Chapter 6. Participatory Action Research initiatives to generate innovations towards a sustainable agriculture: a case study in Southern Spain

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Abstract

Participatory Action Research (PAR) is a methodology consisting of research and in parallel a process of social intervention. It offers an analysis of reality as a form of knowledge and awareness by the people themselves who, through this social intervention process, become active and leading subjects in a project for the development and transformation of their immediate surroundings and reality. In Andalusia, between 2005 and 2008, we conducted a PAR process with groups of farmers and consumers, in order to solve rural development problems generated by a compulsory organic certification system. Basically, these farmers and consumers were opposing a system that was not created for the small- and medium-sized producers, and that was generating their exclusion because of its costs and bureaucratic structure. Instead of applying a subsidy policy, the regional government with the Instituto de Sociología y Estudios Campesinos - ISEC (Córdoba University) proposed a more creative solution to the peasant groups. We invited them to get involved in a process where, collectively, the solution to this problem would be explored and solved. This chapter reports on this PAR process, based on the comparison of three territorial situations. We reflect on the learning process that emerged and on the social forces at play in the implementation of a guarantee system.

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1. By way of introduction: the need for alternative approaches to conventional science

The analysis of problems related to natural resource management that has been done in accordance with the standards of normal science\(^3\) has often marginalised, if not ignored, non-scientific knowledge. It has tended to fragment reality and divide it into agricultural- and forestry-related technical disciplines, which are rarely related to the natural sciences. Indeed, in all phenomena related to natural resources, it has ignored the importance, in practical terms, of social, cultural, environmental and political contexts. These “extra-natural” conditions differ from one reality to another and from one time period to another. Therefore, the theories that are elaborated to explain technical-productive phenomena can hardly be universal and universalised (Guzmán et al. 2000).

In this sense, when the phenomena and realities are studied as isolated elements, they lack realism. Conversely, when they respond to a dense network of relationships, in constant evolution, they might be closer to reality. This goes not only for natural or ecosystemic elements, but also when interactions among people, creating social and cultural identities, are concerned. Noorgard (1994) called this idea the co-evolution between cultural and environmental systems\(^4\).

If one recognises the complex nature of reality, scientific knowledge cannot assume a closed and exact truth; instead, it responds to a scale of degrees of accuracy and closeness to reality, with errors, uncertainty and sometimes disorder. Therefore, one must not conceive a framework of knowledge superior to others when reality is studied in practice, but acknowledge the need for disciplinary and epistemological diversity (Garrido Peña, 1993: 4), recognising the advantages of multivalent logics and their pluralism (Garrido Peña, 1996: 246-261)\(^5\).

It is increasingly clear that conventional science has several limitations with regard to finding answers to the issues raised by sustainability in the agrarian field. The green revolution and modernisation processes have eroded the local knowledge and practices that were the fruit of a co-evolution between human societies and the ecological environment (Carson, 1964; Pimentel y Pimentel, 1979; Toledo and González de Molina, 2007). The paradigm that has sought to break with this logic of normal science separate from other sources of knowledge

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\(^3\) We understand “normal science” on the basis of the writings of authors like Funtowitz and Ravetz (2000) and Kuhn (2005). Throughout this text we will use this concept as a synonym for modern science and conventional science, even though this would requires more explanation.

\(^4\) For a more current analysis of this concept, applied to the unsustainability diagnosed during the second half of the 20th century, with a focus on natural resource management and the policy implications of this way of approaching the analysis of reality: Cf. Noorgard, 2002: 174-178.

\(^5\) Garrido Peña expresses this break with the hegemonic scientific paradigm as follows: "Break with epistemological imperialism of the bivalent logic and supports other ways of thinking and representing reality, within a pluralistic framework where there is no supreme court that tests cases on the truth or falsity of the different types of rationality and thought" (Garrido Peña, 1996:252).
in natural resource management has been called Agroecology. The conceptual framework of Agroecology is underpinned by a trans-disciplinary scientific approach that proposes a pluri-epistemological approach to knowledge. This means that a dialogue between scientific and traditional rural knowledge is possible and much needed, in order to conserve biodiversity and to find plural and innovative answers to the present crises (Naredo, 2006:19-46; Boada and Toledo, 2003: 9 – 39; Alonso Mielgo and Sevilla Guzmán, 1.995: 91-119). Translation of local knowledge in resource management thus becomes a pre-condition of sustainable development.

