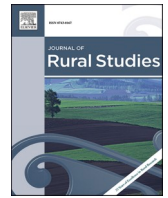


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## Building agroecology with people. Challenges of participatory methods to deepen on the agroecological transition in different contexts

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### 1. Introduction

Agroecology was formulated from a transformative epistemological standpoint that proposes to do “science with people” (Guzmán et al., 2000; Francis et al., 2003; Cuéllar-Padilla and Calle, 2011; Levidow et al., 2014). Numerous publications propound Participatory Action Research as a way of generating knowledge useful to local communities and to transformative food movements, all under the umbrella of sustainability (among others, Holt-Giménez and Shattuck, 2011; Cuéllar-Padilla and Calle, 2011; Putnam et al., 2014; Méndez et al., 2017; López-García et al., 2018; Calvet-Mir et al., 2018). This approach also targets ethical issues, in line with an effort to dissolve the power structures created around scientific knowledge and its monopoly over the production of “truth” (Harding, 1991; Fricker, 2007; Kinson et al., 2007; Bacon et al., 2013; Levidow et al., 2014). The so-called agroecological transition is embedded in this conceptual framework (Lamine, 2011; Calle et al., 2013; Duru, 2015; Darnhofer, 2014; Méndez et al., 2016; López-García et al., 2018). The components of social change and transformation of reality are transversal to this approach (Cuéllar-Padilla and Calle, 2011), often navigating within a vague space between research

and action (Cuéllar-Padilla and Calle, 2011; Guzmán et al., 2013; Méndez et al., 2016; López-García et al., 2018).

The epistemological justification for participatory science has gained a wide consensus, and its epistemological and methodological bases applied to agroecology have been profusely discussed in theoretical terms (Guzmán et al., 2000; Cerf, 2011; Méndez et al., 2016). The past three decades have seen the emergence of broadly used methodological approaches such as Participatory Action-Research (PAR) and Participatory Rural Appraisal (PRA). Both approaches lie on the epistemological and methodological principles of Popular Education and aim to build community empowerment through collective action-reflection processes (Freire, 1975; Patton, 2017). The former is a research methodology that combines theory, action and participation in a commitment to further the interests of exploited groups and classes through a series of techniques that combine knowledge and power analysis (Fals-Borda, 1987). The latter is a family of participatory approaches for sustainable rural development that incorporate methods to enhance the ability of rural communities to share, improve and analyse knowledge that concerns their livelihoods – and through this knowledge, to plan and develop self-determined actions (Chambers, 1994).

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The agroecological scientific literature based on empirical data on the agroecological transition is scarce (Guzmán et al., 2013; Méndez et al., 2017), and has been mostly applied at the farm-scale. Recent debates on agroecological transitions and scaling agroecology (among others: Giessman, 2016; Mier et al., 2018; Ferguson et al., 2019), have raised the scale of agroecological analysis to the food system. Meanwhile, both rural subjects and the features and logics of the (corporate) food regime that shapes their context have undergone great transformations in last decades (Borras, 2009; McMichael, 2014; Bernstein, 2017). Thus new elements of complexity on the conception of agroecological transitions and the participatory methods to support them are introduced. Thus, a more complex and renovated approach to agroecological, participatory research is needed (Ollivier et al. 2018; Magda et al. 2019).

With this article we intend to contribute to taking on these challenges. With this aim, we have compared eight case studies of participatory research in agroecology in six different countries of Europe and Latin America. Based on the analysis carried out, we aim to discuss the main learnings and challenges that emerge in the development of agroecological transitions through participatory methodologies, considering different scales, contexts and stakeholders involved.

### 1.1. Participatory research in agroecological transitions

With the emergence of the food sovereignty paradigm in the 1990s, the politico-cultural proposals of agroecology took on special importance (Holt-Giménez and Shattuck, 2011; Cuéllar-Padilla et al., 2013; McMichael, 2016; Rosset and Altieri, 2017). The issue of power and decision-making in relation to agri-food systems, explicitly denounced by the food sovereignty paradigm, found interesting answers in agroecology and in the experience it had thus far accumulated (Cuéllar-Padilla and Sevilla, 2013; Rivera-Ferré, 2018). Especially relevant was Participatory-Action Research (PAR) (Méndez et al., 2016), which built on early criticisms of rural extension (Freire, 1969, 1975), as well as some relevant methodological approaches for sustainable, participatory rural extension, namely Participatory Action-Research (Fals-Borda and Rahman, 1991), Participatory Rural Appraisal (Chambers, 1994), and Farmers' Participatory Research (Farrington and Martin, 1988).

The need for adequate methodological approaches related to power issues has been stressed in recent scientific debates on the “scaling up”, the “massification” or the “institutionalization” of agroecology (González de Molina, 2013; Parmentier, 2014; Giraldo and Rosset, 2017; Mier et al., 2018; Rivera-Ferré, 2018). The role of the state in agroecological transitions and the institutionalization of agroecology is questioned (Sanderson and Ioris, 2017; González de Molina et al., 2019), and the protagonism of peasant and food movements is found to be at stake, thus requiring to be promoted (Giraldo and Rosset, 2017; Giraldo and McCune, 2019) and often even constructed (López-García et al., 2018, 2019). But the state is not alone in posing such challenges. The transformations affecting the conditions and features of peasantry worldwide, the wide expansion of rural poverty and hunger, and the increasing complexity of the global food chain under the Corporate Food Regime (Borras, 2009; Bernstein, 2010, 2017; McMichael, 2016) have originated a diversification of the subjects of the agroecological transitions (López-García et al., 2019), articulating wide alliances among urban and rural stakeholders (Holt-Giménez and Shattuck, 2011; Giraldo and McCune, 2019; González de Molina et al., 2019; López-García and González de Molina, 2020), and also giving way to new negotiation arenas.

Therefore complex approaches to sustainability, taking into consideration the food system scale, are required. In recent years, a wider diversity of issues for PAR processes applied to agroecology have entered the corpus of English scientific literature, resulting from the effort to raise the territorial scale. These includes social, economic and political issues, as well as the collective dimension of agroecological transitions. Such issues had previously been embedded, more or less explicitly, in

the Spanish and Portuguese scientific agroecological literature that since the early 1990s was already incorporating such complexity (Hecht, 1995; Costa Gomes, 2005; Caporal et al., 2006; Sevilla, 2006; Prévost, 2019; Cuéllar-Padilla and Sevilla, 2019). Research on Participatory Guarantee Systems (Cuéllar-Padilla and Calle, 2011), short food-supply chains and local logistics network development (Guzmán et al., 2013; Bacon et al., 2014; Moragues-Faus et al., 2015; Méndez et al., 2017), the construction of farmers' and community organizations (Daniel, 2011; Bacon et al., 2013), gender inequality (Bezner-Kerr et al. 2018), or urban food policies (López-García et al., 2019) has incorporated such diversity and complexity of issues. This trend also appears to be related to a larger volume of research in territories of the Global North, and to the emergence of so-called ‘urban agroecology’ (Tornaghi and Dehaene, 2019; López-García and González de Molina, 2020).

