondheim. In the Presthus case, agricultural and environmental interest groups need to be empowered to participate in public debates. In comparison to the urban setting, the citizen group is less represented in the periphery, as there are fewer residents and users to counteract powerful business and political actors. Through comparison of the MaP analyses conducted for the two cases, we reveal the underrepresentation of the community sector, both formally and informally. The appropriate scope of citizen participation in a peripheral area is less clearly defined, so there is a need for civil society organisations to fill that role. When this was the case in Presthus, the citizens could lead the controversial development proposal to a different outcome than had resulted from similar proposals threatening the greenbelt. As a further step, it is important to consider new governance models for the sustainable management of UGS.

There is a general assumption that governance—by involving a large number of interdependent and autonomous actors with different but complementary resources—can produce more effective and legitimate outcomes than the traditional hierarchical government. However, our cases have shown that, even with the strong Nordic democratic tradition, sustainable development can be challenged by a lack of transparency towards interests and strategies, conflicts of interests and perspectives towards sustainability, frustration over the lack of clear and visible results, and distortion and change of the set agenda or policy process. In addition, the diffuse range of potential stakeholders negotiating

sustainability in the urban environment complicates collaborative governance under existing structures. As Gohari (2019) concludes, in order to enhance governance effectiveness, all actors need to fully understand decisional processes and realise the model of governance and subsequent power relations. Yet, the model of governance itself is left in doubt, due to power imbalances shown by the failure to include the community sector in both accounts.

Engineering effective governance is a challenging task, and factors related to the culture of the institution and government priorities have a large influence on the outcome of the planning and decision-making processes. Ineffective governance systems have long been recognized to obscure information, thereby enabling the misuse of knowledge and manipulation of participation (Forester 1989). In the era of neoliberal urbanism, the drive for social innovation in governance for greater participation and inclusion highlights the need to rearticulate state-market-civil society relationships (Swyngedouw 2005). In light of the Trondheim cases, we stress the need for an intermediary actor that has the necessary knowledge, resource, power and relationships to make the most of the existing assets, while protecting the weaker parties (e.g., citizens) against a poor agreement and developing mutual benefits (Gohari 2019). Environmental justice, as an underlying social aspect of the Nordic approach to sustainability, can stand to be strengthened in local processes despite the tradition of good governance and the existence of a legal concept (*grønnstruktur*) protecting access to green space. The experiences outlined in these cases from Trondheim beg the question: *how?* It is important that stakeholders understand processes of change with the potential to reinforce or undermine sustainability, including how and why they have happened and whether the change is in response to external (e.g., SDGs, climate change, international or national political mood) or internal (e.g., community's resistance) demands. Urban FM, which has the role of improving citizens' quality of life by stimulating and facilitating their participation in local development processes, can act as an intermediary between

diverse stakeholders, ensuring that social value is embedded with economic and environmental concerns (Temeljotov Salaj et al. 2020). The advantages of such a system are clearer for urban settings, where the multiple actors are highly visible and scrutinised and structures are formalised, than for peripheral ones. Nevertheless, we propose that enhanced collaborative governance focused on sustainability values will also benefit peripheral UGS through increased transparency and formalised roles for local actor groups to partake in shared governance.

Acknowledgements This chapter draws from research supported by the Research Council of Norway project no. 280715 “BE(E) DIVERSE The flowers and the bees—Solutions and tools for integrated sustainable planning to safeguard biodiversity in urban landscapes” and no. 220691 “Frogs, fuel, finance or food? Cultures, values, ethics, arguments and justifications in the management of agricultural land (FORFOOD)”.

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