



# Striving for Inclusion—A Systematic Review of Long-Term Participation in Strategic Management of Urban Green Spaces

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This systematic review contributes to the research field of user participation by suggesting a new holistic approach comprising a cyclic process model for long-term participation in the strategic management of urban green spaces, including analysis, design, and implementation phases, each followed by an evaluation. User participation in urban green spaces is encouraged in international conventions. Such initiatives aim to involve citizens more closely in decisions regarding local spaces, based on the premise that this will create better, more inclusive, and sustainable local environments. However, a social inclusion perspective is largely absent in the growing body of European scientific literature on urban green spaces. Further, user participation processes are often carried out within projects, with uncertainties about which strategic management phase (planning, design, construction, and/or maintenance) to emphasize and about the long-term sustainability of project-based participation. Therefore, the literature was examined for tools for participation with the focus on participation of local users in the strategic management of urban green spaces, and in particular, marginalized groups. A systematic review based on peer-reviewed scientific papers revealed the necessity for adapting participation processes to the known needs of different participant groups, including those of marginalized groups often excluded in the past. Local authorities have several pathways to socially inclusive and long-term participation. These include choosing and employing a suitable participation approach, anchoring repeated project-based participation in existing municipal long-term strategies, continuously supporting participating users and evaluating ongoing participation processes, and employing a mix of participation types and approaches. The “cyclic process model for long-term participation in strategic management of UGS” presented in this paper could guide such efforts.

**Keywords:** tools, marginalized groups, inclusive green spaces, long-term, public involvement, urban green spaces, social inclusion

## INTRODUCTION

A city's overall urban green infrastructure (UGI) has been proven to play an important role in addressing challenges linked to Agenda 2030 and the United Nations Sustainable Development Goals (SDG) (e.g., Cumming et al., 2017; Maes et al., 2019; Reyes Plata et al., 2020). This is due to the ability of UGI to provide a range of benefits and values for urban dwellers in general (e.g., O'Brien et al., 2017) and public health in particular (WHO, 2016), as it is linked to increased physical activity and social cohesion (Jennings and Bamkole, 2019). In order to achieve some of these benefits, active use of UGI is required (Pauleit et al., 2017; van den Bosch and Ode Sang, 2017). UGI comprises both privately, institutionally, and publicly owned urban green spaces, such as designed green spaces, gardens, remnants of natural areas, farmland on the fringe, derelict land, and street trees (Pauleit et al., 2017). Urban green spaces (UGS) denotes a specific part of UGI, defined as urban publicly accessible areas with natural vegetation, such as trees, grass, and plants (e.g., Lachowycz and Jones, 2013). User participation in UGS can have additional benefits for participants compared with green space use alone (Fors et al., 2018), and may contribute to the environmental, social, and institutional resilience of cities (Buijs et al., 2016).

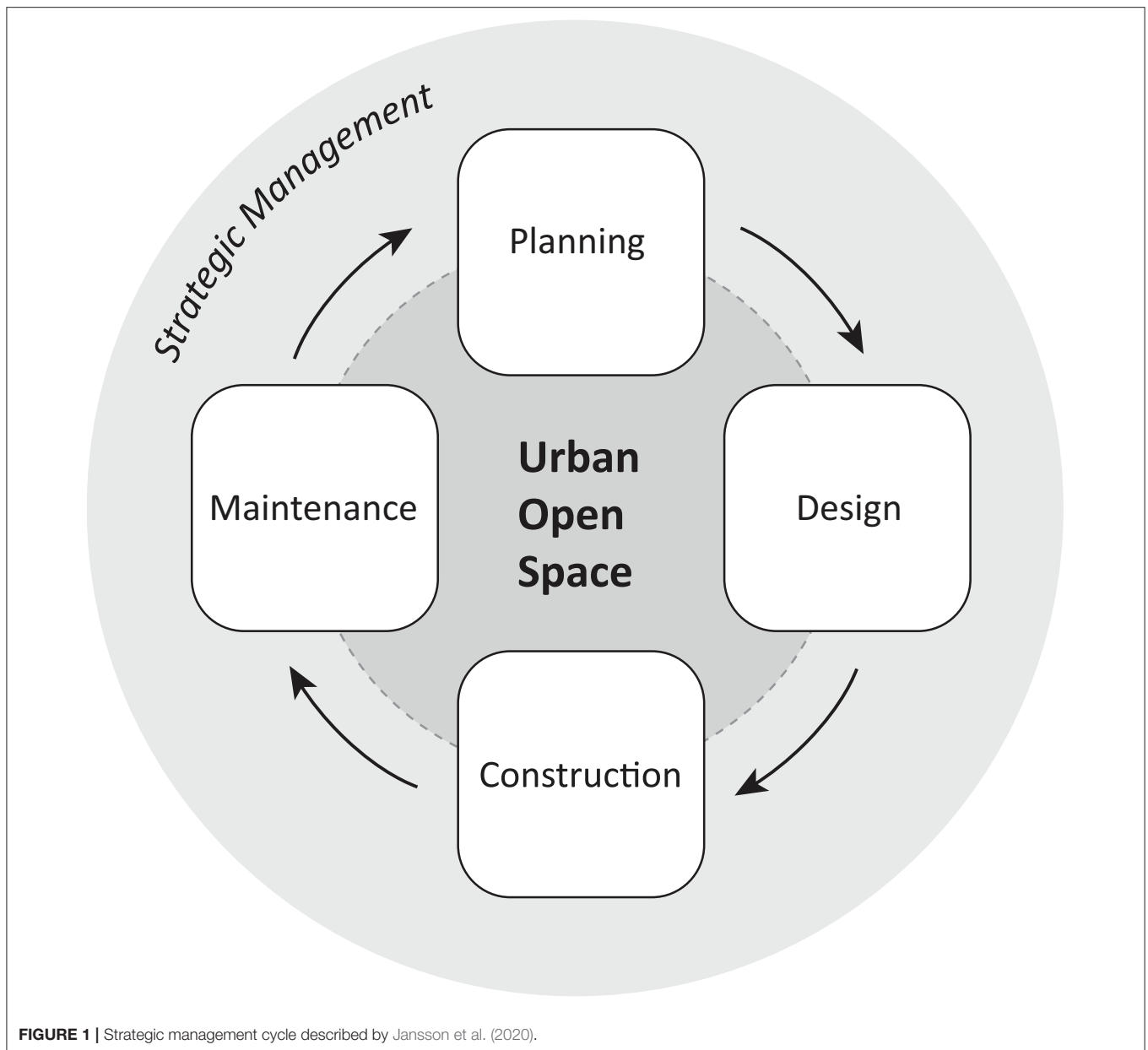
Participation processes are widely encouraged in international conventions, such as the Local Agenda 21 Action Plan (United Nations Conference on Environment and Development, 1992), the European Landscape Convention (Council of Europe, 2000), and the EU Aarhus Convention (Stec et al., 2000). Several policies stress the importance of involving all user groups in participation processes, including marginalized groups, since such processes are crucial to inclusive green space use. "Users" are defined here as people or groups constituting a specific part of the public that regularly or potentially inhabit and interact with a local green space for primarily recreational purposes. They can also be described as "communities of location," i.e., a group of people living in the same geographical location close to an UGS, or "communities of interest," i.e., a group of people sharing a common interest or facing similar challenges in using the same UGS (Seyfang and Smith, 2007; Fors et al., 2020). The term "marginalized groups" includes immigrants, low-income people, women, people of color, LGBTQ people, children, the elderly, and people with disabilities who experience disadvantages in relation to spatial access to UGS, representation in decision-making processes, and UGS use (Rigolon et al., 2019; Rigolon and Gibson, 2021). The European Landscape Convention states that local users should participate actively in both setting and defining landscape values and in decisions regarding protection, management, and planning of their everyday landscape (Articles 5 and 6, Council of Europe, 2000). The United Nations' 2030 Agenda for Sustainable Development focuses on decision-making with particular reference to the participation of marginalized groups (SDG targets 5.5, 11.3, and 11.7), to empower and promote the social, economic, and political inclusion of all in decision-making processes (SDG target 10.2), and to "ensure responsive, inclusive, participatory, and representative decision-making at all levels" (SDG target 16.7). All these initiatives aim to involve citizens more closely

in decisions regarding the local spaces and services they use, with the underlying premise that this will create better, more inclusive, and sustainable local environments. This requires a broad approach to participation and highlights the importance of not focusing solely on green space users in general, but extending participation to groups typically excluded from green space use and participation processes in the past (Dai, 2011). Neal et al. (2015) concluded that parks can work as socially inclusive places, as animators of social interactions, participatory practices, and place affinities across ethnic and cultural differences.

Participation processes add to the workload within the conventional organization for the municipal strategic management of UGS, and thus need to be aligned and organized within existing structures. UGS are generally developed through three consecutive phases or tasks: planning, design, and management (Council of Europe, 2000; Rodiek, 2006; van den Brink et al., 2016). This indicates that landscape practices apply a linear logic in which projects develop in a chronological, hierarchical way, from a plan set by authorities to more detailed designs that are realized through construction or planting, and with maintenance practices implemented as the "end-phase" (Jansson et al., 2019). Jansson et al. (2020) concluded that a strategic approach to this linear logic requires a cyclic process, in which planning, design, construction, and maintenance are viewed in a long-term perspective. In particular, the maintenance phase extends over years, decades, or even centuries, while re-planning, re-design, and re-construction are all ongoing processes in order to develop existing UGS further (Figure 1). As defined by Albrechts (2006), broad and diverse participation in the process is an essential part of the adjacent term "strategic spatial planning." "Strategic management," on the other hand, rather builds on a long-term perspective on UGS development in general, without including development through long-term participation specifically, or taking the participation of marginalized groups into consideration. However, through the "combined governance and management model" (Jansson et al., 2019), participation is theorized also within the UGS management field.

To date, marginalized groups have often been excluded from the use of green spaces and participation in strategic management of UGS, despite political support for their inclusion. While user participation in the strategic management of UGS has the potential to provide a shared purpose for participating users, regardless of their gender, age, physical ability, mental functioning, socio-economic status, or cultural background, marginalized social groups sometimes experience barriers to participation (O'Brien et al., 2011). Further, these groups are less likely to have effective representation within decision-making processes and may lack the capabilities and resources required to effectively claim UGS (Rutt and Gulrud, 2016).

There are many possible barriers to participation in the strategic management of UGS in general, which can be expressed as reasons for non-participation and unsuccessful participation. Reasons for non-participation include lack of trust in existing political decision-making structures, fear of not having any real political influence, direct exclusion from the physical or social landscape (Clausen, 2017), and lack of awareness among users



**FIGURE 1** | Strategic management cycle described by Jansson et al. (2020).

of the possibility to participate (Straka et al., 2005; Fors, 2018). In processes more independent from local authorities, reasons for non-participation have been found to be more personal, including lack of interest in gardening, lack of time, not being at a stage in life when participation is possible, and not being the kind of person who participates (Fors, 2018). Related reasons for unsuccessful participation include professional skepticism, poor communication, varying personal interest in vegetation, lack of commitment (by both users and authorities), too little support from authorities/tokenism, lack of trust in authorities, uneven levels of activity, lack of funding, conflicting interests, and lack of implementation (Fors et al., 2015). However, marginalized groups may experience different barriers to participation than users in general.

In order to understand why marginalized groups are excluded from participation processes, a possible way forward could be to explore local authorities' reasons for initiating participation and participants' reasons for becoming involved. The many international conventions and the SDGs encouraging engagement of local users and volunteers in the strategic management of UGS came at a time when many local authorities faced austerity (Dempsey et al., 2014). User participation in green space management was then seen as part of the solution to tackle declining budgets. In the UK, community groups are having a growing impact in supporting their local green spaces, with the number of friends groups, volunteering levels, and amount of fundraising currently increasing (Persson et al., 2020). In the US, Central Park in New York is owned by the

local government, the City of New York, but officially managed by a local interest group, Central Park Conservancy, formed by concerned New Yorkers in the 1970s in response to a decline in the quality of maintenance and services in the park (Randrup and Jansson, 2020). Thus, as a result of austerity, UGS planning and management now include a growing focus on collaboration, public engagement, entrepreneurship, and strategic partnerships (Osman, 2017; Persson et al., 2020). Times of austerity or international policies encouraging local authorities to involve users are not the only reasons for participation processes being initiated, but the range of existing reasons for initiating participation has not yet been thoroughly studied.

Participation processes are often performed as projects. Considering the strategic management cycle (Figure 1) and the idea of project management, the knowledge gained in projects will effectively be rooted and incorporated in future planning and management routines. However, the idea of short-term projects always leading to learning and change is increasingly being questioned and criticized (Scarborough et al., 2004; Bresnen, 2006; Brulin and Svensson, 2012). This criticism is based on the inherent contradiction between a project's emphasis on short-term task objectives and the longer-term developmental aspects of sustainability. It has been emphasized that there is a clear distinction between the different phases of the strategic management cycle, especially when it comes to the creation of participation processes, e.g., between public authorities and private stakeholders, such as NGOs, private entrepreneurs, and various user groups (e.g., Fors et al., 2020). The increased interest in participation processes among both practitioners and the research community highlights the importance of organizing participation in a way that utilizes the resources of users, the local authority, and the physical UGS in a fruitful and conscious way (Fors, 2018). It is a challenge for many local authorities to facilitate long-term user participation in the strategic management of UGS. Several studies stress the importance of support from local authorities for long-term participation, since people may lose interest and motivation over time and individual "champions" may leave the project (Jones, 2002; Delshammar, 2005; Young, 2011; Burton and Mathers, 2014; Mattijssen et al., 2017). However, local authorities are sometimes the limiting factor over the long-term, through ever-changing administrations, ambiguous communication structures, bureaucratic procedures, and too short-term management contracts (Mattijssen et al., 2017).

