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Can we find solutions with people? Participatory action research with small organic producers in Andalusia

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A B S T R A C T

This paper reports on an experiment linking science with people. Taking as a paradigm the holistic scientific approach fostered by agroecology, we present a methodological proposal for the implementation of participatory action research in rural areas. Our aims were various: to solve a specific problem, i.e. the exclusion of small- and medium-scale organic farmers from the official certification system; to find solutions collectively through an exchange of knowledge between researchers, technicians, producers and consumers; and to generate endogenous social change in rural areas through processes based on local skills and collective creativity. This paper examines the methods applied, and provides a participatory reflexive analysis of those methods. Both the keys to the success and the constraints are analysed, in order to conclude the contributions that agroecology and PAR processes can make to sustainable and innovative research proposals.

1. The critique of participation: who is speaking?

Since the 1980s, it has generally been agreed – particularly in research areas such as endogenous development and rural change – that social knowledge cannot be understood without (re) thinking the question of power (Escobar, 1995; Rist et al., 2007). Power is broadly understood as the legitimation, by symbolic and coercive means, of a "political, economic, institutional régime of the production of truth"(Foucault, 1980: 133). This view is particularly relevant for those involved in rural development, who see knowledge as a relationship rather than as a commodity to be delivered "top-down", in the manner long adopted by functionalist approaches to development (cf. Rogers, 1962; Long and Villarreal 1994: 49). Therefore, and especially in contemporary societies, it is essential to know "who is speaking", in Foucault's terms, in order to understand the distribution of power in any social relationship. Within this critical view of knowledge as an expression of power, we can trace at least three general approaches that have influenced current debate regarding the application of participatory action research to rural social change, and have shaped the socio-methodological framework of *Agroecology* employed here:

1. the critique of conventional development arising from *postcolonial studies* and the notion of *endogenous development*, that gained currency during the 1990s
2. the *popular education* theories advanced in the 1970s by Latin-American educators such as Freire and Fals Borda
3. the work of the so-called *critical sociologists*, including the French researchers Edgar Morin and Bruno Latour, which from the 1970s onwards uncovered the ethical, logical and political biases of modern western science.

In the field of endogenous development, a number of authors (e.g. Escobar, 1995; see Sachs, 1992) have highlighted the arbitrary nature of development discourse, which shapes the way we think about poverty in terms of the objects to be studied (e.g. the poor, the need for capital accumulation), the concepts to be used (e.g. underdeveloped, sustainable), the theoretical underpinning (e.g. modernization, dependency) and the subjective outlook (e.g. underdeveloped communities are passive, ignorant, powerless). Western institutions, ranging from governments to multilateral agencies (UN, WB), constitute the kernel of the power system behind the 'regime of truth' in development, a system interested in preserving and profiting from the existing political and economic status quo. To avoid this, 'radical' participatory systems and flexible projects based on process approaches must be part of the new social development paradigm (Chambers, 1997).

It should be stressed that this critique found support in the development domain by incorporating arguments grounded on

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environmental sustainability. A particularly significant contribution to the emergence of agroecology was the concept of "co-evolution" coined by Norgaard (1993): we live in a eco-social system in which nature and sociotechnical institutions mutually govern and shape each other, through interactions embedded in environmental processes. Recognition of the failure of development and the need for sustainable approaches constitute the internationally-acknowledged twin pillars of agroecology (see Gliessman, 2008; Sevilla, 2006; Sevilla-Guzmán and Woodgate, 1997).

The second critique argues that there is no such thing as neutrality when we are dealing with processes involving learning and education (Freire 1970; Fals Borda et al., 1972). Therefore, participation should be oriented towards the 'practice of freedom', with a view to facilitating the transformation of everyday life for those involved, who are excluded from material benefits and from epistemological production. Here, methodological aspects play an essential role in uncovering vested interests, and pave the way for the emergence of new and creative "solutions" to practical problems.

These approaches encouraged and inspired a community-based participatory approach to action-oriented research all over the world, evidence of which can be traced in the work of the Indian participatory research advocate Rajesh Tandon (2000), the American researchers Hall, Brydon-Miller and Park (Park et al., 1993), and finally the Spanish scholar Tomás R. Villasante (Villasante et al., 2000), whose work provides the basis for the present application of participatory research action to the field of agroecology.