Networks have been highlighted as a major lever within socio-technical transitions, specially regarding the dissemination of socio-technical innovations (Elzen et al., 2012; Bui et al., 2016; Magrini et al., 2019). Research into this topic has shown a weak theoretical framework to be an issue in socio-technical transitions (see e.g. Wezel et al., 2016; Duru et al., 2015; Méndez et al., 2016), which hinders the development of said processes (Sanderson and Ioris, 2017). The Multi-Level Perspective (see e.g. Levidow et al., 2013; Elzen et al., 2018; Magrini et al., 2019) has been noted as an appropriate strategy to understand and promote the up-scaling of local agroecological transition processes to regional or higher levels, and to provide an appropriate theoretical framework for the transition (Levidow et al., 2014; Sanderson and Ioris, 2017). However, such an approach doesn't provide the technical basis to work and activate real world processes with people. A combination of Multi-Level Perspective and Participatory Action-Research has been proposed as an adequate solution (Ollivier et al., 2018; López-García et al., 2018) but has not been further developed.

The complexity of such an operational approach to agroecological transitions raises the question of the participatory methodological approaches to be developed: what key elements and characteristics should these methodologies contain? What methodological challenges do we face, given the diversity of stakeholders and contexts in which agroecological transitions are taking place?

## 2. Methodology

This article emerged as a result of the comparative analysis of eight case studies that were presented and discussed in the Working Group on “Participatory and activist research”, at the VII International Congress of Agroecology, held in Córdoba, Spain, in May 2018.

A broad call for contributions was developed that ended in the selection of 16 papers to be presented and discussed in the working group. Authors were asked to systematize their case studies following the same schema: the theoretical framework that inspired their research; a description of the steps followed in the participatory methodology developed and the time frame; the main results of the process and the main conclusions. Once the articles were received by the coordinating team and discussed during the working group at the congress, 8 of the case studies were selected (see Table 1).

The cases were selected taking into account, on the one hand, that they all involved PAR processes that promoted agroecological transitions. Each case study reflects at least two of the following five stages that are typically followed in participatory processes:

*a A preliminary stage*, consisting of different actions, such as: development of the pre-diagnosis, initial negotiation, allocation of resources and defining a time frame, relationship building, identification and involvement of potentially interested actors, definition of the common goal, definition of governance structures and bodies of the process, among others. Only in one case was this stage not included, coinciding with the case that had been

**Table 1**  
Profile of the eight case studies analysed.

Project	PAR stages	Territorial context	Participants
Participative Construction of the Valladolid Food Strategy, Valladolid	a) Preliminary stage b) Participatory diagnosis and planning c) Implementation	Municipality Spain	Civil society organizations and organic farmers at the provincial level
Local Agroecological Dynamization in the Collserola Natural Park, Barcelona	a) Preliminary stage b) Participatory diagnosis and planning c) Implementation d) Evaluation	6 municipalities, Spain	Agricultural holdings within the Natural Park, civil society of 6 municipalities with land within the Park
Agroecology and PAR with Small-scale Coffee Producers, Tacuba	a) Preliminary stage b) Participatory diagnosis and planning c) Implementation d) Evaluation e) New cycle	1 municipality, El Salvador	3 coffee growers' cooperatives
Production and Exchange of Participatory Knowledge by the Community Agroecology Network, San Ramón	a) Preliminary stage b) Participatory diagnosis and planning c) Implementation d) Evaluation e) New cycle	1 municipality, Nicaragua	234 families and 12 communities of organic coffee growers An NGO
Participatory Construction of Research Projects at the Agroforestry Research Centre, Portal da Amazônia	a) Preliminary stage b) Participatory diagnosis and planning c) Implementation d) Evaluation e) New cycle	16 municipalities, Brazil	About 1200 families with structured agroforestry systems (2800 ha)
Building Farmer Protagonism in the Creation of a Farmers' Market, Goiás	a) Preliminary stage b) Participatory diagnosis and planning c) Implementation d) Evaluation	1 municipality, Brazil	Small agroecological producers in a settlement from the Agrarian Reform
Promotion of a Multi-stakeholder Network on Strategic Planning for the Agroecological Transition at the City-Region Scale, Brussels Region	a) Preliminary stage b) Participatory diagnosis and planning c) Implementation d) Evaluation	A metropolitan region, Belgium	Local social and economic stakeholders involved in setting up alternative food networks
Promotion of Networks of Production and Consumption of Organic and Local Food, Defining "Agroecologically Based Farmer Products", Santiago de Chile	a) Preliminary stage b) Participatory diagnosis and planning c) Implementation d) Evaluation	A Metropolitan Region, Chile	Networks of farmers and consumers of organic and local food

developing for the longest period of time. This seems to indicate that the preliminary stage can be diluted in long term processes in which relations with local subjects and the diagnosis are already well developed.

*b* The first stage corresponds to the participatory diagnosis of the situation and the further identification of the common goals related to the process. In this stage, all cases also include the identification and design of the actions to be developed and the elaboration of a strategic plan. Feedback activities start taking place, as well as iterative moments to repeatedly evaluate the advances.

*c* The second stage corresponds to the implementation of the established action plan. All the cases that developed this stage presented activities aimed at orienting the development of the actions and providing support, at reflecting about these actions and their results, and at supervising the effected changes and new needs that may arise.

*d* The third stage corresponds to a specific moment to evaluate and supervise all the results and the entire design, to plan iterations of selected actions, and to discuss collectively about learnings and next steps to be taken.

*e* A new cycle begins: two of the cases, long-standing ones, had initiated a second cycle of PAR, implementing the results of the first cycle. In such situations, neither the preliminary stage nor the

diagnosis were necessary, and instead they began working based on a renovated Action Plan.

On the other hand, the case studies were selected so as to together represent a diversity in terms of the following variables: (a) spatial scales (municipality, province and region), and (b) geographical contexts (Spain: urban and peri-urban; Belgium: urban and peri-urban; Matto Grosso and Amazonia in Brazil: rural; Nicaragua: rural; El Salvador: rural; and Chile: urban and peri-urban).

These criteria were established by the aforementioned working group, in which most of the authors of the paper were included. Once the selection was made, the variables and codex for comparative analytical purposes were designed in order to compare the different case studies. This codification was drawn up after an inductive process, based on the information provided by the different case studies (see Table 2).