Taken into account the need for disciplinary and epistemological diversity,

The agroecological framework proposes three dimensions to account for rural and agrarian activity, all of which should be taken into account in order to build sustainable propositions (Ottmann and Sevilla Guzmán, 2004, 2005):

- The technical and productive dimension: searching for production methods that respect the environment and health, and contribute to maintaining ecological balances in the agro-ecosystems;
- The socio-economic dimension: searching to build production and consumption relationships at the local level, so that the main actors of food production and consumption gain control over the production and distribution process;
- The political and cultural dimension: stressing the need to build processes that empower main actors in order for them to create solutions that should be adapted to their local reality and culture, and that allow for profound control over the socio-economic processes relating to food provision.

Given the environmental crisis in the second half of the twentieth century, the _greening and washing_ approaches and agroecological approaches certainly differ in interpretation and analysis, as well as in the ways they propose solutions. These differences can be located in the premises from which these two approaches start. Noorgard and Sikor (1995: 16) argue that Agroecology changes the premises underpinning modern science, introducing alternatives to correct its epistemological deficiencies. Instead of fragmenting reality, it tries to come closer in a holistic way; it rejects mechanistic approaches; it replaces a desire for universalism by contextualisation processes and phenomena; it rejects objectivism and assumes subjectivism as being intrinsic to human activity; and it builds knowledge from pluralism, avoiding monism.

By emphasising the need to build a sustainable society, Agroecology aims at establishing epistemological processes in order to facilitate the co-production of community and public knowledge that promote processes of “endogenous development” (Sevilla and Ottmann, 2001:35-47). In this co-production, two key elements have to be underlined: firstly, the participatory definition of objectives within the knowledge co-production process; secondly, joint participation in the process of concretising knowledge in a technical-productive, socio-economic and cultural device that, finally, has political implications.
2. TRANS-DISCIPLINARITY AND THE DIALOGUE OF KNOWLEDGE AS A PREREQUISITE FOR A NEW SUSTAINABILITY SCIENCE

Given the origins of current scientific disciplines, the co-production of agroecological knowledge is related to the concept of trans-disciplinary research. The fragmentation and specialisation of science in disciplines has been overcome through the inter-disciplinarity proposal. It points out the added value of research approaches that get together experts from different disciplines to discuss and develop research projects (Morin, 1986). But the notion of trans-disciplinarity goes further on. This perspective has spawned the concept of ‘post-normal science’, developed by Funtowicz and Ravetz (2000) and has been conceptualised by other authors under the concept of trans-disciplinarity (Hurni & Wiesmann 2004; Hirsch Hadorn et al. 2006, Kumar 2002, Turpin 2002).

It emphasises the need to project knowledge production not only beyond disciplinary divides, but also beyond the scientific arena itself. A fundamental challenge of trans-disciplinarity is to find a way that encourages dialogue and cooperative integration between the various forms of knowledge, the scientific and the popular ones (Cuellar and Calle, 2011; Rist et al., 2007). Within this framework, a new typology of sciences is proposed that takes into account different levels of uncertainty, complexity and interests involved in a specific problem. These authors argue that 'post-normal' research is geared to the joint solution of problems defined on the basis of close interactions between the scientific communities and social actors involved. These problems will reflect society's highest priorities, so that research will become a process of co-production of knowledge, where scientific knowledge is one form of knowledge among others.

One way of concreting this dialogue in order to enable collective creativity is Participatory Action Research – PAR (Villasante, 2006). Through this methodological framework, the principle of dialogue between scientific knowledge and practical and local knowledge are put into practice at the level of scientific production. Reflexive processes can be developed that tend to strengthen endogenous potential in order to find solutions to problems in the agrarian field and in rural contexts.

