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Beyond Mandatory Participation: A Classification of Non-Statutory Participatory Methods

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Abstract

Public participation is integral to contemporary planning and decision-making, yet knowledge of methods beyond formally prescribed procedures remains fragmented across the academic and practice-oriented literature. Terminological inconsistencies and overlapping concepts further complicate their identification and practical selection. This study develops a systematic framework for identifying, classifying, and characterising non-statutory participatory methods and examines their relevance across spatial planning phases. An exploratory, scoping-oriented literature review, combined with qualitative content analysis and conceptual synthesis, examined 96 publications containing identifiable participatory methods. The initial 869 entries were conceptually consolidated by distinguishing methods from aliases, variants, methodologies, and umbrella categories, resulting in 124 participatory methods, 76 aliases, 128 variants, and 12 methodologies. Based on their primary purpose, methods were organised into ten functional categories, while secondary functions captured their cross-functional applicability. Method characteristics and broader participatory approaches were additionally distinguished, and functional categories were mapped against seven spatial planning phases. The findings demonstrate that participatory methods are neither conceptually discrete nor restricted to a single function, but may extend across functional categories and planning phases. The framework makes the functional diversity and relationships among non-statutory participatory methods more explicit, providing a structured basis for their initial identification and comparison according to participatory purposes and potential relevance to different planning phases, rather than a comprehensive tool for context-specific method selection.

Keywords: public participation; participation methods; participation approaches; functional taxonomy; planning phases

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1. Introduction

Public participation is a fundamental aspect of spatial planning, enabling individuals and groups to express their views, propose initiatives, and actively engage in decision-making processes [1]. It plays a crucial role in shaping planning theory and practice, with perspectives on participation evolving alongside new methods [2]. Authorities consult the public, identify the needs and expectations of diverse social groups, and work toward solutions that encourage active involvement and consensus-building [3]. Moreover, citizen participation is widely recognised as an indicator of urban livability and a primary driver of improved environmental quality [4–6]. Given its significance, understanding and refining participatory methods is essential to ensure more inclusive, effective, and transparent planning processes.

1.1. History of Participatory Decision-Making

The origins of participatory decision-making can be traced back to early theorists such as Jean-Jacques Rousseau in the 18th century, whose ideas laid the groundwork for public participation in urban planning [7]. However, it took nearly two centuries for these principles to become institutionalised. The first significant applications emerged in the early 20th century, when Patrick Geddes (1915) introduced participatory concepts into planning theory [8]. This was followed by the contributions of philosophers and sociologists such as Kurt Lewin, Lewis Mumford, and Paulo Freire [9].

The movement gained momentum in the mid-20th century as scholars and practitioners recognised the importance of incorporating local perspectives and indigenous knowledge into development processes [10]. Within this broader movement, socialist Yugoslavia established a distinctive approach to public participation in urban and spatial planning, with its institutional foundations emerging as early as the 1950s [11]. Participatory practices developed further during the 1960s and 1970s within the decentralised system of socialist self-management, notably through local communities (*mesne zajednice*), statutory public consultation procedures, and complementary practices such as surveys, public discussions, exhibitions, and direct engagement with residents [12]. The preparation of the 1972 Belgrade Master Plan provides a documented example of these practices, although their effectiveness and the extent of citizens' influence remained subject to political and institutional constraints [13,14].

Alongside the Yugoslav experience, public participation became increasingly institutionalised through different approaches in other countries. In the United States, the Model Cities programme, introduced in 1966, promoted citizen involvement in urban development, although Arnstein [15] demonstrated that formal participation did not necessarily translate into meaningful influence over decisions. In the United Kingdom, the Town and Country Planning Act 1968 strengthened the legislative framework for public involvement in development planning, while the subsequent Skeffington Report (1969) proposed ways of strengthening participation during plan preparation [16,17]. In West Germany, the 1976 amendment to the Federal Building Act introduced early public participation in local land-use planning, providing a legal basis for informing citizens and discussing planning proposals at an early stage [18]. These developments illustrate different national pathways towards participatory planning, rather than a single model uniformly adopted across countries.

Despite these developments, opportunities for meaningful citizen influence remained uneven and were often constrained by institutional arrangements and unequal power relations [10,15,19,20]. Over time, growing experience and research challenged the notion that local communities were merely passive "subjects", "clients", or "beneficiaries". Instead, studies revealed that they played a critical role in the research and development process [21]. International frameworks emphasising participation began to emerge in the 1990s, laying the foundation for inclusive governance. Early milestones include the Rio Declaration on Environment and Development (1992) [22], Agenda 21 (1992) [22], and the Aalborg Charter [23]. A significant step forward was the Aarhus Convention [24], which provided the first legally binding basis for public participation in environmental matters within the European Union. This was followed by the White Paper on European Governance [25], the International Association for Impact Assessment [26], which emphasised that high-quality Strategic Environmental Assessments (SEA) should be participatory [27], and finally by the EC Directive 35/2003 [28].

Meanwhile, participatory planning became increasingly recognised as a fundamental element of civil society, with democratic nations affirming citizens' rights to influence decision-making [29]. To further support citizen engagement in governance, several key

documents—primarily within the EU—were introduced, including the Leipzig Charter on Sustainable European Cities (2007) [30], the Treaty of Lisbon (2007) [31], the CC-CMC Guidelines (2014) [32], the Organisation for Economic Co-operation and Development (OECD) Frameworks (2017 & 2018) [33,34], and the Interparliamentary Union Act (2015) [35]. The shift toward more inclusive governance was further reinforced by the New Leipzig Charter (2020) [36], which positioned participatory urban development as a cornerstone of European policy. In the past decade, public participation has continued to gain global recognition. The United Nations New Urban Agenda (2016) [37] reinforced this trend by promoting people-centred development, advocating for gender- and age-responsive participation, and safeguarding fundamental rights. Although these international frameworks establish important principles for public participation, their implementation is necessarily context-dependent. Translating such principles into practice requires consideration of national and local regulatory arrangements, institutional capacities, socio-cultural characteristics, and the needs of different stakeholder groups.

1.2. The Value of Public Engagement

Two overarching principles prominently reflected in the reviewed literature underpin the value of public engagement in decision-making: sustainable development and democratic governance.

Local actors possess specific knowledge about the local context, which is essential for completing decision-making processes [38–40]. The value of local knowledge also gained explicit recognition in international policy frameworks, notably in Agenda 21 (1992), which called for the incorporation of indigenous communities' knowledge and perspectives into relevant policies and decision-making processes [22]. Only local actors can provide insights into local conditions that might not be widely known [3,21,41–43]. Integrating local knowledge with professional expertise leads to better decisions [3,44–46], fostering more creative and cost-effective solutions [40,42,47]. This effectiveness translates into solutions that better meet the needs of a broader population and are widely accepted and validated, ultimately enhancing the quality of life for all [3,39]. Furthermore, decisions created through inclusive processes not only improve implementation outcomes and maintenance [48,49] but also enhance compliance with regulations [50,51] and encourage stakeholders to consider the impacts of their activities [42]. When citizens serve as societal watchdogs, they foster a stronger sense of responsibility within the community, contributing to stability and achieving sustainable development [38,39,52,53].

The advancement of human rights [54] and the promotion of democracy, the rule of law, and social inclusion require public engagement in democratic urban planning [1,55]. Ensuring openness and equity in the decision-making process strengthens democracy [56–58] and guarantees procedural fairness [59–62]. This process enables not only major stakeholders but also marginalised groups and low-income communities to play a more active role in their own development and be empowered [21,63]. The principle of democracy is rooted in the idea that communities, as stakeholders, have a right to participate in decisions that significantly affect their welfare [46,56]. Public participation is seen as a normative good that legitimises planning processes and improves outcomes for communities [64–66], ensuring that the perspectives of those impacted by planning decisions are heard [67,68]. As the public is the ultimate 'consumer' of urban planning [69], it is essential to give local communities greater control over the development process [21], thereby fostering greater public confidence in their role as active agents in development.

Decisions in urban and spatial planning often have significant impacts on society and the environment [70], especially in mining areas where conflicts between mining companies and local communities are on the rise [71,72]. In these and even less affected regions, easing

tensions [73] and fostering consensus are crucial [74]. Public participation plays a key role in these efforts by providing tools to build trust among stakeholders, enhance legitimacy, and prevent or resolve conflicts [21,57,75]. Interactive and collaborative participatory approaches create platforms for sharing perspectives, facilitating discussions, and increasing awareness and understanding of different stakeholders' interests [38,75,76]. Furthermore, open discussion and transparency strengthen public trust in the state [26,52,74,77]. Ultimately, the transparency brought by meaningful public participation reduces corruption [39] and enhances social cohesion [59,78].

1.3. Problems Occurring in Traditional Participation

Participatory processes are inherently complex, typically involving four key parties: (1) authorities who commission plans and oversee planning processes; (2) planners who contribute technical, planning, and legal expertise and may facilitate stakeholder engagement and the integration of participatory outcomes into planning processes; (3) communities for whom the planning is done; and (4) investors, who may be represented by either public authorities or private actors, with varying interests depending on their nature. While the state or local authorities should ideally prioritise community well-being, they also face constraints such as limited political mandates and the need for cost- and time-efficiency of the participatory processes. In contrast, private actors are primarily driven by profit. Each of these four parties is internally diverse, especially the citizen group, where individuals may have different priorities and perceptions of a good quality of life, highlighting the overall complexity of participatory procedures. For this reason, achieving the ideal of participatory governance is difficult [79], and numerous obstacles and challenges arise throughout the process.

One common issue is the reduction in participation to legally mandated methods that are followed only formally and often fail to meet their intended purpose. Stakeholders observe that even when they are involved, their input is often not reflected in planning decisions or documents [80,81]. In an effort to streamline procedures and reduce costs [55,82–84], authorities may promote tokenistic participation that serves to mask procedural shortcomings or even reinforce existing power inequalities [85]. Conflicts of interest are particularly evident when the state acts as both plan commissioner and investor. But the issue also arises in processes involving stakeholders of unequal power, where there is a natural tendency to prioritise more powerful actors [86,87]. As a result, the public often perceives such participation as superficial and develops a mistrust of participatory systems [1,3,78], especially when the most vulnerable groups, such as women and minorities, are excluded [84]. In addition, conventional planning processes often lose or underuse data and insights gathered from citizens, further weakening the feedback loop [88].

These limitations are also evident in specific European planning contexts. For example, the Stuttgart 21 railway project in Germany illustrates how insufficient citizen participation and conflicts of interest can hinder the implementation of major infrastructure projects [89]. Similarly, research on cooperative planning in Zurich, Switzerland, highlights inequalities in stakeholder influence, particularly the dominant roles of public authorities, landowners, and developers [90]. Conversely, Zurich's Quartieridee participatory budgeting initiative (2020–2021) illustrates a more direct approach to local engagement, enabling residents to propose neighbourhood improvements and vote on the allocation of funds [91]. Together, these examples illustrate how participatory arrangements can differ in the opportunities they provide for citizens to influence decisions.

Due to their complexity, participatory processes pose significant challenges for organisers, particularly in terms of the staff and resources required to facilitate meaningful engagement [3,57]. Beyond challenges for authorities, the inclusion of all relevant stake-

holders throughout the process also proves difficult for planners. As a result, planners often resort to one-size-fits-all approaches, which overlook the specific socio-economic context and needs of individual communities [57]. Research suggests that early engagement is particularly beneficial, as it helps prevent planning processes from being halted later on when critical perspectives emerge too late [2]. However, when process innovation is needed, planners frequently perceive it as a disruption to their established routines [57].

The need to move beyond the traditional paradigm of public participation in planning arises from several persistent shortcomings that limit its effectiveness and inclusivity. In conventional planning processes, professional planners often dominate the entire workflow, from identifying issues to drafting the final plan. Even when consultations are held, planners frequently defend their own views and tend to disregard input from others, resulting in outcomes that reflect a narrow perspective [39]. Key structural flaws of traditional planning include its purely bureaucratic character [92].

Even newer participatory efforts face obstacles. Traditional participation tools often fall short in enabling large-scale, representative engagement, producing actionable insights, or ensuring that citizens' input genuinely shapes outcomes [93]. These systemic weaknesses underscore the urgent need to expand and modernise public participation frameworks to create more inclusive, transparent, and responsive planning practices. Although participatory planning does not "guarantee the justice of either the process or material outcomes" [94] (p. 115), improving the quality and inclusiveness of participation requires moving beyond statutory procedures by embracing innovative, non-statutory participatory methods that can be adapted to different planning contexts, stakeholder groups, and decision-making objectives. For this study, the terms 'non-statutory participation' and 'non-statutory participatory methods' are used operationally to refer to the repertoire of participatory procedures available to complement conventional, legally prescribed opportunities for public involvement in spatial planning. The designation does not imply that these methods are inherently non-statutory or that their use cannot be legally required in particular jurisdictions. Rather, it distinguishes the methods examined in this study from the formal participation procedures conventionally embedded in statutory planning processes, such as public inspection and early public inspection. The legal status of any particular method remains dependent on the institutional and regulatory context in which it is implemented and is not treated as an intrinsic characteristic within the proposed taxonomy. For brevity, the term 'participatory methods' is used throughout the manuscript to refer to the non-statutory participatory methods examined in this study, unless otherwise specified.

However, addressing these practical shortcomings requires more than expanding the repertoire of participatory methods. It also requires a sufficiently structured knowledge base to support their identification, comparison, and selection. The fragmentation and conceptual inconsistency of existing knowledge about non-statutory methods therefore represent a distinct methodological challenge, which constitutes the specific research gap examined in the following section.

Accordingly, the aim of this paper is to develop a systematic framework for identifying, classifying and characterising non-statutory participatory methods used in planning and decision-making processes, while demonstrating their relevance across different phases of spatial planning. The conceptual framework developed in this paper seeks to consolidate, organise and classify the growing repertoire of non-statutory participatory methods into a coherent functional taxonomy that supports conceptual comparison and the initial identification of methods relevant to particular participatory objectives. To achieve this aim, the paper addresses the following research questions:

RQ1. How can non-statutory participatory methods reported in the planning and decision-making literature be consolidated into a comprehensive and coherent pool of methods?

RQ2. How can these methods be systematically classified according to their primary participatory function?

RQ3. How can categories of non-statutory participatory methods be related to phases of the spatial planning process?

2. Literature Review

This section reviews the evolution of scholarly approaches to public participation in spatial planning, with particular attention to the growing interest in non-statutory methods, their practical applications, and the remaining gaps in their conceptual organisation. Over recent decades, public participation has become an integral component of spatial planning systems worldwide, while the effectiveness of traditional participatory arrangements has increasingly been questioned. While statutory participation provides legally defined opportunities for citizens to engage in planning and decision-making processes, many scholars argue that statutory participation often remains procedural rather than substantive, offering limited opportunities for citizens to influence planning outcomes [85,95–97]. As Lovrić & Lovrić (2018) [98] observe, participation in spatial planning has gradually drifted away from both its theoretical foundations and its democratic aspirations, while traditional participatory practices have proven insufficient in bridging the persistent divide between experts and citizens, prompting growing interest in more innovative approaches.

Over time, these critiques have contributed to a shift in the literature from viewing participation primarily as a legal obligation towards understanding it as a collaborative process requiring continuous interaction among planners, decision-makers, stakeholders, and local communities. Recent international policy documents similarly advocate expanding participation beyond statutory consultation procedures. The New Leipzig Charter (2020) [36], for example, explicitly calls for encouraging new forms of participation, including co-design and co-creation involving citizens, civil society organisations and the private sector. Likewise, Ref. [99] emphasise that contemporary spatial planning requires more responsive and adaptive participatory tools capable of coordinating diverse sectoral interests while increasing transparency throughout planning processes. These developments reflect a broader recognition that meaningful participation cannot be achieved solely through legally prescribed procedures but depends on creating opportunities for continuous dialogue, collaboration and mutual learning.

