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Bridging the Literature Gap: A Framework for Assessing Actor Participation in Participatory Guarantee Systems (PGS)

Sonja Kaufmann *, Nikolaus Hruschka and Christian R. Vogl

Division of Organic Farming, Working Group Knowledge Systems and Innovation, University of Natural Resources and Life Sciences Vienna (BOKU), Gregor-Mendel-Str. 33, A-1180 Vienna, Austria; hruschka@boku.ac.at (N.H.); christian.vogl@boku.ac.at (C.R.V.)

* Correspondence: sonja.kaufmann@boku.ac.at

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Abstract: Participatory guarantee systems (PGS) have become increasingly important for organic quality assurance. PGS are promoted as more suitable than third-party certification (TPC) for smallholder farmers in the Global South. The advocated benefits of PGS include the promotion of organic agriculture, farmer empowerment, and the facilitation of food system sustainability. To deliver these benefits, local actor participation is key. To date, there is still an absence of in-depth studies on participation in PGS in the literature. The aim of this study was to contribute to closing this research gap by (i) conducting a meta-analysis on PGS participation and (ii) presenting a framework for studying actor participation in PGS. A systematic literature review on participation in PGS was carried out, using a framework based on Cohen and Uphoff (1980). The results showed that data on participation in PGS are still fragmented in scientific literature. Quantitative empirical evidence and data on the extent and purpose of participation and actors' perception of participation, for example, are very scarce or not available at all. This paper argues that a systematic and theory-based approach to further research on participation in PGS is needed for improved understanding and facilitation, and suggests an adapted version of Cohen and Uphoff's (1980) framework for conducting this research.

Keywords: participatory guarantee systems; PGS; participation; organic certification; framework; organic agriculture

1. Introduction

Participatory guarantee systems (PGS) are quality assurance systems for assuring the integrity of organic products and are based on the active participation of local actors [1]. In the past 15 years, PGS have become increasingly important as an alternative to impartial third-party certification (TPC) [2], the certification system most commonly used to safeguard the integrity of organic food products [3]. Although often considered best practice when it comes to the reliability of conformity assessment, TPC is increasingly subject to criticism that has been summarized in other studies [4–7].

PGS supposedly involve limited bureaucracy and low direct costs for farmers and are thus considered more inclusive and accessible than TPC, especially for smallholder farmers in the Global South [8]. They are therefore deemed capable of facilitating the inclusion of such farmers into organic production [9]. PGS were conceived as bottom-up organized grassroots organizations where organic certification is achieved through co-governance of diverse stakeholders and related social dynamics [10]. Active participation and continuous learning processes—two key elements of PGS—are said to foster the empowerment of local actors [9], improved resource management, and more sustainable livelihoods [10]. PGS therefore have the potential to enable transformation towards sustainability [11] and promote the

transition to more sustainable food systems—a transition that is needed if fundamental challenges related to our current food system, such as exploitation of natural resources, environmental degradation, food insecurity, and malnutrition, are to be tackled sustainably [11–15].

Participation is a fundamentally relevant element not only for the general functionality and sustainability of PGS, but also for the delivery of these promised PGS outcomes. A profound understanding of actor participation in PGS is therefore key for improved understanding of PGS and their further development.

While in the initial phase of the PGS movement, information and data on PGS were mainly made available by advocating institutions acting 'from within' (e.g., IFOAM, Centro Ecológico Ipê, MAELA), scholarly research on PGS has gained momentum in recent years as PGS initiatives and thus certified farmers are growing in number [16]. Previous research has focused on diverse aspects of PGS, such as the general status quo of PGS implementation [4], the internal challenges and benefits of PGS [17], or PGS stakeholders' motivations and beliefs about PGS [17,18], and has studied PGS as an innovative governance mechanism [19] or in the context of agroecology [20,21], for example. While individual aspects of participation have been covered in scientific literature, an in-depth study that specifically focuses on participation in PGS as a multidimensional phenomenon is still absent from the literature. A meta-analysis of the scientific literature on PGS is therefore highly valuable not only for providing a condensed overview of the state of the art of participation in PGS, but also to inform future research on participation in PGS.

The aim of this study therefore was to contribute to closing the research gap in PGS by (i) taking stock of actor participation in PGS, qualitatively determining the state of the art of participation in PGS and presenting relevant results, and (ii) suggesting a theory-based framework for assessing actor participation in PGS in future research.

We start with an introduction to the concept of participation in general, as well as in PGS, before describing our research methods and presenting Cohen and Uphoff's [22] framework for rural development participation as the applied analytical framework. The various dimensions and elements defined within this framework are described in more detail where relevant in order to set the stage for the remainder of the paper. Using this framework, we systematically explore the main findings with regards to participation and research gaps in the PGS literature analyzed. Finally, the paper outlines an adapted, theory-based framework for assessing actor participation in PGS. These results and the presented framework will contribute to the knowledge base on PGS and facilitate further research in support of PGS development. The suggested framework could further support future research on other forms of participatory grassroots projects, such as urban food [23,24] and community-supported agriculture (CSA) [15] initiatives.

2. Participation and Its Relevance in PGS

The concept of stakeholder participation first appeared in the international development discourse in the 1960s and gained wider importance during the 1970s [25]. Since then its relevance in rural and agricultural development has increasingly been accepted and promoted—although the conceived meaning of participation and approaches advocated to facilitate participation have changed over the years [26,27]. Starting in the 1980s, major donors and development organizations increasingly recognized that top-down, externally imposed processes and measures had not produced the intended results. They therefore progressively started to adopt participatory processes, i.e., approaches that aim to put the so-called beneficiaries of projects at the center and transfer agency to them [28,29]. The development of the notion of participation was also reflected in the shift in the methods applied, e.g., from rapid rural appraisal (RRA) to participatory rural appraisal (PRA) by the mid to late 1980s and the participatory learning and action (PLA) [28,30,31]. Greater inclusion of local people's perspectives and knowledge was rapidly adopted as an alternative to exclusively donor-driven development approaches and justified as more sustainable, relevant, and capable of empowering people [29].

As a consequence of participation agendas pursued by multilateral organizations in the Global South [32], participation was also subsequently adopted as an important concept for effectively implementing social and political programs, e.g., in Latin American countries [32]. Mechanisms of 'participación ciudadana' (citizen participation) were also increasingly incorporated into laws and regulations, and included citizen monitoring ('observatorios ciudadanos') for example [33–36], community councils of civil society ('Consejos Comunales de la Sociedad Civil') [37], and participatory budgeting ('presupuestos participativos') [38–40], to name just a few.

Apart from the realm of development work, the notion of participation also gained momentum in northern countries. In recent years, it has been recognized as a fundamental concept in various areas such as resource management and resource governance [41–43]. Mechanisms to enhance citizen participation were increasingly adopted by local and regional governments in countries such as Germany, following the recognition of limited citizen engagement in democratic processes [44]. These diverse forms of 'Bürgerbeteiligung' (citizen participation) have been outlined by various scholars [44–56].

Similarly, in France, mechanisms to foster 'la participation citoyenne' (citizen participation), such as neighborhood councils ('conseils de quartier') or public debates ('les débats publiques') were established and increasingly adopted on a municipal level [57,58]. As summarized by Bednarska-Olejniczak et al. [59], citizen participation also gained additional momentum with the announcement of the Sustainable Development Goals. Generally, many have agreed on the beneficial nature of people's participation [60–62], and the participation of local people in development projects reportedly improves development project performance [63]. More specifically, advocates of participation in rural development associate a wide array of benefits with local actor participation, including, for example, improved, more democratic decision-making, equity, conflict mitigation, empowerment, and sustainability [26,27,64–66].