Participatory Action Research (PAR) is a methodology developed from a dialectical perspective, consisting of research and a closely inter-related process of social intervention, in parallel. In this way, PAR offers an analysis of reality, which is a form of knowledge production and of raising awareness among the participants, who thus become active and leading subjects of the development pathways of their immediate outer reality.

The specific circumstances of each process or reality determine how it is carried out and accounted for. Despite the particularity of any given process, there are some common criteria that can be identified in most PAR processes: a) acting in order to achieve objectives that accurately match the specific problems to solve; b) operating within a given process with openness to all the points of view of...
those involved, in order to achieve consensus on a diagnosis and to discuss and negotiate the proposals raised during the process; c) facilitating the involvement of participants, which is a prerequisite in order to incorporate participants’ proposals as a set of guidelines for future action; and finally d) promoting the starting point of a new stage of detection of new problems, which consider new objectives, and giving rise to a search process.

3. SCIENCE WITH PEOPLE: A PARTICIPATORY ACTION RESEARCH PROCESS IN ANDALUSIA, SOUTH-EASTERN SPAIN

In Andalusia, between 2005 and 2008, we conducted a PAR process with groups of farmers and consumers, in order to solve a specific problem in this region. In 2005, three different groups of organic farmers in these territories (Sierra de Castril, Sierra de Segura and Serranía de Ronda) asked the regional Andalusian government for a solution to implement a compulsory organic certification system. Basically, they were opposed to a system that was not created for small- and medium-sized producers, and that was generating exclusion because of its costs and necessary commitment to a bureaucratic structure. Instead of applying a subsidy policy, the regional government proposed to the groups of peasant a more creative solution with the help of the Instituto de Sociología y Estudios Campesinos - ISEC (Córdoba University). As researchers of this Institute, we invited them to get involved in a process in which the solution to their problems would be found and an alternative proposed.

Our research work thus aimed at contributing to the creation of an alternative system that would generate confidence in these farmers' produce, thanks to a mechanism that adapted to their farm sizes. We elaborated a preliminary model of what is generally known as Participatory Guarantee Systems (PGS) (Cuéllar y Reintjes, 2009; Roure, 2007; Rundgren, 2007; Khosla, 2006). These are confidence-building systems that are working, under different structures and procedures, all over the world.¹

In this chapter we report the social changes generated in these groups thanks to this collective and participatory process, with particular attention to the three dimensions analysed: technically, through continuous knowledge exchange between the technicians, researchers, consumers and peasants involved; socio-economically, as this process strengthened localised agri-food systems in the region; and politically and culturally, as the process was based on endogenous proposals, and the success of the collective creativity generated self-confidence, empowerment and mutual support.

3.1 Methodology in use

In any PAR process, Balcázar (2003) invokes three dimensions: research, education, and action, which are reflected in a series of activities. The defining
elements of the PAR developed in our case are outlined in Table 1. PAR processes are generally driven by agents, who are external to the communities or groups in which they operate. In these cases, these external actors play a central role as facilitators of the process. Successful development of the methodology should generate a transformation thanks to the transfer of the prominence to the participants.

In the process of building a PGS for Andalusia, two principles guided the design of the methodology of this action-research:

- The three groups that had brought to the fore the problem of certification audits, and the need for solutions, were able to find the answers themselves, by way of a PAR (Balcázar, 2003: 7).
- The PAR process should promote a transformation of the social reality of the persons involved, through increased self-confidence and trust in the community.