The codification of the corresponding case study documents was carried out by the coordinating team, using the software Atlas TI. Both the variables and codex, together with the systematization of the different cases following the codification stage, were discussed and agreed upon among the different authors in a collective discussion held virtually, thus ensuring a consensus on the coding results of every case study.

This sample of cases is by no means exhaustive, nor representative of

**Table 2**

Variables and codex used in the analysis of the case studies.

Variables	Results of relevance to "participant" groups	Research team learnings	Subjects involved
Codex	<ol style="list-style-type: none"> <li>1. Public policies</li> <li>2. New food supply chains</li> <li>3. Social articulation</li> <li>4. Logistics infrastructures and knowledge</li> <li>5. Communication tools</li> <li>6. Farm-scale agroecological transition</li> <li>7. Healthy diets</li> <li>8. Food security – right to good food</li> <li>9. Gender justice</li> <li>10. Self/collective-assessment tools and knowledge</li> <li>11. Self-esteem</li> </ol>	<ol style="list-style-type: none"> <li>1. About the contexts</li> <li>2. About the process and methodological design</li> <li>3. About stakeholder involvement and participation</li> <li>4. About the role of research teams</li> <li>5. About power issues and power imbalance management</li> </ol>	<ol style="list-style-type: none"> <li>1 Research teams</li> <li>2 Peasant communities and family farmers</li> <li>3 Organic farmers</li> <li>4 Policy makers</li> <li>5 NGOs</li> <li>6 Grassroots organizations</li> </ol>

**Table 3**

Main results and lessons learnt from the eight case studies.

Case study code, location, scale and context	Results of relevance to "participant" groups	Research team learnings	Subjects involved
C1. Valladolid, Spain; region, Global North	<ol style="list-style-type: none"> <li>Public policies</li> <li>New food supply chains</li> <li>Social articulation</li> <li>Logistics infrastructures and knowledge</li> </ol>	<ol style="list-style-type: none"> <li>1. About the contexts</li> <li>3. About stakeholder involvement and participation</li> <li>4. About the role of research teams</li> <li>5. About power issues and power imbalance management</li> </ol>	<ol style="list-style-type: none"> <li>Organic farmers</li> <li>Policy makers</li> <li>NGOs</li> <li>Grassroots organizations</li> </ol>
C2. Collserola, Barcelona, Spain; region; Global North	<ol style="list-style-type: none"> <li>Public policies</li> <li>Social articulation</li> <li>Communication tools</li> </ol>	<ol style="list-style-type: none"> <li>3. About stakeholder involvement and participation</li> <li>5. About power issues and power imbalance management</li> </ol>	<ol style="list-style-type: none"> <li>Organic farmers</li> <li>Policy makers</li> <li>NGOs</li> </ol>
C3. Tacuba, El Salvador; region; Global South	<ol style="list-style-type: none"> <li>New food supply chains</li> <li>Social articulation</li> <li>Farm-scale agroecological transitions</li> </ol>	<ol style="list-style-type: none"> <li>2. About the process and methodological design</li> <li>3. About stakeholder involvement and participation</li> </ol>	<ol style="list-style-type: none"> <li>Peasant communities and family farmers</li> <li>NGOs</li> <li>Grassroots organizations</li> </ol>
C4. San Ramón, Nicaragua; municipality; Global South	<ol style="list-style-type: none"> <li>Agroecological transition in farms</li> <li>Healthy diets</li> <li>Food security – right to good food</li> <li>Gender justice</li> </ol>	<ol style="list-style-type: none"> <li>4. About the role of research teams</li> <li>5. About power issues and power imbalance management</li> </ol>	
C5. Portal da Amazônia, Brazil; region; Global South	<ol style="list-style-type: none"> <li>Public policies</li> <li>Farm-scale agroecological transitions</li> </ol>	<ol style="list-style-type: none"> <li>2. About the process and methodological design</li> <li>3. About stakeholder involvement and participation</li> <li>4. About the role of research teams</li> <li>5. About power issues and power imbalance management</li> </ol>	<ol style="list-style-type: none"> <li>Research teams</li> <li>Peasant communities and family farmers</li> </ol>
C6. Goiás, Brazil; municipality; Global South	<ol style="list-style-type: none"> <li>Public policies</li> <li>New food supply chains</li> <li>Farm-scale agroecological transitions</li> <li>Food security – right to good food</li> </ol>	<ol style="list-style-type: none"> <li>2. About the process and methodological design</li> <li>3. About stakeholder involvement and participation</li> <li>4. About the role of research teams</li> <li>5. About power issues and power imbalance management</li> </ol>	<ol style="list-style-type: none"> <li>Peasant communities and family farmers</li> <li>Policy makers</li> <li>NGOs</li> <li>Grassroots organizations</li> </ol>
C7. Brussels Region, Belgium; region; Global North	<ol style="list-style-type: none"> <li>Social articulation</li> <li>Logistics infrastructures and knowledge</li> <li>Agroecological transition in farms</li> <li>Food security – right to good food</li> <li>Self/collective-assessment tools and knowledge</li> </ol>	<ol style="list-style-type: none"> <li>2. About the process and methodological design</li> <li>3. About stakeholder involvement and participation</li> <li>4. About the role of research teams</li> <li>5. About power issues and power imbalance management</li> </ol>	<ol style="list-style-type: none"> <li>Research teams</li> <li>Policy makers</li> <li>NGOs</li> <li>Grassroots organizations</li> </ol>
C8. Santiago de Chile Metropolitan Area, Chile; region; Global South	<ol style="list-style-type: none"> <li>New food supply chains</li> <li>Self/collective-assessment tools and knowledge</li> <li>Self-esteem</li> </ol>	<ol style="list-style-type: none"> <li>2. About the process and methodological design</li> <li>3. About stakeholder involvement and participation</li> </ol>	<ol style="list-style-type: none"> <li>Organic farmers</li> <li>NGOs</li> <li>Grassroots organizations</li> </ol>

all possible contexts and designs, but it is sufficiently diverse to draw lessons concerning the operationalization of participatory methodologies in the construction of agroecological transition processes, in different contexts and territories.

### 3. Results

The different types of results obtained from the analysis of the case

studies are summarized in [Table 3](#).

### 4. Results of relevance to participating actors

The results that are relevant to participants fall under three main groups, namely: material results, social-political results, and epistemological results. Each one of these were codified and systematized based on the documentation contributed for each case.