Further, UGS planners and managers have reported that they lack the knowledge and training required to involve users in a beneficial way, instead working in *ad hoc* ways when involving users (Molin and van den Bosch, 2014; Randrup et al., 2017). There are few structured reviews on different tools that could help UGS managers facilitate user participation in the different phases of strategic management of UGS. In addition, it is not known whether existing tools for participation are designed to ensure participation by traditionally excluded marginalized groups. The choice of tool for participation is affected by the role assigned to participants and the amount of power that local authorities are willing to transfer to users. The spectrum of public participation (Ambrose-Oji et al., 2011) provides a helpful way to describe the

level or type of participation in this regard, clarifying the role of participants.

To summarize, user participation in the strategic management of UGS is widely promoted, but participation processes are often carried out in short-term projects, compromising the long-term sustainability of participation. The aim of this review was to examine the literature for tools for participation and answer the following three research questions related to participation processes in the strategic management of UGS, with specific focus on marginalized groups:

- (1) Which participation approaches, tools, and types are used in which phases of the strategic management of UGS, i.e., planning, design, construction, and maintenance?
- (2) Why are participation processes initiated?
- (3) Which user groups participate?

## METHOD

### Systematic Review

After initial tests, we conducted a systematic review (Grant and Booth, 2009) based on peer-reviewed scientific literature, using the strategic management cycle (Figure 1) as the theoretical foundation. We included a range of synonymous search terms to capture the breadth of literature on participation of local users in the strategic management of UGS. Inspired by Fors et al. (2015), we used several similar terms for participation (e.g., involvement and engagement), omitted "urban" from "green spaces," and included specific group demarcations, such as public, user, citizen, or resident to generate a wider range of relevant hits. With the focus on local users we chose not to include "stakeholder" as a search term, since local users compose only one stakeholder group out of many.

Different terms describing physical public green spaces were also included as search words, to limit search hits to user participation in the strategic management of UGS (i.e., not participation in other fields). These search terms were limited to non-private green spaces that are actively used by local users, and hence the terms green space, park, urban forest, and community garden were identified as relevant. Search terms, such as nature-based solutions and urban green infrastructure were not included, since they are broader in their scope of green elements.

In order to find articles on participation in all phases of the strategic management of UGS, these were included (i.e., planning, design, construction, maintenance, management) together with governance. The search was conducted in the Scopus database and included the following search string under the search category "title-abstract-keywords," limited to journal articles in English, and without a publication date limitation:

[(public OR user OR citizen OR resident) AND (participation OR engagement OR involvement) AND (maintenance OR management OR planning OR design OR construction OR governance) AND (tool\* OR approach\* OR guideline\* OR checklist\*) AND ("green space\*" OR park\* OR "urban forest\*" OR "community garden\*")].

The initial search was carried out in March 2019 and yielded 674 articles. These articles were first sorted for relevance by only reading abstracts, and then the full papers were read in order to answer the three main research questions. In the first round, excluded articles represented very different fields from the strategic management of UGS, e.g., computer science or medicine, or articles with an obvious rural focus. Following the first round, a total of 188 articles remained. Reading the full papers and applying the same criteria for inclusion as during the first round further reduced the amount of articles. The second round retained 34 articles, of which several presented and evaluated multiple cases of participation, each of which was singled out for further analysis. There were also different articles covering the same cases, and for those, information from all articles was summarized on a case basis. This resulted in 48 cases, or participation processes, being included in the review.

A Microsoft Excel spreadsheet was created to compile information from the articles reviewed which needed to answer the research questions (see list of categories in section Analytical Approach). In some cases, the results and discussion were not directly related to our research questions, but were kept in an “other findings” column. This was consulted regularly for inputs to the overall analysis and discussion. For some of the cases, particularly those described in multiple-case articles, additional information on the specific tools used in the cases was supplemented through additional internet and literature searches. The analysis and categorization of participation tools was facilitated by use of a Trello board (trello.com), where individual participation processes were categorized and assigned labels based on information retrieved from the Microsoft Excel spreadsheet.

An advantage of the systematic review method, used for the literature search, is its ability to provide an overview and to structure the current understanding of a research field in relation to specific questions. The Scopus database was chosen for its broad disciplinary coverage compared to other academic databases of peer-reviewed publications.

This method did therefore exclude studies not published as scientific articles, e.g., conference proceedings, book chapters, and gray literature (i.e., non-academic publications, such as governmental documents and technical reports). By moving beyond the search in the Scopus database, a wider range of cases would likely have been identified. However, to not do so was a deliberate choice, since that would have required including publications in multiple languages to move beyond an English language country bias. This was beyond the scope of this review and would require the involvement of a larger international research team.

## Analytical Approach

We developed an analytical approach in which information was retrieved from the articles for each of the following seven categories:

1. **Background information:** Geographical context, number of specific UGS included in the case.
2. **Approaches, processes, and tools:** Describing participation on three different hierarchical levels, where (a) “approach” was defined as a category of participation processes, where participation processes with similar characteristics belonged to the same approach, (b) “participation process” was defined as a procedure for user participation carried out employing one or several tools, and (c) “tool” was defined as a device/action/happening that supported/was part of the participation process. For each case, we first described the participation process carried out (**Table 1**) and then the specific tools used (**Table 2**).
3. **Phase of strategic management of UGS:** Participation can occur in different phases of strategic management, with some participation processes spanning several phases. The cases reviewed were classified as occurring in the planning, design, construction, and/or maintenance phase (Jansson et al., 2020).
4. **Type of participation:** The cases reviewed were categorized using the “Spectrum of Public Participation in Forest and Woodland Planning” checklist (Ambrose-Oji et al., 2011). It describes different types of participation as a spectrum ranging from *inform* to *consult*, *involve*, *partnership*, and *empower*. For some of the cases reviewed, the type of participation changed during the life span of the participation process.
5. **Participation initiation:** Reasons behind initiating the participation process and whether process initiation was top-down or bottom-up were noted for each case (Buijs et al., 2016).
6. **Marginalized user groups:** For each case, it was noted which user group participated and whether the case focused on involving traditionally marginalized groups (Rigolon et al., 2019; Rigolon and Gibson, 2021).
7. **Project (short-term) or process (long-term) participation:** Cases were classified as either project-based (short-term) or as longer governance processes (long-term participation) (Mellqvist et al., 2016).

## RESULTS

### Which Participation Approaches, Tools, and Types Are Used in Which Phases of the Strategic Management of UGS, i.e., Planning, Design, Construction, and Maintenance?

#### Geographical Context

Of the 48 cases or participation processes reviewed, 38 were from Europe, eight from North America, and two from Oceania. Of the European cases, 20 were related to two large EU-funded research projects; five cases were studied during the project “NeighbourWoods” (Janse and Konijnendijk, 2007) and 15 cases in the “Green Surge” project (Cvejić et al., 2015; Mattijssen et al., 2017; van der Jagt et al., 2017; Buijs et al., 2019; Møller et al., 2019; Rall et al., 2019). In the “NeighbourWoods” project, good practices for the planning and design of urban woodlands in Europe were identified, after which a set of public participatory tools were tested in six European urban woodland case study areas to enhance the planning, design, and management of urban

**TABLE 1** | Case overview.

Participation approach	Number of sites	Participation process	Type of participation	Marginalized user group participates	Strategic management phase	Project vs. long-term participation	Geographical location	References
Value mapping	1	Social-value mapping	C	No	P	Single project	Helsinki-1, Finland	Janse and Konijnendijk, 2007
	1	Path mapping	C	No	P	Single project	Helsinki-2 Finland	Korpilo et al., 2018
	City-wide	Mapping app for foraging	Inf → C → E	No	P, M	Long-term	Copenhagen, Denmark	Buijs et al., 2019; Møller et al., 2019
	City-wide	Mapping of cultural ecosystem services	C	Yes	P	Single project	Berlin-1, Germany	Møller et al., 2019; Rall et al., 2019
	City-wide	Mapping of walks and bottlenecks for connectivity	C-P	No	P, M	Single project → long term	Berlin-2, Germany	Buijs et al., 2019
	47	Park audit	C	Yes	P	Single project	South Carolina, US	Gallerani et al., 2017
	1	Monitoring of environmental quality	Inv	Yes	P	Single project	San Francisco, US	Metzger and Lendvay, 2006
Collaborative planning	City-wide	Mapping of values	C	No	P	Single project	Melbourne, Australia	Ives et al., 2017
	Multiple	Online tool for engagement	Inv	No	P	Long-term	Helsinki-3, Finland	Møller et al., 2019
	Multiple	Urban forest planning	Inv	No	P	Long-term	Helsinki-4, Finland	Sipilä and Tyrväinen, 2005
	2	Work-bench method	Inv	No	P, D, C	Single project	Amersfoort, Netherlands	Cilliers et al., 2011
	1	Participatory planning	Inv	No	P	Single project	Ghent, Belgium	Janse and Konijnendijk, 2007
	2	Participatory planning	C	No	P	Single project	Florence, Italy	Janse and Konijnendijk, 2007
	1	Participatory planning	C	No	P	Single project	Stara Zagora, Bulgaria	Janse and Konijnendijk, 2007
	1	Participatory planning	C	No	P	Single project	Ronneby, Sweden	Janse and Konijnendijk, 2007; Arler and Mellqvist, 2015; Mellqvist, 2017
	1	Community engagement process	C → Inv	Yes	P	Single project	Toronto, Canada	Khazaei et al., 2017, 2019
	Co-design	1	Community engagement process	C	Yes	D	Single project	Auckland, NZ
1		Design charrette	Inv	Yes	D	Single project	Corvallis, US	Patton-López et al., 2015
1		Three-phase visioning process	Inv	Yes	D	Single project	Irvine, US	Garde, 2014
Co-management of UGS	City wide	Neighborhood green plans	P	No	P, D	Long-term	Utrecht, Netherlands	Buijs et al., 2019
	12	Collectively managed green spaces	Inv → P → E	No	D, M	Long-term	Greater Manchester, UK	Dennis and James, 2016a,b
	1	Friends group	Inv → P	No	M	Long-term	Brighton, UK	Speller and Ravenscroft, 2005
	Multiple	Friends group	P	No	M	Long-term	England, UK	Jones, 2002
	1	Participatory planning process, redesign, restoration, and management of green space	P	Yes	P, D, C, M	Long-term	Aarhus, Denmark	Buijs et al., 2019
	1	Co-management of public woodland	Inf → Inv → E	No	M	Long-term	Holstebro, Denmark	Fors et al., 2018, 2019
Multiple	Residential yards managed by residents	P	Yes	M	Long-term	Malmö-1, Sweden	Castell, 2006	

(Continued)

TABLE 1 | Continued

Participation approach	Number of sites	Participation process	Type of participation	Marginalized user group participates	Strategic management phase	Project vs. long-term participation	Geographical location	References
Co-management of UGS	Multiple	Residential yards managed by residents	E	No	M	Long-term	Gothenburg-1, Sweden	Castell, 2006
	15	Residential yards managed by residents	P	Yes	M	Long-term	Gothenburg-2, Sweden	Castell, 2006
	Multiple	Environmental volunteering	P	Yes	M	Long-term	North England and Scotland, UK	O'Brien et al., 2011
	1	Self-governance of nature reserve	E	No	P, D, C, M	Long-term	Amsterdam, Netherlands	Buijs et al., 2019
	1	Co-management of public green space	P → E	No	M	Long-term	Milan, Italy	Buijs et al., 2019
	Multiple	Community greening	P → E	No	P, D, C, M	Long-term	Belgrade, Serbia	Simić et al., 2017
	City-wide	Park activism	E	No	D, C, M	Long-term	New York, US	Osman, 2017
	1	Community managed park	E	No	P, D, C, M	Long-term	Berlin-3, Germany	Mattijssen et al., 2017
Community gardening	4	Residential yards managed by residents	P	No	P, D, C, M	Single project	Stockholm-1, Sweden	Castell, 2006
	Multiple	Communal urban gardening	P → E	Yes	M	Single project	Malmö-2, Sweden	van der Jagt et al., 2017
	1	Allotment gardening	P → E	Yes	M	Long-term	Stockholm-2, Sweden	van der Jagt et al., 2017
	15	Community gardening initiatives	P → E	No	D, C, M	Single project and long-term	Stockholm-3, Sweden	Bonow and Normark, 2018
	5	Community gardening	P → E	No	M	Long-term	Netherlands	Könst et al., 2018
	10	Communal urban gardening (CUG)	P → E	Yes	M	Long-term	Edinburgh, UK	Ambrose-Oji et al., 2017; van der Jagt et al., 2017
	1	Community gardening	P → E	Yes	P, D, C, M	Long-term	Berlin-4, Germany	Karge, 2018
	21	Communal urban gardening	P → E	Yes	M	Long-term	Lisbon, Portugal	van der Jagt et al., 2017
	1	Urban gardening	C → Inv → E	Yes	P, M	Long-term	Vienna, Austria	Mayrhofer, 2018
	1	Communal urban gardening	C → P → E	Yes	M	Long-term	Szeged, Hungary	van der Jagt et al., 2017
	Multiple	Community gardening	E	No	D, C, M	Long-term	Zagreb, Croatia	Slavuj Borčić et al., 2016
	1	Communal urban gardening	C → P → E	No	P, M	Single project	Ljubljana, Slovenia	Cvejić et al., 2015; van der Jagt et al., 2017
	6	Community gardening	P → E	Yes	P, D, C, M	Long-term	Milwaukee, US	Ghose and Pettygrove, 2014
	28	Community gardening	P	Yes	M	Long-term	Denver, US	Hale et al., 2011

For each case, participation approach, number of sites, participation process, type of participation (Inf, inform; C, consult; Inv, involve; P, partnership; E, empower), whether traditionally marginalized user groups are involved, the phase of the strategic management of urban green space (UGS) in which participation takes place (P, planning; D, design; C, construction; M, maintenance), whether the participation is project-based or long-term participation, the geographical location (numbered for cities that appeared in more than one case), and reference are listed.

woodlands with high social value (Janse and Konijnendijk, 2007). The “Green Surge” project sought to advance the development of UGI by strengthening its conceptual base, developing better methods for assessment of its state, benefits, and methods, and applying these methods to build a stronger evidence base (Pauleit et al., 2019).