The growing interest in non-statutory participatory approaches is further supported by empirical studies demonstrating that meaningful engagement frequently occurs outside formal consultation procedures. Poelzer's research [100] shows that although legislation clearly defines formal entry points for public participation, stakeholders often raise concerns, exchange information and influence projects throughout the planning process rather than only during legally prescribed consultation periods. Similarly, Ringholm et al. [2] argue that these more spontaneous or "untidy" forms of participation may compensate for the limitations of formal, institutionally organised participation by strengthening input, throughput and potentially even output legitimacy. Innes and Booher [85] likewise contend that traditional participation methods often function merely as rituals intended to satisfy legal requirements rather than to facilitate genuine deliberation, arguing instead for participatory processes that enable citizens and public authorities to deliberate collaboratively on shared challenges.

The need to move beyond statutory participation is particularly evident when planning processes seek to engage increasingly diverse stakeholder groups [88,101]. Consequently,

a growing body of literature advocates participatory approaches specifically designed to improve the inclusion of women, young people, older adults and other underrepresented groups (e.g., Refs. [102–104]). Some studies demonstrate that employing diverse participatory tools contributes to more inclusive planning by accommodating participants of different ages, genders, ethnicities, socio-economic backgrounds and abilities [103], or indicate that younger generations often engage more effectively through less formal and digitally supported forms of participation than through conventional institutional mechanisms [2,102].

Accordingly, recent research increasingly rejects the notion of a universally applicable participatory method. Instead, participatory processes are widely recognised as context-dependent and should therefore be designed according to the objectives of participation, the characteristics and capacities of stakeholders, available resources, and the stage of the planning process at which participation occurs [105–108]. Alterman et al. [109] and Berman [110] further argue that not only the overall participatory framework but also the specific methods employed significantly influence whether participation ultimately affects planning decisions. Likewise, Wilcox's [82] well-known observation that "different methods suit different people" continues to underpin contemporary calls for more adaptive, inclusive and purpose-oriented participatory processes. Rather than relying on a limited repertoire of legally prescribed procedures, planners are increasingly expected to combine multiple complementary methods capable of responding to different planning objectives, stakeholder needs and decision-making contexts.

Despite this growing recognition that participation should extend beyond statutory procedures and employ a broader repertoire of participatory approaches, the literature provides surprisingly limited guidance on how planners should identify, compare and select appropriate non-statutory methods. Existing research has substantially expanded knowledge of participatory planning by developing innovative techniques, documenting individual case studies and evaluating specific participatory processes. However, this knowledge remains highly fragmented across disciplines, planning traditions and application contexts. Most studies introduce only one or several methods within a particular project or planning setting, whereas comprehensive syntheses of non-statutory participatory methods remain remarkably scarce [19]. Even studies presenting relatively broad collections of participatory methods rarely move beyond descriptive inventories, offering limited explanation of the methods themselves, their procedures, intended purposes or practical applicability. Consequently, practitioners seeking appropriate participatory approaches are required to navigate a dispersed body of literature in which relevant knowledge is difficult to identify, compare and operationalise.

A second limitation concerns the conceptual organisation of participatory methods. While numerous methods have emerged over recent decades, the literature lacks a coherent framework through which they can be understood and compared. Also, Brown & Fagerholm [111] and Olteanu-Raimond et al. [112] noted that, depending on the approach and context, terms such as Public Participation GIS (PPGIS), Participatory GIS (PGIS), Volunteered Geographic Information (VGI), as well as crowdsourcing and neogeography, are used to describe related mapping practices. Although these terms are often used interchangeably, they represent distinct concepts and approaches that differ in their objectives, the role of participants, data collection methods, and the level of public participation [113,114]. These inconsistencies have received relatively little explicit attention in previous research, even though they significantly reduce the transparency, comparability and cumulative development of knowledge within the field.

The literature also offers limited support for one of the most important practical challenges faced by planners: selecting methods that are appropriate for specific planning situa-

tions. Previous studies consistently recommend adapting participatory processes to their objectives, stakeholder characteristics, available resources and planning stages [105–108], yet few attempts have been made to organise participatory methods according to these criteria in a systematic and operationally useful manner. Existing classifications typically distinguish methods according to levels of participation, communication technologies or broad participatory paradigms, while providing little guidance regarding their primary function within participatory processes or their suitability for different planning tasks.

Taken together, these gaps highlight the need for a more coherent organisation of existing knowledge on non-statutory participatory methods. In particular, the fragmentation of available sources, inconsistent terminology, and limited attention to the functional characteristics of methods complicate their identification and comparison. The proposed framework addresses these limitations by consolidating existing methods, clarifying terminological and conceptual relationships, and linking their functional categories to different phases of the spatial planning process, thereby providing planners with a structured basis for identifying and initially comparing methods according to their participatory purposes and potential relevance to different planning phases.

3. Theoretical Background

Building on the gaps identified in the literature review, this section establishes the conceptual basis for organising non-statutory participatory methods, drawing on knowledge organisation theory and established frameworks of public participation.

Classification represents one of the fundamental mechanisms through which scientific knowledge is organised and communicated. Rather than merely grouping similar objects, classification establishes conceptual relationships among entities and provides a structure that facilitates comparison, interpretation and cumulative knowledge development. Within the field of knowledge organisation, Hjørland [115] distinguishes classification from related concepts such as categorisation, typology and taxonomy, arguing that each serves a different epistemological purpose. Whereas categorisation generally refers to the process of assigning objects to groups, taxonomy represents a systematic and hierarchically organised classification based on explicitly defined principles.

Contemporary knowledge organisation increasingly recognises that complex domains cannot be adequately represented through single-dimensional classifications. Souza et al. [116] argue that many existing taxonomies remain incomplete because they rely on a limited number of analytical dimensions, thereby capturing only part of the complexity of the domain under investigation. They therefore advocate integrative taxonomic frameworks capable of representing multiple dimensions simultaneously, allowing different characteristics of the classified objects to coexist within a coherent conceptual structure.

Beyond organising existing knowledge, taxonomies play an important role in theory building and conceptual development. By identifying similarities and differences among objects, taxonomies facilitate communication, comparison and cumulative scientific understanding, while providing a shared conceptual language for future research. Consequently, taxonomies are increasingly recognised not merely as descriptive inventories but as conceptual frameworks capable of structuring complex research domains [117]. From this theoretical perspective, participatory methods constitute a complex and heterogeneous domain that may benefit from systematic conceptual organisation.

Since the emergence of participatory planning, scholarly attention has predominantly focused on the extent of participation rather than on the characteristics of the methods through which participation is achieved. Consequently, the most influential conceptual frameworks in planning theory have classified participation according to levels of citizen influence, degrees of power redistribution or forms of interaction between public authorities

and stakeholders. Arnstein's [15] ladder of citizen participation, together with subsequent models proposed by Davidson [118], Connor [119], Pretty [120] and the International Association for Public Participation (IAP2) [121], conceptualises participation primarily as a continuum ranging from information provision to citizen empowerment. Although these frameworks have profoundly influenced participatory planning theory and practice, their primary purpose is to explain the nature and intensity of participation, rather than to conceptualise the methods by which participation is organised.

This distinction is theoretically important. Participation represents a social and institutional process, whereas participatory methods constitute the operational mechanisms through which that process is implemented. A single participatory method may therefore support different levels of participation depending on how it is designed and applied. For example, workshops, focus groups or participatory mapping exercises may serve merely consultative purposes in one planning context, while facilitating collaborative knowledge production or co-decision in another. Consequently, participation levels describe the relationship between stakeholders and decision-making, whereas participatory methods describe the means through which such relationships are established and facilitated. From this perspective, methods should not be regarded simply as procedural instruments but as distinct conceptual entities whose characteristics, purposes and relationships deserve independent analytical attention.

The diversity of participatory methods reflects differences in their purposes, interaction patterns, communication processes and implementation contexts [122]. These characteristics reinforce the relevance of a multidimensional approach to their classification, allowing methods to be examined through complementary rather than mutually exclusive perspectives.

A recurrent principle in the literature is that method selection should begin with the purpose of participation, as different purposes imply different requirements for interaction and therefore favour different methods. Hofer and Kaufmann [122] conceptualise public participation through three interrelated dimensions—actors, arenas and aims—highlighting the relationships between who participates, the settings in which participation occurs and the objectives pursued. Their framework provides a useful conceptual perspective for understanding participatory methods in relation to the broader configurations in which they are applied.

The participatory literature itself increasingly points towards such a relational and multidimensional understanding. Voinov et al. [123], in their review of tools and methods for participatory modelling, demonstrate that participatory instruments differ substantially in their purposes, requirements and suitability for particular tasks and stages of decision-making. Their analysis also highlights the difficulty of selecting among a wide range of tools when knowledge about their characteristics and appropriate uses remains dispersed. This suggests that participatory methods are better understood relationally—as instruments whose meaning derives partly from the functions they perform and the participatory configurations in which they are embedded—than as isolated techniques with fixed properties.

From this theoretical perspective, the organisation of non-statutory participatory methods can be understood as a problem of conceptual knowledge organisation rather than simply compilation. A coherent framework should make visible both the diversity of the domain and the relationships that give that diversity structure. Importantly, such a framework need not assume that one participatory form is inherently superior to another. Instead, it can accommodate multiple dimensions of difference and recognise that methods acquire relevance in relation to particular participatory purposes, actors, settings and stages of decision-making. This perspective provides a theoretical basis for understanding the

repertoire of non-statutory participatory methods as an interconnected domain of planning knowledge—one that can be systematically described, differentiated and related without reducing its complexity to a single hierarchy or normative scale.

4. Materials and Methods

4.1. Research Design

This study adopted an exploratory, multi-stage research design aimed at identifying, conceptually consolidating, describing and organising non-statutory participatory methods used in planning and decision-making. In this study, the term 'non-statutory' defines the scope of the participatory repertoire under examination rather than an inherent legal characteristic of individual methods. The analysis focuses on methods that can complement conventional statutory participation procedures, without classifying their legal status across individual planning jurisdictions. An exploratory approach was considered appropriate because the investigated field is characterised by dispersed terminology, heterogeneous disciplinary traditions and limited comprehensive syntheses of participatory methods. Exploratory research is particularly suited to domains in which relevant concepts and relationships have not yet been sufficiently structured and where the research process involves progressively identifying meaningful patterns and analytical categories [124].

The research combined an exploratory, scoping-oriented literature review with qualitative content analysis, conceptual synthesis, descriptive quantitative analysis, and the development of a multidimensional classification framework. Scoping approaches are particularly suitable for mapping heterogeneous bodies of literature, examining the breadth and characteristics of available knowledge and identifying conceptual gaps without requiring the type of evidence-quality assessment characteristic of systematic reviews [125,126]. The study proceeded through five interrelated analytical stages: (1) identification and descriptive analysis of the evidence base; (2) extraction and conceptual consolidation of participatory methods with development of standardised method profiles; (3) multidimensional classification, development of a functional taxonomy and mapping functional categories onto phases of the spatial planning process; (4) identification and characterisation of participatory approaches; and (5) identification of primary and secondary functional relationships.

The five stages were distinguished according to their analytical objectives and outputs, with each stage building on the findings of the preceding analysis. However, the research process was iterative rather than strictly linear. In particular, defining individual methods frequently required returning to the reviewed publications, reconsidering terminological relationships and revising distinctions between methods, variants, broader categories and more complex methodologies. This iterative movement between individual cases and the emerging conceptual structure is consistent with qualitative category development and taxonomy-building approaches [117,127].

(1) Identification and descriptive analysis of the evidence base: The evidence base was assembled through an exploratory literature search conducted between February and October 2024. Four members of the project team contributed to the identification and collection of relevant publications using a common set of search terms in Google Scholar: "participation", "participatory methods", "public participation", and "public participation" combined with "mining". The search was conducted in English and focused primarily on publications from the preceding five years, while also considering relevant sources published from 2015 onwards. Earlier publications were additionally identified through backward citation searching, whereby reference lists of retrieved publications were examined to identify potentially relevant sources.

The initial selection was based on publication titles indicating a focus on public participation, participatory methods, or participatory decision-making potentially applicable

to spatial or urban planning. Abstract screening was not systematically undertaken at this stage. The collected references were subsequently compiled into an alphabetically organised database, with duplicate publications manually removed during consolidation. The resulting collection comprised 110 unique publications.

The full texts of the collected publications were examined to determine whether they identified or discussed specific participatory methods. Publications addressing participation exclusively at a general, theoretical, or conceptual level, without reference to identifiable methods, were excluded from the subsequent method-oriented analysis. Fourteen publications were excluded on this basis, resulting in a final corpus of 96 sources. The retained publications were descriptively characterised according to publication type, publication period, and the number of participatory methods identified. The characteristics of the final corpus are presented in Section 5.1, while Appendix A (Table A1) provides the complete list of included sources and the methods extracted from them.

(2) Extraction and conceptual consolidation of participatory methods with development of standardised method profiles: The second stage sought to identify the broadest possible initial pool of participatory methods represented in the reviewed literature. All terms explicitly presented as participatory methods, techniques, tools, approaches, procedures or comparable forms of organised stakeholder engagement were initially extracted without imposing a restrictive terminological distinction. This inclusive first-round extraction was necessary because the participatory literature does not consistently distinguish between these terms, and premature exclusion based on labels could therefore have removed conceptually relevant practices. The resulting inventory was subsequently subjected to conceptual consolidation. Each candidate item was examined in relation to its description, purpose, procedure and relationship to other identified items rather than classified solely based on its published name. Qualitative content analysis provided the general analytical logic for this process, particularly its emphasis on systematic examination of material through progressively developed and refined categories [127].

Conceptual consolidation followed an iterative, criteria-based procedure. Initially, identical and terminologically similar entries were identified and provisionally grouped to facilitate comparison. These groupings were subsequently examined in terms of the methods' purposes, procedural characteristics, and, where available, examples of application. Terms referring to substantially equivalent procedures with the same underlying purpose were treated as aliases. Entries retaining the same basic purpose and procedural logic but differing in delivery format, tools, target groups, or more narrowly defined applications were classified as variants. Entries with sufficiently distinct purposes or procedural characteristics were retained as separate methods. More complex arrangements combining several methods or predefined sequences of activities were classified as methodologies, while broad terms encompassing multiple participatory practices without a sufficiently specific procedure were treated as umbrella categories and excluded from the method-level analysis. Ambiguous cases were reconsidered iteratively as the conceptual framework developed and relationships between methods became clearer.

Following conceptual consolidation, a standardised profile was developed for each retained method. The objective was to move beyond simple method identification towards descriptions sufficiently informative to allow researchers and practitioners to understand the essential characteristics of a method and assess its potential relevance to a planning context. Each method profile included six core elements: (1) definition, (2) primary purpose(s), (3) procedural or distinguishing characteristics, (4) recognised variants or sub-types, (5) synonyms or alternative names, and (6) example(s) of practical application.

Where available, descriptions were synthesised directly from the publications included in the review. Because many publications named participatory methods without providing

sufficiently detailed descriptions, if any, additional source verification was undertaken where necessary. The supplementary searches included additional scholarly publications, institutional resources, specialised online reference sources, dictionaries or encyclopaedic resources. Generative artificial intelligence was also used (OpenAI ChatGPT–GPT-4o and GPT-5) to identify possible alternative terminology, formulate additional search terms, flag potentially relevant descriptions requiring verification, or clarify fine differences between similar methods such as "discussion" and "round table", or "voting" and "polling". ChatGPT outputs were used to support conceptual comparison rather than to determine classification decisions. The final distinctions between aliases, variants, methods, methodologies, and umbrella categories were made by the author through consideration of the available descriptions, purposes, and procedural characteristics. Where independent documentary evidence was insufficient, the resulting distinctions remained subject to interpretative uncertainty. Methodologies remained part of the broader conceptual framework but were identified separately in the descriptive outputs.