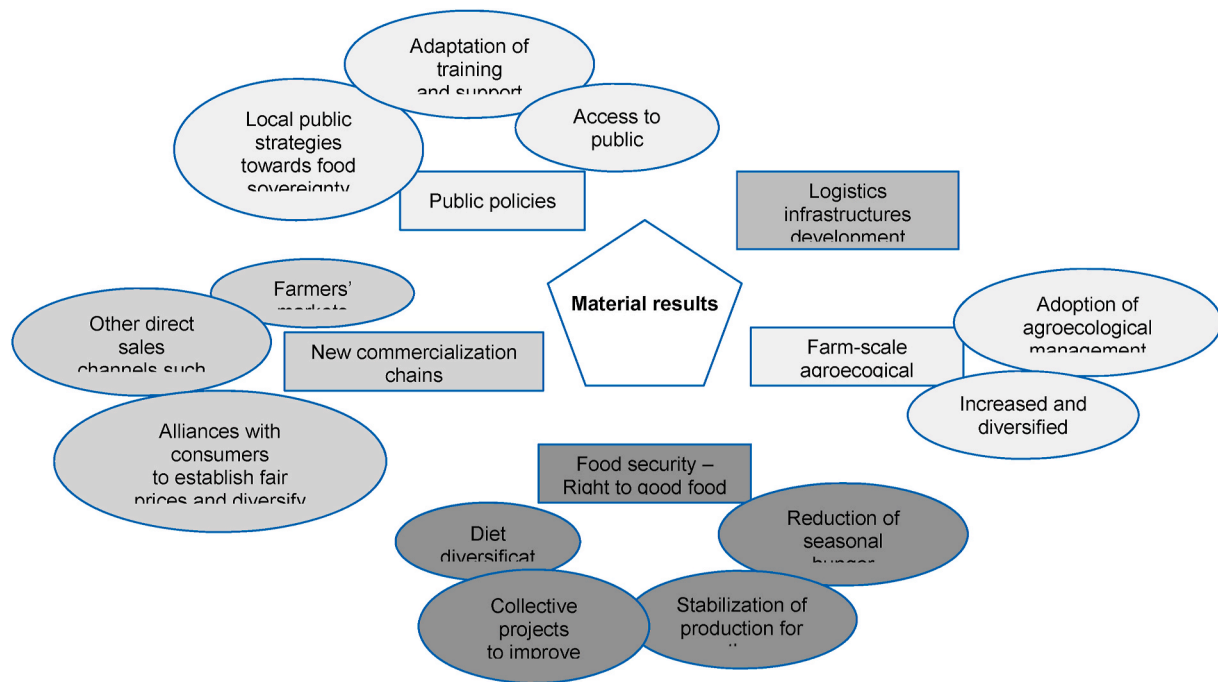


Fig. 1. Types of material results identified in the cases studied.

Material results correspond to concrete and often physical solutions to identified problems, or the materialization of identified collective dreams or desires. The different types of material results identified are shown in Fig. 1

In this group we find, by way of example: (a) the development of direct-sales structures and infrastructures (such as farmers' markets) that provide an outlet for agroecological produce while providing a space for direct contact between producers and consumers; (b) the adaptation or creation of public policies that give support to producers and short food supply chains, whether existing or under development (for example, adapted training or financial programmes for small-scale producers, oriented at agroecological management and short food supply chains); (c) logistic and distribution infrastructure in complex food relocation processes (for example, supplying an institutional market or public food purchase programmes, facilitated by producers coming together in a coordinated manner); (d) the development and learning of agroecological practices and of processes of productive diversification; or (e) concrete tools or projects to guarantee production and income stabilisation for farmers and access to healthy food for urban consumers

in situations of social exclusion.

All the cases presented concrete results in this area. However, the cases from rural contexts were more oriented towards farmers and their needs, while the cases from urban contexts were more oriented towards multi-actor processes that increased both the complexity and diversity of material results. That is to say, for instance, that the farm-scale transition was mainly addressed in rural processes, while it had very little presence in urban ones. Also, the issue of the right to food and food security mainly surfaced in rural processes, while it received little attention in urban processes.

In relation to the scale, it is worth highlighting that the smaller the scale was, the more present were issues related to new food supply chains, food security and right to food, logistics infrastructures, and farm-scale transitions. Scale was not a key issue when developing public policies. Most of the material outputs from participatory agroecological transition processes occurred at the municipal or metropolitan scales.

The second type of results are of a social nature Fig. 2. Results in this group were not identified in all the cases.

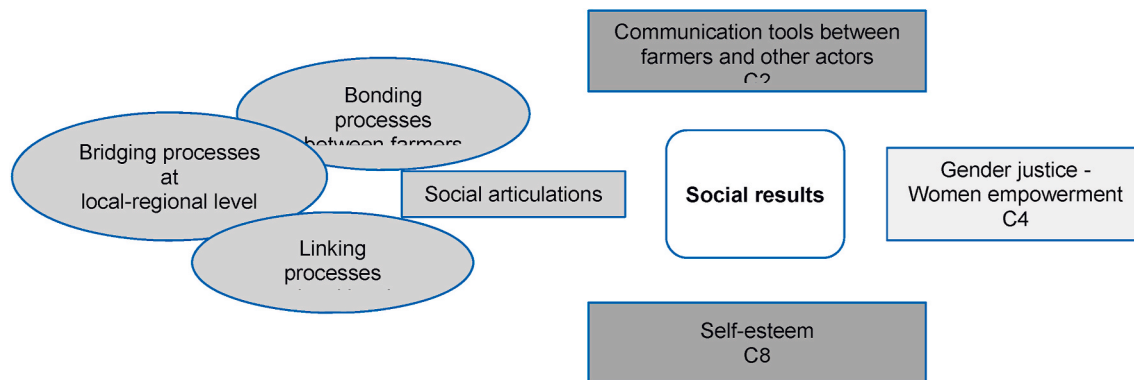


Fig. 2. Social results identified in the case studies.

The most relevant results are the promotion and strengthening of social cohesion within territories – among peers of stakeholders and also among stakeholders with different levels of social power. Thus, an intrinsic result of these processes is the strengthening of the social fabric at the local or regional level (depending on the scale of impact), through both horizontal and vertical networks. In some cases, it touches public policies and institutions. This is identified both in rural and urban contexts.

Other social outcomes that were reported in only a few cases involve communication tools that facilitate the links between farmers and other actors such as consumers; gender justice in the form of projects aimed at empowering women at the community level; or increasing the self-esteem of the stakeholders involved, specially farmers, in processes that generate autonomy and decision-making capacity.

Most of the social results identified in the cases studied occurred at the municipal and metropolitan scales, and in urban contexts.

The last type of prominent results are of an epistemological nature **Fig. 3**. That is to say, these processes generate the collective construction of useful knowledge. Again, this type of results were not identified in all the cases studied.

The scale was not an important factor in determining this type of results. Most of the cases highlighting these outputs took place in urban contexts.

#### 4.1. Learnings identified by the research teams

Research teams identified interesting learnings in four different areas: (a) about the process and the methodological design (C3; C4; C5; C6; C7; C8); (b) about the involvement and participation of stakeholders (C1; C2; C3; C4; C5; C6; C7; C8); (c) about the role of the research team (C1; C3; C4; C5; C6; C7); and (d) about power issues and power imbalance management (C1; C2; C3; C4; C5; C7).