However, there are concerns that participation may not deliver these expected benefits and may even have contrary effects [27,29,67,68], since the forecasting and measuring of the potential benefits of participation are anything but trivial [67,68]. Shining a spotlight on participation in a more differentiated and theory-based way, unbiased by normative assumptions with regard to its effects, is therefore critically important if a better understanding and further development of participatory processes are to be achieved.

2.1. Typologies of Participation

Participation is multidimensional, highly complex, and context-specific in nature. It can occur in different forms, mean different things, and change over time [22,61,69]. Rather than being a universally definable term, participation can be conceived as an umbrella concept that embraces a whole range of diverse phenomena [22,67,68]. According to Taddei [68] and Cohen and Uphoff [22], there is a strong need to frame participation by a broader analytical framework if it is to be understood more thoroughly. Not only is there a need to consider different processes and structures through which participation can take place, but the broader context that affects the process of participation also needs to be addressed [67,68]. Over the years, a number of different typologies have been developed to categorize, interpret, and understand participation [27].

Arnstein's [70] 'ladder of community participation' is one of the oldest and best-known typologies. The ladder defines eight rungs of citizen participation. The degree of engagement increases along 'the ladder' on a continuum from passive dissemination of information (manipulation) via consultation of citizens, all the way to their active engagement (citizen control) [70,71]. Arnstein's [70] ladder has been modified by several scholars over the years [27,72–76]. Pretty's [26] typology likewise suggests a continuum from 'lower' to 'higher' forms of engagement (i.e., from 'manipulative participation' to 'self-mobilization') and thus more preferable and less preferable forms of participation [26,71]. In contrast to the 'ladder of community participation', Pretty's [26] typology addresses practitioners using participatory approaches, rather than focusing on the citizen as a program beneficiary [26,70,71].

Farrington et al. [77] proposed assessing participation according to the different stages of an activity in which the actors are involved (i.e., depth of participation) and the range of actors involved (i.e., breadth of participation) [71,77]. Other typologies distinguish between principal stakeholders and their main interests in and use for participation [25,69], or define different types of participation based on the general objective at which participation is addressed, i.e., development or research [78], planner or people-centered [66,79], and the direction and nature of communication flows [27,71,80].

The focus of most of these typologies is on different kinds of participation, which are determined by different levels of actor engagement. Mostly, there is no detailed focus on the participants themselves, the "who" of participation [71]. Moreover, as outlined by Cornwall [71], most of these typologies define a continuum between "more preferable" and "less preferable" forms of participation [71] (p. 276).

The framework for describing and analyzing rural development participation developed by Cohen and Uphoff [22], however, defines overarching, general dimensions of participation under which different situations and activities that involve and demand the engagement of different actors can be assembled and described in a differentiated way. It was therefore considered the most suitable approach for the aim of our work, which was firstly to descriptively analyze data on actor participation in PGS so far delivered in scholarly literature in order to use this as a basis for, secondly, developing a methodology to support further data collection on participation in PGS. Other typologies [26,70] could be used in a final analytical stage for interpreting results and drawing conclusions on the degree of actor engagement under consideration in a specific research endeavor. However, to explore and describe participation in a little-studied phenomenon such as PGS in the first place, we suggest the framework developed by Cohen and Uphoff [22] to be the most appropriate and adequate for this purpose.

2.2. Participation in PGS

As the name "Participatory Guarantee Systems" already suggests, participation is a central element of PGS. The International Federation of Organic Agriculture Movements (IFOAM—Organics International) defines PGS as "locally focused quality assurance systems. They verify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange" [10] (p. vi). The fundamental importance of participation in PGS is further underlined by being one of the key elements defined by IFOAM within the PGS framework, developed in the aftermath of the first international workshop on alternative certification in 2004 [8,10]. According to this framework, participation as a key element of PGS means that "producers, consumers as well as other stakeholders, such as NGO staff, are engaged in the initial design, and in the activities of the PGS. All stakeholders (including producers) take part in decision-making processes related to certification and to the operation of the PGS itself" [10] (p. 11).

Farmers, consumers, and other actors are believed to share ownership of the PGS and collectively take responsibility for ensuring the organic integrity of products verified by the PGS [8]. It is therefore reasonable to consider active actor participation as a pre-condition for a PGS to function in the first place and subsequently deliver the benefits associated with PGS. These benefits comprise inclusion in organic production [9] and the provision of market access for smallholder farmers, empowerment of farmers engaged in the PGS, positive effects on food security and resource management, an overall improvement in the livelihoods of smallholder farmers and their communities [10], and the promotion of local development [81,82].

Participation is also closely linked to other key elements and features of PGS that are supposedly needed for PGS to function and to exploit their full potential. The principle of horizontality in PGS, characterized for example by an equal sharing of power and responsibilities, adequate rotational principles, and collective implementation of the certification process [9,10,82], is linked to how the principle of participation is implemented. This horizontal structure, mainly based on the voluntary donation of time, is the basis for reduced direct certification costs for producers, one of the reasons why PGS are promoted as being specifically adapted to smallholder farmers' realities [1,10].

Other elements and features essentially linked to participation include transparency, the formation of trust, the development of a strong common vision, and a permanent learning process, for example through the engagement of all stakeholders in the definition, implementation, and verification of standards and rules [1,8,10,82].

The considerable dedication and participation of all actors are crucial for PGS to function, be sustainable, and achieve their full potential. IFOAM [9], in one of its earliest position papers on PGS, argues that "such involvement is entirely realistic in the context of the small farms and local, direct markets that PGS systems are most likely to serve" [9] (p. 1).

However, a mere three years after the first international workshop on PGS in 2004, there was still an absence of empirical evidence. Although still a niche in science, some empirical research on PGS has since been conducted. The literature analysis presented in this paper therefore explored this scientific empirical evidence collected over the past 15 years, focusing on participation as the central building block of PGS.

3. Materials and Methods

3.1. Literature Search

A systematic literature review [83–85] was undertaken in October and November 2019. In line with the research aims outlined in the introduction, the following research questions were posed:

Based on the framework for rural development participation by Cohen and Uphoff [22],

- (1) What kind of participation is practiced in the PGS initiatives studied?
- (2) Which actors participate in the PGS initiatives studied and what are their dominant background characteristics?
- (3) How is participation in PGS occurring in relation to the basis, form, extent, and effect of participation?
- (4) For what reasons are the actors participating in the PGS initiatives studied?
- (5) What are the current specific research gaps on actor participation in PGS?

The literature search was conducted in Scopus and the Web of Science database using the search strings "Participatory Guarantee Systems", "participatory certification", and equivalent terms in the Spanish language (e.g., "Sistemas Participativos de Garantía", "Sistemas de Garantía Participativa"). The results were filtered for relevant subject areas and languages spoken by the authors (i.e., English and Spanish). This search rendered 92 results. During prereading, titles and abstracts were analyzed [86] and articles related to organic agriculture, agriculture, food production, food systems, and PGS were selected, leading to a total number of 30 articles.