(3) Multidimensional classification, development of a functional taxonomy and mapping functional categories onto phases of the spatial planning process: The taxonomy development literature similarly treats classification as an iterative process in which conceptual dimensions and characteristics are progressively refined against the empirical objects being classified [117]. The comparative analysis of method definitions, purposes and procedural characteristics revealed that participatory methods differ along several analytically meaningful dimensions. Rather than being reducible to a single continuum, the identified methods were differentiated according to several aspects. The dimensions were developed iteratively through comparison of method profiles. This approach is consistent with multidimensional understandings of classification, according to which complex domains may require several complementary dimensions to represent meaningful similarities and differences among objects [116]. For the functional taxonomy, methods were grouped according to their predominant participatory purpose, as identified through comparison of their definitions and procedural characteristics.

The applicability of functional method categories across different phases of the spatial planning process was examined. Seven planning phases were distinguished for analytical purposes: Needs Assessment; Decision to Initiate Planning; Concept Development; First Draft Preparation; Final Draft Preparation; Plan Adoption & Implementation; and Monitoring & Evaluation. The mapping was undertaken as a conceptual assessment rather than an empirical analysis of the frequency or effectiveness of method application across planning phases. Drawing on the author's professional and research experience in spatial planning, the assessment considered the principal tasks and expected outputs of each planning phase in relation to the defining purposes and procedural capabilities of the ten functional categories. Primary applicability was assigned where a category directly addressed a central task of a particular planning phase, whereas supportive applicability indicated that the category could contribute additional value without being central to that phase's principal objectives. The resulting relationships therefore represent an indicative assessment of functional suitability rather than independently validated patterns of practice. The importance of timing participation in relation to the wider decision-making process is recognised in participatory-method literature: methods appropriate for identifying problems and local knowledge may differ from those required for evaluating alternatives, deliberating preferences or monitoring implementation, and method choice therefore needs to take account of the stage at which participation occurs [123].

(4) Identification and characterisation of participatory approaches: Following the development of the method taxonomy, the analysis was extended to characteristics that could not be consistently attributed to individual methods but instead described the broader

design of participatory processes. Recurring characteristics identified during method analysis were compared and consolidated into dimensions of participatory approaches, each comprising a set of corresponding modes. These dimensions were analysed separately from the method taxonomy to maintain a distinction between characteristics of individual participatory methods and characteristics resulting from the way in which methods are embedded and organised within a broader participatory process.

(5) Identification of primary and secondary functional relationships: Assigning a method to a primary functional category does not imply that the method can perform only one participatory function. Participatory methods are flexible instruments whose role may change depending on how they are embedded within a broader process. Consequently, following identification of each method's primary function, the analysis examined whether it could also meaningfully contribute to one or more secondary functions.

The primary function was determined by the principal participatory objective reflected in the method's definition and characteristic procedure. Secondary functions were assigned where the procedural characteristics or documented applications indicated that the method could also contribute meaningfully to another participatory objective, depending on the context and manner of implementation. These additional functions were therefore understood as context-dependent capabilities rather than equally defining purposes. Functional assignments were reconsidered iteratively as the classification framework was refined and the relationships between methods became clearer. This relational analysis prevents the taxonomy from presenting methods as rigid and mutually exclusive entities. The resulting primary and secondary functional relationships are documented in Appendix B (Figure A1).

4.2. Limitations

As an exploratory study, the proposed framework should be interpreted with several methodological considerations in mind. The literature search relied on Google Scholar and backward citation searching rather than an exhaustive search across multiple bibliographic databases. Moreover, the initial identification of potentially relevant publications was based on title screening, and the total number of search results was not systematically recorded. Consequently, the search and selection procedure cannot be fully reconstructed in accordance with all PRISMA-ScR reporting items, and the reviewed corpus should not be regarded as exhaustive. The English-language restriction and the focus on publications identified up to October 2024 may also have excluded relevant sources, including methods documented in other languages or more recent publications.

Nevertheless, the analysis revealed substantial repetition and terminological overlap among the identified participatory methods. The initial extraction of 869 entries, subsequently consolidated into 124 methods, illustrates both the diversity of the literature and the considerable conceptual overlap within the reviewed corpus. Although this recurrence suggests that the selected sources captured a substantial repertoire of established participatory methods, it does not demonstrate that methodological saturation was achieved or that additional sources would not yield further methods or variants.

Furthermore, the analysed literature is characterised by inconsistent terminology and uneven levels of methodological detail. Many publications mention participatory methods without providing sufficiently detailed descriptions to enable reliable interpretation or replication, requiring additional verification from complementary sources.

The conceptual consolidation and functional classification inevitably involved interpretative judgement, particularly when distinguishing between methods, variants, methodologies and synonymous terminology, as well as when assigning secondary functions. Although explicit conceptual criteria, comparison of available sources and iterative reconsideration of ambiguous cases were used to improve analytical consistency, the final

decisions were made by a single researcher. No independent coding or formal inter-coder reliability assessment was conducted. Consequently, the independent reproducibility of the proposed taxonomy has not been empirically established, and some distinctions may remain open to alternative interpretations. Moreover, the functional taxonomy represents one possible conceptual organisation of participatory methods; alternative classifications based on different organising principles or specific planning contexts could also be justified. To facilitate scrutiny of the analytical decisions, the reviewed literature, consolidated method corpus and functional relationships are documented in the accompanying appendices. The mapping of functional categories onto planning phases is likewise conceptual and has not been independently validated against observed patterns of method application or effectiveness. Its applicability across different planning systems and contexts therefore requires further empirical examination.

5. Results and Discussion

5.1. Identification and Descriptive Analysis of the Evidence Base

The final corpus of publications, identified through the procedure described in Section 4.1, was characterised according to three principal variables: publication type, publication period, and number of participatory methods addressed (Table 1). The complete corpus is provided in Appendix A, including the author(s), year, publication type, application domain, number of participatory methods identified, and the methods extracted from each source.

Table 1. Characteristics of the sources included in the analysis.

Source Type	No. of Sources	Publication Period	No. of Sources	No. of Participatory Methods Mentioned	No. of Sources
Peer-reviewed journal	56	1994–1999	4	1	13
Guide/Toolkit	14	2000–2004	6	2–5	39
Report/Policy Paper	8	2005–2009	2	6–10	20
Book/Book chapter	7	2010–2014	14	11–15	12
Conference proceedings	5	2015–2019	29	16–20	5
Master thesis	2	2020–2024	41	21–25	3
Doctoral thesis	1			26–30	1
Student work in a master program	1			31–50	1
Working paper	1			>50	2
Presentation	1				

The review shows an emphasis on more recent peer-reviewed publications, while guides and toolkits also proved to be a relevant source of information on participatory methods. Earlier publications and other types of sources were retained where they contributed relevant methods or methodological information, thereby broadening the evidence base beyond contemporary academic literature.

While some publications focus on a single participatory method, the largest group of reviewed publications (39) addresses between two and five methods, whereas only two publications each address more than 50 methods (Table 1). Sources addressing a particularly broad range of methods were of specific interest, as they offered the greatest potential for providing more comprehensive inventories of available participatory methods. At the same time, the distribution of the reviewed sources provided a basis for examining, in the subsequent analytical stages, how comprehensively and consistently participatory methods are documented and systematised across the existing literature.

5.2. Extraction and Conceptual Consolidation of Participatory Methods with Development of Standardised Method Profiles

Following the review of the selected sources listed in Appendix A, all participatory methods addressed in these sources were compiled into a single list. At this point, participatory methods were understood in a deliberately broad sense to preserve the exploratory character of the research. Accordingly, no strict distinction was made between methodologies, approaches, methods, tools and techniques during the initial extraction. This inclusive approach yielded a preliminary list of 869 entries. Several recurring conceptual problems were identified during the subsequent consolidation:

1. First, the same entries were identified across multiple publications, requiring the detection and removal of duplicates from the initial list.
2. Second, the same or substantially equivalent methods sometimes appeared under different names, requiring the identification and consolidation of synonymous or alternative terms. One of the examples is "focus group" method addressed by the majority of sources (e.g., Refs. [6,48,128–132]), whereas others used terms such as Focus Group Discussion [133], Focus/User Groups Meeting [39], Discussion Group [29], or Focus Group Discussion [46].
3. Third, conceptually distinct terms were sometimes used interchangeably in the literature, despite referring to participatory practices with different meanings, purposes, or procedural characteristics. This terminological overlap complicated the identification of aliases, as apparent equivalence in usage did not necessarily imply conceptual equivalence. One example is the interchangeable use of questionnaire and survey, although the terms refer to different concepts: a questionnaire is an instrument comprising a set of questions used to collect data, whereas a survey is a broader method of data collection in which a questionnaire may be used as the principal instrument. Examples of the use of the term questionnaire were found in Dalal-Clayton et al. [38,39] and Natarajan [66].
4. Fourth, some publications presented broad families of participatory practices as individual methods, although these categories encompassed several distinguishable methods. Thus, Wilcox [82] uses the encompassing term deciding together, Hoefsloot and van den Berg [134] use public gathering, Derr and Kovács [135] use dialogue, Lea [136] uses verbal hearings, while Hossu et al. [6] refer to a wide range of broadly defined forms of participation, including conversations, face-to-face gatherings, participative initiatives, co-decisions, public–private–citizen exchanges of information, mediation, collaborative learning, dialogical activities, civic participation, advisory activities, and co-development.
5. Finally, the level of procedural detail provided for participatory methods varied considerably across the reviewed literature. Numerous publications mentioned or briefly described methods without providing sufficient information to determine how they could be implemented or replicated in practice. In some cases, methods were presented only through selected aspects, making it difficult, or sometimes impossible, to reconstruct the procedure as a whole (e.g., Refs. [6,137,138]). Conversely, other sources provided sufficiently detailed descriptions of the procedures, purposes, and practical application of the methods discussed (e.g., Refs. [46,82,131,132]). No consistent relationship was observed between the level of methodological detail and either the type of publication or the number of methods covered.

The analysis revealed that the boundaries between methods, tools, and outputs are not always clear and may depend on the role an element assumes within a participatory process. This is particularly evident in spatial and digitally mediated participation: a collaboratively produced map may represent an output, whereas an interactive map through which stake-

holders contribute information may simultaneously function as a participatory tool and the principal means of participation [75,139]. Similarly, methods are often embedded within or combined with other methods; participatory mapping, for example, may incorporate focus-group discussions and other techniques as part of a broader participatory procedure [131]. These overlaps suggest that participatory methods cannot always be treated as discrete and mutually exclusive procedural units and are better distinguished according to their role and function within the participatory process. To accommodate this ambiguity, all such elements were retained in the analysis, as their status as distinct participatory methods may depend on the purpose for which they are applied and the role they assume within a particular participatory process. As elaborated in the subsequent sections, this emphasis on purpose and function subsequently informed the development of the ten functional categories used to classify the identified methods.

A similarly context-dependent boundary exists between statutory and non-statutory participation. The regulatory status of procedures such as public registers or referenda may differ between countries, regions, and planning systems [3,52], making a universally applicable division difficult to establish. Together, these findings support a flexible, function-oriented classification that recognises overlaps and relationships among methods rather than imposing rigid conceptual boundaries.

To manage these inconsistencies systematically, extracted entries were distinguished as (a) participatory methods, (b) method aliases, (c) method variants, (d) methodologies, and (e) umbrella categories. The primary focus was on non-statutory participatory methods; however, methods could not always be reliably distinguished from their synonyms, variants, or broader methodologies based on terminology alone. Such distinctions became possible only after the entries had been examined in terms of their definitions, purposes, procedural characteristics and, where available, examples of practical application. Each entry was therefore systematically described according to these elements, enabling the identification of equivalent methods appearing under different names, method variants, etc. Umbrella categories were subsequently excluded from the method-level analysis, whereas methodologies were retained as a distinct but complementary group. Methodologies were understood here as more complex, explicitly structured participatory arrangements that typically combine several methods and/or comprise a predefined sequence of interrelated procedural steps.

It should be noted that some of the retained methods could alternatively be regarded as techniques, particularly those used within workshops or other broader participatory arrangements. Examples include the nominal group technique [82], wall chart technique [140], scale mapping techniques [141], and World Café technique [19]. For the purposes of this study, these were retained within the broader category of participatory methods rather than separated into an additional analytical class. Nevertheless, they can often be distinguished by their more specific role in structuring or facilitating deliberation and communication among participants. This functional distinction is further addressed in the following section.

Workshops required particular consideration because they represent a common participatory format that can accommodate substantially different objectives and activities. Although workshop-based methods share certain organisational and procedural characteristics, their specific forms may serve different primary functions and therefore belong to different functional categories. Consequently, specific workshop types were distinguished from ordinary method variants and retained as separately identifiable workshop-based methods within the taxonomy. Their relationship to the general workshop format is indicated in the graphical classification (Appendix B).

The final results of the consolidation process are presented in Appendix B, which provides method profiles organised by functional category, including their definitions,

purposes, aliases, variants, and examples of practical application, and in Appendix C (Figure A2), which provides a consolidated overview of all methods by category together with their aliases and variants. The consolidation process resulted in the identification of 124 methods, 76 aliases, 128 variants, and 12 methodologies, reducing the initial list of 869 entries to 340 distinct terms retained within the analytical framework.

5.3. Multidimensional Classification, Development of a Functional Taxonomy and Mapping Functional Categories onto Phases of the Spatial Planning Process

The comparative analysis of method definitions, purposes and procedural characteristics conducted in the previous step of the research revealed that participatory methods differ along several analytically meaningful dimensions (Table 2). The relevance of individual dimensions may vary according to the goals of participation, which are themselves shaped by the subject of planning, the characteristics and needs of affected groups and individuals, and the desired level of transparency in decision-making. The framework is intended to support the initial identification and comparison of methods rather than to provide a comprehensive assessment of their feasibility or effectiveness in specific planning contexts.

Table 2. Taxonomic dimensions and modes of non-statutory methods.

Dimension	Mode
Communication mode	Face-to-face Online
Number of required participants	Solitary (one) In pairs (two) Groups (more than two)
Type of communication	Verbal Non-verbal (e.g., drawing, gesticulation) Mix of verbal and non-verbal
Presentation of materials and outputs	Text Graphics (e.g., drawings, maps, graphs) Mixed
Location/setting	Indoors Outdoors
Function/purpose	Collecting Information Informing Stakeholders Encouraging Participation Organising Interest Advocacy Understanding Others' Interests Co-Created Advice or Act Structuring Deliberation Collecting Opinions Expressing Dissent Participatory Monitoring

The previous literature on participatory methods likewise emphasises that tools and methods serve different purposes and may be appropriate at different stages of a participatory process [123]. Taxonomic thinking is especially useful where the objects under consideration cannot be adequately described through a single characteristic. Souza et al. [116], examining knowledge organisation systems, argue that existing classifications may become idiosyncratic or incomplete when they rely on only a limited number of analytical dimensions. They therefore advocate more integrative representations capable of accommodating several dimensions of a complex domain simultaneously. Nickerson et al. [117]

likewise conceptualise taxonomies as systems for organising objects according to shared characteristics and emphasise their role in enabling researchers to describe, compare and understand complex domains. Taxonomies can therefore support a common conceptual vocabulary while making similarities and differences among otherwise heterogeneous entities more visible.

Among the identified taxonomic dimensions, each of which has its own analytical relevance, the function/purpose dimension was selected here as the primary organising dimension because it encompasses the greatest variety of modes and, importantly, its elaboration also captures aspects of the other dimensions, as shown in Appendix B (Figure A1). The function/purpose dimension is closely intertwined with the planning cycle, spanning activities from the collection of information that provides input for planning and decision-making to stakeholder involvement in implementation (Table 3).