The geographical distribution of cases identified in this review was similar to that in reviews on issues related to other aspects of UGS (e.g., Haase et al., 2014; Dobbs et al., 2019), i.e., with a dominance of published studies from Europe and North America.

### The Five Participation Approaches

During the analysis of the reviewed cases, five categories of participation processes emerged. These *approaches* for participation included:

1. Value mapping, where users identify and map values relevant to them (eight cases).
2. Collaborative planning, where users influence decision-making in planning with their views, e.g., giving input to or feedback on management plans (eight cases).
3. Co-design, where users contribute ideas on how UGS can be developed further (four cases).

**TABLE 2** | Overview of participation tools used within each participation approach and participation process/case, categorized according to the phase of the strategic management of UGS.

Strategic management phase	Participation approach	Participation tool	Geographical location	References
Planning	Collaborative planning	Events	Florence, Italy	Janse and Konijnendijk, 2007
		Excursion	Stara Zagora, Bulgaria	Janse and Konijnendijk, 2007
			Amersfoort, Netherlands	Cilliers et al., 2011
			Ronneby, Sweden	Janse and Konijnendijk, 2007; Arler and Mellqvist, 2015; Mellqvist, 2017
		Public information meeting	Ghent, Belgium	Janse and Konijnendijk, 2007
		Recruiting participants	Toronto, Canada	Khazaei et al., 2017, 2019
			Helsinki-4, Finland	Sipilä and Tyrväinen, 2005
			Helsinki-4, Finland	Sipilä and Tyrväinen, 2005
			Helsinki-3, Finland	Møller et al., 2019
			Helsinki-4, Finland	Sipilä and Tyrväinen, 2005
		Survey/interviews	Ghent, Belgium	Janse and Konijnendijk, 2007
			Florence, Italy	Janse and Konijnendijk, 2007
		Use of collages	Stara Zagora, Bulgaria	Janse and Konijnendijk, 2007
	Ronneby, Sweden		Janse and Konijnendijk, 2007; Arler and Mellqvist, 2015; Mellqvist, 2017	
	Walk-and-talk interviews	Ronneby, Sweden	Janse and Konijnendijk, 2007; Arler and Mellqvist, 2015; Mellqvist, 2017	
	Value mapping	Amersfoort, Netherlands	Cilliers et al., 2011	
		Ronneby, Sweden	Janse and Konijnendijk, 2007; Arler and Mellqvist, 2015; Mellqvist, 2017	
	Public consultation sessions	Toronto, Canada	Khazaei et al., 2017, 2019	
	Field trip	Helsinki-4, Finland	Sipilä and Tyrväinen, 2005	
		Helsinki-4, Finland	Sipilä and Tyrväinen, 2005	
		Toronto, Canada	Khazaei et al., 2017, 2019	
		Toronto, Canada	Khazaei et al., 2017, 2019	
		Amersfoort, Netherlands	Cilliers et al., 2011	
		San Francisco, US	Metzger and Lendvay, 2006	
		South Carolina, US	Gallerani et al., 2017	
	Monitoring	San Francisco, US	Metzger and Lendvay, 2006	
Helsinki-1, Finland		Janse and Konijnendijk, 2007		
Berlin-1, Germany		Møller et al., 2019; Rall et al., 2019		
Berlin-2, Germany		Buijs et al., 2019		
Park audit	Melbourne, Australia	Ives et al., 2017		
	Copenhagen, Denmark	Buijs et al., 2019; Møller et al., 2019		
	Helsinki-2, Finland	Korpilo et al., 2018		
	South Carolina, US	Gallerani et al., 2017		
	San Francisco, US	Metzger and Lendvay, 2006		
Design	Co-design	Design charrette/workshop	Corvallis, US	Patton-López et al., 2015
		Event	Corvallis, US	Patton-López et al., 2015
		Focus groups	Auckland, NZ	Mackie et al., 2018; Macmillan et al., 2018; Witten and Field, 2020
		Interviews	Auckland, NZ	Mackie et al., 2018; Macmillan et al., 2018; Witten and Field, 2020
		Park audit	Corvallis, US	Patton-López et al., 2015
	Participatory budgeting	Utrecht, Netherlands	Buijs et al., 2019	
	Recruiting participants	Corvallis, US	Patton-López et al., 2015	

(Continued)



TABLE 2 | Continued

Strategic management phase	Participation approach	Participation tool	Geographical location	References	
Design	Co-design	Survey	Irvine, US	Garde, 2014	
			Auckland, NZ	Mackie et al., 2018; Macmillan et al., 2018; Witten and Field, 2020	
		Training	Corvallis, US	Patton-López et al., 2015	
		Value mapping	Auckland, NZ	Mackie et al., 2018; Macmillan et al., 2018; Witten and Field, 2020	
Construction/ Maintenance	Co-management of UGS	Visioning workshop	Irvine, US	Garde, 2014	
			Irvine, US	Garde, 2014	
		Workshops/focus groups	Events	Greater Manchester, UK	Dennis and James, 2016a,b
				Brighton, UK	Speller and Ravenscroft, 2005
				England, UK	Jones, 2002
				Holstebro, Denmark	Fors et al., 2018, 2019
				Amsterdam, Netherlands	Buijs et al., 2019
				Milan, Italy	Buijs et al., 2019
			Fundraising	Belgrade, Serbia	Simić et al., 2017
				Berlin-3, Germany	Mattijssen et al., 2017
				Brighton, UK	Speller and Ravenscroft, 2005
				England, UK	Jones, 2002
				Gothenburg-1, Sweden	Castell, 2006
				Gothenburg-2, Sweden	Castell, 2006
			Green space maintenance	Stockholm-1, Sweden	Castell, 2006
				New York, US	Osman, 2017
				Berlin-3, Germany	Mattijssen et al., 2017
				North England and Scotland, UK	O'Brien et al., 2011
				Gothenburg-1, Sweden	Castell, 2006
				Malmö-1, Sweden	Castell, 2006
Gothenburg-2, Sweden	Castell, 2006				
Stockholm-1, Sweden	Castell, 2006				
Green space management	Aarhus, Denmark	Buijs et al., 2019			
	Holstebro, Denmark	Fors et al., 2018, 2019			
	Amsterdam, Netherlands	Buijs et al., 2019			
	Milan, Italy	Buijs et al., 2019			
	Belgrade, Serbia	Simić et al., 2017			
	New York, US	Osman, 2017			
	Berlin-3, Germany	Mattijssen et al., 2017			
	Greater Manchester, UK	Dennis and James, 2016a,b			
	Brighton, UK	Speller and Ravenscroft, 2005			
	England, UK	Jones, 2002			
	North England and Scotland, UK	O'Brien et al., 2011			
	Gothenburg-1, Sweden	Castell, 2006			
	Malmö-1, Sweden	Castell, 2006			
	Gothenburg-2, Sweden	Castell, 2006			
Stockholm-1, Sweden	Castell, 2006				
Aarhus, Denmark	Buijs et al., 2019				
Holstebro, Denmark	Fors et al., 2018, 2019				
Amsterdam, Netherlands	Buijs et al., 2019				
Milan, Italy	Buijs et al., 2019				
Belgrade, Serbia	Simić et al., 2017				

(Continued)

TABLE 2 | Continued

Strategic management phase	Participation approach	Participation tool	Geographical location	References	
Construction/ Maintenance	Co-management of UGS	Green space management	New York, US	Osman, 2017	
			Greater Manchester, UK	Dennis and James, 2016a,b	
			Aarhus, Denmark	Buijs et al., 2019	
		Growing food	Holstebro, Denmark	Fors et al., 2018, 2019	
			New York, US	Osman, 2017	
			Berlin-3, Germany	Mattijssen et al., 2017	
		Recruiting participants	Brighton, UK	Speller and Ravenscroft, 2005	
			Milan, Italy	Buijs et al., 2019	
			Berlin-3, Germany	Mattijssen et al., 2017	
		Socializing	Greater Manchester, UK	North England and Scotland, UK	Dennis and James, 2016a,b
				Gothenburg-1, Sweden	O'Brien et al., 2011
				Gothenburg-2, Sweden	Castell, 2006
	Stockholm-1, Sweden		Aarhus, Denmark	Castell, 2006	
			Amsterdam, Netherlands	Castell, 2006	
			Milan, Italy	Buijs et al., 2019	
	Berlin-3, Germany		Berlin-3, Germany	Buijs et al., 2019	
			Edinburgh, UK	Mattijssen et al., 2017	
			Netherlands	Ambrose-Oji et al., 2017; van der Jagt et al., 2017	
	Community gardening		Events	Berlin-4, Germany	Könst et al., 2018
				Vienna, Austria	Karge, 2018
				Szeged, Hungary	Mayrhofer, 2018
		Ljubljana, Slovenia		van der Jagt et al., 2017	
		Milwaukee, US		Cvejić et al., 2015; van der Jagt et al., 2017	
		Denver, US		Ghose and Pettygrove, 2014	
		Fundraising	Edinburgh, UK	Hale et al., 2011	
			Stockholm-3, Sweden	Ambrose-Oji et al., 2017; van der Jagt et al., 2017	
			Netherlands	Bonow and Normark, 2018	
Lisbon, Portugal			Könst et al., 2018		
Szeged, Hungary			van der Jagt et al., 2017		
Milwaukee, US			van der Jagt et al., 2017		
Green space maintenance	Stockholm-2, Sweden	Ghose and Pettygrove, 2014			
	Stockholm-3, Sweden	van der Jagt et al., 2017			
	Netherlands	Bonow and Normark, 2018			
	Vienna, Austria	Könst et al., 2018			
	Szeged, Hungary	Mayrhofer, 2018			
	Ljubljana, Slovenia	van der Jagt et al., 2017			
Green space management	Milwaukee, US	Cvejić et al., 2015; van der Jagt et al., 2017			
	Denver, US	Ghose and Pettygrove, 2014			
	Stockholm-3, Sweden	Hale et al., 2011			
	Netherlands	Bonow and Normark, 2018			
	Edinburgh, UK	Könst et al., 2018			
	Malmö-2, Sweden	Ambrose-Oji et al., 2017; van der Jagt et al., 2017			
Growing food	Stockholm-2, Sweden	van der Jagt et al., 2017			
	Stockholm-3, Sweden	van der Jagt et al., 2017			
	Netherlands	Bonow and Normark, 2018			

(Continued)

TABLE 2 | Continued

Strategic management phase	Participation approach	Participation tool	Geographical location	References	
Construction/ Maintenance	Community gardening	Growing food	Berlin-4, Germany	Karge, 2018	
			Lisbon, Portugal	van der Jagt et al., 2017	
			Vienna, Austria	Mayrhofer, 2018	
			Szeged, Hungary	van der Jagt et al., 2017	
			Zagreb, Croatia	Slavuj Borčić et al., 2016	
			Ljubljana, Slovenia	Cvejić et al., 2015; van der Jagt et al., 2017	
			Milwaukee, US	Ghose and Pettygrove, 2014	
			Denver, US	Hale et al., 2011	
			Recruiting participants	Edinburgh, UK	Ambrose-Oji et al., 2017; van der Jagt et al., 2017
				Szeged, Hungary	van der Jagt et al., 2017
		Ljubljana, Slovenia		Cvejić et al., 2015; van der Jagt et al., 2017	
		Netherlands		Könst et al., 2018	
		Selling produce	Denver, US	Hale et al., 2011	
			Malmö-2, Sweden	van der Jagt et al., 2017	
			Socializing	Edinburgh, UK	Ambrose-Oji et al., 2017; van der Jagt et al., 2017
				Malmö-2, Sweden	van der Jagt et al., 2017
			Stockholm-2, Sweden	van der Jagt et al., 2017	
			Stockholm-3, Sweden	Bonow and Normark, 2018	
		Socializing	Netherlands	Könst et al., 2018	
			Berlin-4, Germany	Karge, 2018	
Lisbon, Portugal	van der Jagt et al., 2017				
Vienna, Austria	Mayrhofer, 2018				
Zagreb, Croatia	Slavuj Borčić et al., 2016				
Ljubljana, Slovenia	Cvejić et al., 2015; van der Jagt et al., 2017				
Milwaukee, US	Ghose and Pettygrove, 2014				
Denver, US	Hale et al., 2011				

The geographical location is numbered for cities that appeared in more than one case.