The database search was complemented by backward snowballing from reference lists of the resulting articles [84,85]. Only articles published in peer-reviewed scientific journals were included, rendering five more articles to be included in the first stage of analysis. The results were initially analyzed using an author-centric approach [85,86]. The results of the different authors had not been synthesized at this point according to specific concepts or main contents [85], but the following attributes of articles were analyzed to produce an initial categorization of articles and decide whether an article was to be considered for further analysis: aim of the article/research focus, PGS initiative(s) studied, language, research methods, and type of results (qualitative, quantitative, results on participation). Articles were only included for further analysis if they studied a concrete PGS initiative or PGS network (e.g., Ecovida) and presented empirical primary data as well as results on participation in PGS. Based on these criteria, 18 peer-reviewed publications were included in the analysis. In July 2020, search results were updated by adding newly published articles. Consequently, 21 articles were included in the final analysis (Table A1). The articles studied PGS in Brazil, Belgium, Chile, Colombia, France, India, Italy, Japan, Mexico, Peru, South Africa, Spain, and the Philippines. The data collection methods applied

included surveys, interviews, observation, document analysis, focus groups, and participatory action research (Table A1).

Articles were coded deductively and inductively using a concept-centric approach [85] to analyze key findings on participation in PGS. The analysis was organized according to Cohen and Uphoff's [22] framework for rural development participation and the different dimensions and elements of participation defined therein. These dimensions and elements served as a first set of deductive codes [85]. Additional codes were developed inductively where necessary and appropriate [87]. A concept matrix was created to synthesize the results of various authors according to the concept applied [85,88].

3.2. Participation: Analytical Framework for Analysis

The framework for describing and analyzing rural development participation developed by Cohen and Uphoff [22] (referred to below as 'the framework') draws on the assumption that participation is not one single phenomenon that can easily be measured and determined to establish whether or not it "exists". Instead participation is considered as an overarching concept under which different elements, activities, and situations are assembled. These can be defined, analyzed, and promoted more concretely, a task that is barely possible if participation is considered as one single entity. Cohen and Uphoff [22] promoted the identification and consideration of these different dimensions as the building blocks of participation required for a better analysis and understanding of participation and its more precise promotion [22]. The framework defines four main dimensions of participation, which are then further subdivided into different sub-dimensions and elements (Figure 1).

Figure 1. Framework for rural development participation: Dimensions (bold), sub-dimensions, and elements (italics) of participation (modified from [22]).

Cohen and Uphoff [22] define four main '*kinds*' of actor participation in rural development projects (Figure 1). According to the authors, it is important not only to consider participation in

decision-making, implementation, benefits, and evaluation separately, but also the connections between these different kinds of participation, e.g., relationships between participation in decision-making and participation in benefits also need to be taken into account [22].

The framework further defines four main actor groups ('*Who participates?*') as generic types of actors who participate in rural development projects most often (Figure 1). Depending on the context, these can be further divided into different sub-groups. The authors further emphasize the importance of not considering these actor groups as homogenous entities, but rather to consider aspects such as age, sex, or education to make analytical distinctions within a group [22].

The '*how*' dimension adds a qualitative aspect to the framework. While the first two dimensions allow determination of the type of actors participating in the decision-making, implementation, benefits, and evaluation of a rural development project, the 'how' dimension makes it possible, for example, to establish the different activities of implementation in which people participate, the time they invest, the impetus and incentives that lead to participation, and the empowering character of this participation. This allows conclusions to be drawn on specific patterns of participation and why participation in a specific setting develops in a certain way and increases or declines, for example [22].

The fourth dimension regards the reasons why people participate—'*Participation for what?*'. Its aim is also to establish whether these purposes are achieved and whether certain actions related to participation are intended or unintended [22].

An additional crucial component for describing, analyzing, and understanding participation is the '*context of participation*'. This includes the characteristics of a project as well as the so-called 'task environment' that includes historical, physical, natural, and societal factors for example [22].

Cohen and Uphoff's [22] framework for rural development participation came out of an analysis commissioned by USAID aimed at developing more practical concepts and measures on development participation [89].

The framework has been used by Hawker [90], for example, to analyze consumer involvement in service delivery cycles, by Michener [66] to analyze participation in education projects in Burkina Faso, and by Adhikari et al. [91] to examine participation in community forest governance in Nepal. Several scholars have highlighted its critical view of participation [66], its applied and praxis-oriented character [66], its claim to achieve greater clarity on participation by being more specific [92], as well as its comprehensiveness, which is achieved for instance by taking into account different types of participation, the how and the who dimension of participation [66,93], and considering target groups and beneficiaries of development projects in a more differentiated way [71]. For these reasons and due to the purpose of this work, this framework appeared to be the most appropriate and most comprehensive framework available for conducting an analysis of what has been said about participation in PGS.

4. Results: Participation in PGS in the Scientific Literature

4.1. What Kind of Participation?

Decision-making processes in PGS are described as fairly horizontal by most authors, with the mostly direct participation of stakeholders in decision-making through a general assembly of all members or stakeholders [4,20,94–98]. Montefrio and Johnson [99] describe mechanisms of indirect participation in decision-making through committees at which all stakeholders are represented. However, for the most part the authors do not go into more detail on the type of decisions in which actors are involved and make no reference to the actual extent of actor participation in general assemblies or stakeholder committee meetings at which decisions are taken.

The actors that prove important for resource contribution (i.e., know how, financing, infrastructure) in PGS *implementation* include institutions such as NGOs and universities [4,17,19,94,95,97–103]. However, neither the necessary resources nor the concrete role of different actors for resource contribution to different PGS activities have been determined empirically. Only Chaparro-Africano

and Naranjo [21], who describe a participatory funding system supported by producers and local markets, determine the costs for initial farm visits at 90 USD per visit.

The reported *benefits of participation* are community development and promotion of social cohesion [17,18,20,98,99,102,104,105], greater self-responsibility, self-confidence and self-management skills of producers [20,100,104,106], improved agricultural practices (e.g., diversification, biodiversity) [20], protection of natural resources [20], opportunities for farmers (e.g., access to markets, loans, and social PGS processes) [20,98,106], increased female participation e.g., in decision-making [20,98,106], diversification of diets, and knowledge exchange between producers [18,20,97,98,100,104,105]. However, only López Cifuentes et al. [17] base their findings on a quantitative evaluation of farmer perceptions.

Trust as an important outcome and basis of PGS has been found to be high by Nelson et al. [19] and Kaufmann and Vogl [4]. Loconto and Hatanaka [101] report a lack of trust among producers towards consumers. Quantitative evidence for the relationship between actor participation and trust is still absent from the literature.

Evaluation has only been addressed in the passing by Chaparro-Africano and Naranjo [21] and specifically as part of participatory action research undertaken to establish a PGS. However, this is not surprising as the kinds of participation suggested by Cohen and Uphoff [22] are organized based on the logic of development projects [66] and most PGS initiatives certainly do not follow this logic. While evaluation could be a highly relevant aspect to consider in PGS implementation in order to monitor PGS processes and activities and ensure PGS sustainability, according to the analyzed literature, evaluation does not yet seem overly relevant in PGS practice. As the framework suggested in this paper aims to be applied to research on existing PGS initiatives, evaluation will not be considered as a sub-dimension in section four.

4.2. How Is Participation Occurring?

Several scholars generally describe the organization and structure of PGS and the range of activities organized. The *form of participation*, that is the structure of participation (e.g., organizational structures, different organizational units, rotational principles, admission procedure to the PGS) (Table 1), and the direct or indirect character of participation are partly described in more detail by some authors [4,19,95,102,105], but mostly without covering the sub-dimension thoroughly. Most of the described participatory certification processes function at two levels, i.e., one organizational unit carries out the farm visits and a different unit verifies the visit results. However, participatory certification processes functioning at one level only, where the same entity conducts the visits and verifies the results, are also described, especially for Brazil and Mexico. Binder and Vogl's [100] Peruvian case study describes the most complex certification process (Table 1).