Table 3. Functional modes and their descriptions.

Mode	Description
Collecting Information	Includes methods used to gather input data on the current situation in the field, which support planners in formulating spatial and planning solutions. These methods are applied to collect both objective facts (e.g., observation of damaged road surfaces, excessive traffic congestion, lack of space for industrial facilities or shops, etc.) and subjective experiences related to problems and satisfactions expressed by space users, professionals, and other stakeholders (e.g., dissatisfaction with traffic safety, lack of recreational infrastructure between settlements and recreation zones, etc.). These methods are most relevant during the planning phase that precedes the drafting of a formal planning document.
Informing Stakeholders	Includes methods used to disseminate information to stakeholders about aspects relevant for their involvement in the planning process. These methods are used to communicate the intent to initiate a planning process, the fact that a plan is being developed, the available modes and timelines for participation, the content of planning documents, and the implications of proposed planning solutions. These methods are applied from the very beginning of the planning cycle (when the intention to develop a plan is announced), throughout the development and adoption of the plan, and even into the next cycle when citizens are informed about the monitoring and evaluation of the implementation of the previous planning document.
Encouraging Participation	Includes methods aimed at strengthening the motivation of stakeholders to become involved in the planning process. These methods are applied depending on when citizen involvement is desired, and whether the process involves continuous planning or planning through formal documents. Their application may be particularly relevant during the conceptualisation stage of the plan.
Organising Interest Advocacy	Includes methods of bringing stakeholders together into temporary or long-term organisations or bodies for deliberation and contributing to the quality of planning solutions. These organisations and bodies may consist of actors with the same or similar interests who join forces to advocate for shared goals within the planning process—either formally or informally—or may involve externally facilitated assemblies of diverse stakeholders to foster dialogue among groups with potentially conflicting interests, aiming to reach compromise-based agreements. These methods can be applied continuously and independently of the specific planning phase; however, they may be particularly valuable from the introduction of the first draft of the plan until plan adoption.
Understanding Others' Interests	Includes methods that enable intensive exchange of views and roles among stakeholders with different interests, aiming to enhance mutual understanding and foster acceptance of each other's standpoints and concerns. These methods are designed to support empathy-building, perspective-taking, and collaborative problem-solving among actors who may initially be in opposition. Thus, the methods in this category are applied when potential or actual conflicts in certain planning solutions are recognised, i.e., from the decision to develop the plan until its adoption, with the highest intensity from the first draft stage to adoption.

Table 3. *Cont.*

Mode	Description
Co-Created Advice or Act	Includes methods that enable intensive interaction among stakeholders with the aim of co-creating recommendations, solutions for the planning document, or even testing proposed planning solutions developed through joint work. It also encompasses methods of exchange that do not end with providing advice or recommendations to planners, but rather with agreement on spatial interventions that the stakeholders (participants) will implement themselves. Accordingly, these methods are used from the moment the public is informed about the intention to develop a plan, that is, from the decision to initiate the planning process until the adoption of the planning document. Their use intensifies from the conceptualisation phase to adoption.
Structuring Deliberation	Includes methods (or we can also call them techniques) that structure the co-creation process through the use of visual frameworks and various tools. These methods are designed to guide participants in collaboratively shaping planning solutions in a more organised and interactive way. Accordingly, these methods are used from the moment the public becomes aware of the intention to develop a plan, that is, from the decision to initiate the planning process until the adoption of the planning document. Their application is considered particularly relevant from the conceptualisation phase to the adoption phase, given their role in supporting co-creation. Those methods can also be considered techniques: when viewed alongside a workshop, brainstorming is a technique because it is applied within the framework of a workshop or similar formats. However, suppose we need to answer the question of which way (method) can be used to structure deliberation. In that case, brainstorming becomes a way to structure the participants' inputs for easier understanding.
Collecting Opinions	Includes methods aimed at enabling planners to gather the opinions of citizens and other stakeholders. These methods focus on collecting feedback on a planning document that is currently being developed. The essence is that stakeholders are invited to participate, i.e., their participation takes place through channels that are specifically created for that purpose. Commenting on a previous planning document would fall under methods related to monitoring implementation or gathering background information. Accordingly, these methods are used from the moment the public becomes familiar with the plan content and proposed planning solutions, that is, from the draft stage to the adoption of the planning document. Given that the Decision on the preparation of the plan states the main objective of drafting the planning document, the public can, to some extent, share views with the planners in the period from the adoption of the Decision until the preparation of the first draft.
Expressing Dissent	Includes methods through which citizens and other stakeholders express their opinions when they have not been allowed to do so through formal channels, or when their input—provided via regular methods—has been disregarded. These are ways in which the public expresses dissatisfaction with planning decisions. Such actions are typically collective, though in rare cases they may involve individual initiatives. Accordingly, these methods are used after the plan has been adopted, although they can also be applied from the moment the decision to develop a plan is made (e.g., a plan involving a controversial topic such as opening a mine or constructing a nuclear power plant).
Participatory Monitoring	Includes methods aimed at collecting field data by citizens for monitoring the environment or plan implementation in general, as well as for evaluating planning solutions. The results of these activities serve as input data for preparing the next planning document, thereby closing the loop. Thus, the methods in this category are used after the adoption of the plan and the start of its implementation, continuing up to the decision to develop a new plan.

The descriptions in Table 3 provide the conceptual basis for an indicative mapping of the ten functional categories onto the seven phases of the planning cycle (Figure 1). Drawing on the author's professional and research experience in spatial planning, this mapping interprets the relationship between the purposes of participatory methods and the principal tasks of successive planning phases. It does not represent an independent empirical finding concerning the frequency or effectiveness of method application. Primary

applicability indicates a direct correspondence between the defining purpose of a functional category and the central objectives of a planning phase. Supportive applicability indicates that methods within the category may contribute additional value, particularly where more intensive or inclusive participation is pursued, even though their application is not central to that phase. These relationships should therefore be interpreted as indicative opportunities for method selection rather than fixed requirements or empirically established patterns of use.

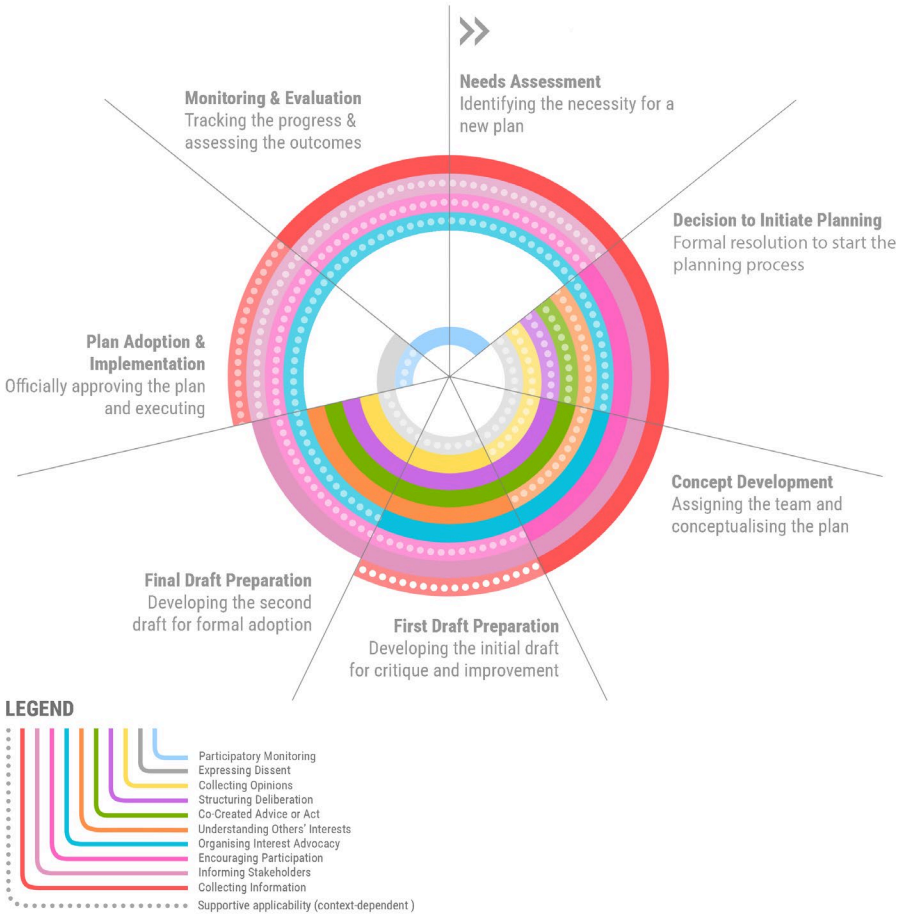

Figure 1. Indicative applicability of functional categories of participatory methods across planning phases.

Previous studies emphasise that methods differ in their suitability for particular purposes and conditions and often need to be combined to respond to different needs and stakeholder groups [39]. Their selection should therefore consider the goal and desired degree of participation, the stage of the process, stakeholder capacities and available resources [108], as well as the characteristics of the task and the wider social and organisational context [39,142]. These considerations are particularly important because participation entails costs in time and resources, depends on the quality of information available [38], and may fail to include vulnerable or otherwise underrepresented groups [46,92]. Moreover, local knowledge that is difficult to capture through conventional sources can be accessed only when methods enable the involvement of diverse stakeholder groups [114]. Thus, participation requires deliberate process design rather than the isolated application of individual methods.

The proposed taxonomy can support such design by distinguishing methods according to their functions and relating these functions to different phases of the planning cycle. This responds to an identified gap in previous research, which has often examined indi-

vidual participatory methods without sufficiently considering their suitability for specific engagement purposes or particular phases of urban development [19]. Mapping functional modes onto planning phases makes it possible to consider not only which methods are available, but what they are expected to accomplish, when their application is most relevant, and how different methods can complement one another across the process. However, their effective application requires adaptation to local circumstances, including institutional arrangements, cultural norms, language, digital accessibility, and the characteristics and capacities of stakeholder groups. Such adaptation is particularly important for ensuring that participatory processes are accessible to groups that might otherwise remain underrepresented. In this sense, the taxonomy should not be understood as prescribing particular methods for particular planning phases—an approach that would disregard the contextual nature of participation [39]—but as a framework for making method selection and combination more systematic and purpose-sensitive. It may thereby contribute to continuity and quality of participation throughout the planning cycle, from generating knowledge and informing planning and decision-making to deliberation, co-creation, evaluation and stakeholder involvement in implementation.

5.4. Identification and Characterisation of Participatory Approaches

Building on the distinction between individual methods and broader participatory arrangements established during the conceptual consolidation stage, the analysis also revealed several dimensions that characterise participatory approaches rather than individual methods. The taxonomy development process also revealed several dimensions that characterise broader participatory approaches, rather than individual methods. Like the selection of participatory methods, these approaches may vary according to the objectives of the planning process, the stakeholders involved, and the extent to which participation initiators are willing and able to broaden or deepen stakeholder engagement. Four dimensions were identified: iteration frequency, involvement phase, stakeholder inclusiveness, and option flexibility (Table 4). The dimensions were identified by grouping characteristics observed during the analysis of participatory methods by the aspects of participation they describe, while distinguishing those related to individual methods from those concerning the broader participatory process. These dimensions were not incorporated into the core method taxonomy because they primarily describe the design of the broader participatory process rather than consistent characteristics of individual methods. Maintaining this distinction prevents different units of analysis—participatory methods and participatory approaches—from being conflated.

The distinction between methods and broader participatory approaches is particularly relevant to the taxonomy of non-statutory participation. Unlike formally prescribed procedures, non-statutory participation allows planners greater flexibility not only in selecting individual methods but also in determining when and how often participation occurs, who is involved, and how open the process is to participant-generated alternatives. This finding is consistent with Voinov et al. [123], who emphasise that participatory methods and tools serve different purposes and may be appropriate at different stages of a participatory process, and with [122], who conceptualise participation through the interdependent dimensions of actors, arenas, and aims embedded within a broader planning context. The dimensions identified in this study therefore complement rather than extend the functional taxonomy: while the taxonomy organises methods by what they primarily aim to achieve, the approach dimensions describe how participation can be structured around those methods. This distinction is important for translating the taxonomy into planning practice, where method selection and participatory process design represent related but analytically distinct decisions.

Table 4. Dimensions and modes of participatory approaches.

Dimension	Mode
Iteration frequency	Single occurrence Two-stage participation Repeated participation Continuous participation
Involvement phase	Problem identification/Needs assessment Concept development/Visioning Drafting (plan development) Drafting/Plan development Draft review/Feedback and validation Decision-making/Plan approval Implementation Monitoring and evaluation
Stakeholder inclusiveness	Open to all Interested parties Selected representatives
Option flexibility	Open-ended—participants may propose alternatives Closed—participants choose among predefined alternatives

5.5. Primary and Secondary Functional Relationships

The allocation of participatory methods to ten functional categories according to their primary purpose does not imply that the boundaries between these categories are rigid. Many methods can support purposes other than the one for which they are primarily classified, depending on how they are applied within a participatory process. The proposed taxonomy therefore distinguishes between a method's primary function, which determines its position within the taxonomy, and its secondary functions, which reflect its potential applicability across other functional categories. These cross-functional relationships are presented through two complementary visualisations: Appendix B (Figure A1) indicates the secondary functional categories associated with individual methods through colour-coded indicators in their graphical profiles, whereas Appendix D (Figure A3) provides a network diagram highlighting broader patterns of connectivity between functional categories.

The analysis indicates that the degree of such functional versatility differs considerably across categories. Methods primarily classified under Collecting Information, for example, were found to have potential applications across eight other functional categories, whereas methods belonging to Expressing Dissent showed recognised applicability in only one additional category. Some methods were not assigned any secondary function. These differences should not be interpreted as indicating the relative value or importance of either individual methods or functional categories; rather, they reflect differences in their potential range of application. Recognising these cross-functional relationships can facilitate the design of participatory processes by helping planners identify methods capable of serving multiple purposes. More broadly, the fluidity observed between functional categories highlights the adaptability of non-statutory participation and may provide a basis for experimenting with existing methods in new contexts and for developing new forms of participatory practice.

6. Conclusions

This study addressed the fragmentation of knowledge on non-statutory participatory methods by developing a systematic framework for their identification, consolidation, classification, and application within spatial planning. The analysis demonstrated that the existing literature contains a considerably broader repertoire of participatory practices than can be captured through conventional lists of methods, but also that this knowledge is dispersed across different types of sources and characterised by terminological inconsistency, conceptual overlap, and uneven levels of procedural detail. Consolidating this body of knowledge therefore required moving beyond the terminology used in individual publications and distinguishing between methods, aliases, variants, methodologies, umbrella categories, tools, and outputs according to their procedural characteristics and roles within participatory processes. The resulting consolidated pool provides a structured basis for understanding the diversity of non-statutory participation and addresses the first research question.

In response to the second research question, the study demonstrates that primary participatory function provides a useful organising principle for a heterogeneous set of methods. The resulting taxonomy distinguishes ten functional categories while avoiding the assumption that methods are confined to a single purpose. The identification of secondary functions reveals considerable permeability between categories and demonstrates that many participatory methods are functionally versatile. The taxonomy should therefore be understood as providing structure without imposing rigid boundaries: primary functions organise the field, whereas secondary functions reveal opportunities for methods to be adapted, combined, or employed for additional purposes. Complementary dimensions related to communication, participant numbers, interaction, materials and outputs, and setting further support method characterisation and selection, while dimensions identified at the broader approach level demonstrate that choosing a method and designing a participatory process are related but distinct planning decisions.