4. Co-management of UGS, where users participate in the maintenance and further development of a local UGS (15 cases).
5. Community gardening, where users maintain, manage, and sometimes construct public garden spaces for growing vegetables, flowers, etc. (13 cases).

**Table 1** presents all 48 cases in relation to the participation approach applied. In the following sections, when referring to the 48 cases, the case name given in the column “Geographical location” in **Table 1** is used, e.g., Helsinki-1.

### Value Mapping

Several of the cases focused on mapping different forms of values, perceptions, and activities, mainly using different forms of public participatory GIS (PPGIS) (Berlin-1, Helsinki-2, Helsinki-3, Copenhagen), or paper map-based surveys (Melbourne). Most studies of this type were initiated by researchers and carried out in collaboration with the local authorities.

In most of the value mapping cases, participation was limited to *consulting* users about values in a specific UGS, as part of a single participation process. However, there were some examples of mapping as part of a larger process. For Helsinki-3, this was

done using the online tool “Kerro kartalla” in a collaborative planning process, and hence the users also had a more active consultative role, the process enabled them to react to suggested changes. For the “20 Green walks” project (Berlin-2), value mapping took the form of *consultation*, but the continued participation process became a *partnership* between participating users and local authorities, where the not-for-profit Berliner Wanderverband e.V. hiking association looked after new way markers and trail signage. In the Copenhagen case, users mapped urban foraging possibilities through a community developed app, “Byhøst” (city harvest), allowing knowledge sharing between users, but also providing a mechanism for the local government to engage with the users in relation to foraging. Copenhagen is therefore an example of how value mapping can be a tool for *empowering* users. The tool is also used by users with a *consultative* role within the planning process, informing on values associated with local/wild food.

### Collaborative Planning

Collaborative planning is a long-established approach for integrating residents’ views into forest management (e.g., ILO, 2000). The majority of the cases reviewed using this approach

stemmed from the EU-funded NeighbourWood project (Janse and Konijnendijk, 2007), including the cases Ghent, Florence, Stara Zagora, and Ronneby. The project identified a suite of tools and categorized them based on information provision (information distribution and public events), information collection (social surveys/interviews), involvement of the public at large (sounding board group, public workshops, thinking days with the public), and processing and use of information (working group sessions, visioning processes, MCA). In addition to the cases identified within the NeighbourWood project, collaborative planning processes were described in Helsinki-3, Helsinki-4, Toronto, and Amersfoort.

Typically, a collaborative planning process in the cases reviewed aimed to develop a new plan or establish a new UGS. The process often started with some kind of *information* action targeting the would-be involved users. In Helsinki-4, this was done through specific information sessions, while in Toronto, public events were used. In the next stage, different forms of participation tools were used to capture visions and suggestions from the participants. In the cases reviewed, this included the use of value mapping (Amersfoort, Helsinki-4), public events (Stara Zagora, Helsinki-4, Toronto), different forms of surveys (Stara Zagora, Toronto), and workshops (Amersfoort, Helsinki-4, Toronto). The department responsible for the process collated the information obtained and used it in a draft plan. In the last phase, the draft plan was sent for *consultation*, with mechanisms, such as public events and surveys used to provide feedback (Toronto, Helsinki-4).

### Co-design

The cases identified as belonging to this approach focused on public participation in the design of UGS. The involvement ranged from cases where participants were asked to provide information that explicitly informed the design (Auckland) to more elaborate processes, such as those carried out in the case of Irvine, where different participation tools were used to create a design brief that was used in a UGS design competition. In the case of Corvallis, observation of behavior was combined with a design charrette to develop a design for the park. These were all examples of processes where the user participation type ranged from *consult* to *involve*. The approach also encompassed co-design processes driven by members of the general public, such as the case with neighborhood green plans in Utrecht, where users had the possibility to suggest (re)designs and subsequent management of public land, which could be classified as *partnership*.

### Co-management of UGS

Users co-managing UGS typically had strong possibilities to influence the appearance of the space. Therefore, all but one of the 15 cases within this type participated through *partnership* or *empowerment*, i.e., power was transferred from local authorities to the users, giving local authorities more of a supporting role. In some cases, local residents participated in maintenance and management of their semi-public residential yard (Gothenburg-1, Gothenburg-2, Malmö-1, Stockholm-1). Other cases dealt with co-management of different kinds of

UGS: a combined participatory planning process, redesign, and restoration, followed by co-management of a specific UGS (Aarhus); self-governance of an UGS guided by professional staff and supported by 1,000s of volunteers (Milan); UGS of four types: (1) community gardens, (2) allotments, (3) community orchards, and (4) pocket parks, collectively managed by local residents (Greater Manchester); UGS collectively managed by friends of park groups (England, Brighton); practical outdoor volunteering where participants perform different environmental management tasks in both UGS and rural sites, such as forests, and individuals being supported in recovery from mental health problems through participation in management of a therapeutic garden, forming part of a larger UGS in central London (North England and Scotland); and co-management of an urban public woodland (Holstebro).

### Community Gardening

Community gardening served a range of purposes, especially, but not exclusively, at the neighborhood level, and often occurred alongside or in UGS, in allotments, on unused public land, or with temporary permits to use areas designated for future development. The 13 cases within this type described community gardening as addressing issues, such as lack of access to UGS (Vienna, Szeged, Ljubljana); lack of fresh produce/healthy food (Edinburgh, Stockholm-2, Stockholm-3, Lisbon, Zagreb, Milwaukee, Denver); neglect of public land (Milwaukee); lack of funding for maintenance (Lisbon); and lack of places for social gatherings and activities (Vienna, Ljubljana, Berlin-4, Stockholm-2, Stockholm-3, Malmö-2, Edinburgh, Milwaukee, Netherlands). Each case study presented between one and 28 community gardens, providing results mostly at the city scale, but in some cases on the neighborhood scale, and in one case on the national scale.

Local authorities and other organizations typically facilitated community gardening with leases for unused public land or grants for construction, equipment, and larger maintenance tasks. In all cases studied of community gardening, local authorities, NGOs, or action researchers aimed to enter into *partnerships* with, or sought to *empower*, community gardeners.

### Participation Approaches and Tools Related to the Strategic Management Phase

The reviewed articles included examples of participation processes in all four phases of the cyclic process of strategic management shown in **Table 1**. Participation was exemplified with 26 cases in the planning phase, 16 cases in the design phase, 11 cases in the construction phase, and 30 cases in the maintenance phase. For many of the cases (17 out of 48), participation was not limited to one phase and covered two or more phases.

The participation approaches of “value mapping,” “collaborative planning,” and “co-design” were predominantly used in the planning and design phases. The “co-design” approach often spanned planning and design. However, the cases reviewed provided examples of these processes also spanning the maintenance phase. The approaches “co-management of UGS” and “community gardening” mostly covered the maintenance

phase, with several also including aspects of planning and/or the design and construction phases.

Comparison of participation tools used for each approach (**Table 2**) showed that a particular type of tools (e.g., surveys, workshops) was not exclusive to either the five approaches identified or to the phases in cyclic strategic management. For the planning phase, it was found that survey/interviews, auditing, monitoring, field trips, and public events were all used as mechanisms for identifying users' values and experiences, information used in the development and planning of actions to be carried out. In the design phase, tools, such as public events, survey/interviews, different forms of workshops (including visioning workshops), and design charrettes were identified as being used as mechanisms for participation. Tools related to the "co-management of UGS" and "community gardening" approaches were integrated in a merged construction/maintenance phase, since no natural division of tools between the two phases was found. In these phases, participation tools included growing food, socializing, events (educational, social, cultural, or recreational, sometimes directed toward special user groups), green space maintenance (e.g., of shared areas in a community garden), green space management (i.e., development of a green space, including redesigning it by adding new facilities), fundraising, and recruitment of new participants (**Table 2**). During the analysis, it became clear that the line between approaches and tools cannot always be drawn neatly. As a result, "value mapping" and "management" appear as both approaches and tools.

## Why Are Participation Processes Initiated?

The reviewed articles were scrutinized for a) local authorities' reasons for *initiating* participation processes top-down and *supporting* bottom-up initiated processes, and b) reasons for participating users *initiating* bottom-up processes or, when stated, for *participating* in top-down initiated processes. **Table 3** summarizes reasons for initiating processes for participation in the strategic management of UGS.

We identified 14 reasons for initiating participation processes, listed below in a non-hierarchical order:

- a) To improve UGS quality (e.g., to increase accessibility and number of UGS; create attractive neighborhoods; maintain park standards; increase UGI connectivity for walking and cycling; improve outdoor recreation opportunities; or environmental revitalization).
- b) To streamline participation (e.g., to find methods that could replace conventional public participation tools; to develop a cost-efficient and flexible process; to establish a permanent task force for user participation; or to explore new participation tools).
- c) To involve (e.g., to make plans and decision-making better; having an ambition to perform open, inclusive, and transparent decision-making; to let residents voice their opinion; or for users wishing to influence policy-making and planning).
- d) Due to government requirements (e.g., local and state governments requiring user participation in urban design projects; or an area being covered by the Local Environmental Action Plan, emphasizing the importance of user participation).
- e) To yield income (to create jobs for unemployed immigrants).
- f) Due to austerity (e.g., to upgrade degrading UGS due to budget cuts; or to reduce maintenance costs).
- g) For food security (e.g., to facilitate self-sufficiency; or to provide food sovereignty).
- h) For environmental reasons (e.g., to facilitate sustainable urban development; promote biodiversity; increase environmental awareness; to achieve/struggle for environmental justice; to increase ecological connectivity; or to promote car-free mobility).
- i) For social reasons (e.g., to create meeting places; to increase social cohesion; community building).
- j) To improve relations between users and local authorities (e.g., to narrow the gap between users and local authorities).
- k) For political reasons (to create political momentum for the development of UGS; to raise political interest in UGS management; participation as part of a political debate; or social-ecological activism).
- l) To improve health (to improve mental and physical health of citizens; to increase physical activity; or to encourage healthy nutrition).
- m) By interest (gardeners desiring to grow vegetables near home; a form of hobby and leisure; or wanting to learn new skills).
- n) To increase place attachment (to reflect cultural identity in redesign; to strengthen users' relationship with the UGS).

Local authorities' three main reasons for initiating participation top-down were to involve, to increase UGS quality, and to streamline the participation process (**Figure 2**). These, together with "for environmental reasons," constituted their four main reasons for initiating participation top-down and supporting bottom-up initiated participation.

Participants' main reasons for initiating participation and/or becoming involved were to increase UGS quality, for environmental reasons, and for social reasons (**Figure 3**). This mainly involved the participation approaches "co-management of UGS" and "community gardening." These were also the three main reasons mentioned for initiating participation bottom-up.

Looking at both authorities' and participants' reasons, and both top-down and bottom-up initiated participation, the main reasons were to increase UGS quality, for social reasons, and for environmental reasons (**Figure 4**).