### Table 1. Key Activities of the Participatory Action Research developed

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<th>Activity</th>
<th>Property</th>
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| Research | Analysis of the problems associated with third-party certification (through certification bodies)  
Evaluation of alternatives to this European mandatory system  
Analysis and evaluation of a participatory process of building a Participatory Guarantee System (PGS)  
Analysis of the PGS operability in Andalusia: strengths and weaknesses  
Analysis of the possibilities of building a PGS in a territory from a PAR |
| Education | Working group meetings in which collective critical awareness is built, and the ability to propose alternatives and solutions, in a collective way, is reached.  
Development of capacities of discussion, exposure of opinions and visions, and search for consensus. |
| Action | Construction and implementation of a PGS Responding to the needs of organisation and interaction among participants, for the implementation of the PGS, local and regional socio-technical and economic networks were established |

**The proposed stages of the dialectical process**

The structure of the PAR in this process, following the systematisation suggested by various authors (Fals Borda, 1993; Ibáñez, 1998; Ortí, 1999, Guzmán et al., 1996; Villasante, 2006)\(^6\), has consisted of four stages, in addition to a previous one (Table 2).

It is assumed that each region/group should adapt the process to their own reality, in terms of specific techniques to be implemented at each stage, and depending on the objectives it wants to reach. The way to ensure coordination

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\(^6\) The processes that arise through the PAR are neither final nor determined in advance; the hows and whos are constantly redefined (Rosa and Encina, 2003: 95).
and concomitant objectives and stages between the three groups was carried through regular coordination meetings of the technical team and expanded meetings between all those involved in each territory. These expanded meetings allowed: on the one hand, to build consensus on the elements that were at work in each of the stages, and on the other hand, to determine the objectives and timing of the next stage.

Table 2. Stages of the methodology followed in the construction of an alternative system of certification for Andalusian organic production

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<th>Stage</th>
<th>Objectives</th>
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| Previous | Knowing the territorial context of each area  
           | Establishing a first approach to the problems |
| First   | Agreeing on the diagnosis and establishing the first draft of proposals |
| Second  | Building the final proposals for an alternative Guarantee System |
| Fourth  | Evaluating the model and the process; identifying new symptoms |

3.2. Assessment of the impact and changes generated by a process of science with people

The effects and changes that were generated by the process in the groups who built it were evaluated by means of a set of semi-structured interviews at the beginning of the process and at the end. Establishing a similar pattern in both stages of this fieldwork, we compared the evolution of discourses and visions of the people directly involved in the process.

The perception of the concept of “guarantee”

Broadly speaking, after the analysis of interviews, it appears that the initial vision that the people involved in the project had on guarantee systems for organic products was very narrow, in the sense that they did not imagine other possibilities or options apart from audits by a certification body, despite the widespread dissatisfaction with this procedure. They were glimpsing the possibility of proximity processes, on a local scale, which interlinked the various stakeholders in building confidence, but did not believe in their inherent ability to manage this confidence.

However, a year and a half after the beginning of the research, the prevailing vision among the people involved in the process was different. They grasped the idea that guarantee systems in organic products could be more than just a technical examination. It could be the result of a process and mechanisms of building confidence through close relationships, and through which the social context itself continuously endorsed what was being done, without the need for technical figures or annual reviews.

"The regulations must be met, but it is more a local certification system, more participatory (...) that is organised into groups, (...) It gives substance to other
things that a private certifier cannot, in my view, such as training, counseling, participatory sessions between producers and consumers (...) of course, that's what gives you more autonomy and independence and also much more support” (farmer - Sierra de Segura)

A mechanism was constructed that they recognised as their own, with full awareness of the advantages and difficulties of putting it into practice. They were convinced that this participatory system was more reliable than the third party certification system. Several reasons were expressed to support this opinion, such as: a) the constant social control of the implied persons, which means that everybody knows how the others are producing; b) procedures that strengthen the direct relationships between the different actors; and c) procedures that facilitate continuous exchanges between producers and with consumers.

They clearly identified that the issue of legal recognition would be a serious stumbling block with possible effects on the consolidation of the system. They likewise perceived a certain immaturity of the system, identifying the need to move towards a horizontal assignment of tasks and transmission of information by all involved, as most delegation of tasks and responsibilities was still in the hands of the technicians and the research team.