Delving deeper in the design of both the processes and the methodologies developed, we find, first, that the use of mixed research methods, combining quantitative and qualitative techniques, was perceived to be an interesting support instrument in these processes. Second, flexible planning of the research process, enabling the respect of social times, as well as allowing for emergencies and unforeseen events, was in turn brought up as a key resource. Third, importance was given to moments of systematization and participatory evaluation – at each stage of the process – in order to realize and develop the empowering and emancipatory pedagogical potential of the methodology itself. And fourth, the iteration of activities was also proposed as a valuable resource that reinforces the appropriation of the process by the participating

stakeholders.

Also highlighted was the need to assume responsibility for the process and the stakeholders involved in it, beyond a time-limited project. This implies: a necessary immersion in the field in order to create trust; the continued presence of the research team in the territory, or of figures that permanently establish a link between the actors involved and the process; a dedication to “taking care” of the process, in the sense of safeguarding the memory of the initial objectives agreed, as well as of the goals and common vision constructed along the way; and the inclusion of confidence building moments and spaces, together with accountability mechanisms, within a specific design. The importance of incorporating technical assistance or extension activities in order to engage farmers in a committed way was also highlighted.

With respect to the participation and involvement of stakeholders, the case studies point at several key lessons. First, intergenerational collaboration is a key element in guaranteeing the long-term impacts of these processes. Second, agrarian stakeholders present important specificities that must be taken into account in order to guarantee their participation, as they might feel uncomfortable in mixed contexts (when dealing with non agrarian stakeholders). The experiences studied show that it is important to incorporate moments and elements into the process that enable farmers to overcome viewing themselves as the object of research, and to collectively build their social place as political subjects, in a Freirean sense (Freire, 1975). Also, concrete objectives and results that relate to the improvement of their profits and incomes were identified as a key issue to motivate their involvement. In this sense, and taking into consideration other stakeholders, the process must be designed to achieve in its early stages short-term and simple actions and results that are of significance to participants – and that are perceived by the community. This in turn lays the ground for them to move from these “partial successes” to more complex actions and moments of reflection. In addition to this, symbolic results that reinforce local struggles and shared identities are considered an appropriate device for fostering processes. To collectively build new narratives that are more open to agroecological transitions can be a key element.

Due to this complexity, the case studies highlight the importance of choosing well the partners with whom this type of research is carried out. This determines to a large extent the type of results obtained. In the cases that went hand in hand with public policies, it clearly emerged that when aiming to involve local institutions in such a process, the scale of the territory matters. That is, the smaller the scale, the easier it will be to get (local) public administrations engaged in the process. The scale of the processes was also a sensitive variable affecting the ways in which local stakeholders engaged. As the territorial scale (and therefore the

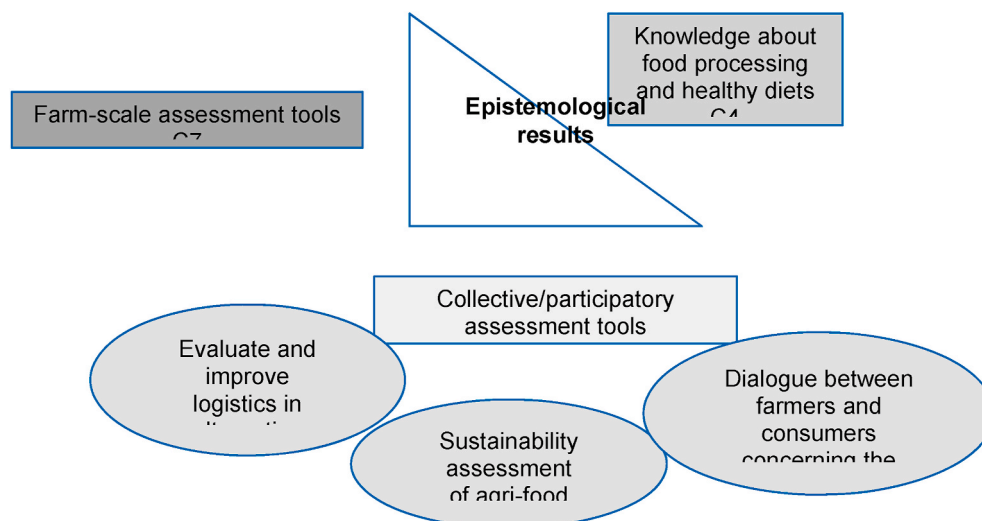


Fig. 3. Epistemological results identified in the case studies.

number of people and organizations involved) grows, deep pedagogic processes become more difficult, and the participation of local subjects tends to be reduced to deliberative, often just consultative activities. Some cases developed different strategies to keep the pedagogic potential of action-reflection processes in broad territories. For example, through the creation of territorial subgroups (Collserola), or by focusing the calls to participatory activities on representatives of associations or other institutions rather than on individuals (Portal da Amazônia). These solutions represent a positional, structural approach for encompassing the diversity of stakeholders present in a given territory.

Delving deeper into the role of the research team in such processes, several lessons are found. In the formerly mentioned contexts that are socially diverse and in which the stakeholders participating in the research have different and even opposed positions with respect to agroecology, mediation is a key element that should be incorporated into the role of the research team. It is not evident for the requirements and capacities of mediation to be present within this team. In rural contexts, the dialogue between academia and popular knowledge proves to be complicated, due to divergent mindsets and interests. In this regard, tensions were identified concerning several aspects: between the different aesthetics and shapes of each type of knowledge; between the different time frames and rhythms of each sphere; and also between differences in expected or sought results. Therefore, capacities and abilities to foster dialogue between knowledges (following Santos' concept, 2018) seem to be important assets to be sought in academic and research teams. In this regard, the cases identified resistance to opening up academic institutions to non-academic social actors – stakeholders with whom to define and diversify research agendas. This indicates that internal work regarding academic structures and procedures could be another interesting role to incorporate into the research team. Additionally, all the cases reviewed raised the issue of leadership management, together with the management of the reconfigurations of social relations that result from consensus building and social empowerment processes.

In relation to the management of power relations in agroecological transition processes, there are many interesting learnings that indicate its importance and the specificities it requires. There is a general consensus as to the importance of the steering group. It should be composed of like-minded stakeholders that share a similar agroecological perspective, among whom a balanced contextual level of capacity for action should exist. In this regard, several studies have highlighted the importance of incorporating farmers into decision-making and process design. This entails taking care to adapt these processes to the farmers' language and aesthetics, and ensuring these spaces do not reproduce unmanaged power relations. Along this line, and especially in contexts of relative marginality of the agricultural sector, several cases point out the importance of establishing exclusive spaces for farmers, in parallel with mixed social spaces. The aim is to manage existing power imbalances between the rural and urban spheres, between agriculture and other sectors. The issue of amplifying marginalized voices, so as to enable them to be heard at the same level as the others, is generally perceived to require attention.