Table 1. Results on the form of participation: Organization and structure of participation.

Results		Author
Organizational Units at Local Level	**Certification Process**	
Management board, internal evaluators	3 levels: (i) local visit group + internal evaluator, (ii) management board (local level), (iii) regional councils	Binder and Vogl [100]
Visit committee, evaluation committee, other committees	2 levels: (i) visit committee/group, (ii) evaluation committee/steering committee/quality commission	Cuéllar-Padilla and Ganuza-Fernandez [96]
Visit group, steering committee		Dumont et al. [97]
Visit group, quality commission		Cuéllar-Padilla [95]
Inspectors, visit group, other committees	2 levels: (i) employed inspectors, (ii) visit group	Loconto and Hatanaka [101]

Table 1. *Cont.*

Results		Author
Organizational Units at Local Level	**Certification Process**	
Control and approval commission	2 levels: (i) local control commission, (ii) federal approval commission	Niederle et al. [107]
General assembly, certification committee, administrative and/or other committees	1 level: certification committee	Bara et al. [94]
		Bellante [106]
		Kaufmann and Vogl [4]
		Nelson et al. [102], Nelson et al. [19]
Ethical council (verification commission), regional nuclei	1 level: Ethical council/review committee/governing committee	Zanasi et al. [105]
		Niederle et al. [107]
Review committee		Loconto and Hatanaka [101]
Governing committee		Montefrio and Johnson [99]
Board of promoters, PGS committee, visiting group	Exact certification process unclear	Chaparro-Africano and Naranjo [21]

Several scholars mention other organizational units than those directly engaged in certification (Table 1), without going into much more detail, however.

The direct or indirect character of participation are partly described in more detail by some authors [4,19,95,102,105]. Regarding the *extent of actor participation*, some authors name the range of activities organized as part of the PGS (Table 2).

Table 2. Results on the extent of participation: Range of activities.

Results	Author
Farm visits and certification *	Bara et al. [94], Binder and Vogl [100], Chaparro-Africano and Naranjo [21], Cuéllar-Padilla [95], Rodrigues Hirata et al. [20], Kaufmann and Vogl [4], Niederle et al. [107], López Cifuentes et al. [17], Montefrio and Johnson [99], Nelson et al. [19,102], Zanasi et al. [105]
Revision of own organic standard	Niederle et al. [107]
Farm assistance trips or field days for farmers	Loconto and Hatanaka [101], Rodrigues Hirata et al. [20]
General assemblies and other meetings	Bara et al. [94], Bellante [106], Binder and Vogl [100], Cuéllar-Padilla [95], Rodrigues Hirata et al. [20], Kaufmann and Vogl [4], López Cifuentes et al. [17], Nelson et al. [102], Roldán Rueda et al. [103]
Farm visits for consumers **	Kaufmann and Vogl [4]
Collective marketing of products and related organizational work	Bara et al. [94], Bellante [106], Chaparro-Africano and Naranjo [21], Home et al. [98], Rodrigues Hirata et al. [20], Kaufmann and Vogl [4], Montefrio and Johnson [99], Nelson et al. [19,102], Niederle et al. [107], Roldán Rueda et al. [103]
Workshops and training courses	Bara et al. [94], Bellante [106], Binder and Vogl [100], Home et al. [98], Kaufmann and Vogl [4], López Cifuentes et al. [17], Nelson et al. [19,102], Roldán Rueda et al. [103]

Table 2. *Cont.*

Results	Author
Cultural events ***	Rodrigues Hirata et al. [20], Kaufmann and Vogl [4], Loconto and Hatanaka [101], Roldán Rueda et al. [103]
Credit and saving schemes	Bellante [106], Home et al. [98]
Seed saving/exchange schemes	Rodrigues Hirata et al. [20], Home et al. [98]
Exchange of labor/collective work	Home et al. [98]
Collective buying	Home et al. [98]
Events (not further specified)	Bara et al. [94], Binder and Vogl [100]
Activities related to participation in PGS activities at national/ regional level ****	Binder and Vogl [100], Rodrigues Hirata et al. [20], Niederle et al. [107]

* including document management and meetings related to certification ** in addition to farm visits as part of the certification *** e.g., for consumers in the market place [4]; cooking and dining sessions for consumers [101] **** including e.g., national PGS meeting, advocacy [100].

However, when it comes to the *time involved*, only a handful of authors address the frequency of participation for different actors based on empirical evidence (Table 3) and those authors who provide empirical evidence on the frequency of participation only do so for selected core activities of the PGS (i.e., farm visits, certification committees). The time required for different activities is not addressed more specifically and only briefly mentioned by Nelson et al. [102] (Table 3).

Table 3. Results on the extent of participation: Time involved.

Results	Author(s)
Frequency of producer participation: 52% of producers on certification committees, 65% on farm visits (n = 60)	Kaufmann and Vogl [4]
Frequency of producer participation: considered as normal or high by 76% of interviewed PGS members (n = 29)	López Cifuentes et al. 2018 [17]
Frequency of participation in certification committee: 46% of producers (n = 80), 11% of consumers (n = 48)	Nelson et al. [19]
Frequency of producer participation: 61% attended more than 5 meetings of certification committee (n = 8)	Zanasi et al. [105]
Frequency of producer participation: training 90%/100%, control visits 5%/45%, farm visits 80–90%, evaluation at local level 20%/45% (additional results for further specific activities) (n = 46)	Binder and Vogl [100]
Time required for participation in certification committee: approx. 2 h per farm visit (1 visit per producer per year); approx. 2 h per producer per year for evaluation and decision-making	Nelson et al. [102]

The impetus for actors' participating in PGS activities (*basis of participation*) has not been addressed. Incentives for participating in a PGS are only addressed by Montefrio and Johnson [99], who mention low or even absent access and membership fees, and Binder and Vogl [100] who report remuneration for participation in PGS certification processes. Specific impetus and incentives for the different PGS activities and the sub-dimension '*effect of participation*' (i.e., empowerment, interactions) were not addressed in any of the articles analyzed.

4.3. Who Is Participating?

Most publications that address the history of PGS initiatives and the type of actors participating in their genesis ('*Who is participating*?') underline the importance of NGOs and universities for PGS development, including beyond resource contribution, e.g., by facilitating contacts with consumers or enhancing the perceived legitimacy of the PGS system [4,17,94,98,99,101,102,106].

Actors most often involved in the implementation of PGS are producers and consumers [4,17,19–21,94,97–103,105–107], NGOs [4,17,94,97–100,107], and universities [4,19,94,98,99,102]. Local or regional governments [4,98–100], shops, food cooperatives [17], manufacturing enterprises, and small agroindustries [98,105]. Traders [99,105], restaurants [101], local markets [21,105], and third-party inspectors [19] are also mentioned. However, the involvement of producers and consumers in many cases refers more to the design of the PGS and not to the practiced reality, as most publications do not make any statement regarding the actual state of producer and consumer participation based on profound quantifiable evidence (Table 3).

Furthermore, the involvement of producers and consumers is reported as challenging by several authors [4,17,94,98,100,104]. Related challenges give some indication of the important background characteristics of those actors who participate and those who do not, and include time constraints [4,17,19,94,96,98,102,106], related opportunity costs [4], lack of awareness [94], motivation [98] and of real and perceived expertise [4,19,96,98,102,108], long distances [94,98], conflicts, and conflict of interest [4,96,98,102,106]. The actors' background characteristics, however, are not addressed in more detail.