The mapping of functional categories against planning phases addresses the third research question by demonstrating that non-statutory participation can contribute throughout the planning process rather than being confined to isolated moments of consultation. Some functional categories have primary applicability in particular phases, while others may play a supportive role where planners seek to extend participation beyond what is necessary for accomplishing the immediate task. This flexibility may be particularly relevant in highly participatory or conflict-sensitive planning contexts, where additional engagement can support communication, mutual understanding, transparency, and the management of competing interests. Taken together, the taxonomy, secondary functional relationships, and indicative planning-phase mapping provide an initial basis for identifying and comparing methods according to what participation is intended to achieve and where particular participatory functions may contribute within the planning process. In practice, planners may use the framework to begin by identifying the participatory objective associated with a particular planning phase, consult the corresponding functional category to identify potentially relevant methods, and then compare their characteristics and secondary functions. This provides a starting point for considering alternative or complementary methods, which must subsequently be assessed against the specific requirements and constraints of the planning context. Final method selection also requires consideration of context-specific factors, including available resources, accessibility, stakeholder characteristics, power relations, facilitation capacity, and evidence of effectiveness, which are not systematically assessed within the present taxonomy. The framework should therefore be used alongside more comprehensive guidance on participatory process design and implementation.

The proposed framework should nevertheless be regarded as an evolving rather than exhaustive representation of non-statutory participatory practice. The continuously expanding literature means that additional methods and variants may remain unidentified or emerge over time, while inconsistent terminology and incomplete procedural descriptions inevitably introduce an interpretative element into conceptual consolidation. Moreover, the boundaries between methods, techniques, tools, methodologies, and broader participatory arrangements are not always clear-cut, and the functional role of a method may vary across institutional, cultural, regulatory, and planning contexts. In particular, differences between national planning systems may affect how individual methods are implemented and whether they are regarded as statutory or non-statutory.

These limitations also define a research agenda for further development of the framework. Future research should first test the proposed taxonomy through expert review and its application in actual planning processes, examining whether the functional categories and primary–secondary relationships correspond to practitioners' experiences. Particular attention should also be given to method combinations: rather than studying individual methods in isolation, future research could investigate which configurations of methods are most appropriate for different planning phases, participatory objectives, stakeholder structures, and levels of conflict. Empirical research could additionally examine whether the proposed distinction between primary and supportive applicability across planning phases is reflected in participatory outcomes. Ultimately, the contribution of the proposed framework lies in making a fragmented repertoire of participatory methods more accessible and comparable, while providing a flexible conceptual basis for designing participation in spatial planning without prescribing universally applicable solutions.

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Data Availability Statement: The data supporting the findings of this study are contained within the article and its appendices. Further inquiries can be directed to the corresponding author.

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Conflicts of Interest: The author declares no conflicts of interest. The funders had no role in the design of the study; in the collection, analysis, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Appendix A

Table A1. The complete evidence base.

1 [142]
Gaete Cruz, M. Ersoy, A., Czischke, D., Van Bueren, E. (2022). A Framework for Co-Design Processes and Visual Collaborative Methods: An Action Research Through Design in Chile. *Urban Planning*, Vol. 7, No 3, 363–378.

Source type:
Peer-reviewed journal

Methods detected:
Methodology: Co-Design Process
Method: Booklets for Experience Registration
Method: (Booklet's) Workshop
Method: Online Post-It Board
Method: Live Sketching at the Site
Method: Revision Meetings
Method: Sketching in Social Media Visuals
Method: Renders (3D Models) in Social Media
Method: Photo-Report

2 [39]
UN.ESCAP (2003). A guide to the application of public participation in planning and policy formulation towards sustainable transport development. Retrieved from: https://hdl.handle.net/20.500.12870/150 (accessed on 11 June 2024).

Source type:
Guide/Toolkit

Methods detected:
Method: Interactive Website
Method: Consultation Documents
Method: Citizen Advisory Group Workshop
Method: Advisory/Consultative Forums.
Method: Public Meeting (Town Hall meeting)
Method: Questionnaire Survey
Method: Referendum
Method: Focus/User Groups Meeting
Method: Social/Service Satisfaction Surveys
Method: Social Survey
Method: Roundtable Discussion
Method: Community Meeting/ Workshop
Method: Workshop
Method: Public-Community Partnership
Method: Partnership
Method: Residents Informed
Method: Response to Proposals
Method: Public hearings
Method: Community Forum
Method: Task Force
Method: Citizens Juries
Method: Nominal Group Process
Method: Interactive Website
Method: "People's Plan"

Table A1. *Cont.*

3 [70] **Hansson, K. (2013). An E-Participatory Map over Process Methods in Urban Planning. Danube University Krems, Centre for E-Governance. Retrieved from https://www.slideshare.net/slideshow/karin-hansson-gran-cars-love-ekenberg-mats-danielson-an-eparticipatory-map-over-process-methods-in-urban-planning/21747306 (accessed on 11 June 2024).** **Source type:** Report/Policy Paper **Methods detected:** Method: Multi-Criteria, Multi-Stakeholder Decision Analysis Method: An iterative dialogue process in three steps with residents and other stakeholders, e.g., the municipality, investors and NGOs. Method: A Dialogue Method: The resulting plans were displayed in public Method: Consultation Meetings with the public
4 [38] **Dalal-Clayton, B., Dent, D., & Dubois, O. (2000). Approaches to Participation in Planning. In Rural Planning in the Developing World with a Special Focus on Natural Resources: Lessons Learned and Potential Contributions to Sustainable Livelihoods. International Institute for Environment and Development. http://www.jstor.org/stable/resrep18122.9 (accessed on 10 March 2025).** **Source type:** Book/Book chapter **Methods detected:** Method: Stakeholder Meetings Method: Discussion Method: Drives and/or Walks Method: Landcare groups (Australia) Method: Publicity and awareness campaign Method: Formation of farmer groups Method: Rapid District Appraisal Method: Mapping Method: 3-dimensional model of the region Method: Transect walk or transect sketch Method: Semi -structured interviewing with individuals Method: Focus group discussion(s) Method: Feedback meeting on local or regional level Method: Questionnaire surveys Method: Group discussions (conversations)
5 [128] **Turkoglu, H., Ocakçı, M., Ataöv, A., Uşun, M., Işık, A., Güvener, U. (2012). A Participatory Spatial Planning Process: The Case of Bursa, Turkey. In A Participatory Spatial Planning Process 48th ISOCARP Congress 2012, 10–13 September 2012, Perm, Russia, pp. 1–4.** **Source type:** Conference proceedings **Methods detected:** Method: Informative meetings Method: Focus groups Method: Individual interview Method: Workshops Method: Interviews with decision-makers

Table A1. *Cont.*

6 [132] **Land Links (2023). Artisanal Mining and Property Rights (AMPR). Retrieved from https://landportal.org/community/projects/artisanal-mining-and-property-rights-ampr (accessed on 11 June 2024).** **Source type:** Guide/Tooklit **Methods detected:** Method: Publishing a notice on local radio stations Method: Public facilitation (~Public discussion) Method: Focus groups Method: Role-playing around the prepared questions
7 [46] **Egunyu, F., & Boakye-Danquah, J. (2024). A systematic review of the socio-economic impacts of mining in Africa: Do research methods influence participation? *The Extractive Industries and Society*, 17, 101408.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Interview Methods: Focus group discussion Methods: Survey Method: Oral history Method: Life history Method: Participatory mapping Method: Participatory GIS Method: Participatory Rural Appraisal (PRA) Method: Participant-led transect walks Method: Participatory Resource Mapping Method: Participatory Action Research (PAR) Method: Observation Method: A group interview Method: Online survey
8 [143] **European Association of Mining Industries, Metal Ores & Industrial Minerals. A Quick Guide to Community Development. Extracted from ICMM Community Development TOOLKIT. (2016). Euromines: Brussels, Belgium.** **Source type:** Guide/Tooklit **Methods detected:** Method: Community Mapping Method: Workshop
9 [73] **Tulio Fundão Zanini, M., Pires Migueles, C., Gambirage, C., Silva, J. (2023). Barriers to local community participation in mining projects: The eroding role of power imbalance and information asymmetry. *Resources Policy*, Volume 86, Part B, 104283.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Meeting

Table A1. *Cont.*

10 [45] **Maennling, N., Correa, J. (2020). Best Practices in Data Driven Development Planning in Mining Regions. Available at: https://scholarship.law.columbia.edu/sustainable_investment_staffpubs/6 (accessed on 17 March 2025).** **Source type:** Report/Policy Paper **Methods detected:** Method: Portal queries Method: Public consultations Method: Workshop Method: Collaborative mapping Method: Online real-time dashboard Method: Socio-Economic Technology Initiative (SETI)
11 [29] **Čolić, N., Dželebdžić, O. (2018). Beyond Formality: A Contribution towards Revising the Participatory Planning Practice in Serbia. *Spatium*, No. 39, pp. 17–25.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Public presentation (at the sub-municipality level)thod: Exhibition Method: Printed promotional material Method: Info-points Method: Discussion groups (Meetings) Method: Public-private dialogue (Meetings in conceptual planning phase) Method: Workshop Method: Visioning Method: "Speak out!"
12 [144] **Carlos de Castro Penaa, J., Camara de Assis, J., Aparecida da Silva, R., Kyoko Honda, L., Inez Pagani, M., Beyond the mining pit: the academic role in social deliberation for participatory environmental planning (2017). *Perspectives in Ecology and Conservation*, 15, 194–198.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Working group (for professionals) online meetings Method: Public plenary session (organised by Government)
13 [145] **Ocelík, P., Lukáš Lehotský, L., Černoch, F. (2021). Beyond our backyard: Social networks, differential participation, and local opposition to coal mining in Europe. *Energy Research & Social Science*, 72(February), 101862.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Petition Method: Demonstration

Table A1. *Cont.*

14 [20] **Pantić, M., Cilliers, J., Cimadomo, G., Montaño, F., Olufemi, O., Torres Mallma, S., van den Berg, J. (2021). Challenges and Opportunities for Public Participation in Urban and Regional Planning during the COVID-19 Pandemic—Lessons Learned for the Future.** *Land*, **10, 1379.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Online questionnaire Method: Mobile application data collection Method: Dialog about scenarios (with residents) Method: Digital query Method: Online voting Method: Virtual public hearings Method: Online meetings Method: Online submission of remarks and suggestions Method: Consultation with planners (by phone/mail) Method: Meetings Method: Social media presentation Method: Social media advertisement Method: Transparency dashboard Method: Digital registry
15 [104] **Cities Alliance Cities for Women Programme (2020). Cities for Women: Urban Assessment Framework through a Gender Lens. Cities Alliance, UNOPS. Retrieved from: https://www.citiesalliance.org/sites/default/files/2020-11/Cities%20for%20Women_Urban%20Assessment%20Framework%20Through%20a%20Gender%20Lens_0.pdf (accessed on 12 June 2024).** **Source type:** Guide/Tooklit **Methods detected:** Method: Survey (WEC Survey) Method: Workshop ("I Like, I Wish, What If" after pilot project) Method: WEC Collective Assessment Workshop Method: Ideation workshop Method: Daily itinerary map Method: A gender-based community mapping Method: Co-creation workshop Method: Roadmap workshops Method: Urban Living Lab Method: Vision development workshops Method: Scenario testing Method: Usability test Method: Focus group (on user experiences) Method: Public documentation available (for information) Method: Publications (to explain plans)

Table A1. *Cont.*

16 [146] **Carpenter, J., Horvath, C. (2022). Co-Creation and the City: Arts-Based Methods and Participatory Approaches in Urban Planning. *Open Planning*, 7(3): 311–314.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Art-based co-creation Method: Storytelling
17 [108] **Raynor, K. E., Doyon, A., & Beer, T. (2017). Collaborative planning, transitions management and design thinking: evaluating three participatory approaches to urban planning. *Australian Planner*, 54(4), 215–224.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Collaborative planning Method: Transitions management Method: Design thinking
18 [79] **Sam A Kasimba, Päivi Lujala, Community based participatory governance platforms and sharing of mining benefits: evidence from Ghana. *Community Development Journal*, Volume 57, Issue 4, October 2022, Pages 635–654.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Responsibility forum
19 [147] **International Council of Mining and Metals (ICMM) (2012). Community Development Tool Kit. A Set of 20 Revised and Updated Tools Intended for Use throughout the Mining Project Cycle. ICMM: London, United Kingdom.** **Source type:** Guide/Tooklit **Methods detected:** Method: Community mapping (workshop) Method: Institutional analysis Method: Development opportunity ranking
20 [148] **Stjernström, O., Ellingsen, T., Dankertsen, A., & Sandersen, H. T. (2024). Complexity and interdependence in local mineral extraction planning: The Nasa Mountain Quartz Case in Northern Norway. *The Extractive Industries and Society*, 17, 101434.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Meeting

Table A1. *Cont.*

21 [129] **Wessels, B., Dittrich, Y., Ekelin, A., & Eriksén, S. (2012). Creating Synergies Between Participatory Design of E-Services and Collaborative Planning.** ***International Journal of E-Planning Research (IJEPR)*****, 1(3), 1–16.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Discussion (between authorities and planners) Method: Interviews (with institutional stakeholders) Method: Workshop (all stakeholders, including final users/citizens) Method: Survey (with employees of target institutions) Method: Participant observation study Method: Interactive web-based maps Method: Mock-up sessions Method: Focus groups
22 [149] **Ivanović, S., Tomićević-Dubljević, J., Bjedov, I., Đorđević, I., Živojinović, I. (2023). Cultural Landscape Management in Context: Local Communities' Perceptions under Jadar Mineral Extraction Project in Serbia.** ***The Extractive Industries and Society*****, Volume 16: 101361.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Protests
23 [139] **Wallin, S., Horelli, L., Saad-Sulonen, J. (eds.) (2010). Digital Tools in Participatory Planning. Centre for Urban and Regional Studies Publications: Birmingham, UK.** **https://aaltodoc.aalto.fi/server/api/core/bitstreams/9fb898eb-142a-432a-a911-d4c870dc6ee8/content (accessed on 5 July 2025).** **Source type:** Book/Book chapter **Methods detected:** Method: Web-based maps (Urban Mediator tool + Maptionnaire tool) Method: Local internet forums Method: Tell a Story (via mobile application) Method: Shared Design Whiteboard—Shadew
24 [114] **Kozłowska-Woszczycka, A., & Pactwa, K. (2024). Diagnosis of the Wałbrzych post-mining area: Pilot study using social participation.** ***The Extractive Industries and Society, 17*****, 101434.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Public Participation Geographic Information Systems (PPGIS) Method: Interview

Table A1. *Cont.*

25 [55] **Liepa-Zemeša, M., & Hess, D. B. (2016). Effects of public perception on urban planning: evolution of an inclusive planning system during crises in Latvia. *Town Planning Review*, 71–92.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Polls Method: Meetings (in neighbourhoods) Method: Local governments' multi-stage planning processes (approach)
26 [57] **UN-Habitat (2023). Enabling Meaningful Public Participation in Spatial Planning Processes—A Tool Kit. Principal author: Palmia, F., Quinlan, V. (ed.). UN-Habitat: Nairobi, Kenya.** **Source type:** Guide/Tooklit **Methods detected:** Method: National urban forums Method: Focus group Method: Interview Method: Meetings Method: Deliberative mini-publics (citizens' assemblies, councils, juries or forums) Method: Referendum for a citizen vote Method: Planning Review Panel Method: Participative geographic information systems (data crowdsourcing) Method: Mobile application data collection Method: Discussion forums Method: Brainstorming Method: Deliberation Method: Mixed reality Method: Iterative policy design (approach)
27 [92] **Pérez García, A., Huerta Morales, A., Kolona, L. (2018). Evaluating Public Participation in Denmark. Student work at the Masters' Program "Environmental Management and Sustainability Science". Aalborg University: Aalborg, Denmark.** **Source type:** Student work at the Master Program **Methods detected:** Method: Meeting Method: Survey Method: Interview Method: Brochures and leaflets Method: Staffed displays (info points and stands with personnel) Method: Unstaffed displays (info points and stands without personnel) Method: Field trips (site visits) Method: Operating field offices Method: Internet games Method: 3D models displayed online Method: Interactive online maps Method: Surveys Method: Focus group