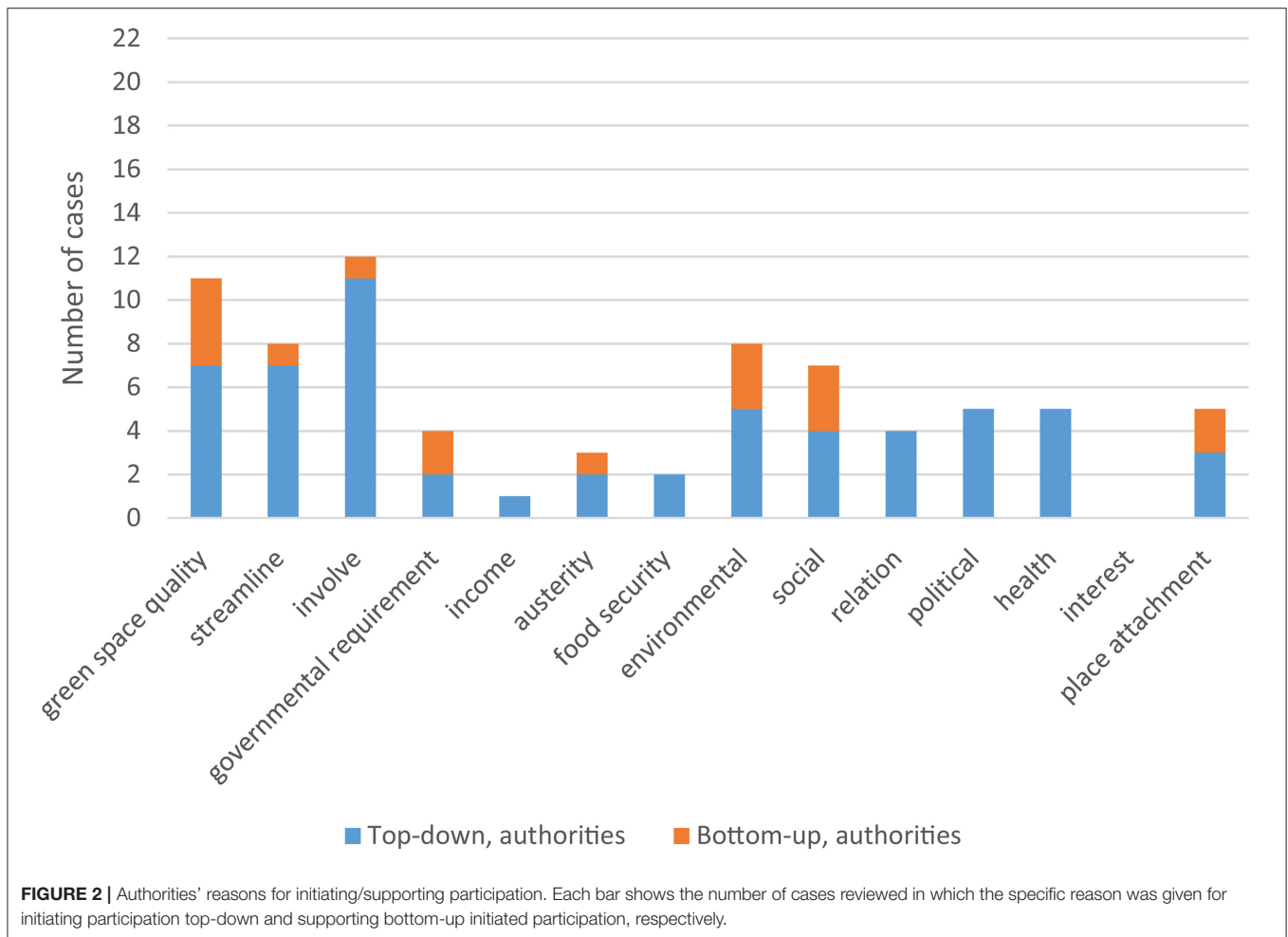
In seven of the cases reviewed, the participation process was led or facilitated by researchers (Speller and Ravenscroft, 2005; Metzger and Lendvay, 2006; Janse and Konijnendijk, 2007; Arler and Mellqvist, 2015; Gallerani et al., 2017; Ives et al., 2017; Mackie et al., 2018; Rall et al., 2019).

The 20 cases reviewed in which marginalized user groups were included are marked in yellow in **Table 3**. However, making UGS more inclusive was part of the actual reason for initiating participation in only eight of these cases. Those reasons included:

**TABLE 3 |** Reasons for initiating participation processes in the strategic management of urban green space (UGS) top-down (27 cases) or bottom-up (18 cases).

Mapping of values	Collaborative planning	Co-management of UGS	Community gardening	Co-design
<b>TOP-DOWN INITIATED PARTICIPATION</b>				
Health* (South Carolina)	Political; involve (Toronto)	Green space quality (Malmö-1)	Income; food security; environmental (Malmö-2)	Governmental requirement; involve (Irvine)
Environmental; health; political* (San Francisco)	Green space quality; relation; involve (Amersfoort)	Social; green space quality (Gothenburg-2)	Green space quality; environmental; austerity; health; food security (Lisbon)	Health; place attachment* (Auckland)
Streamline; green space quality*(Berlin-1)	Political; streamline (Ghent)	Environmental (Stockholm-1)	<b>Authorities:</b> political. <b>Participants:</b> interest; social; health (Stockholm-2)	Health; social; streamline (Corvallis)
Involve* (Melbourne)	Involve; relation; social; place attachment; streamline (Florence)	Austerity; green space quality; involve; relation (England)	<b>Authorities:</b> social; environmental. <b>Participants:</b> social; interest (Vienna)	<b>Authorities:</b> green space quality; involve. <b>Participants:</b> green space quality; environmental; social (Utrecht)
Streamline (Helsinki-1)	Streamline (Stara Zagora)	Governmental requirement* (Brighton)		
Involve (Helsinki-2)	Political; involve; relation; place attachment* (Ronneby)			
	Involve; streamline (Helsinki-3)			
	Involve (Helsinki-4)			
<b>BOTTOM-UP INITIATED PARTICIPATION</b>				
<b>Authorities:</b> environmental; social. <b>Participants:</b> environmental (Copenhagen)		<b>Authorities:</b> social; place attachment; green space quality; environmental. <b>Participants:</b> green space quality; interest (Aarhus)	<b>Authorities:</b> governmental requirement. <b>Participants:</b> Food security; social; green space quality; environmental; political (Milwaukee)	
<b>Authorities:</b> green space quality; involve; austerity. <b>Participants:</b> environmental; involve (Berlin-2)		Environmental; political (Amsterdam)	Environmental; social; green space quality (Berlin-4)	
		<b>Authorities:</b> environmental; green space quality. <b>Participants:</b> environmental; green space quality (Milan)	Interest; green space quality; austerity; social; health; environmental (Edinburgh)	
		Political (Gothenburg-1)	Social; environmental; food security; health (Szeged)	
		Interest; social; green space quality; political (Greater Manchester)	<b>Authorities:</b> green space quality; social; place attachment. <b>Participants:</b> environmental; interest; social; health (Stockholm-3).	
		Political; green space quality (Berlin-3)	Interest; social (Netherlands)	
		Austerity (New York)	Interest; political (Zagreb)	
		<b>Authorities:</b> governmental requirement. <b>Participants:</b> interest; green space quality (Belgrade)	<b>Authorities:</b> streamline. <b>Participants:</b> environmental; social; place attachment; green space quality (Ljubljana)	
<b>SOME SITES IN CASE BOTTOM-UP, OTHERS TOP-DOWN INITIATED PARTICIPATION, OR COMBINATION OF BOTTOM-UP AND TOP-DOWN</b>				
		<b>Participants:</b> interest; health (North England and Scotland)		
		<b>Authorities:</b> involve; political. <b>Participants:</b> interest; green space quality; social (Holstebro)		

Participation processes that were led or facilitated by researchers are marked with \*. Participation processes where marginalized groups were involved are marked in yellow. The cases are referred to by the case names given in the column "Geographical location" in Table 1. Hale et al. (2011) did not describe reasons for initiating participation, and this case is therefore excluded from the table.



to create jobs for unemployed immigrants (van der Jagt et al., 2017); to transform a declining and stigmatized housing area (Castell, 2006); to increase physical activity among children by redesigning a neighborhood park in a culturally diverse area (Patton-López et al., 2015); to reflect cultural identity in UGS redesign (Mackie et al., 2018); to increase UGS use by diverse communities not represented in UGS visitation statistics (Khazaei et al., 2017, 2019); to re-design and re-develop UGS in a deprived social housing area to reduce social problems (Buijs et al., 2019); to create high-quality UGS for all in a deprived neighborhood (Karge, 2018); and to mitigate persistent food insecurity in a segregated area, as well as for environmental revitalization and environmental justice (Ghose and Pettygrove, 2014).

## Which User Groups Participate?

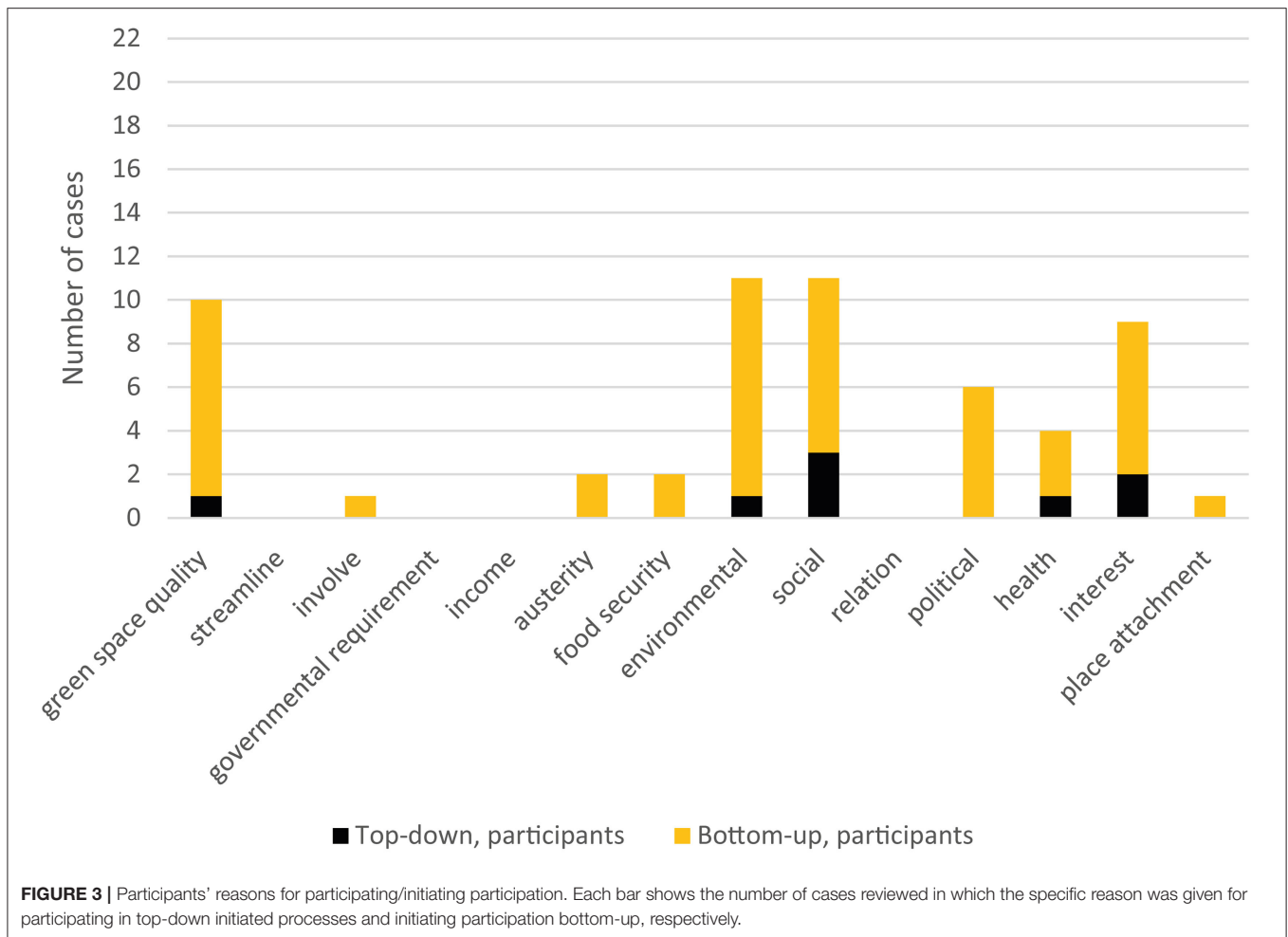
### How Participants Are Named

Most commonly, participatory processes were oriented toward the population living in close proximity to the UGS. The participant groups were then described as “citizens,” “local residents,” or “active/frequent users.” In some cases, the scope was more explicitly the entire city, using descriptions, such

as “the wider public/community.” This was especially the case for participation types, such as *informing* or *consulting* the public (Ambrose-Oji et al., 2011). For participation types, such as *partnerships* or *empowerment*, the citizens involved were described as “volunteers,” “gardeners,” “managers,” or “member of local *x* groups” where *x* was a more or less formalized garden association, in some cases formed as a result of the participatory process. Some of the cases targeted a more specific group of participants, such as NGOs and environmental groups, or aimed to formalize the participation of local activists already engaged in reshaping UGS. Twenty of the cases specifically aimed to include marginalized user groups, through either representation or active *empowerment* (Table 4).

### Focus on Marginalized Groups

A common concern related to participation in UGS is how to include marginalized groups. In 20 of the 48 cases reviewed, we found a distinct focus on the inclusion of marginalized groups. Of these 20 cases, three were found within the participation approach “value mapping,” one within “collaborative planning,” three within “co-design,” four within “co-management of UGS,” and nine cases within “community gardening.” The marginalized



groups involved included ethnic minorities, indigenous people, immigrants, the elderly, young people, children, unemployed people, people suffering from illness or mental health problems, people with low income living in impoverished neighborhoods, or sometimes combinations of these (e.g., young people from ethnic minorities) (Table 4). Community gardening in particular was directed toward impoverished neighborhoods (Lisbon, Milwaukee, Edinburgh, Berlin-4), and toward participation by diverse groups, such as young people, immigrants, ethnic minorities (Szeged, Stockholm-2, Denver, Malmö-2), and women from ethnic minorities (Vienna).