#### 4.2. Stakeholders involved

The main stakeholders involved in the agroecological transition processes systematized in this study were: farmers, more or less organized; civil society, organized around values and principles such as sustainability and social justice (grassroots movements, NGOs); and some institutional stakeholders such as research groups and policy makers. When research groups were involved, individuals often acted without the support of their institutions, instead forming more or less isolated research groups nested in bigger institutions, with activist profiles related to social justice, food sovereignty or other sustainability causes.

In terms of the diversity of stakeholders involved, participation

varied from just two different types of stakeholders in some processes, to at least four different types being engaged in more complex processes. It is noteworthy that policy makers were present only in the more complex processes.

It also stands out that farmers were central stakeholders in rural processes, while their presence and centrality was diluted in urban contexts (even disappearing in one of the urban cases). In general, agroecological transition processes in urban contexts were more complex in terms of stakeholders and social processes than their rural counterparts.

The scale of the process was not directly related to its level of complexity. Some municipal processes involved very different stakeholders while others did the opposite. The same occurred at with regional-scale processes. However, a relationship was found between the scale and the presence of policy makers. This type of stakeholder is more easily involved in agroecological transition processes developed at the municipal scale than at larger scales.

#### 4.3. Discussion. Lessons from science with people applied to the agroecological transition

The comparative analysis of the eight case studies brings to light key elements of participatory processes oriented at the agroecological transition. The discussion of these findings is organized into three parts: (a) territorial scales and geographical contexts; (b) issues covered and transition paths developed; and (c) power management and subjects involved. These three categories emerged in the initial literature review, which centred its regard on the changes occurring in recent decades both in the global agri-food sector (differentiation of peasant and farmer profiles and economic strategies, and changes in local and global food chains) and in the conception of the agroecological transition (raising the scale of analysis to the food system level, and a stronger focus on social, economic and political aspects).

#### 4.4. Territorial scales and geographical contexts

The cases analysed are built at different scales, from the municipal to the regional, passing through the metropolitan scale. Larger territorial scales are supposed to require more extensive time periods to launch PAR processes (Herrador et al., 2012; López-García et al., 2019). However, the results indicate that in each case study the objectives were adjusted to available time and resources (as suggested by Chambers, 1994b), or they focused on specific groups within wider communities. For instance, most processes in complex situations limited their objectives and actions to specific activities or tasks: developing a common research agenda in Portal da Amazônia and the Brussels region, building a local food strategy in Valladolid, or creating new food supply chains in Tacuba. The municipal project of Goiás and the projects in Santiago de Chile and Collserola (which each focused on a small groups of farmers, despite covering a vast and highly populated territory) developed a deeper approach of action-reflection-action and more complex 'itineraries of results'.

The cases we denominated as 'urban' (Santiago de Chile, Brussels, Valladolid and Collserola) were actually located in highly urbanized peripheral land or within metropolitan regions. All of them were based around cities in which the food was sold, and include, at least formally, farmers located in the hinterland of the cities and more often in metropolitan locations. Rather than a strictly 'urban' model, the City-Region Food System approach would be more adequate for agroecological transitions in such contexts (Vaarst et al., 2018; Blay-Palmer et al., 2018). In fact, urban food policies and urban agroecologies lack a territorially extended approach that links the city and the countryside. Such a bias limits the sustainability potential of agroecological transitions in urban settings, limiting their ability to adopt a comprehensive perspective of the food system that includes both upstream and downstream processes (López-García and González de Molina, 2020).

Processes occurring in urban contexts (Brussels, Valladolid, Collserola, Santiago de Chile) were promoted by local institutions (including activist research groups) in order to build or strengthen agroecological distribution networks. Most of them included policy makers in the processes, in a clear case of agroecological policy institutionalization (Van Dyck et al., 2019). The case of Santiago de Chile is the exception that does not include these stakeholders. This could be a consequence of the initial stages of its agroecological transition (Guzmán et al., 2013) and of the weak position food movements and farmers had in the local scene and its politics (López-García et al., 2019). In such situations it seems that there is a collective subject for agroecological transitions to be constructed (López-García and González de Molina, 2020) (we will come back to this question later).

The rural-urban axis of differentiation could be related to greater importance being given to agronomic issues, such as self-sufficiency and food security, in rural locations and in processes involving peasant and rural communities, since food poverty and hunger is mainly a rural phenomenon (Borras, 2009; FAO, 2020). This raises important questions regarding the need for access to markets on behalf of rural and peasant communities (Mier et al., 2018): self-sufficiency approaches to agroecological farming practices don't seem capable of moving the rural poor out of poverty (Bernstein, 2010), but the development of local markets and alternative food supply chains could provide a way to strengthen the so-called 'agroecological peasantries' through processes of food sovereignty and agroecological out-scaling (McMichael, 2014; Mier et al., 2018; Giraldo and McCune, 2019). In fact, in the cases studied occurring in rural contexts, peasants wanted better access to markets as a means of escaping rural poverty and hunger, even if such markets were international (as in the case of Tacuba). It is not yet clear if this entails moving a step further in the commoditization of peasantry or if it instead represents repeasantization (Van der Ploeg, 2010; Bernstein, 2010). The methodological implications of this debate should be further developed.

For the moment, we can affirm that rural agroecological transitions are often linked to avoiding food insecurity (Putnam et al., 2014; Bezner-Kerr et al., 2018); while in urban locations the processes focus instead on the search for more added value for its produces, and on reconstructing "rural power" (Bell et al., 2010). These differences in the contexts, and in the concepts applicable to each of them, lead to very different methodological strategies being applied in each case. In rural contexts the focus is on organizing training actions, field visits and farming extension. In urban locations there is greater focus on meetings and participatory workshops in order to develop a multi-stakeholder agenda for joint work – whether related to the development of alternative food networks or to the construction of local food policies. In urban contexts there is a strong presence of NGOs and grassroots organizations that could be identified with what has been called 'urban agroecology' (Tornaghi and Dehaene, 2019; Cohen and Ehgerer, 2020), while peasants and farmers lose centrality.

In all case studies we found multi-stakeholder alliances, especially between like-minded actors such as grassroots movements, NGOs and peasant/farmer groups (in rural contexts). This is consistent with the "transformative agroecology" pointed out by many authors (Levidow et al., 2014; Mier et al., 2018; Anderson et al., 2018; Tornaghi and Dehaene, 2019).