Table A1. *Cont.*

Method: Workshop Method: Photographing Method: Behavior mapping Method: Advisory panel Method: Competition Method: Online contact form Method: Comment cards Method: Internet voting Method: Online debate forum Method: Chat forum Method: Citizens Group Method: Delegation of Money
28 [140] **Sarkkinen, J. (2004). Examining a Planning Discourse: How a Manager Represents Issues within a Planning Frame and how the others Could do the Same. In: PDC 04: Proceedings of the eighth conference on Participatory design: Artful integration: interweaving media, materials and practices—Volume 1, pp. 74–82.** **Source type:** Conference proceedings **Methods detected:** Method: Interviews Method: Wall chart technique Method: Meetings
29 [150] **Ocampo-Melgar, A. Sagaris, L., Gironàs, J. (2019). Experiences of voluntary early participation in Environmental Impact Assessment in Chilean mining.** ***Environmental Impact Assessment*****, 74, 43–53.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Letters (invitation for participation) Method: E-mail (invitation for participation) Method: Announcements in local radio Method: Announcements in local newspapers Method: Poster announcements Method: Door-to-door invitation Method: One-on-one meeting Method: Citizen engagement platform Method: Survey (Questionnaire) Method: Agreement
30 [151] **Fouché, E., Brent, A. (2020). Explore, Design and Act for Sustainability: A Participatory Planning Approach for Local Energy Sustainability.** ***Sustainability*****, 12, 862.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Workshop Method: Interview Method: Observation Method: Meeting Method: Cognitive mapping

Table A1. *Cont.*

31 [75] **Kusters, K., Sirait, M., De Koning, P., Lumangkun, A., Nijpels, R., Pilin, M., Ros-Tonen, M., Snelder, D., Sulaiman, Van Sluijs, Wezendonk, L., Witsenburg, K., Wolvekamp, P., Wösten, H., Yas, A. 2013. Formalising participatory land-use planning—Experiences from Sanggau District, West Kalimantan, Indonesia. Both ENDS, Amsterdam. [online] URL: www.bothends.nl/nl/Publicaties (accessed on 5 March 2025).** **Source type:** Report/Policy Paper **Methods detected:** Method: Workshop Method: Discussion Method: Community mapping
32 [80] **Moore, K. R., & Elliott, T. J. (2016). From Participatory Design to a Listening Infrastructure: A Case of Urban Planning and Participation.** ***Journal of Business and Technical Communication*****, 30(1), 59–84.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Flyers Method: Design charrettes (workshop for planning together) Method: Open house Method: Web-site collection of citizens' ideas Method: Voting Method: Polls
33 [130] **Strydom, W. J., Puren, K. (2014). From Space to Place in Urban Planning: Facilitating Change Through Participatory Action Research.** ***WIT Transactions on Ecology and the Environment*****, 191: 463–476.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Meetings Method: Focus group Method: Workshop
34 [88] **Andrzejewska, M., Baranowski, M. (unidentifiable). Geovisualisation Methods for Participatory Spatial Planning. UNEP/GRID-Warsaw, 1–5. Retrieved from https://icaci.org/files/documents/ICC_proceedings/ICC2005/htm/pdf/oral/TEMA15/Session%201/MAREK%20BARANOWSKI.pdf (accessed on 13 November 2024).** **Source type:** Conference proceedings **Methods detected:** Method: Geovisualisation Method: Internet voting Method: Consultation Method: Animation Method: Meeting Method: Commenting via post

Table A1. *Cont.*

35 [141] **Corbett, J. Good Practices in Participatory Mapping: A Review Prepared for the International Fund for Agricultural Development; International Fund for Agricultural Development: Rome, Italy, 2009. Available online: https://www.ifad.org/documents/38714170/39144386/PM_web.pdf/7c1eda69-8205-4c31-8912-3c25d6f90055 (accessed on 6 July 2025).** **Source type:** Guide/Tooklit **Methods detected:** Method: Counter mapping Method: Participatory mapping Method: Participatory land-use planning (PLUP) Method: Ground mapping (hands-on mapping Method: Sketch mapping (hands-on mapping) Method: Participatory mapping using scale maps and images (Scale mapping techniques) Method: Participatory 3-D modelling Method: Geographic Information Systems (GIS) Method: Multimedia and Internet-based mapping
36 [152] **UN-HABITAT (2019). Guidelines for Public Participation in Spatial Planning. UN-HABITAT: Nairobi, Kenya. Retrieved from https://unhabitat-kosovo.org/wp-content/uploads/2019/07/3._Guidelines_for_Public_Participation_in_Spatial_Planning_335630.pdf (accessed on 13 November 2024).** **Source type:** Guide/Tooklit **Methods detected:** Method: Consultation Method: Debate Method: Survey Method: Working group Method: Informing thourh media (press, TV, radio) Method: Infomration boards (in institutions) Method: Poster Method: Leaflet Method: Internet information Method: Open days (in municipality or similar) Method: Poll Method: Public discussion Method: Online voting Method: Workshop Method: Meeting (face-to-face) Method: Brainstorming
37 [153] **Dumbrell, N.D., Adamson, D., Zuo, A., Wheeler, S.A. (2021). How do natural resource dependent firms gain and lose a social license? *Global Environmental Change*, 70, 102355.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Consultation Method: Protest Method: Media coverage

Table A1. *Cont.*

38 [58] **Nurminen, V., Rossi, S., Rinne, T., Kyttä, M. (2024). How has digital participatory mapping influenced urban planning: Views from nine planning cases from Finland.** ***Computers, Environment and Urban Systems*****, 112, 102152.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Public participation GIS (PPGIS) (tools)
39 [135] **Derr, V., & Kovács, I. G. (2015). How participatory processes impact children and contribute to planning: a case study of neighborhood design from Boulder, Colorado, USA.** ***Journal of Urbanism: International Research on Placemaking and Urban Sustainability*****, 10(1), 29–48.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Drawing Method: Presentations and films about exemplary neighborhoods, green building, and green cities Method: Model making Method: Field trips with photovoice Method: Reflection writing (after field trip) Method: Dialogue
40 [52] **Pulgar Vidal, M., Aurazo, A. (Eds.), Bass, S., & Sandoz, W. (Co-Eds.) (2004). Improving Citizen Participation in the Environmental Impact Assessment Process in Mining. Published by the Peruvian Society for Environmental Law Sociedad Peruana de Derecho Ambiental (SPDA).** **Source type:** Guide/Tooklit **Methods detected:** Method: Workshop Method: Working groups Method: Seminar (for information—working group organised) Method: Panel (for information—working group organised) Method: Press campaign (for information—working group organised) Method: Small publication (for information—working group organised) Method: Consultation Method: (Technical) reports Method: Meetings. Method: Open houses Method: Advisory committees Method: Liaison offices Method: Site visits Method: Interview Method: Survey Method: Scoping sessions Method: Public registry Method: Demonstration (protest) Method: Round table

Table A1. *Cont.*

41 [1] **Bizjak, I. (2012). Improving public participation in spatial planning with Web 2.0 tools. *Urbani Izziv*, 23(1), 112–124.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Meetings Method: Consultations Method: Protests Method: Vote raising Method: Signing petitions Method: Making demands
42 [99] **Nadin, V., Stead, D., Dąbrowski, M., & Fernandez-Maldonado, A. M. (2021). Integrated, adaptive and participatory spatial planning: trends across Europe. *Regional Studies*, 55(6), 791–803.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Online mapping (collecting evidence) Method: Sharing information (via social media) Method: Online voting Method: Participatory budgeting Method: Urban living labs
43 [154] **Sulistyawan, B. S., Verweij, P. A., Boot, R. G. A., Purwanti, B., Rumbiak, W., Wattimena, M. C., ... Adzan, G. (2018). Integrating participatory GIS into spatial planning regulation: The case of Merauke District, Papua, Indonesia. *International Journal of the Commons*, 12(1), 26–59.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Participatory GIS Method: PGIS—sketch map Method: PGIS—participatory 3D model Method: PGIS—community-based air photo and satellite imagery interpretation Method: PGIS—GPS transect walk Method: PGIS—GIS-based cognitive mapping
44 [10] **Sedogo, L. G. (2002). Integration of local participatory and regional planning for resources management using remote sensing and GIS. Wageningen University.** **Source type:** Doctoral thesis **Methods detected:** Method: Participatory rural appraisal (PRA) Method: Participatory action research (PAR) Method: Participatory rural appraisal (PRA)

Table A1. *Cont.*

Method: Participatory mapping Method: Participatory modelling Method: Participatory transect walks Method: Matrix scoring Method: Well-being grouping and ranking Method: Institutional diagramming Method: Seasonal calendars trend and change analysis Method: Analytical diagramming
45 [19] **Geekiyanage, D., Fernando, T., Keraminiyage, K. (2021). Mapping Participatory Methods in the Urban Development Process: A Systematic Review and Case-Based Evidence Analysis. *Sustainability*, 13, 8992.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Printed material (Newsletters, Letters, Posters, Fact Sheets, Brochures, Reports) Method: Advertising/Media coverage (Paid advertisements on radio, newspapers, TV or online; Free media (press releases, news conferences, media packages or letters to the editor)) Method: Media coverage (Paid advertisements on radio, newspapers, TV or online; Free media (press releases, news conferences, media packages or letters to the editor)) Method: Displays/Exhibits (Set up at relevant public locations (e.g., libraries, ward or electorate offices, shopping centres, community festivals, etc.)) Method: Presentations (PowerPoint, Visme, Haiku Deck, Canva, YouTube Live) Method: Live streaming (PowerPoint, Visme, Haiku Deck, Canva, YouTube Live) Method: Videos (PowerPoint, Visme, Haiku Deck, Canva, YouTube Live) Method: Website (Fact sheets, Downloadable resources, Photo galleries, Registration forms, Information repository) Method: Infographics (Hand drawn visual image such as a chart or diagram used to represent information or data Image drawn using a software) Method: Social media (Facebook, Twitter, LinkedIn, Instagram, Snapchat, Pinterest, Online forums) Method: Site visits/Tours (Opening up a project venue for the public to visit, Optional tours associated with a conference or workshop) Method: Public meetings (Presentation followed by questions and answers, Town-hall meeting, Panel/roundtable, Large group/small group) Method: Interviews (Face to face, Using virtual tools such as Microsoft Teams, Zoom, Skype) Method: Focus groups (Face to face, Virtual tools: Microsoft Teams, Zoom, Skype, Mural) Method: Polls (Physical polling booths, Postal vote, Online vote (SmartSurvey)) Method: Surveys (Paper survey, Postal survey, Email survey, Online surveys (Google Forms, Typeform, SurveyMonkey)) Method: Citizen science (Crowdsourcing sites like 99 designs or Fiverr, Social media platforms like Twitter, Facebook, and Instagram) Method: Crowdsourcing ideas (Crowdsourcing sites like 99 designs or Fiverr, Social media platforms like Twitter, Facebook, and Instagram) Method: Expert panels (Round tables, GoToMeeting, Slack, WebEx, Igloo) Method: Working groups (Round tables, GoToMeeting, Slack, WebEx, Igloo) Method: System dynamics (SD) (Group model building (GMB), Participatory SD modelling, Community-based SD) Method: Community mapping/Mind mapping (Round tables, Public participatory geographic information system (PPGIS), Virtual mapping tools (Mapping for Change CIC)) Method: Citizen juries (Round tables, Virtual meeting tools) Method: Citizen committees (Physical gathering, Virtual meeting tools) Method: Visioning (Facilitated idea-sharing and recording, Notecard/flip chart brainstorming, Graphic facilitation (e.g., PATHTM)) Method: Community indicator projects (Community Indicators' Consortium toolbox) Method: Workshop (Physical workshops, Remote workshops using Mentimeter, Slido, Go Create) Method: Open space events (Physical workshops, Remote workshops using Mentimeter, Slido, Go Create)

Table A1. *Cont.*

Method: Design charrette (Placemaking, Pop-ups) (Physical gathering, Digital tools such as SketchUp, Dynamo, Grasshopper) Method: Tactic-urbanism (Placemaking, Pop-ups) (Physical gathering, Digital tools such as SketchUp, Dynamo, Grasshopper) Method: Knowledge / document co-creation (Open Innovation Digital Platforms) Method: Asset-based community development (ABCD) (Maps such as Google maps, Interviews, Surveys, Community events, Canvassing) Method: Participatory budgeting (PB) (Citizen Budget online budget simulator, Cobudget) Method: Most significant change (MSC) (Capturing stories through interviews and note-taking, Reporting forms, Selecting the significant story by voting or scoring, Thematic coding) Method: 'World Café' technique
46 [155] **Skelton, C., Koplin, M., Cipolla, V. (2011). Massively Participatory Urban Planning and Design Tools and Process: the Betaville Project. In Proceedings of the 12th Annual International Digital Government Research Conference: Digital Government Innovation in Challenging Times (dg.o '11). Association for Computing Machinery, New York, NY, USA, 355–358.** **Source type:** Conference proceedings **Methods detected:** Method: Participatory design software
47 [72] **Kivinen, S., Kotilainen, J. & Kumpula, T. (2020). Mining conflicts in the European Union: environmental and political perspectives.** ***Fennia*** **198(1–2) 163–179.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Boycotts
48 [156] **New South Wales (NSW) (2017). Mining Rehabilitation: Raising the Priority Given to Social Outcomes through Participatory Planning. NSW: Sydney. Retrieved from: https://s3.ap-southeast-2.amazonaws.com/dpe-files-production/s3fs-public/dpp/271418/245886_Mine_rehabilitation_DP_submission_KR.pdf (accessed on 13 November 2024).** **Source type:** Report/Policy Paper **Methods detected:** Method: Lobbing Method: Creating public awareness—The active recruitment of participation by local communities (including their emotional presence and daily involvement) Method: Creating Networks Method: Discussion Method: Consultation Method: Report

Table A1. *Cont.*

49 [157] **International Council on Mining and Metals (ICMM) (2011). Mining: Partnerships for Development. Toolkit. ICMM: London, UK.** **Source type:** Guide/Tooklit **Methods detected:** Method: Interview Method: Survey
50 [158] **Stratigea, A., Papadopoulou, C.-A. (2013). Multicriteria Evaluation in Spatial Planning: A Participatory Methodological Approach, pp. 85–97. Agenzia delle Entrate Ministero dell'Economia e delle Finanze: Rome, Italy.** **Source type:** Book/Book chapter **Methods detected:** Method: Focus group Method: Scenarios Method: NAIADE multicriteria evaluation method
51 [159] **Food and Agriculture Organization of the United Nations (FAO) (2016). Negotiated Territorial Development in a Multi-Stakeholders Participatory Resource Planning Approach. An Initial Sustainable Framework for the Near East Region. FAO: Rome. Retrieved from https://openknowledge.fao.org/server/api/core/bitstreams/35fb5769-e2d0-4093-83d8-31691fedb6e3/content (accessed on 13 November 2024).** **Source type:** Guide/Tooklit **Methods detected:** Method: Working groups
52 [160] **Bartlett, M. (2020). Objection Overruled: Understanding the Main Impacts of Circular Letter H-2/14 on Rogaland County Governor's Office and Sola Municipality through Multi-Level Governance and Logics of Decision-Making Perspectives. Master thesis in Energy, Environment and Society, University of Stavanger, Department of Media and Social Sciences.** **Source type:** Master thesis **Methods detected:** Method: Discussion meetings Method: Mediation Meetings (Deliberative Negotiation and Strategic Bargaining)
53 [161] **Barbarino, R., Herlo, B., Bergmann, M. (2022). Online Podcast Production as Co-Creation for Intercultural Participation in Neighbourhood Development. *Urban Planning*, 7(3), 418–429.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Online Podcast Production Method: Storytelling Method: Workshop