In summary, quantitative data on the real extent of actor participation in the implementation of PGS activities (e.g., decision-making, farm visits, evaluation of farm documentation and reporting, training activities, commercialization), are scarce and mostly limited to participation in key certification activities (Table 3).

4.4. Why Are People Participating?

Finally, some authors refer to the motivations behind starting or joining a PGS, which include low certification costs [105], market access and price premiums [99,100,105,106], discontent with TPC and PGS going beyond TPC [17,18,95], PGS being a tool for social change, community development, mutual support [17,99], access to technical training [100], preservation of indigenous culture, promotion of local products [17,101,106], access to high-quality food [17,101,106], and the direct relationship with producers [17]. However, the motivations behind participating in different PGS activities—to use Cohen and Uphoff's [22] terminology, the *purposes actors participate for*—have not yet been studied more profoundly and neither have motivations to refrain from participation in different activities beyond the above-mentioned challenges to actor participation.

5. Discussion: An Analytical Framework for Studying Participation in PGS

Participation is one of the cornerstones of PGS and has increasingly been addressed in scholarly research in recent years. However, despite the importance of actor participation in PGS and the growing scientific evidence on PGS, participation in the processes related to PGS has barely been addressed specifically and thoroughly. Our approach to analyzing participation in PGS shows that research on participation is still fragmented in the scientific literature and limited to isolated aspects of participation. Producer and consumer participation were revealed as being part of the PGS design in the majority of the PGS initiatives studied, but at the same time was also reported as a challenge. Nevertheless, most publications do not provide quantitative evidence on this. Based on the literature analyzed, IFOAM's [9] claim that full direct participation of producers and consumers in the certification process is entirely realistic in the context in which PGS operate, cannot therefore be confirmed. Viewing the available English and Spanish scientific data on PGS through the lens of Cohen and Uphoff's [22] framework further shows that information on the *basis of participation* in PGS (impetus, incentives)

and *decision-making* processes is not available. Neither has the *extent of participation* been assessed for the full diversity of participation in PGS (i.e., diverse range of activities). Research that studies the latter empirically in combination with the *effects, benefits, costs,* and *purpose* of participation—a dimension that so far has been equally neglected—is not available either. The same is true for empirical evidence on local actors' perception and their understanding of participation and the implications of actor participation for those outcomes of PGS claimed by its promoters.

We therefore suggest an adapted methodology based on Cohen and Uphoff's [22] framework for rural development participation for the study of participation in PGS. Due to its highly comprehensive character, the framework appears particularly suitable for addressing participation in little-studied phenomena such as PGS. Definitions of the different dimensions, sub-dimensions, and elements defined by Cohen and Uphoff [22] are combined with specific information on PGS available in the scientific literature, but also in grey literature (reports and concept documents on PGS developed by IFOAM, for example) and our own research experience.

As a result, the framework was adapted and expanded where needed specifically for the PGS context. This was done separately for each of the four main dimensions: '*What kind of participation?*' (Figure 2), '*How is participation occurring?*' (Figure 3), '*Who participates?*' (Figure 4), and '*Participation for what?*'.

One major advantage of combining the '*how*', '*what kind*', and '*who*' dimensions is that it allows elements such as benefits derived from PGS (Figure 2) or the time required and invested for the PGS (Figure 3) not only to be studied for participation in PGS in general, but also for the range of activities involved in PGS. The same is the case for the fourth dimension: '*Participation for what purpose?*'.

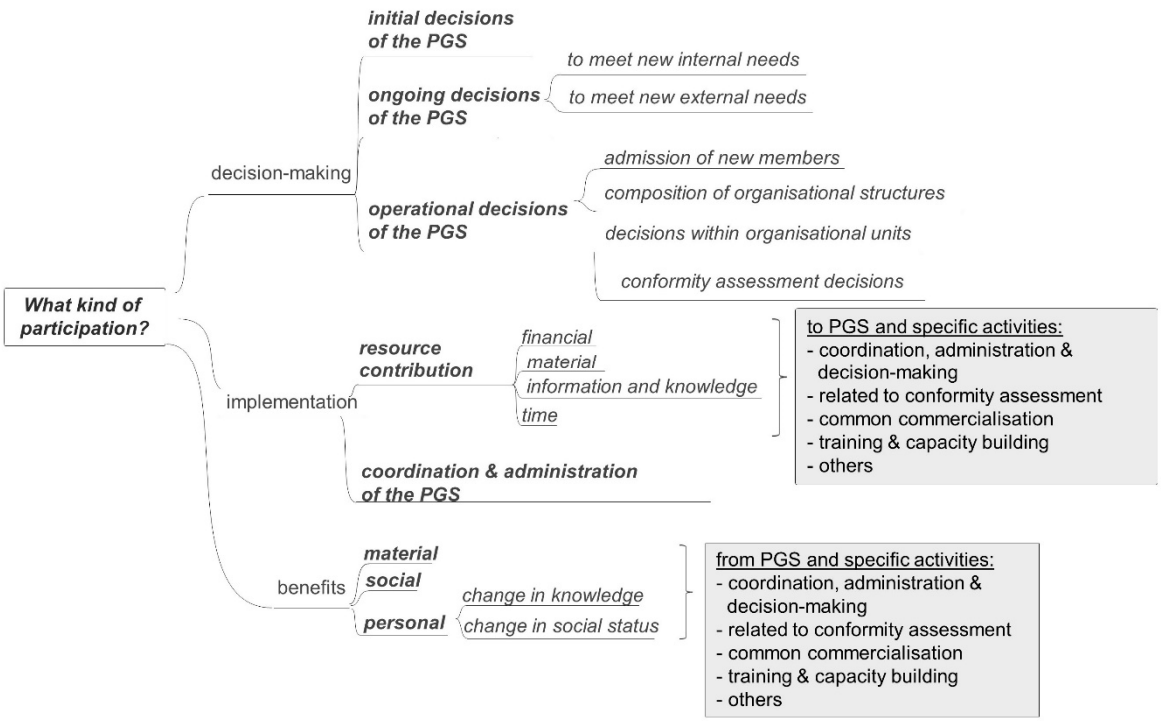

Figure 2. Framework for rural development participation adapted to participatory guarantee systems (PGS): What kind of participation? (modified from [22]).

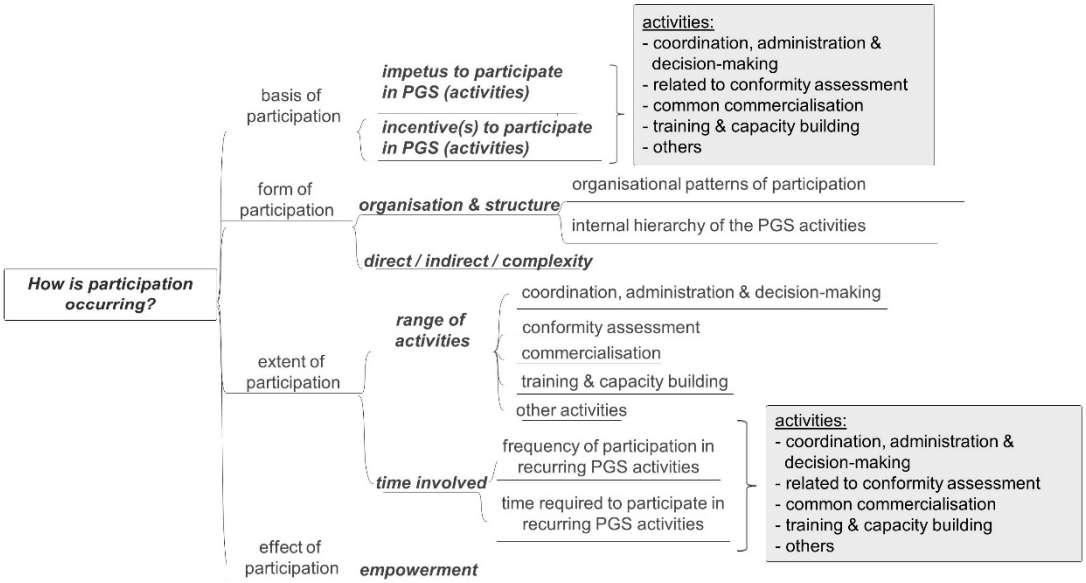

Figure 3. Framework for rural development participation adapted to PGS: How is participation occurring? (modified from [22]).