#### 4.5. Thematic route maps and transition paths

Cerf (2011) affirms that participatory research produces two types of knowledge: one "situated" and useful for the communities or subjects "participating" in the research, and the other of a scientific nature and useful to researchers. Situated knowledge generated during the process becomes key to increasing the involvement of 'participants' in PAR processes, and to activating the spiral of action-reflection-action that might lead to community empowerment through the Freirean 'concientização' (Freire, 1975; Kindon et al., 2007; Méndez et al., 2017).

Nevertheless, the results obtained vary from case to case – and yet the differentiation remains between urban and rural settings.

Results are important in PAR processes in agroecology, but people don't always seek the same results in agroecological transitions; and they do not always begin at Gliessman's (2016) Level 1 (external input reduction in farming). In all contexts studied, the development of new marketing chains occurred, mostly involving the setting up of alliances between producer grassroots organizations and consumer groups, even when located in foreign countries such as was the case for Tacuba's coffee. The specific food distribution channels and infrastructures available for local food and farmer groups have been identified as being a major key driver in fostering agroecological transitions (Guzmán et al., 2013; Magrini et al., 2019). However, as discussed above, urban processes are focused on generating food policies and multi-actor networks, together with improving the sustainability of food systems and developing new sustainable approaches for economic flows and territorial planning. Meanwhile, in rural processes there is a greater emphasis is given to food security, self-sufficiency and overcoming poverty, together with establishing alliances between researchers and rural communities to improve rural livelihoods.

Guzmán et al. (2013) talk about the 'pre-existing degree of development of agroecological transitions' as a measure to be taken when designing methodological PAR arrangements in each given context. But the diversity and fragmentation of the global food system's local configurations (Bernstein, 2010, 2017) makes it difficult to adopt linear approaches to reality. Urban cases such as the Spanish ones do not search for new farming practices (Levels 1–3 of Gliessman's scheme), but for horizontal organization and public support for existing farmers to survive in very competitive markets (sociocultural and economic dimension, and political dimension in the Calle et al., 2013, model). Coffee growers in Tacuba reached Level 4 but then turned back to Level 3 or 2 when export markets became harder. Even though there is a common trend to strengthen communities and re-configure market relations towards alternative, local food networks, there are other important ingredients to the equation that may also be addressed, such as 'participant' profiles or the need to work on the symbolic and emotional context of the transition (Méndez et al., 2017; López-García et al., 2019). A focus on transitions as an open-ended process for achieving growing levels of sustainability in food systems (Magda et al., 2019), in which the 'itineraries of results' might follow very diverse paths (López-García et al., 2019), seems to be more adequate for adapting PAR approaches to the differentiated situations of farmers and rural communities in the current globalized food system. It also seems better adapted to address the hybrid and changing strategies of small and/or organic farms to keep their economic viability (Darnhofer, 2014).

The materiality of PAR processes in agroecology requires for researchers to adopt mixed profiles in a way that enhances the construction of both action (achieving results with significance for 'participants') and reflection, within action-reflection-action spirals (Kindon et al., 2007; Guzmán et al., 2013). Hybrid scientific profiles and multi-disciplinary teams might fulfil the demands of local 'participants' better than pure agronomist or sociologist teams, thus constructing the transdisciplinarity of agroecology (Méndez et al., 2016).

#### 4.6. Subjects in the transition and social power structures

Interesting differences were identified in the interrelation of the geographical contexts and the type of subjects involved in the case studies. Those cases that developed in rural settings (the cases of Nicaragua and Brazil, fundamentally), focused on a collective or community approach, and relied on strong, structured and well-defined organizations. In urban cases, the concept of "community" lost its meaning or took on a much more lax meaning than in rural contexts. The farming sector lost centrality and the processes embraced a greater diversity of stakeholders than in rural settings. In the latter we observe that



peasants, farmers and/or rural communities show a clear protagonism in PAR processes, although actions aimed at establishing links with urban stakeholders exist. This may be linked to the shift in the composition and nature of the agrarian work force worldwide, which could be more violently expressed in the Global North through depeasantization (Bernstein 2010, 2017). It may also be linked to the strength of rural stakeholders in contrasts to the weakness of farmer movements in the deagrarianized and highly urbanized scenario of urban contexts (common in the Global North) (Mier et al., 2018; López-García et al., 2019).

In urban contexts, agroecological transition processes are developed with the participation of a diversity of actors, including deeply conventional stakeholders and alternative non-agricultural stakeholders that are connected to food consumption or urban social movements, together with other stakeholders that are closely linked to agroecological movements. This reflects the emphasis that some agroecologies from the Global North place on alliances (Holt-Giménez and Shattuck, 2011; Levindow et al., 2014), especially with urban and non-agricultural stakeholders. In urban contexts, farmers acting as subjects of the transition fit categories such as organic family farmers or even small organic enterprises, but the leaders of the transitions observed in the case studies analysed have proven to be local (urban) food movements and administrations. This raises new questions: is there an emergence of urban agroecology in deagrarianized contexts, or rather is agroecology in such contexts an urban movement trying to build up its subject around the so-called ‘peasant agroecology’ (Giraldo and McCune, 2019). In contrast, the rural contexts emphasize agroecological out-scaling, by strengthening the capacity of peasant and rural organizations to multiply and territorialize themselves (Mier et al., 2018; Giraldo and McCune, 2019).

Farmers do not appear as a self-organized collective of actors directly committed to agroecology at the beginning of the process. PAR methodologies showed a strong potential to engage such actors in the transition, and even to establish them as leading groups in it (for example, the neighbours in Valladolid and Collserola, or the rural community in Goiás). The most involved groups are not always the ‘agroecological peasantry’ that is supposed to be the avant-garde in agroecological transitions overall (Mier et al., 2018; Giraldo and McCune, 2019), but often a large diversity of groups such as NGOs, local governments and especially researchers themselves.

Significantly, in contexts where agrarian stakeholders are present, farmers and/or rural communities gradually transform their identities, organizational forms and survival strategies. In San Ramón (Nicaragua) and Goiás (Brazil) there was an evolution from self-sufficiency to self-organization and development of direct marketing channels. In Tacuba (El Salvador) the shift was from conventional to organic farming. In Santiago de Chile small organic farmers developed a collective identity around ‘peasant agroecology’. And in Collserola (Spain) organic farmers developed a collective identity to demand more public support for gaining access to payments for ecosystem services.

The diversification of stakeholders raises ethical and epistemological questions regarding the position of researchers. They are supposed to accompany local subjects in developing their potential while immersing themselves in the territory and its problematics (Chambers, 1994a; Kindon et al., 2007; Méndez et al., 2017). Reflections about the role of researchers come together in most of the cases analysed to highlight the unbalanced power relations between researchers and the objects of research. Researchers are clearly positioned in favour of agroecology, as an exercise of scholar activism or activist research (Cancian, 1993; Edelman, 2008), but thus assume a position of power that might influence the orientation of the process, and then the divergence of interests between researchers and ‘participants’ becomes a key issue to work on (Cancian, 1993; Edelman, 2008).