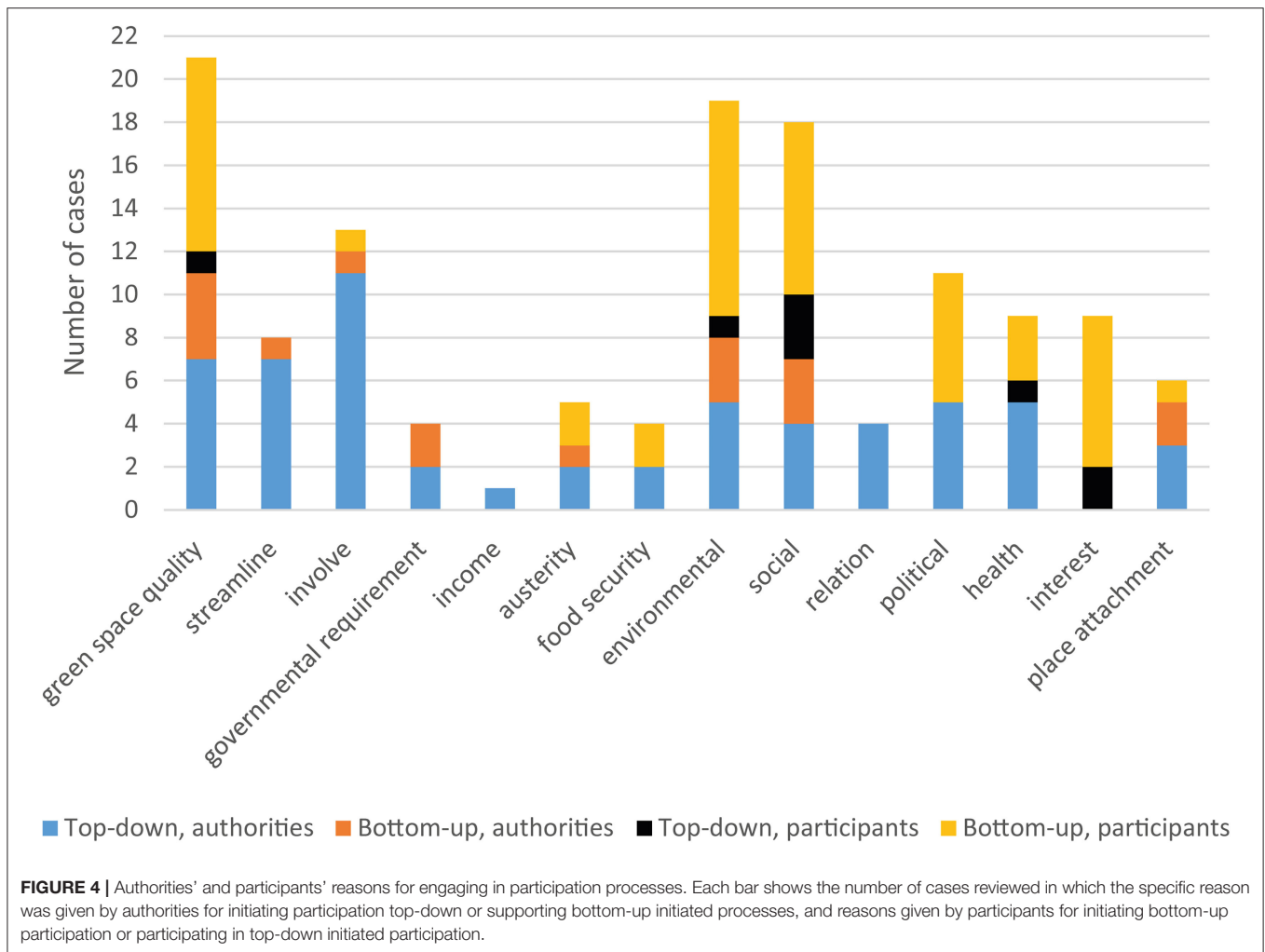
In almost all “community gardening” cases, immigrants and ethnic minorities comprised a significant proportion of the participants, but local authorities had directed their efforts toward this group in only one case (Malmö-2, when targeting unemployed immigrants in collaboration with a local NGO). Four cases of “co-management of UGS” involved marginalized groups. Three of these involved participants from impoverished neighborhoods, especially immigrants, unemployed, and low-income citizens (Malmö-1, Gothenburg-2, Aarhus). The fourth “co-management of UGS” case was a targeted effort to combat the marginalization of diverse ethnic groups and people with mental health diagnoses through volunteering and skill-building (North

England and Scotland). The inclusion of children and young people was described within “value mapping,” where participants aged 15–22 carried out monitoring (San Francisco) or park audits (South Carolina), in “collaborative planning” (Toronto), in a “co-design” process aiming to facilitate walking and cycling (Auckland), and in “community gardening,” where a gardener worked with a group of children during summers to teach them to garden and grow food, and children of ethnic minorities participated in gardening in special garden beds created for the children to use (Milwaukee), or more indirect participation through educational events for children (e.g., Szeged, Berlin-4).

### Representation

The most elaborate considerations of representation in participatory processes appeared in cases using “value mapping” (three cases), “co-design” (three cases) and “co-management of UGS” (one case). The “value mapping” studies compared the demographic representation of participants to city demographics, and expressed specific concern about securing the representation of young people and ethnic minorities (South Carolina, San Francisco) and in one case in identifying skewed response rates toward women, middle-aged, and college-educated people (Berlin-1). In the “co-design” process, despite





participants from nine different interest categories being invited, including elderly people and members of cross-cultural groups, participants from less affluent areas were nonetheless found to be underrepresented (Irvine). Indigenous populations were only involved in one case (Auckland). In several of the cases, it proved challenging to secure broad and equal representation, e.g., by having mainly elderly or unemployed board members for community gardens, since they had more available time to engage compared with younger employed people (Netherlands). Further, it was found to be difficult to recruit ethnic minorities from impoverished areas in a Milwaukee community garden led by white citizens. Studies also mentioned potential bias against significant groups of immigrant gardeners due to language barriers (Denver). “Community gardens” were in several cases considered apt meeting places for diverse sociocultural groups (Lisbon, Milwaukee, Edinburgh), and some gardeners from ethnic minorities in Denver described how they connected to their cultural roots through gardening.

Recruitment difficulties also appeared, in that initiating participation processes with minority groups was found to be more resource demanding. While the cases with a minority focus

did not employ significantly different recruitment methods, they used *more* of them. Several of them applied at least three different recruitment methods, including:

- Poster, flier and online campaigns, canvassing, friend referrals, and public meetings (Szeged, Berlin-4, Edinburgh, Ljubljana)
- Recruitment through schools, after-school groups, parks and recreation programs, flyers, emails, and a recruitment booth at a local summer park event (South Carolina)
- Recruitment at a neighborhood block party (Corvallis)
- Targeted searches to recruit specific subgroups of participants, often through collaboration with local partners (Berlin-1, Malmö-2, North England, and Scotland)
- A sufficiently narrow geographical focus to capture a specific sub-user group due to neighborhoods being segregated (Malmö-1, Lisbon, Milwaukee).

In the “value mapping” study in Berlin-1, the ratio of Germans to non-Germans sampled was similar to that in the city, but some ethno-cultural subgroups were still insufficiently involved, despite attempts to address this issue through targeted sampling (Rall et al., 2019).

**TABLE 4** | The 20 cases where marginalized groups were involved.

Geographical location	Participation approach	Type of participation	Focus on marginalized group	References
Berlin-1, Germany	Value mapping	Consult	Immigrants	Møller et al., 2019; Rall et al., 2019
South Carolina, US	Value mapping	Involve	Young people	Gallerani et al., 2017
San Francisco, US	Value mapping	Involve	Ethnic minorities, young people (ages 15–22); impoverished neighborhood	Metzger and Lendvay, 2006
Toronto, Canada	Collaborative planning	Consult–involve	Immigrants; young people	Khazaei et al., 2017, 2019
Corvallis, US	Co-design	Involve	Ethnic minorities; impoverished neighborhood	Patton-López et al., 2015
Irvine, US	Co-design	Involve	Elderly; immigrants	Garde, 2014
Auckland, NZ	Co-design	Consult	Indigenous people (local Māori); impoverished neighborhood; children and young people	Mackie et al., 2018; Macmillan et al., 2018; Witten and Field, 2020
North England and Scotland, UK	Co-management of UGS	Partnership	Diverse participant group regarding ethnicity, unemployment due to illness; mental health problems	O'Brien et al., 2011
Malmö-1, Sweden	Co-management of UGS	Partnership	Declined and stigmatized housing area with high proportion of immigrants and people needing income support	Castell, 2006
Gothenburg-2, Sweden	Co-management of UGS	Partnership	Immigrants; impoverished neighborhood	Castell, 2006
Aarhus, Denmark	Co-management of UGS	Partnership	Impoverished neighborhood; immigrants	Buijs et al., 2019
Malmö-2, Sweden	Community gardening	Partnership–empower	Immigrants; unemployed people	van der Jagt et al., 2017
Lisbon, Portugal	Community gardening	Partnership–empower	Impoverished neighborhoods; meeting place for people with different lifestyles or cultural backgrounds	van der Jagt et al., 2017
Vienna, Austria	Community gardening	Consult–partnership–empower	Immigrants	Mayrhofer, 2018
Szeged, Hungary	Community gardening	Consult–partnership–empower	Children	van der Jagt et al., 2017
Milwaukee, US	Community gardening	Partnership–empower	Ethnic minorities; impoverished neighborhoods; children and young people of ethnic minorities	Ghose and Pettygrove, 2014
Denver, US	Community gardening	Partnership	Ethnic minorities	Hale et al., 2011
Stockholm-2, Sweden	Community gardening	Partnership–empower	Immigrants; elderly; unemployed people	van der Jagt et al., 2017
Edinburgh, UK	Community gardening	Partnership–empower	Impoverished neighborhood; wide range of ethnic and economic backgrounds	Ambrose-Oji et al., 2017; van der Jagt et al., 2017
Berlin-4, Germany	Community gardening	Partnership–empower	Impoverished neighborhood; people with disabilities; migrants and, especially, refugees; children	Karge, 2018

*In total, 48 cases were reviewed. The geographical location is numbered for cities that appeared in more than one case.*

## Barriers to Participation by Marginalized Groups

Some of the articles reviewed discussed barriers to participation. Only barriers relating to participation of a marginalized group are reported here, i.e., not barriers to user participation in general. In the following, we describe the three main barriers for participation.

### Lack of Resources

Lack of resources in terms of time, accessibility, knowledge, skills, and income were some of the most frequently mentioned barriers to participation. For example, the number of members managing an UGS in Berlin decreased drastically due to the social structure of the neighborhood changing toward a low-income milieu, indicating that recruiting marginalized groups is sometimes difficult and a lack of members threatens sustained participation (Berlin-3). Young people participating in park

audits experienced travel issues, finding it difficult to locate the assigned park auditing site and not having the time to travel to the site (South Carolina).

Local authorities placing too high demands and setting overly complicated procedures for community gardening permits were found to exclude marginalized groups that lacked the necessary skills and resources. In Milwaukee, community gardens evolved through citizen activism, not state support, due to city policy showing an ambiguous attitude to community gardening, championing commercial development over gardening, and restricting greater development of community gardens by limiting citizen access to vacant lots. Thus, all citizens did not have equal abilities to participate, as individual participation depended on having knowledge acquired through specific channels and on developing relationships with specific gatekeeping non-profit organizations. Groups

that lacked organizational capacity or access to the knowledge, social connections, and skills needed to secure material resources experienced relatively greater barriers to participation (Milwaukee). Participation leading to improved relations with others and the development of social and employable skills was of particular relevance to a marginalized participant group in the cases in North England and Scotland, potentially contributing to their well-being and facilitating their reintegration into their local community. However, as described earlier in this section, such resources are often needed in order to be included in the strategic management of UGS in the first place.

### *Language and Communication Issues*

It is unclear whether the language barrier hinders participation. Some informants in a Canadian study recommended providing translation and interpretation, while others regarded it as a poor excuse for justifying low participation (Toronto). In a community garden in Vienna, cultural diversity, sweeping judgements due to prevailing social stereotypes, and language problems caused latent conflicts between different ethnic groups, which were resolved by applying a women-centered organizing approach (Vienna). Although simultaneous interpretation in Spanish was provided during a design charrette (Corvallis), stakeholders listed time and communication among challenges experienced. To support community participation, it was found to be important to have a communication plan that respected users' culture and, early in the process, to clarify the ways in which users will be involved and explain the park redesign process, to facilitate dialog (Patton-López et al., 2015). Hence, there is more to well-functioning communication than simply providing information in the language of a participating ethnic minority.