**Participation and confidence in the group**

At the beginning of the project, some inertia in the territories was perceived, that precluded or limited the emergence of group initiatives aimed at resolving common issues. Trying to characterise this inertia, we identified two perceptions of respondents regarding their social environment: individualism, which generated distrust of others, feelings of loneliness and very little initiative to engage in group processes; and passivity, generated by the general attitude, and consisting in waiting for solutions to their problems from the government administration. In this sense, the need for rewards or incentives (such as the Common Agricultural Policy and its subsidies) was identified.

In this context, which was common to the three territories, there were certain specificities conditioning the particular development of the project in each of the areas involved. In Castril the external impulse of the process was valued very positively. The initiative for the project, despite some doubts, was well received, perhaps because it is a territory with a long tradition of working through participatory methodologies, that the University of Cordoba had been developing through the ISEC.

In Sierra de Segura, an added difficulty was perceived to question the success of the project: the huge geographical distances and the topography of the region, which would make very difficult to work at a territorial level in a participatory way, because of the distances.

Serranía de Ronda was the territory where the starting point of the project was the most negative. We perceived two peculiar issues concerning its concrete
reality, which could adversely affect the process proposed. First, agriculture is not a major activity in this region, only a source of part-time work. This meant that producers were less likely to engage in activities that their livelihoods did not depend on.

As a second specific difficulty, we perceived in the analysis of interviews a sense of frustration and dissatisfaction with local and regional administrations, related to the failure of a number of previous projects. The interviewees identified the cause of the failure as a lack of real support or accompaniment over time, or the generation of conflicts that had not been dealt with.

After one and a half years of work on a collective and dialectic process to promote dialogue and joint reflection, the reality perceived in the territories is different. Broadly speaking, we see that the level of social maturity on the project is high in Castril, medium or high in Sierra de Segura, and low in Serranía de Ronda.

However, in the three areas, the main problems detected during the process were shared and were treated by means of the innovative procedure proposed within the PAR, a dynamic approach completely unknown in these contexts. In this regard, the three project areas have demonstrated a shift from passivity to a responsible and active attitude to make proposals and to work collectively. We admit that this process of change is slow, but note that through the project we have initiated some changes.

In Castril and Sierra de Segura, participation has facilitated a process of rapprochement and communication between people, through which they have recognised shared problems in the practice of their profession. The direct effect has been to increase confidence in the group and the ability to engage in dialogue. In both areas, this process was seen as a beginning, on which to keep on working. In these two areas we have perceived the need to persist with technical support, and thus to keep on "energising the process". This support guides the implementation of the actions that have arisen as a result of the socio-practical process.

The group of the Serranía de Ronda had a different evolution. Broadly speaking, we see that the project did not achieve a real consolidation of the group. An idea strongly perceived as a difficulty, in the second round of interviews, that was already perceived at the beginning of the process, was that agriculture is a source of part-time work in the area, and that any project that requires involvement of the primary sector will have a weak response in this area. A direct consequence was that the people who were motivated to get involved ended up frustrated and tired, because of this little social answer to the project. This generated a vicious circle that appeared to be difficult to solve.

Despite these difficulties in Serranía de Ronda, one cannot say that the project has been a failure, or should be terminated. Instead, there is appreciation for the progress that has been made, albeit at a very slow pace. Given this shared analysis, which supposes some kind of immaturity of the group, we argue that there should be deeper reflection on the facilitating support to propose in order
to continue building the process. Note that the problem initially detected – distrust in government – does not appear in the speeches during the second round of interviews. We understand that implementation of the project, established in a serious and committed manner, and with a continuous monitoring of the technical people involved, has been able to break that initial distrust but nothing more. However, this initial difficulty has been one of the causes of weaker participation of other people in the project.

3.3. Actual changes in the territory

The changes detected in the views of those involved correspond to concrete changes in the social implementation of initiatives. In this sense, the Castril group has been the most active. In summer 2008, this group had established three stalls (Biopuntos) in Castril local markets and nearby towns; was catering for six schools in three districts of Granada; was participating in regional organic markets (Bioferias) organised by the regional government, at their own stall and at the stall set up for Andalusian PGS groups; and had reached an agreement with El Encinar, a cooperative of organic producers and consumers in Granada city, in order to supply them with a predetermined volume of organic products at prices negotiated in a transparent manner.