Despite this, we found there to be awareness about a key success factor for PAR in agroecological transitions: to listen to the needs of the people, to promote reflection, and through it, to empower local subjects (Freire, 1975; Kindon et al., 2007; Méndez et al., 2017). Most of the

cases focused their processes on strengthening local communities so as to enable them to pose their own questions and seek their own answers, beyond the professional interests of researchers (Freire, 1975; Patton, 2017). The protagonism of local stakeholders in agroecological transitions was not an *a priori* condition in the cases studied, but rather appears to have been constructed through PAR. In fact, in almost all the cases studied (with the exception of those in Nicaragua and El Salvador, which started with the thrust of strong peasant and farmer organizations), PAR processes were oriented towards creating a collective subject – often quite heterogeneous – capable of leading the transitions (López-García et al., 2018; López-García and González de Molina, 2020). In some cases (Valladolid, Collserola and Santiago de Chile), located in metropolitan contexts, explicit methodological decisions were taken in order to promote the protagonism of farmers’ groups – through the creation of exclusive (non-mixed) spaces for farmers to enhance their empowerment processes. Such a proposal is convergent with the methodological suggestions made by feminist agroecologists for the empowerment of women in rural communities and agroecological movements (Siliprandi, 2010; Khadse, 2017) – in so far as farmers are considered, in some situations, as forming a marginal social-economic group even in rural locations (Kindon et al., 2007; Schattman et al., 2015; López-García et al., 2019). Nevertheless, in most of the cases the process advanced in the direction of forming a heterogeneous subjects for the transition. This was so even in the case of Tacuba, since the solution to low prices and low income came about through setting up alliances with solidarity NGOs located in importer countries (in the Global North).

The categories used when referring to ‘participants’ who produce food deserve a specific comment, as researchers used diverse and heterogeneous concepts in the different case studies. This presents links with relevant discussions in the arena of political economy (see discussions between Bernstein, McMichael and others in the Journal of Peasant Studies). In most of our cases (Valladolid, Collserola, Brussels, Portal da Amazônia, and Santiago de Chile) the category of ‘peasant’ was not used to refer to participants, but rather ‘farmers’. In other occasions the term ‘peasant’ was instead used to utter processes and networks, or to differentiate ways of producing food (often in opposition to ‘commoditized organic food’). This contrasts with some authors who present peasants or peasantries as core profiles for leading agroecological transitions and agroecological scaling (Van der Ploeg, 2010; Mier et al., 2018; Giraldo and McCune, 2019; Fergusson et al., 2019). Regarding the cases analysed, ‘peasantries’ might be seen in PAR processes for agroecological transition as a political rather than as an analytical category, useful in constructing symbolic identities and unified (food sovereignty) movements that bring together a wide array of class and political divisions that exist within the agricultural and rural workforce worldwide (Edelman, 2009; McMichael, 2014; Bernstein, 2017). This raises new questions concerning the differences between urban and rural contexts, given that in some deagrarianized contexts, specially in metropolitan environments, ‘peasant’ and ‘peasantries’ are not used, not even as a political category.

#### 4.7. Final remarks

The case studies present a diversity of results, learnings and social fabrics, despite having stemmed from a common methodological and theoretical framework and having shared similar goals – essentially to trigger agroecological transitions. These differences are related to the territorial scales of research, the different features of the geographical context (following the urban/rural axis that translates into deagrarianized/agrarian contexts), and the diversity of stakeholders included in each process. We can thus state that there are different ways of approaching reality, within the common framework of participatory action research (PAR) to generate agroecological transition processes. Such diverse approaches address and incorporate the different profiles found within the agricultural sector worldwide and the changes

affecting them in recent decades: growing urbanization of the population, expansion of rural poverty, differentiation of farming profiles, generalization of the commoditization of subsistence agriculture and farming practices, and economic strategies (including marketing strategies) among farmers and peasants.

Two types of agroecology that emerged from the discussion could inform the application of PAR approaches to agroecological transitions in different geographical contexts. They could be described in terms of the actors involved and the type of results expected by participants. On the one hand, a 'rural/agrarian context agroecology', characterised by a stronger focus on farming practices and on-farm transitions in order to address food insecurity, a marginal access to markets and added value, a clear protagonism of farmers and peasant communities, and the common leadership or support of farmers or community organizations. And on the other hand, an 'urban/deagrarianized context agroecology', mainly developed in urban or metropolitan settings, led or strongly supported by urban actors but involving urban and rural stakeholders within a determined City-Region Food System, which includes a wide diversity of stakeholders and tries to build the protagonism of (usually organic) farmers, and aims at scaling agroecology through the development of local food networks and policies. Both agroecologies seem to focus on achieving Levels 4 (connection between producers and consumers) and 5 (building a new global food system) of [Gliessman's \(2016\)](#) scheme for agroecological transitions, as well as on the construction of new political subjects to promote and lead them. Both agroecologies present elements of the five different dimensions of the agroecological transition, following the proposal by [Calle et al. \(2013\)](#).

Thus, agroecological transitions cannot be easily embarked on through linear approaches, especially when applied to scales of analysis larger than the farm. Instead, the large degree of complexity found in the analysed case studies points towards the adoption of complex models that allow processes to begin at different levels/dimensions of the transition spiral, since the motives for people to get involved are diverse. We are thus drawing a complex, open-ended process in which the transitions can follow different paths to achieve higher degrees of social and ecological sustainability. Such a viewpoint opens the door for the transitions to involve very diverse actors in very diverse contexts and actions, trying to engage them in action-reflection-action processes to create new collective subjects. For situations in which the agricultural fabric is not strong nor strongly committed to agroecology (as was the case in most of the projects here studied), the subjects of the transitions are not given *a priori*, but are to be constructed.

Following [Chambers' \(1994b:1449\)](#) classic reflections on Participatory Rural Appraisal, we could say about PAR applied to agroecological transitions that "as it is emerging, it is experiential, not metaphysical. Theory has been induced from practice, from what is found to work, not deduced from propositions. Good performance has been sought through empiricism, diversity, improvisation and personal responsibility." The challenge of embracing open-ended processes is key to adapting scientific knowledge in order to be operative at generating practical knowledge in complex situations and with complex subjects. This is especially difficult when dealing with agrarian issues and actors; situations in which the power imbalances stemming from the divides that exist between academia/stakeholders, rural/urban, and farmers/consumers are to be taken into account and managed.

The risk in deagrarianized/urban contexts of not considering farmers as a central stakeholder, and disregarding their needs and specificities, is high. And so is the risk of losing these key actors when the deagrarianization process advances until its ultimate consequences.

#### Credit author statement

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