### *Need for Adapted Participation Processes*

In order to address all or potential user groups, special means are sometimes needed. Rall et al. (2019) argued that for PPGIS to be socially inclusive, special efforts are needed to reach a sufficiently high number of respondents from certain population groups, such as those with limited computer literacy, and suggested using PPGIS as only one of several parts of a comprehensive participation strategy. Witten and Field (2020) concluded that non-tokenistic participation by children in planning is more likely when consultation is carried out in familiar settings where children feel comfortable to express their views. Therefore, the consultation of children in Auckland took place in a familiar environment, their schools. In another example (South Carolina), the process needed to be adapted to the needs of the young people as vandalism, litter, and presence of others in the park where park auditing took place made some of the participating young people feel uncomfortable or unsafe, perceiving the UGS as threatening. Here, the young participants should have been directed to UGS they perceived as safe. In one case (Toronto), pre-meetings with interested immigrants before public sessions were recommended by some partner organizations, to inform immigrants about expectations and objectives and to prepare them to take part effectively in the public session, but the researchers argued that this risked hindering authentic participation of immigrants by influencing

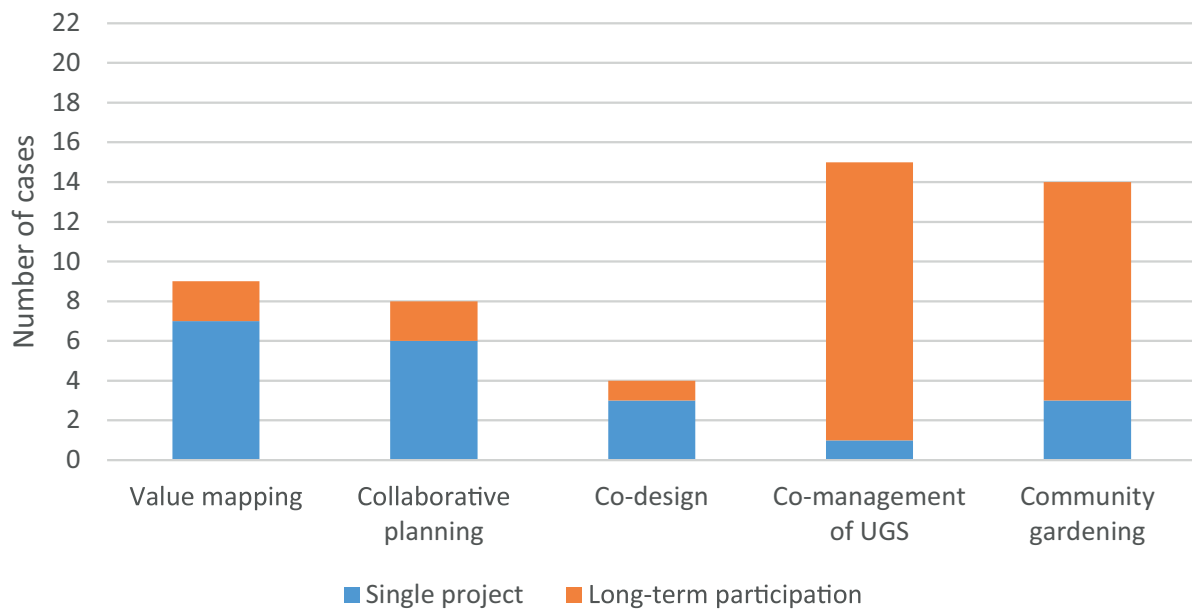
the content of their input. In the Toronto case, planners acknowledged the need to connect with multicultural local communities, but still applied a more general strategy for engaging participants, rather than adapting the participation process in a way that acknowledged cultural and individual differences between participants. According to Khazaei et al. (2019), this calls for a shift from equality-based to equity-based participation in planning, i.e., from treating all participants in the same way to adapting the process to each participant group, to suit everybody's needs, and design a truly inclusive participation process.

## DISCUSSION

### Participation Approaches for Long-Term Participation

The present review showed that the participation approaches "value mapping," "collaborative planning," and "co-design" were dominated by studies of participation processes carried out as one-off, single projects (Figure 5). "Co-management of UGS" and "community gardening," on the other hand, almost solely involved cases of long-term participation. Hence, it could be argued that the choice of participation approach could guide local authorities toward the establishment of long-term participation processes. However, there are multiple pathways to long-term participation. While participation may be carried out as project-based approaches for a specific spatial location within the city, in some cases it is nonetheless embedded in municipal long-term strategies. For example, collaborative planning in Helsinki, Finland, is often carried out as projects at different locations, but the outcomes feed into the revision of the city's urban forest management plans (Sipilä and Tyrväinen, 2005). Project-based participation processes repeated over time, especially when the same people chose to participate again, are another example of long-term collaborative planning; the individual processes together gradually build participants' place attachment and trust in local authorities (Mellqvist et al., 2016).

Two of the three community garden studies classified as single projects in Figure 5 describe temporary gardens situated on land designated for future housing development. Some of the community gardens studied by Bonow and Normark (2018) only existed for a year, while others lasted longer. Therefore, their study was classified as both long-term participation and as a single project. Too short lease contracts, of only 1 year at a time (Bonow and Normark, 2018) or 3 years with potential renewal, but with commercial development always being prioritized over gardening (Ghose and Pettygrove, 2014), were identified as threats to long-term participation, since it takes time to grow crops and develop a garden (Bonow and Normark, 2018). The importance of longer lease contracts as a way to support long-term participation in UGS management has been highlighted previously by Mattijssen et al. (2017). In other words, local authorities choosing the "community gardening" or "co-management of UGS" approaches do not automatically achieve long-term participation, since relevant support from



**FIGURE 5** | Number of cases carried out as single projects and as long-term processes, based on **Table 1**. Some of the cases reviewed cover several places within a city. When some of these were single projects and others long-term processes, the case was classified as both a single project and long-term participation in this chart. UGS, urban green space.

the local authority is still needed for successful long-term participation processes.

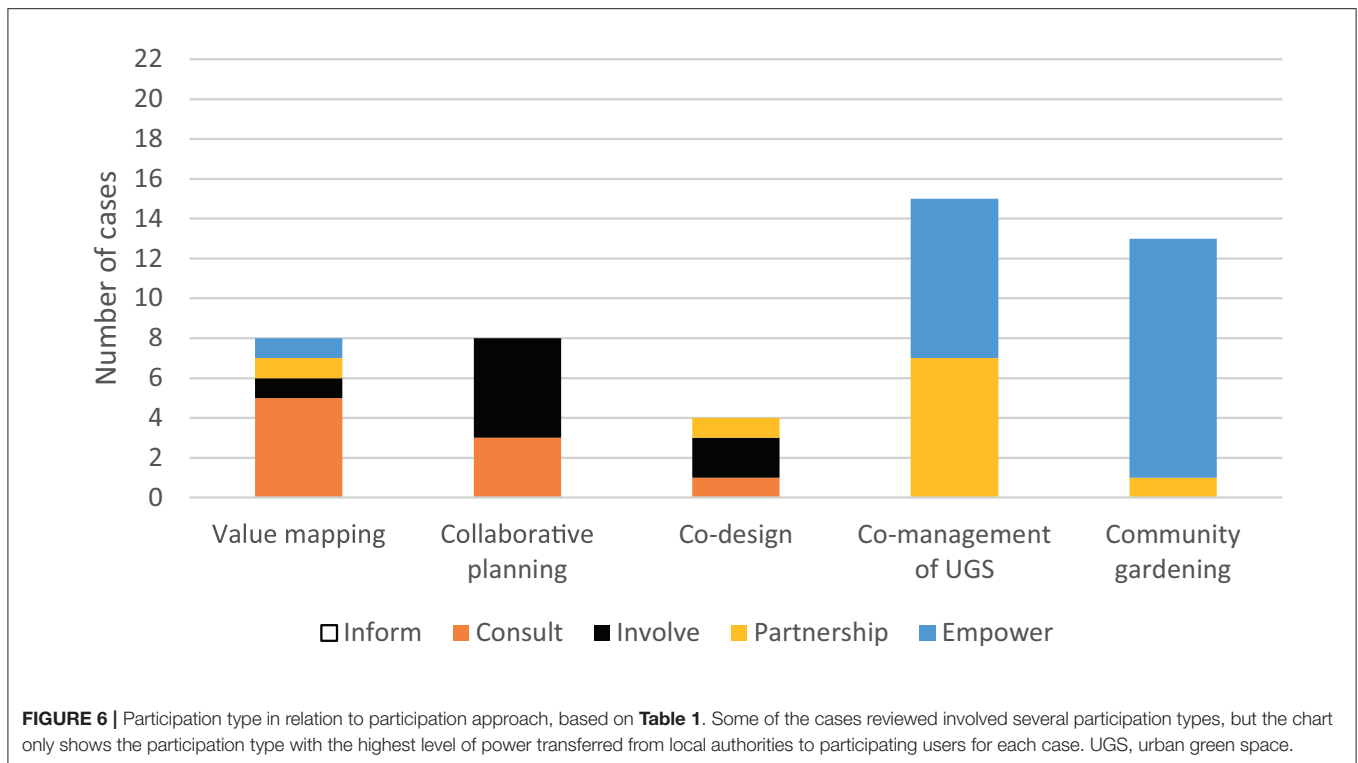
Different participation approaches cover different participation types (**Figure 6**). All five participation types defined by Ambrose-Oji et al. (2011) were found in the cases reviewed, but the type *inform*, i.e., when local authorities inform users, was never the only participation type used. As shown in **Figure 6**, *partnership* and *empower*, i.e., the types with most power being transferred from authorities to users, were with a few exceptions only reached through the approaches “co-management of UGS” and “community gardening.” This is not a problem *per se*, since participants’ capacity and interests concerning scale and type of participation need to be matched with corresponding management activities (Burton and Mathers, 2014). Users differ in how much and in what way they want to participate, and therefore a mix of participation types should be employed. However, it is crucial for local authorities to be aware of limitations and possibilities associated with each participation approach, and the degree of power transferred to users depending on the approach chosen. For example, if a local authority only conducts value mapping, users will typically only be consulted in processes carried out single projects, failing to result in a long-term strategy for participation. The fact that all five participation approaches were represented among the 20 cases reviewed with a specific focus on marginalized groups further underlines the importance of employing a mix of participation types and approaches in order for participation processes to be both long-term and socially inclusive. Buijs et al. (2019) argue that local authorities need to utilize the

long-term visions developed in UGI planning, since activities emerging from active citizenship tend to be local and fragmented. Development of a strategy for long-term participation can thus be supported and structured by existing municipal plans and policy documents.

### The Participation Process Organized in Relation to the Strategic Management Cycle

Participation processes were found not to follow the logic in which the strategic management of UGS is organized, e.g., local authorities through the phases of planning, design, construction, and maintenance (Jansson et al., 2020). For example, the participation tool “green space management” would have to be placed in the maintenance phase, while describing the entire strategic management cycle (**Table 2**). Based on this, the strategic management cycle was extended to include and describe participation processes. A cycle was still found to be the most suitable form, since it captured the long-term perspective of both municipal strategic management and participation processes.

Evaluation phases were added because of the difference between when local authorities manage green spaces through hierarchical governance and when they involve users through co- and self-governance arrangements. With more, both public and private actors involved, continuous evaluation of the ongoing participation process needs to be an integral part of the cycle describing participation. Participation processes carried out as projects without compiling the lessons learnt, which is the case



at least within some participation approaches (**Figure 5**), results in participation processes being carried out *ad hoc*, with limited experience building, and potentially employing new tools for every new participation process.