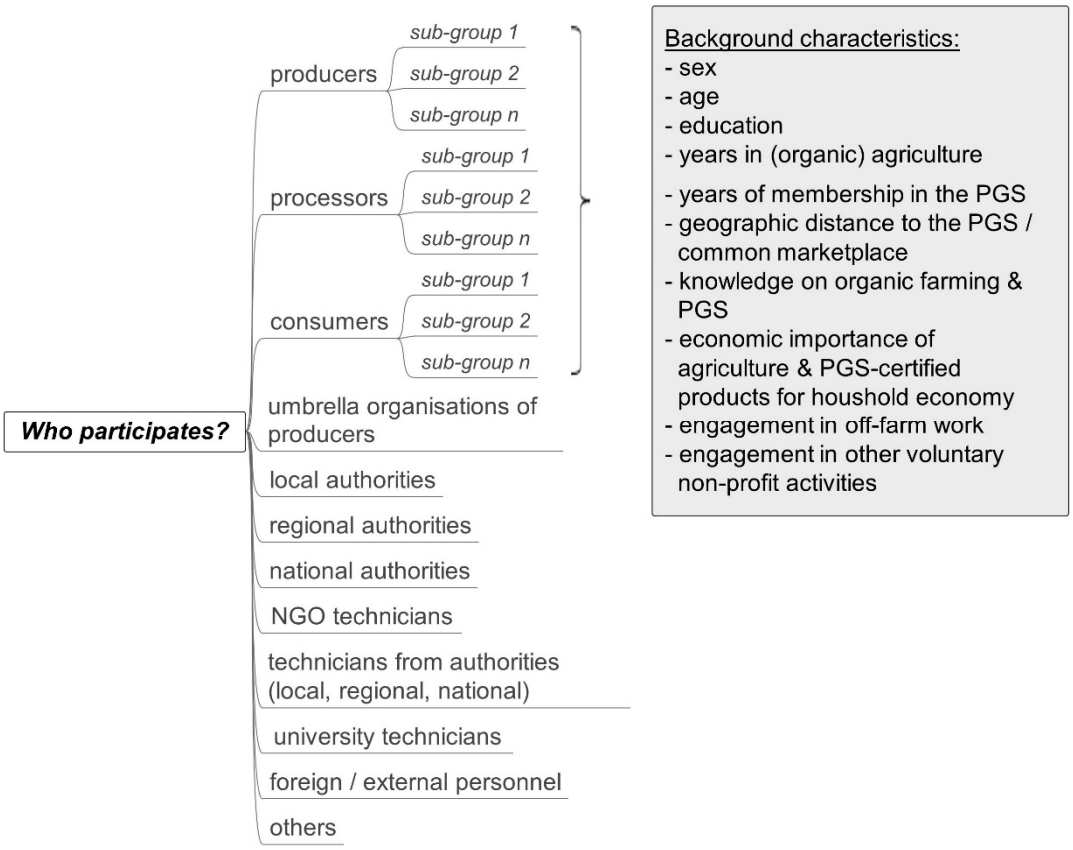

Figure 4. Framework for rural development participation adapted to PGS: Who participates? (modified from [22]).

Based on the results of our literature analysis, we suggest five generic groups of activities that many PGS have been found to implement: Coordination and administration of the PGS, decision-making, activities related to conformity assessment, common commercialization of products, and training and

capacity-building [4,10,94] (Table 2). We nevertheless suggest adapting the exact range of activities to the specific case studied.

For the '*who*' dimension we suggest eleven generic actor groups (Figure 4). Background characteristics that are relevant for consideration, according to Cohen and Uphoff [22], include sex, age, education, and years in agriculture. We also suggest adding further characteristics that are specifically relevant in the PGS context (Figure 4). These characteristics can be adapted or further extended according to the specific context. We suggest considering them especially for local actor groups directly engaged in the production and consumption of PGS-certified products since participation by these actor groups is specifically being targeted under the PGS concept [8,10] and is challenging, according to the analyzed literature. These background characteristics can be used to make analytical distinctions, as suggested by Cohen and Uphoff [22], and further subdivide actor groups. Specific PGS background characteristics may also be considered as potential influential factors, e.g., for the extent of participation or the purposes of participation in the PGS.

Important elements constituting the *context of participation* in PGS include the legal framework for organic farming and other areas related to PGS, relevant government programs (e.g., support programs relevant to farmers involved in PGS), geographical factors, as well as the history of the PGS. Depending on the specific case, further *project characteristics* (e.g., *entry effects*, such as the complexity of the PGS and resources required to join the PGS) and the *task environment* (e.g., *historical factors* such as prior experiences with similar initiatives and *cultural factors* that interact with the maintenance of PGS structures, rules, and procedures, for example) also have to be considered.

We further found that some sub-dimensions suggested by Cohen and Uphoff [22] may need more specific conceptualization in order to shed light on them in the PGS context. Regarding *the purpose of participation*, we support the suggestion made by Cohen and Uphoff [22] and other scholars [66,109] to consider the reasons for different individuals participating in the PGS and in PGS activities (i.e., peoples' interests and motivations for participation), as well as the compatibility of these purposes across individuals and actor groups. This also includes, for example, the compatibility of producers' purposes and those of organizations and government institutions and agencies that initiate or facilitate the PGS and related activities. In addition, we consider the reasons and motivations for non-participation to be equally important for a better understanding of participation in PGS.

Depending on the specific local context, and especially on the data available in an initial research phase, a qualitative approach may be the best solution for exploring these purposes. However, if more data were available we would suggest adding more standardized theoretical and methodological approaches for studying behavior, such as the work of Ajzen [110,111] and Ajzen and Fishbein [112,113]. The theory of planned behavior as developed by these authors fits very well with the framework suggested in this paper. It combines the motivational dimension '*For what purpose?*', corresponding to Ajzen and Fishbein's concept of *attitudes and beliefs,* with the *impetus and incentives* for participation and the *context of participation*, corresponding to Ajzen and Fishbein's actual *behavioural control,* that is the external and internal factors encouraging or inhibiting participation (e.g., resource availability) [110].

Empowerment as an effect of participation is defined by Cohen and Uphoff [22] as the amount of "capacity people have to obtain the results which they intend to obtain from their involvement in decision-making and implementation" [22] (p. 224). Further elaboration of the concept, however, is absent from the framework. If a more specific focus is to be placed on empowerment, either with respect to the empowering character of PGS structures and processes [114] or empowerment as an outcome of participation in the PGS as advocated by IFOAM [9] for example, the suggested framework should be further extended by building on the work of Alkire et al. [115], Ibrahim and Alkire [116], Mosedale [117], Mosedale [118], or Martínez-Restrepo et al. [119], for example.

With respect to actors' knowledge of organic farming and PGS, we suggest not only considering these aspects as important background characteristics that potentially influence the extent of participation, but also as important personal benefits of participation in PGS [8,10].