Table A1. *Cont.*

54 [2] **Ringholm, T., Nyseth, T. & Hanssen, G. S. (2018). Participation According to the Law?: The Research-Based Knowledge on Citizen Participation in Norwegian Municipal Planning.** ***European Journal of Spatial Development*****, 67: 1–20.** **Source type:** Peer-reviewed journal **Methods detected:** Method: City walks Method: Exhibitions Method: Performances Method: Workshops Method: Survey Method: Citizen jury Method: Deliberative polling Method: Charrette Method: 'Trials' Method: 'City-lab' Method: Protests Method: 'Children's path' Method: Petitions
55 [3] **Schöffel, J., Finka, M., Ondrejička, V., Petríková, D. Jamečný, Ľ., Ondrejičková, S., Kemper, R., Nigga, P. (2014). Participative Planning in Planning Culture of Slovak Republic and Switzerland. Schoolbook for Spatial Planners. Rapperswil: IRAP University of Applied Science.** **Source type:** Book/Book chapter **Methods detected:** Method: Advisory committees Method: Workshop Method: Local referendum Method: Federal referendum Method: Urban walk Method: Focus group Method: (Idealistic futuristic) competition Method: Professional discussion fora Method: Interview Method: Public Participation GIS (PPGIS)
56 [162] **Cornish, F., Breton, N., Moreno-Tabarez, U., et al. (2023). Participatory action research.** ***Nat Rev Methods Primers*****, 3(1), 34.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Participatory action research (PAR)

Table A1. *Cont.*

57 [21] **Mitlin, D., Thompson, J. (1995). Participatory Approaches in Urban Areas. Strengthening Civil Society of Reinforcing the Status Quo?** ***Environment and Urbanization*****, 7(1), 231–250.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Discussion (with 3D model and cutouts for everyone to set in the „space" of the model) („Planning for Real") Method: Participatory Rural Appraisal Method: Rapid Assessment Procedure Method: Participatory Mapping of the Settlement Method: Household survey Method: Collective modelling of new housing designs Method: Collective planning of new settlement designs Method: Transect walks Method: Formal groups Method: Informal groups Method: Workshop
58 [163] **Pareja, C., Xavier, A., Daitch, S. (2019). Participatory Environmental Monitoring Committees in Mining Contexts: Lessons from Nine Case Studies in Four Latin American Countries. United Nations Development Programme: New York.** **Source type:** Book/Book chapter **Methods detected:** Method: Consultation Method: Discussion forums / Roundtables Method: Protests Method: Committee (body for monitoring)
59 [164] **Broome, B.J. (2002). Participatory Planning and Design in a Protracted Conflict Situation. Applications with Citizen Peace-Building Groups in Cyprus.** ***Systems Research and Behavioral Science, Special Issue: Participatory Planning and Designing*****, 19(4): 313–321.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Interactive Management (Approach) Method: Workshops

Table A1. *Cont.*

60 [165] **Tarsitano, E., Giordano, S., de Gennaro, G., Turi, A., Ronco, G., Parchitelli, L. (2023). Participatory Planning for the Drafting of a Regional Law on the Bioeconomy.** ***Sustainability*****, 15(9): 7192.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Laboratory (Workshop) Method: Design thinking approach (DT) Method: Interview Method: Brainstorming Method: Benchmarking Method: Discussion (Feedback on the proposals of each group)
61 [166] **Akmentiņa, L. (2020). Participatory Planning in Post-Socialist Cities: a Case Study of Riga.** ***Architecture and Urban Planning*****, 16(1), 17–25.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Survey Method: Media (newspapers and TV) Method: (Extensive) marketing and public engagement campaign Method: Pre-paid postcards Method: SMS to the Mayor of the City Method: Sending e-mails Method: Discussion Method: Prizes for the best ideas (coming from citizens) Method: Specially designed website Method: Online discussion (forum-like features) Method: Working group Method: Dedicated phone number Method: Geoportal Method: Meeting (seminar) Method: Neighborhood walks Method: Protest
62 [42] **Rakotomahazo, C., Ravaoarinorotsihoarana, L.A., Randrianandrasaziky, D., Glass, L., Gough, C., Todinanahary, G.G.B., Gardner, C.J. (2019). Participatory planning of a Community-Based Payments for Ecosystem Services Initiative in Madagascar's Mangroves.** ***Ocean & Coastal Management*****, 175: 43–52.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Public participation geographic information systems Method: Concept modelling workshops Method: Participatory mapping

Table A1. *Cont.*

63 [167] **Everingham, J.-A., Svobodova, K., Mackenzie, S., Witt, K. (2020). Participatory Processes, Mine Closure and Social Transitions. Centre for Social Responsibility in Mining. University of Queensland: Brisbane.** **Source type:** Report/Policy Paper **Methods detected:** Method: Participatory geographic information systems (PGIS) Method: Participatory monitoring and evaluation (participatory monitoring committees) Method: Interview Method: Survey Method: Website Method: Workshop Method: Factsheets Method: Newsletter Method: Media reports Method: Aerial visualisations Method: Virtual reality Method: Focus group Method: Open-ended survey questions Method: Community scorecards Method: Community Reference Group (a.k.a. Community Consultative Committee) Method: Visioning
64 [168] **Roba, G., Davies, J. (2018). Participatory Rangeland Management Planning: A Field Guide. International Union for Conservation of Nature—IUCN: Nairobi, Kenya.** **Source type:** Guide/Tooklit **Methods detected:** Method: Participatory mapping
65 [169] **Torso, K., Cooper, C. M., Helkey, A., Meyer, C., Kern, A. L., & Wardropper, C. B. (2020). Participatory Research Approaches in Mining-Impacted Hydrosocial Systems. *Hydrological Sciences Journal*, 65(14), 2337–2349.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Participatory Action Research Method: Indigenous Research (Methodologies) Method: Survey Method: Interview Method: Card sorting

Table A1. *Cont.*

66 [170] **Yu, L., Zhang, X., He, F., Liu, Y., Wang, D. (2020). Participatory Rural Spatial Planning Based on a Virtual Globe-Based 3D PGIS. *ISPRS Int. J. Geo-Inf.*, 9, 763.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Virtual globe-based 3D participatory geographic information system (PGIS) / Public participation geographic information systems (PPGIS)
67 [84] **McCall, M.K. (2005). Participatory Spatial Planning for Environmental Planning & Natural Resource Management. Faculty of Geo-Information Science and Earth Observation: Enschede, Netherlands.** **Source type:** Presentation **Methods detected:** Method: Mass media Method: Local Community meetings Method: Workshops Method: RRA methods Method: Public Fora Method: PRA methods Method: Focus groups Method: E-Consultations Method: Petitions Method: Elections Method: Demonstrations
68 [171] **Montréal Urban Ecology Centre (MUEC) (2015). Participatory Urban Planning—Planning the City with and for its Citizens. Québec en Forme & the Public Health Agency of Canada: Québec. Retrieved from https://participatoryplanning.ca/sites/default/files/upload/document/participatory_urban_planning_brochure_2016.pdf (accessed on 13 November 2024).** **Source type:** Guide/Toolkit **Methods detected:** Method: Workshop Method: Consultation kiosk (štand sa informacijama i mogućnošću komentarisanja) Method: Exploratory walk Method: Participatory budget Method: Monitoring committee
69 [172] **Krzysztofik, R., Dulias, R., Kantor-Pietraga, I., Spórna, T., Dragan, W. (2020). Paths of Urban Planning in a Post-Mining Area. A Case Study of a Former Sandpit in Southern Poland. *Land Use Policy*, 99, 104801.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Protests

Table A1. *Cont.*

70 [173] **Campbell, G., Roberts, M. (2010). Permitting a new mine: Insight from the community debate. *Resource Policy*, 35(3), 210–217.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Websites Method: Newsletters Method: Billboards Method: Public Meeting Methods: Interview Method: Lobing groups
71 [66] **Natarajan, L. (2019). Perspectives on Scale in Participatory Spatial Planning. *Built Environment*, 45(2), 230–247.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Face-to-face survey Method: Online survey Method: Drop-in session (Stand with information)
72 [103] **Ortiz Escalante, S., Gutiérrez Valdivia, B. (2015). Planning from Below: Using Feminist Participatory Methods to Increase Women's Participation in Urban Planning. *Gender & Development*, 23(1), 113–126.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Awareness workshops Method: Exploratory walk Method: Neighbourhood photovoice, Everyday log itineraries Method: Assessment of the everyday network (public spaces, facilities, mobility network, safety) Method: Community mapping Method: Awareness walks and mapping Method: Safety audit walks Method: Street festivals Method: Space occupation/Demonstrations
73 [102] **Wirth, P., Černič Mali, B., Fischer, W. (Eds.) (2012). Post-Mining Regions in Central Europe—Problems, Potentials, Possibilities. München: oekom verlag, Gesellschaft für ökologische Kommunikation mbH.** **Source type:** Book/Book chapter **Methods detected:** Method: Workshop Method: Round table Method: Implementation of project Method: Working group (for strategy drafting) Method: Voting

Table A1. *Cont.*

74 [77] **Gohari, S., Baer, D., Nielsen, B.F., Gilcher, E. and Situmorang, Z. W. (2020). Prevailing Approaches and Practices of Citizen Participation in Smart City Projects: Lessons from Trondheim, Norway.** *Infrastructures* **5(4): 36.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Exhibitions Method: Workshops Method: Petitions Method: Meeting
75 [110] **Berman, T. (2016). Public Participation as a Tool for Integrating Local Knowledge into Spatial Planning. Springer Cham: Cham, Switzerland.** **Source type:** Book/Book chapter **Methods detected:** Method: Focus group Method: Structured questionnaires Method: Coordinated workshop Method: Charrette Method: Community forum Method: Survey Method: Webcasting Method: Online consultation Method: Online forums Method: Planning for Real Method: Participation Action Research (PAR) Method: Citizen-based conference (People's Panel) Method: Citizens' Jury Method: SWOT analyisis (technique) Method: Criteria prioritization (technique) Method: Alternatives Selection (technique) Method: Demonstration Method: Street notices (fliers) (notification mean) Method: Personal letters (notification mean) Method: Search Conference Method: Grassroots Movement Method: Radical participation method Method: Network Participation Method
76 [174] **Worden, S., Svobodova, K., Côte, C., Bolz, P. (2024). Regional Post-Mining Land Use Assessment: An Interdisciplinary and Multi-Stakeholder Approach.** *Resources Policy*, **89, 104680.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Stakeholder panel Method: Online surveys Method: Roundtables (scoping discussions)

Table A1. *Cont.*

77 [175] **Costa, G., Costa, H., Monte-Mór, R. (2021). Rooting Metropolitan Planning in Critical Theory and Participatory Practices: A University Planning Experience in Belo Horizonte, Brazil.** ***plaNext—Next Generation Planning*****, 11: 44–61.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Meeting Method: Seminar Method: 'Theatrical discussions' Method: Workshop Method: Overlaying collaborative maps Method: Discussion forum Method: Participatory cartography Method: Participatory Local Interest Committee
78 [138] **Brown, J. A., Kim, H., Schober, K., Vipond, J., Gorman, M., & Nykiforuk, C. I. J. (2024). Scoping population health equity in impact assessments: A realist synthesis-informed review of key literature 2010–2019.** ***The Extractive Industries and Society*****, 17, 101413.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Forum Method: Information fairs Method: Interview Method: Surveys Method: Hotlines Method: Webinars Method: Teleconferences Method: Field trips Method: Field offices Method: Advisory groups Method: Meetings Method: Public registry websites
79 [67] **Crawford, P., Kotval, Z., Rauhe, W., Kotval, Z. (2008). Social Capital Development in Participatory Community Planning and Design.** ***Town Planning Review*****, 79(5), 533–554.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Meeting (SWOT) Method: Design workshop

Table A1. *Cont.*

80 [176] **Natarajan, L. (2017). Socio-Spatial Learning: A Case Study of Community Knowledge in Participatory Spatial Planning.** ***Progress in Planning*****, 111, 1–23.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Collaborative Workshops
81 [177] **Luke, H. (2017). Social Resistance to Coal Seam Gas Development in the Northern Rivers Region of Eastern Australia: Proposing a Diamond Model of Social License to Operate.** ***Land Use Policy*****, 69, 266–280.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Marches Method: Blockades Method: Festivals
82 [43] **Newel, R., Picketts, I. (2020). Spaces, Places and Possibilities: A Participatory Approach for Developing and Using Integrated Models for Community Planning.** ***City and Environment Interactions*****, 6, 100040.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Iterative participatory process (approach) Method: Focus group Method: Scenario development Method: Virtual reality visualisation
83 [178] **International Institute for Environment and Development -London, GB, IIED (1994). Special Issue on Participatory Tools and Methods in Urban Areas—RRA Notes/IIED, Vol. 21. International Institute for Environment and Development (IIED): London, UK.** **Source type:** Report/Policy Paper **Methods detected:** Method: Rapid Analysis Methods Approach Method: Participatory Learning Methods (PALM) Method: Action learning approach (a modified form of Rapid Rural Approach) Method: Participatory Urban Appraisal (PUA) Method: Rapid Urban Appraisal (RUA) Method: PRA Method: Interviews Method: Observation Method: Mapping Method: Survey Method: House models Method: Naming of causal factors Method: Card sorting

Table A1. *Cont.*

Method: Ranking Method: Matrix of different roles Method: Scoring Method: Comparative ranking Method: Linkage diagrams Method: Participatory Appraisal and Needs Assessment (PANA) Method: Venn diagrams Method: Trend analyses Method: Matrix ranking Method: 3D model of the neighbourhood Method: Interviews Method: Transect walks Method: Committee Method: Participatory Urban Planning (PUP) Method: Development Planning for Real Method: Community action planning
84 [179] **Stefanović, N., Danilović Hristić, N., Petrić, J. (2023). Spatial Planning, Environmental Activism, and Politics—Case Study of the Jadar Project for Lithium Exploitation in Serbia.** ***Sustainability*****, 15(2), 1736.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Protest Method: "Reception office" on-site
85 [6] **Hossu, C.-A., Oliveira, E., Niță, A. (2022). Streamline Democratic Values in Planning Systems: A Study of Participatory Practices in European Strategic Spatial Planning.** ***Habitat International*****, 129, 102675.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Focus group Method: Online consultation Method: Online survey Method: Survey Method: Living labs Method: Charrettes Method: Internet-based knowledge platforms Method: Neighbourhood walks Method: Interviews (individual talks) Method: Artistic workshop (Art-based initiatives) Method: Collaborative learning Method: Civic fora Method: Planning cells Method: Workshops Method: Regional design Method: Visions Method: Self-organized initiatives Method: Hands-on initiatives Method: Crowdsourcing Method: Participatory budgeting Method: Participatory mapping