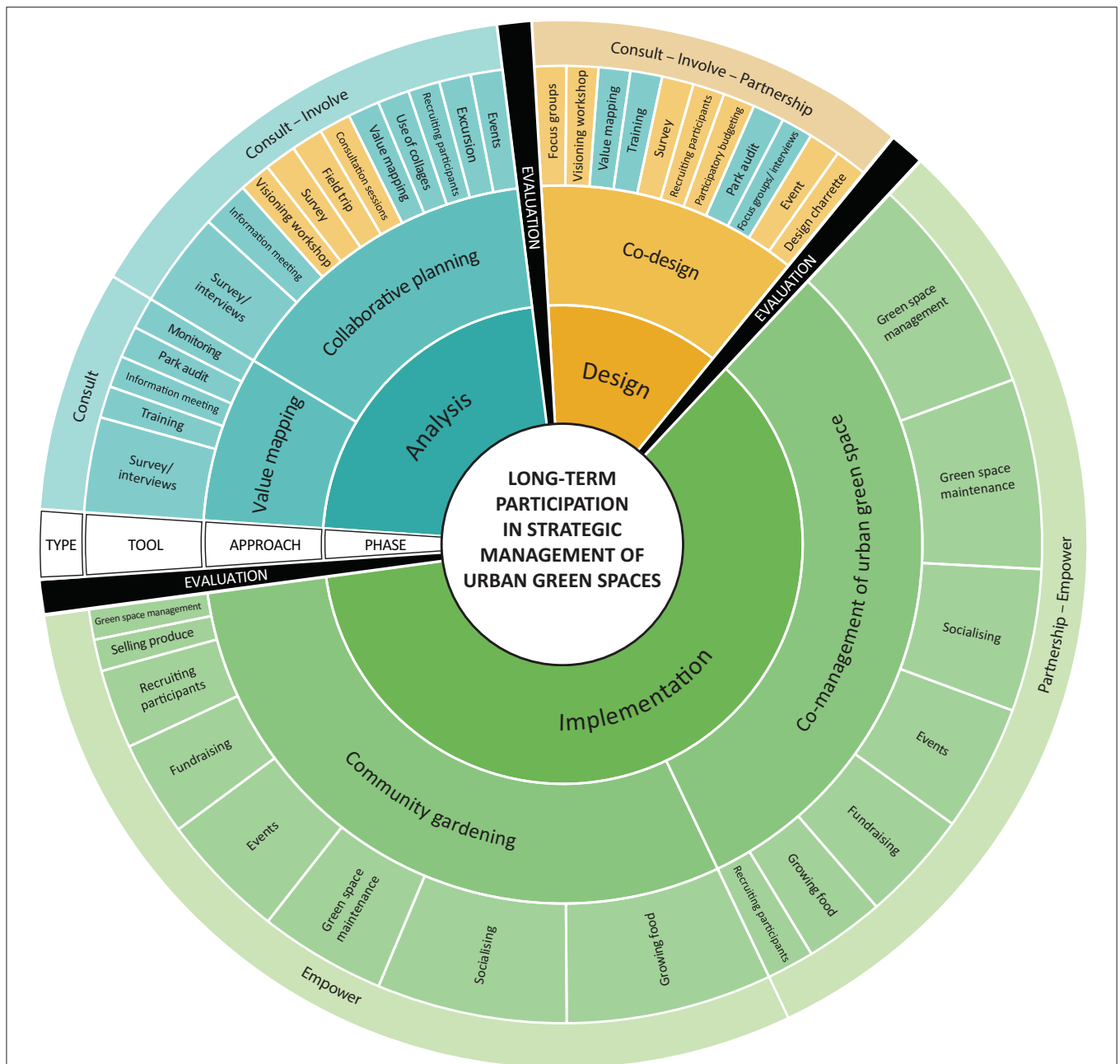
Inspired by the many process cycles available within project-based fields, such as software development, business process management, and instructional design, an alternative way of organizing participation approaches and tools is here proposed (**Figure 7**). It comprises a model of phases (analysis, design, implementation, evaluation), generic to any type of project, and visualizes an overall strategy for obtaining long-term participation in the strategic management of UGS. However, instead of placing evaluation as the fourth step, it is performed after each phase, since smaller, more frequent evaluations are more likely to be performed. It also means that participation processes which only include one of the phases, i.e., analysis, design, or implementation, is evaluated. This represents a move away from empty participation processes, simply ticking off the participation box, to processes that meet requirements initially formulated for the process (**Figure 7**). This could enable participation processes that are sustainable in the long-term, being part of an overall strategy.

**Figure 7** includes all tools mentioned in the cases reviewed. The width of the slice for each tool corresponds to number of times the tools are mentioned in the cases reviewed, with wider slices indicating a higher frequency in the number of mentions. Tools, such as the recruitment of participants were most likely also carried out in cases where they were not mentioned, but **Figure 7** nonetheless gives a visual indication of the tools most commonly used within user participation in the contemporary

strategic management of UGS. Each participation approach belonged to a specific phase. However, some of the cases reviewed within a specific approach involved tools typical to that phase and tools from other phases.

In the past, participation in management (i.e., “co-management of UGS,” “community gardening”) has been less common than the more established practice of participation in planning (i.e., “value mapping,” “collaborative planning”) (Konijnendijk, 2011). The implementation phase dominates **Figure 7**, confirming the emerging trend for increased user participation in management identified by Mattijssen et al. (2017). Surveys, interviews, events, recruiting participants, field trips, and training of participants were tools used in several phases.

Some of the tools within the implementation phase involved hands-on work in the physical UGS (e.g., green space maintenance, growing food, events), while other tools affected the UGS indirectly (e.g., fund-raising, recruiting participants). The tool “socializing” only occurred in the implementation phase, probably because it takes time to build social relationships, which is in line with the finding that most long-term participation processes were within the implementation phase. The tool “green space management” within “co-management of UGS” and “community gardening” involves elements of analysis and design, but these lack tools of their own, since participants typically do this rather autonomously, without local authorities steering the process. For example, the analysis and re-design needed before a community garden can be further developed and physically changed occur through discussions between participants, not through events and workshops led by local authorities.



**FIGURE 7 |** Cyclic process model for long-term participation in the strategic management of urban green spaces (UGS). The inner ring shows the phases of participation in the strategic management of UGS. Analysis phase: turquoise slices; design phase: yellow-brown slices; implementation: green slices. An evaluation of the outcomes from the previous phase is carried out before moving to the next phase. The inner middle ring shows the participation approaches, with the outer middle ring containing the specific tools used within each approach. The outer ring shows the dominating participation type for each approach (based on Figure 6).

“Collaborative planning” processes included elements of both the analysis phase (e.g., of current usage) and design phase (through the development of plans with suggestions for changes). Processes within the “co-design” approach were located in the design phase, but included analysis phase tools, with the understanding of the current situation being a prerequisite for the development of redesigns.

Lack of knowledge on how to involve users has resulted in UGS planners and managers working *ad hoc* when involving users and has made them hesitant about participation processes (Molin and van den Bosch, 2014; Randrup et al., 2017). The proposed cyclic process model for long-term participation in the strategic management of UGS (Figure 7) could be useful to them by visualizing what participation processes may imply, the range

of tools potentially needed, and the important evaluation step, while providing an image of the current status of participation processes in the strategic management of UGS.

## Participation Process Initiation

The reasons for initiating participation processes were found to vary. Participation processes seemed to be driven by a common urge for increasing quality in UGS among local authorities and participants. The main reasons of local authorities for initiating or supporting participation were to involve, to increase UGS quality, streamline the participation process, and for environmental reasons. Participants' main reasons for initiating participation or becoming involved were to increase UGS quality, for environmental reasons, or for social reasons.

Concerning reasons for initiating participation, authorities and participants regarded "UGS quality" in a similar way. This included local authorities wishing to increase quality, accessibility, and the number of UGS, and user groups responding to the appearance of their local neighborhood, wishing to make it more attractive or to transform a run-down housing area. Local authorities sometimes considered green space quality on a different spatial level than users, e.g., striving to increase UGI connectivity for walking and cycling on a city level, rather than developing UGS on a local level.

The aim of local authorities to "involve" reflected their ambition to perform open, inclusive, and transparent decision-making and to use community-generated ideas to improve their plans and decision-making. Fors et al. (2015) pointed out that many arguments for participation are used in scientific articles without being empirically supported, meaning that many benefits of participation are taken for granted. The reason for a specific participation process being initiated is not necessarily identical to the argument for, or outcome of, that process. The wish to involve the public may prompt local authorities to initiate participation, but this underlines the need for the continuous and established evaluation of participation processes, since they do not become successful, or inclusive, by default. Making green spaces more inclusive by involving marginalized groups in the strategic management of UGS was part of the actual reason for initiating participation in only eight of the 48 cases reviewed.

## Inclusive Participation Processes—Inclusive UGS

Participants were often described in the literature reviewed in an unspecific and general way as "citizens," "local residents," "active users," or "volunteers." However, less than half of the cases reviewed (20 out of 48) had a specific focus on marginalized groups, indicating that it is currently not a self-evident part of participation processes to involve marginalized groups in the strategic management of UGS. Cases targeted at involving minority groups were found to use more recruitment methods than cases involving users in general. However, the cases reviewed did not provide empirical evidence on the effects of participation processes, e.g., processes contributing to more inclusive UGS use, stressing the need for evaluation tools.

Marginalized groups often experience barriers to participation (see O'Brien et al., 2011; Rutt and Gulsrud, 2016). Information

from cases describing barriers to the participation of marginalized groups suggested that different marginalized groups experience different barriers, calling for user group-adapted measures to overcome those barriers. Some barriers seemed to be generic, while others were specific to marginalized groups. Generic barriers within "lack of resources" included lack of time (Fors, 2018), too little support from authorities, and conflicting interests (Fors et al., 2015). Not having access to necessary information, skills, knowledge, and income seemed to be a greater barrier for marginalized groups than for users in general. Regarding "language and communication issues," generic barriers included poor communication (Fors et al., 2015) and lack of awareness among users (Straka et al., 2005; Fors, 2018). For some marginalized groups, solving the communication issue meant moving beyond mere translations to explaining the process early on and addressing and respecting cultural differences. The "need for adapted participation processes" for marginalized groups means combining different tools in the same participation process to reach several different groups. As summarized by Khazaei et al. (2019), a shift is needed from equality-based to equity-based participation to obtain inclusive processes.

Since the earliest academic reflections on environmental justice (EJ), the use of the concept has been extended in both geographic scope and into a broader range of issues, thereby developing the theoretical foundation of the concept and allowing for analysis of its key dimensions across disciplines (see Walker, 2012; Schlosberg, 2013; McCauley and Heffron, 2018). As the aim of this study has not been to review and move forward EJ in relation to UGS, existing applications of EJ in UGS specifically will inform the discussion. There are three dimensions of EJ in UGS: distributional justice (equal provision and quality of UGS), procedural justice (inclusion of marginalized groups in UGS decision-making), and interactional justice (meaningful UGS use for marginalized groups) (Low, 2013; Rigolon et al., 2019). The perspective of EJ was found to be largely absent in the reviewed articles on participation in strategic management in UGS. This confirms findings by Rutt and Gulsrud (2016), who call for more studies on UGS use and the participation of marginalized groups, to add knowledge on how to achieve inclusive, green cities. The three groups of barriers identified in this review all need to be considered to reach procedural justice in the strategic management of UGS. However, the dimensions of EJ are interrelated, and therefore there are also distributional aspects of barriers to the participation of marginalized groups, e.g., community gardens being located on the fringe of the city, causing long travel times not affordable to all (Mayrhofer, 2018), as well as interactional aspects, e.g., young people conducting a park audit being reluctant to audit specific green spaces where they feel unsafe (Gallerani et al., 2017).

Striving for inclusive participation processes is important from the perspective of EJ, since procedural justice could lead to distributional and interactional justice in UGS in the next step. Several of the users groups defined here as marginalized groups are socio-economically deprived societal groups with limited resources and limited possibilities to travel to UGS farther away from home. This makes local UGS very important for their

recreational activities. Existing distributional injustice in UGS related to socio-economic status and ethnic background (Byrne et al., 2009; Kabisch and Haase, 2014; Wüstemann et al., 2017) means that the participation of marginalized groups may be the most feasible way to develop high-quality local green spaces in deprived areas. However, Rigolon and Gibson (2021) found that few NGOs in California work on distributional justice and argue that local authorities ought to carry out more of that work and support NGOs currently working toward increased procedural and interactional justice to make them engage in distributional justice as well.

## Future Research

This analysis was carried out as a systematic literature review with the focus on tools for the participation of local users in the strategic management of UGS. Based on this, participation related to the strategic management cycle, type of participation, how participation was initiated, and groups engaged were assessed. The choice to focus on tools limited the type of studies identified within the review and affected the results for the different categories of cases, compared with a literature review focusing specifically on benefits or type of participation covered by earlier reviews within the field (Ambrose-Oji et al., 2011; Fors et al., 2015). However, the cases identified provided a clear indication of existing approaches for participation and tools commonly used within these.

The cases identified showed a strong dominance of European studies, which probably reflects the recent focus on this in Europe through several large EU-funded research projects (e.g., Green Surge, NeighbourWoods), which was evident in this review. Other search terms could potentially have yielded more studies from other parts of the world, although several of the studies filtered out from the initial search were from other geographical regions. Future empirical studies could assess how the three groups of barriers to the participation of marginalized groups identified in this review could be overcome in practice and study potential differences between countries and continents in the participation of marginalized groups. Further, future research could evaluate the cyclic process model for long-term participation in the strategic management of UGS as decision-support for UGS planners and managers at local authorities.

## CONCLUSIONS

A review of the literature identified five participation approaches, namely “value mapping,” “collaborative planning,” “co-design,” “co-management of UGS,” and “community gardening.” These categories covered different phases of the cyclic process model

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for long-term participation in the strategic management of UGS, showing the strength of combining different approaches fostering an inclusive and long-term perspective on the strategic management of UGS. Some of the specific tools used re-occurred within several different participation approaches, but their specific application and how they were combined differed between the approaches.

This review showed that participation processes were initiated for different reasons. The main reasons of local authorities were to involve the public, to increase UGS quality, to streamline the participation process, and for environmental reasons. Participants' main reasons for initiating participation or becoming involved were to increase UGS quality, for environmental reasons, or for social reasons. The user groups engaged in the cases reviewed here were often not clearly described and were most often referred to as “local residents” or “citizens.” When specific user groups remain unidentified, there is a risk of these being excluded from participation, or involved but without the necessary process adaptation, leading to unsuccessful participation. Local authorities have several pathways to socially inclusive and long-term participation. These include choosing and employing a suitable participation approach, anchoring repeated project-based participation in existing municipal long-term strategies, continuously supporting participating users and evaluating ongoing participation processes, and employing a mix of participation types and approaches. The “cyclic process model for long-term participation in the strategic management of UGS” provides a visualization of an overall strategy for participation that could guide such efforts.

## DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article. Further inquiries can be directed to the corresponding author.

## AUTHOR CONTRIBUTIONS

TR and HF: conception of project. HF, FH, and ÅS: data collection and analysis. HF: drafting the article. All authors: design of the review, interpretation and concept development, critical revision of the article, and final approval of the version to be published.

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**Conflict of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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