Following the adaptation of the framework to the PGS context, the various dimensions, sub-dimensions, and elements should be operationalized to develop indicators for data collection (Table 4) and finally data collection instruments, e.g., survey and interview questions, observation guidelines, and guidelines for focus group discussions or participatory methods [120]. For data collection we suggest using a mixed-methods approach, for example combining qualitative interviews, document analysis, surveys, focus groups, and participant and non-participant observation with key actor groups identified and in key PGS activities [121,122]. The chosen methods should be selected according to the specific case study and the local realities of the study area. Table 4 shows a simplified example of the operationalization of the framework, using the time involved in PGS activities (dimension "how", extent of participation) for the actor group producers in combination with the dimension "for what". An example for the expression of indicators is given for farm visits as a typical PGS activity.

Depending on the focus and scope of the research as well as resources available and the timeframe set, the framework may be reduced to indicators considered a priority for each dimension and subdimension. Weightings of the indicators may be considered according to their importance in the specific context.

Table 4. Simplified example of the operationalization of the framework for rural development participation [22,120] for application in PGS research—Dimension 1: 'how'., sub-dimension: Extent of participation; dimension 2: 'for what'; actor group: Producers; example activity: Farm visits (A = Activity).

Contextualization within PGS	Selected Indicator	Selected Sub-Indicators	Example Method	Example Expression
Dimension 1: How, **Sub-dimension:** extent of participation, **Element:** time involved				
Involvement in PGS activities	Frequency of recurring PGS activities	Frequency of *A1–A6* [1]	Interviews with PGS key informants	Number of farm visits per month
	Frequency of producers' participation in PGS activities	Frequency of producers' participation in *A1–A6*	Interviews or surveys with producers	Participation yes/no; number of farm visits producer participates in per month
Required time for participating in PGS activities	Time required to participate in recurring PGS activities	Time required to participate in *A1–A6*	Interviews with PGS key informants and producers, observation	Average time required per farm visit
	Time invested by producers for participating in recurring PGS activities	Time invested by producers to participate in *A1–A6*	Surveys with producers	Average time invested by producer to participate in farm visits per month

Table 4. *Cont.*

Contextualization within PGS	Selected Indicator	Selected Sub-Indicators	Example Method	Example Expression
Dimension 2: For what				
The purpose behind different actors participating in the PGS	The purpose behind producers participating or not participating in different PGS activities	The reasons producers participate in A1–A6	Interviews or surveys with producers	Reasons for participating in farm visits listed by producers (e.g., to learn about organic production, to assure organic integrity of collectively marketed products)
		Reasons why producers do not participate in A1–A6	Interviews or surveys with producers	Reasons for not participating in farm visits listed by producers (e.g., lack of time)

[1] Frequency with which activity A1–A6 take place; A1–A6: A1 meetings/activities of different organizational units/positions; A2 activities related to coordination and administration; A3 activities related to conformity assessment; A4 activities related to common commercialization; A5 activities related to trainings and capacity building; A6 other activities.

6. Conclusions

This paper presents a systematic literature review based on the analysis of 21 scientific articles, with the aim of taking stock of actor participation in PGS and determining the state of the art of participation in PGS. For this purpose, the framework for rural development participation of Cohen and Uphoff [22] was used. This framework was then further adapted to meet the second aim of the paper, which was to provide a theory-based framework for future research on actor participation in PGS.

Although scientific empirical evidence on PGS has increased in recent years, after 15 years of PGS development it is still limited. Research on actor participation in PGS specifically is scarce. According to the literature analyzed, decisions in most PGS are made in a general assembly of all members. Apart from that, for the most part no further data on decision-making is presented. NGOs and universities in particular are reported as being essential for the resource contribution in PGS implementation. However, the required resources have not been determined in the first place. The benefits of participation in PGS claimed by its promoters and advocating institutions—which include learning processes, community development, and improved livelihoods of farmers [9,10]—have been confirmed by the research analyzed. At the same time quantitative empirical evidence on benefits as perceived by the farmers themselves is almost absent in the literature. The same is the case for actors' motivations behind starting or joining a PGS. The motivations reported include low certification costs, market access and price premiums, community development, and technical training, thus mirroring the key promises of PGS. However, there is no evidence of whether these initial motivations are fulfilled or of the actors' motivations behind participating in different activities. Certification processes with different degrees of complexity are described, most of them operating on two levels. The PGS presented in the literature have one or two organizational units responsible for the certification process. Some PGS are reported to have established additional units in charge of further activities. These activities mostly include meetings, collective marketing of produced products, workshops and training courses, and cultural events. Further activities are scarcely mentioned and range from credit and saving schemes to collective work and seed saving and exchange schemes. While producers, consumers, NGOs, and universities are the actors most frequently mentioned as participating in PGS implementation, their actual state of participation (including the frequency of participation) has not yet been assessed for the different organizational units and activities of the PGS. The analyzed evidence

suggests that actor participation in PGS can present a challenge, however without addressing the topic in a theory-based, comprehensive manner.

Our analysis further shows that information on the *basis of participation* in PGS is not available, that the *extent of participation* has not yet been assessed for the full diversity of participation in PGS, and that the latter has not yet been studied empirically, in combination with the *effects*, *benefits*, *costs,* and *purpose* of participation. Local actors' perception and their understanding of participation have not been addressed either. If participation in PGS is to be better understood in order to facilitate actor participation in PGS and thus achieve related benefits and further promote PGS development and sustainability, more research on participation in PGS is required. The latter needs to be conceived as a multidimensional phenomenon and studied from a broader perspective. To do so, it is important to break down the different dimensions presented in our framework (what kind of participation, who participates, how is participation occurring, participation for what), their respective sub-dimensions and elements, and consider participation in the five generic groups of PGS activities (Figures 2–4). This approach therefore allows researchers and practitioners to gain a comprehensive perspective on PGS participation.

Although the framework suggested in this paper is still being tested, we argue that findings from a research approach of this kind will fundamentally contribute to a better understanding of participation in PGS and of participatory grassroots processes in general. More precisely, this broader focus will allow the status quo of actor participation in a given PGS initiative to be assessed for all four dimensions of participation, to identify facilitating and hindering factors, and to study the specific challenges, benefits (e.g., economic, personal, and social), and costs (e.g., certification fees, time invested, opportunity costs) of participation in PGS, as perceived by the actors engaged in a specific PGS. This will be possible not only for the PGS but for the different activities of the PGS as well. Therefore, findings resulting from the implementation of the framework could eventually inform local actors, practitioners, and policy makers and thus be of use for further developing and promoting PGS and ensuring their sustainability. Local actors and practitioners could benefit from an increased overall awareness regarding the status quo of actor participation. Findings on the reasons and motivations for participation or non-participation, the extent of actor participation, and the benefits perceived by actors engaged in the PGS, for example, could reveal specific hindering factors to overcome and leverage points for designing the PGS in way that is better adapted to farmers' and consumers' time availability, to facilitate actor participation or boost the benefits delivered by the PGS.

On a policy level, findings about the form and extent of participation (*how* dimension), implementation, decision-making (*what kind* dimension), and the *who* dimension of participation could support the regulatory process and contribute to PGS being adequately included in national legal frameworks of organic production in accordance with local PGS realities.