Table A1. *Cont.*

Method: Area-based coalitions
Method: Boundary events
Method: Coalitions
Method: Actor coalitions
Method: Cooperation
Method: Grassroots initiatives
Method: Negotiations
Method: Dialogical activities
Method: Civic participation
Method: Mediation
Method: Conversations
Method: Task-force meetings
Method: Participative initiatives
Method: Design activities
Method: Plenary sessions
Method: Field inventory
Method: Partnerships
Method: Discussions
Method: Citizen initiatives
Method: Collective actions
Method: Collaborative initiatives
Method: Visual aids
Method: Storytelling
Method: Intuitive inquiry
Method: Consultations
Method: Planning support systems
Method: Forums
Method: Volunteering
Method: Community action groups
Method: Scoping sessions
Method: Round tables
Method: Meetings
Method: Testing sessions
Method: Polls
Method: Advisory activities
Method: Presentations
Method: Interviews
Method: Excursions
Method: Digital ethnography
Method: On-site activities
Method: Stakeholder initiatives
Method: Questionnaire
Method: Co-creation
Method: Panel meetings
Method: Communication processes
Method: Network governance
Method: 3D tools
Method: Spontaneous conversations
Method: Consensus-oriented planning
Method: Evaluation workshops
Method: Action research
Method: Appreciative Inquiry
Method: Co-design mapping
Method: Engagement workshop

Table A1. *Cont.*

Method: Game-based exercises
Method: Seminars
Method: System thinking approaches
Method: Socio-technical information
Method: Communication Arrangements
Method: Activist group
Method: Citizen science
Method: Computer-assisted design
Method: Conflict resolution
Method: Lobbying
Method: GIS mapping
Method: Mapping workshops
Method: Creative laboratories
Method: Decision support systems
Method: Exhibitions
Method: Face-to-face gatherings
Method: Media platforms
Method: Multi-modal communications
Method: Neighborhood initiatives
Method: Protests
Method: Phone calls
Method: Planning groups
Method: Public-private citizen exchanges of information
Method: Radio broadcasts
Method: Advisory groups
Method: Agreements
Method: Alliances
Method: Commissions
Method: Conferences
Method: Consultations
Method: Coordination platforms
Method: Debates
Method: Drop-in sessions
Method: Public examinations
Method: Scenarios
Method: Steering groups
Method: Symposiums
Method: Collaborative planning
Method: Pop-up urbanism
Method: Ad hoc initiatives
Method: Arrangements
Method: Brainstorming
Method: Council meetings
Method: Participatory GIS platforms
Method: Roadshows
Method: Strollogies
Method: On-site workshop
Method: Stakeholder involvement
Method: Co-development
Method: Evaluation exercises
Method: Expert forums
Method: Participatory protocols
Method: Planning games
Method: Co-decisions
Method: Organized walks

Table A1. *Cont.*

Method: Appeals Method: Cross-party panels Method: Expert collaborations Method: Geo-referenced discussions Method: Regeneration initiatives Method: Role plays Method: Urban design Method: Data gathering Method: Digital tools of participation Method: Training programmes Method: Urban design seminars Method: Cognitive learning Method: Geo-design Method: House visits by planners Method: Conceptual group modelling Method: Networking activities Method: Voluntary wardens (e.g., for flood) Method: Volunteer-based networks Method: Jurying Method: Visioning initiatives
86 [180] **Imamia, F., Dhramib, K. (2019). Strengthening Cooperation for Spatial Planning—A Case Study on Participatory Planning in Albania.** ***Journal of the Western Balkan Network on Territorial Governance*****, 1, 27–41.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Participatory Reflection and Action (PRA) Method: Participatory Learning and Action (PLA Method: Social mapping Method: Well-being ranking Method: Network Method: Venn diagramming Method: Matrix scoring Method: Survey Method: Consultation workshop Method: Television (to inform) Method: Social media (to inform) Method: Focus group Method: Local Planning Coordination Forums Method: Local Urban Forums Method: Citizen Advisory Panels Method: Website (information and the end of the process) Method: GIS application made (available to the public, to check and comment in real time regarding the plan)
87 [134] **Hoefsloot, A., van den Berg, L.M. (eds.) (1998). Successful Examples of Participatory Regional Planning at the Meso-Level. Towards Sustainable Land Use through Negotiated Conflict Resolution. Report 164, 136 pages. DLO-Starting Centrum: Wageningen, Netherlands.** **Source type:** Report/Policy Paper **Methods detected:** Method: Agreement

Table A1. *Cont.*

Method: Steering committee Method: Negotiations Method: Workshop Method: Seminars Method: Public gathering Method: Citizen organisations Method: Community Advisory Council (CAC) Method: Negotiation platform Method: Initial Fora Method: Agreement fora Method: Negotiation fora
88 [181] **Steward, R., Chopin, P., Verburg, P.H. (2024). Supporting Spatial Planning with a Novel Method Based on Participatory Bayesian Networks: An Application in Curaçao. Environmental Science & Policy, 156, 103733.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Workshop Method: Expert groups (discussion) Method: Interviews Method: In-person meetings
89 [182] **Kokko, K., Buanes, A., Koivurova, T., Masloboev, V., & Pettersson, M. (2015). Sustainable mining, local communities and environmental regulation.** *Barents Studies: Environmental & Socio-economic Studies*, **2(1): 50–81.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Information meetings Method: Steering committees
90 [183] **Lesser, P., Ejdemo, T., Suopajärvi, L., Petrétei, A. (2016). Sustainable Mining in the Northernmost Europe: Lessons Learned and Practices Developed. Retrieved from https://urn.kb.se/resolve?urn=urn:nbn:se:ltu:diva-61701 (accessed on 13 November 2024). Source type:** Report/Policy Paper **Methods detected:** Method: Participatory GIS Method: Consultations Method: Agreements
91 [137] **Pantić, M., Čolić, N. (2023). Digital Participation Framework for Mountain Areas in Serbia.** *Transylvanian Review of Administrative Sciences*, **[S.l.], 78–95.** **Source type:** Peer-reviewed journal **Methods detected:** Method: Questionnaires Method: Geographic information systems (GIS) Method: Expert discussions Method: Gaming

Table A1. *Cont.*

Method: Virtual design Method: Computer-aided design Method: Social media Method: Online meetings Method: Online voting Method: Phone consultations Method: Submission of remarks and suggestions by e-mail Method: Submission of remarks and suggestions by the digital registry Method: Mobile phone applications
92 [82] **Wilcox, D. (1994). The Guide to Effective Participation. Joseph Rowntree Foundation. York: UK.** **Source type:** Guide/Toolkit **Methods detected:** Method: Leaflets Method: Media Method: Video Method: Surveys Method: Meetings Method: Workshops Method: Planning for Real Method: Strategic Choice Method: Advertising Method: Exhibitions Method: Workshop Method: Village appraisal Method: Brainstorming Method: Nominal Group Technique Method: Campaigns Method: Festivals Method: Lobbying Method: Committees Method: Focus groups Method: Presentations Method: Design Games Method: Awareness Through to Action Method: Community forum Method: Community initiatives Method: Strategic Assumption Surface Testing (SAST) Method: SSM Method: Community technical aid centres Method: Community Trusts Method: Foundations Method: Cost/benefit analysis Method: Deciding together Method: Site visits Method: Slide shows of examples Method: Development trust Method: Games Method: Simulations Method: Kolb's cycle Method: Newsletter Method: Mind Maps

Table A1. *Cont.*

Method: SWOT analysis Method: Parish maps Method: Past and future Method: Post-it notes Method: Press Releases Method: Posters Method: Reports Method: Priority Search Method: Shop front Method: Steering group Method: Voting Method: Workload planning
93 [184] **Macdonald, C. (2017). The Role of Participation in Sustainable Community Development Programmes in the Extractives Industries. United Nations University: WIDER Working Paper 2017/28.** **Source type:** Working paper **Methods detected:** Method: Corporate social responsibility (CSR) Method: Social licence to operate (SLO) Method: Free prior informed consent (FPIC) Method: Joint solution groups Method: Community Action Plans Method: Participatory rural appraisal (PRA) Method: Workshop
94 [185] **Xavier, A., Leon, A., Carlier, A., Bernales, M., Klein, B. (2017). The Role of Participatory Environmental Monitoring Committees in Mining Regions in Peru. In: Z.X. Li, Z. Agioutantis, D.H. Zou (eds.), Proceedings of the 8th International Conference on Sustainable Development in the Minerals Industry, 27–29 June 2017, Beijing, China, pp. 176–181.** **Source type:** Conference proceedings **Methods detected:** Method: Environmental Monitoring Committees Method: Surveillance Committees Method: Protests Method: Participation Agreements (PA) Method: Community Development Agreements (CDA)

Table A1. *Cont.*

95 [136] **Lea, T. (2016). The Status of Participatory Planning in Norway: A Case Study. Master thesis, Institute for Landscape Architecture and Spatial Planning.** **Source type:** Master thesis **Methods detected:** Method: Consultation groups Method: Open office Method: Worksheets Method: Open meetings Method: Closed meetings Method: Verbal hearings Method: Brainstorming, brainwriting Method: CPS (Creative Problem Solving) Method: Seeker conference Method: Idea workshops
96 [131] **Aggrey, J.J., Ros-Tonen, M.A.F., Asunbonteng, K.O. (2021). Using Participatory Spatial Tools to Unravel Community Perceptions on Land-Use Dynamics in a Mine-Expanding Landscape in Ghana.** ***Environmental Management*****, 68, 720–737.** **Source type:** Peer-reviewed journal **Methods detected:** **Method**: Participatory mapping **Method**: Focus group

Appendix B



Figure A1. Method categories (https://www.minipart.rs/assets/images/Method%20categories.jpg). Access date 15 February 2026.

Appendix C

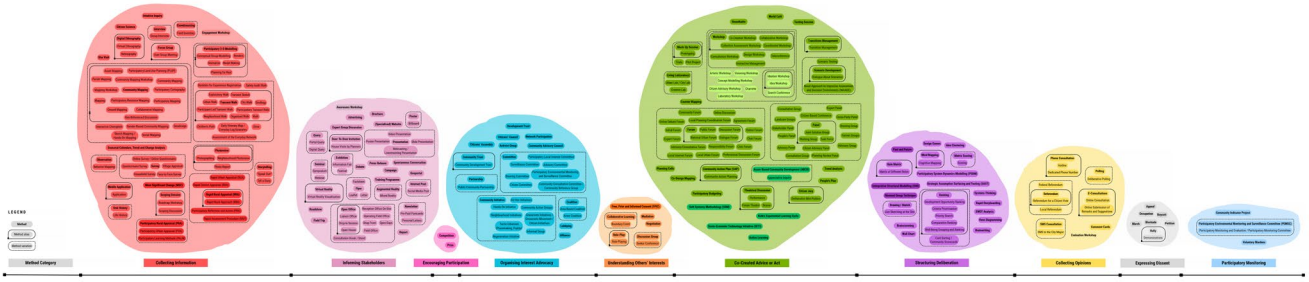

Figure A2. Methods, aliases and variations (https://www.minipart.rs/assets/images/Methods%20and%20variations.jpg). Access date 15 February 2026.

Appendix D

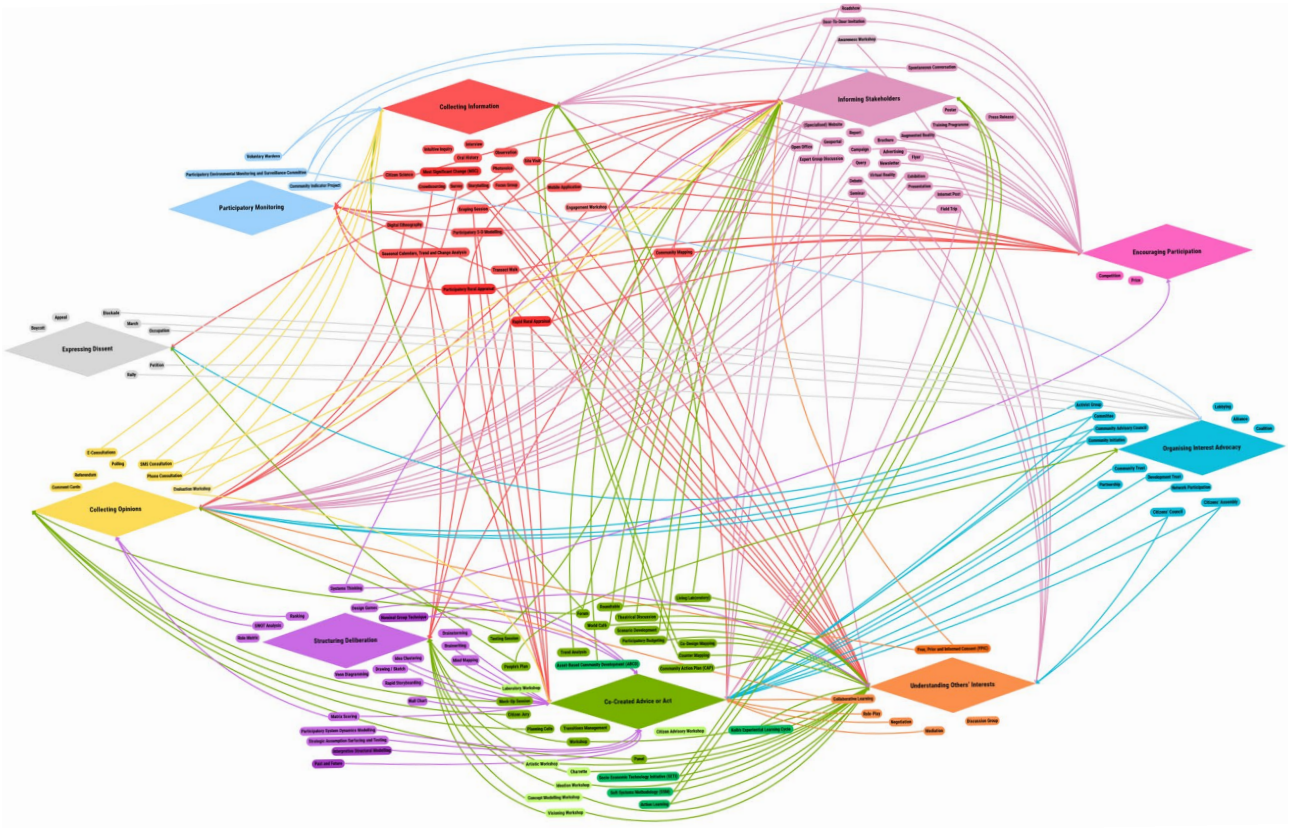

Figure A3. The method network (https://www.minipart.rs/assets/images/Method%20network.jpg). Access date 15 February 2026.

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3. Schöffel, J.; Finka, M.; Ondrejička, V. (Eds.) *Participative Planning in Planning Culture of Slovak Republic and Switzerland: Schoolbook for Spatial Planners*; University of Applied Science Rapperswil: Rapperswil, Switzerland, 2014.
4. Ariyanti, V.; Gaafar, T.; De La Sala, S.; Edelenbos, J.; Scholten, P. Towards liveable volcanic cities: A look at the governance of lahars in Yogyakarta, Indonesia, and Latacunga, Ecuador. *Cities* **2020**, *107*, 102893. [CrossRef]
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9. Fisher, F. *Building Bridges Through Participatory Planning*; UN-Habitat: Nairobi, Kenya, 2001.
10. Sedogo, L.G. Integration of local participatory and regional planning for resources management using remote sensing and GIS. Ph.D. Thesis, Wageningen University, Wageningen, The Netherlands, 2002.
11. Nedović-Budić, Z.; Djordjević, D.; Dabović, T. The Mornings After ... Serbian Spatial Planning Legislation in Context. *Eur. Plan. Stud.* **2011**, *19*, 429–455. [CrossRef]
12. Fisher, J.C. City Planning and Housing Administration in Yugoslavia. *Urban Aff. Q.* **1965**, *1*, 59–71. [CrossRef]
13. Simmie, J. Self-management and town planning in Yugoslavia. *Town Plan. Rev.* **1989**, *60*, 309–330. [CrossRef]
14. Blagojević, M.; Perić, A. The diffusion of participatory planning ideas and practices: The case of socialist Yugoslavia, 1961–1982. *J. Urban Hist.* **2023**, *49*, 797–820. [CrossRef]
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