In Sierra de Segura, the evolution of actions promoted by the group was similar to the Castril territory, but it began later and at a slower pace. At a meeting in August 2008, the group proposed to establish a specific place to collect products in one of the municipalities, in order to supply a consumer group through a weekly basket of products ordered online. Aiming to open the initiative to more people, the PGS group got involved in the days called Biosegura, held in August 2008 at Beas de Segura, through a contribution to the organisation of activities.

The evolution of the Serrania de Ronda partly explains the participants’ feeling that they had not achieved the desired objectives. The low level of maturity and group cohesion achieved in Ronda has resulted in the fact that there has been no real and visible initiative by those involved in the process. While there had been some motivation to create a consumer group, by the summer of 2008 they had not fulfilled the most basic part of their commitment to act.

4. Conclusion

Considering the comparison of the three territories, the fact of learning from the participatory process has resulted in changing perspectives and notions concerning guarantee systems and the social environment itself. All of these have resulted of a collective process of exchanges and in the construction of new knowledge between producers, consumers, technicians and scientists. At first, the visions expressed by participants were based on a single view of the assurance process and on the personal changes that could involve the creation of
an alternative system. They expressed internal characteristics of the future model that pertained to their own individual expectations: basically participation and proximity. At the end of the process, they highlighted the features of the model constructed, and the aspects of collective processes generated: exchange of knowledge and experience with other producers, direct personal relations, and the promotion of mutual understanding and group support. The social construction of a group is valued not only by producers, but also by consumers and technicians at local level. They value the diversity of groups and the fact that each actor plays different roles in the established system.

The progress in the very concept of credibility and guarantee is to be noted. The interviewees began to think of it as a consequence of relations of trust and closeness between the people involved. In this way, they moved beyond the idea of confidence as an external technical review, and began to see it as a reflection of the legitimacy of individuals belonging to a group that had earned credibility. The guarantee is based, therefore, on personal relationships and close trust. This proximity put pressure on individuals to meet agreed standards, since disappointment would socially penalise them because it would mean not only a withdrawal of the seal but also expulsion from an environment built on trust and support.

The initial step of creatively devising solutions detected after a year and a half of work was possible thanks to a process that promoted a certain breakthrough in territories. These changes were perceived primarily in the inertia and entrenched views based on years of rural public policy liabilities and patronage.

With these results, we propose that the reality of passivity and individualistic inertia detected initially in the territories involved can be reversed through such dialogic processes. In our context it is unlikely that certain collective processes arise spontaneously or endogenously, given the inertia detected. However, as some results obtained in this investigation show, such a collective process has been promoted through participatory research methodologies. The starting point was some problems or "pains" over the territories, that were identified as intrinsic. The PAR has been shown to be flexible and adaptable to the specific circumstances. Thus, the starting point is not only to solve the problems detected, but also to identify the type of prior knowledge that the groups involved have about the subject, the level of social cohesion, inertia and historical builders of each area, and the socio-economic and cultural rhythms, among others. This starting point, and a trans-disciplinary methodology, can bring together local and scientific knowledge to build endogenous and sustainable answers.

Based on this remark, we have identified certain limitations to this type of induced process. We would like to highlight two of these limitations:

- **The reality of rural areas shows that agriculture is no longer a central activity.** In this sense, the lesson learned in these contexts is the need for research that links farming with other major economic sectors in the territory. Faced with the current trends of increasing rural pluri-activity...
and loss of agrarian relevance and multi-functionality, the fact of taking this aspect into account may be very important.

**Territories with negative past experiences have generated unresolved disputes and distrust.** It can be concluded that the development of PAR, that does not guarantee continuity in time or deep involvement of the research team, may produce perverse effects such as mistrust and apathy. Such continuity and involvement would not mean, however, that social processes to build knowledge and skills would be expected to create dependencies. They would aim at creating space and time where territories could acquire autonomy and empowerment, while ensuring and accompanying the desired social changes, which are usually slow.

**References**