Furthermore, such data may help to determine more concretely whether PGS fulfil their claims [9,10] and can contribute to transformation for sustainability and to identify factors needed for them to do so more effectively. This may constitute important feedback for practitioners or advocating institutions, as the framework would, for example, also allow an assessment of whether the benefits perceived by farmers (e.g., agricultural practices [20], market access, loans, social PGS processes [20,98,106], and knowledge exchange between producers [18,20,97,98,100,104,105]) also translate into broader PGS benefits such as an improvement in farmers' livelihoods [10] and, more specifically, their economic situation. In addition, assessing the participation in resource contribution to the PGS, including certification fees, allows an evaluation of whether one of the key promises of PGS, i.e., offering a TPC alternative that is cheaper and better adapted to the economic situation of the farmers involved [1,10], can be fulfilled.

Furthermore, the suggested framework could support future research on other forms of participatory grassroots projects in the food sector, such as consumer cooperatives, community-supported agriculture (CSA) projects, group certification/internal control systems (ICS), farmer associations, and other schemes that are based on voluntary member participation.

The framework presented here offers one way of assessing actor participation in PGS. As shown in Section 2, there are plenty of typologies and theories on participation. However, we consider Cohen and Uphoff's [22] framework for rural development participation and its adaptation to the PGS context to be the one best suited to PGS research.

To further improve the proposed framework presented, testing in the field and the feedback loops resulting from these tests are crucial. As a limitation of the work presented, it should be noted that this process is still ongoing and the incorporation of experiences in the field is still pending. Moreover, while the comprehensive nature of the framework presented is its greatest strength, for the purpose of practicability in the field it may be necessary to reduce the framework to aspects that are considered a priority. These priority areas may be chosen as a function of the focus and scope of the research as well as of resources and time availability. Nevertheless, even though a reduced version of the framework may be used in some cases, we believe that the complete version makes an important contribution to broadening the overall perspective on actor participation in PGS and eliminating researchers' potential blind spots.

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Abbreviations

CSA	Community Supported Agriculture
ICS	Internal Control System
IFOAM	International Federation of Organic Agriculture Movements
MAELA	El Movimiento Agroecológico Latinoamericano y del Caribe
NGO	Non-governmental organization
PGS	Participatory Guarantee Systems
PLA	Participatory Learning and Action
PRA	Participatory Rural Appraisal
RRA	Rapid Rural Appraisal
TPC	Third-Party Certification

Appendix A

Table A1. Overview of the articles analyzed.

Author	Country	PGS Initiatives Studied	Methods	Actor Type Sampled	Type of Data	Dimensions of Participation Addressed
Bara et al., 2018 [94]	Mexico	Chapingo Organic Tianguis, Xalapa Agroecological Tianguis, Yuu Vann Organic Market of the Sierra Juárez, San Miguel de Allende Organic Tianguis, El Jilote Agroecological Market, Macuilli Teotzin Market of Natural and Organic Products	Interviews, observation, document analysis	Producers	Qualitative	What kind, who,
Bellante 2017 [106]	Mexico	Tianguis de Comida Sana y Cercana	Interviews, survey observation	Producers, consumers, other	Qualitative	What kind, who, for what
Binder and Vogl 2018 [100]	Peru	SPG Lima, SPG Apurímac	Interviews, survey observation	Producers, consumers, other	Qualitative quantitative	What kind, how, who,
Chaparro-Africano and Naranjo 2020 [21]	Colombia	Red de Mercados Agroecológicos de Bogotá Región (RMABR)	Participatory action research	Producers, consumers, market promoters	Qualitative	What kind, how, who
Cuéllar-Padilla and Calle Collado 2011 [104]	Spain	Grupo Sierra de Segura, Grupo Castril and Castilléjar Serranía de Ronda	Interviews	Producers	Qualitative	What kind, how, who, for what
Cuéllar-Padilla et al., 2018 [96]	Spain	Asociación de productoras ecológicas la Balanza, Ecocarpio, Red catalana de campesinos agroecológicos la Xarxeta, Ecollaures, Aiguaclara	Interviews, observation, document analysis	Not further specified	Qualitative	What kind, how, who
Dumont et al. 2016 [97]	Belgium	Les grosses légumes	Interviews, document analysis	Producers, other	Qualitative	What kind, how, who
Home et al., 2017 [98]	Peru, India, South Africa, France, Mexico, Brazil	Asociación Nacional de Productores Ecológicos (ANPE)/Instituto de Desarrollo y Medio Ambiente (IDMA), Bryanston Organic and Natural Market (BONM), Green Foundation, Keystone Foundation, MASIPAG Farmers' Guarantee System, Nature et Progrès, Red Mexicana de Tianguis y Mercados Orgánicos (REDAC), Ecovida	Interviews, survey	Producers, other	Qualitative	What kind, who

Table A1. *Cont.*

Author	Country	PGS Initiatives Studied	Methods	Actor Type Sampled	Type of Data	Dimensions of Participation Addressed
Rodrigues Hirata et al., 2019 [20]	Brazil	SPG-Sul de Minas	Document analysis, observation	Producers (analysis of producers' documents)	Qualitative	What kind, how, who
Kaufmann and Vogl 2018 [4]	Mexico	Chapingo organic market, Tlaxcala alternative market, El Pochote Xochimilco alternative market,	Survey, interviews, observation, document analysis	Producers, consumers	Qualitative quantitative	What kind, how, who
Lopez Cifuentes et al., 2018 [17]	Spain	PGS Ecollaures, PGS Vecinos Campesinos, PGS Ecovalle	Survey, interviews, observation	Producers, consumers	Qualitative quantitative	What kind, how, who, for what
Loconto and Hatanaka 2018 [101]	Chile, Japan	Kom Kelluhayin (the Mapuche Ethical label), Seikatsu Club Consumer Cooperative	Interviews, observation,	Producers, consumers., other	Qualitative	What kind, how, who, for what
Montefrio et al., 2019 [99]	Philippines	PGS Candaba, PGS Teresa	Interviews, observation,	Producers, other	Qualitative	What kind, how, who, for what
Nelson et al., 2010 [102]	Mexico	Chapingo Organic Tianguis	Interviews, observation,	Not further specified	Qualitative	What kind, how, who
Nelson et al., 2016 [19]	Mexico	10 local organic markets located in Chapingo, Metepec, Puebla, Tlaxcala, Xalapa, Coatepec, Xico, Oaxaca de Juárez (2 markets) and San Cristóbal de las Casa	Survey, interviews, observation,	Producers, consumers, other	Qualitative quantitative	What kind, how, who
Niederle et al., 2020 [107]	Brazil, France	Ecovida, Nature et Progrès	Document analysis, interviews, observation	Producers, consumers, market managers, vendors, processors, technicians, and policy makers	Qualitative	How, who
Sacchi 2019 [18]	Italy	CampiAperti, ECO)(Mercato, OltreMercato, SemInterrati, Permacultura Sicilia	Focus groups	Producers	Qualitative quantitative	What kind, how, for what
Sacchi et al., 2015 [108]	Brazil	Ecovida	Survey	consumers	Quantitative	Who
Zanasi et al., 2009 [105]	Italy	Ecovida	Survey, document analysis	Producers	Qualitative quantitative	How, who, for what
Cuéllar-Padilla 2010 [95]	Spain	Grupo Sierra de Segura, Grupo Castril and Castilléjar, Serranía de Ronda	Participatory action research	Producers, consumers	Qualitative quantitative	What kind, how, who, for what
Roldán Rueda et al., 2016 [103]	Mexico	Tianguis Orgánico Chapingo, Tianguis de Comida Sana y Cercana, Miscelánea Orgánica Playa del Carmen	Survey, interviews, observation	Producers, consumers, others	Qualitative	What kind, how, who, for what

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