Last but not least, critical sociology – more closely tied to Western discourse about the "validity" of normal science – has exposed and explored the ways in which scientific knowledge is embedded in logical and political games, rendering impossible any useful democratic and communicative action, to use Habermas' (1984) terms. The systemic approaches (social, economic, physical) adopted by Western science rely heavily on a biased simplification of the relationships between the "whole" and its "parts"; these approaches, despite their frequently erroneous outcomes, claim to be founts of "legitimacy" and "truth" (Funtowicz and Ravetz, 1993). Instead, the critical sociologists argue that we should go for complex views that assume "uncertainties", "contradictions" and "emergent properties" arising from the parts (or actors) involved in a system (Morin 1992). Therefore, in the socio-economic setting we should reject the authoritarian recipes imposed by "laboratory science" (Latour 1979). This traditional and ultimately futile concept of science should be replaced by a participatory paradigm according to which, since information is context-dependent, the production of knowledge should make room for people (Funtowicz and Ravetz, 1993).

These critiques of the science and power systems underlying conventional development were widely shared by advocates of participatory rural approaches in the 1990s, who conceived knowledge as "an encounter of horizons" (Long and Villarreal 1994: 42) and learning as "an adaptive and iterative process" (Pretty and Chambers, 1994: 185). Instead of promoting a managed intervention pursuing a "common goal", endogenous development comprises a series of learning processes induced by facilitators, aimed at negotiating with a range of distinct interests, goals, power and access to resources (see Scoones and Thompson 1994: 22).

Building upon these practices and arguments, the agroecological approach emerged in the late 1980s. Methodologically, it sought to go beyond rapid appraisals and to support participatory action research aimed ultimately at achieving self-mobilization processes within a given community (Sevilla, 2006: 125). The essential focus was to be both environmental and cultural, stressing the need to go for a "hard sustainability", as opposed to the "soft views" expressed by environmental economists (Sevilla-Guzmán and Woodgate, 1997). To clarify the approaches underlying agroecology, the table below, drawing upon Pretty's (1995) work, summarizes the various types of participation (Table 1).

The participatory approaches adopted by agroecology belong to types six, seven and eight. Type six, interactive participation, is appropriate for groups or territories with less experience of social organization, and thus less group cohesion amongst local inhabitants. In these contexts, collective processes are unlikely to develop spontaneously, so an initial boost is required. Types seven and eight, supported participation and self-mobilization, can be used wherever there is a more mature level of social cohesion. Here, agroecology as a scientific approach plays a supportive role. Under these three approaches society ceases to be an object for study, and becomes an arena for the work of active agents (Villasante, 2002). In these cases, the research team not only promotes, supports and enhances initiatives by providing suitable tools and instruments, but also focuses on defending the initiatives and advocating their inclusion in existing legal frameworks and government policies.

The two major defects inherent in the first four types of participation (manipulated, passive, through consultation or through material incentives) are that they establish unequal

Table 1
Types of participation.

Types of participation	Features
1. Manipulated Participation	Facilitates the presence of unelected pseudo-representatives of the "beneficiaries" in an official space. These representatives have no real power
2. Passive Participation	Project managers or researchers inform people about what has been decided or what is being done
3. Participation through consultation	Participation is facilitated through consultation, usually in the form of responses to certain questions. The problems and the method of obtaining information are externally-defined; as a result, data analysis, too, is carried out externally.
4. Participation through material incentives	Participation is reward-driven. Both research and process design are external.
5. Functional participation	People are brought into the work done towards achieving certain predetermined targets. They work in groups, and a certain degree of interaction is generated that may guide some decisions. This usually happens once structural decisions have already been taken.
6. Interactive Participation	Joint participation in analysis and process development. Participation is conceived as a right, rather than as a means of achieving certain objectives. This approach facilitates systematic and structured learning processes
7. Supported Participation	People work together, supported by external teams who respect their collective dynamics of social action and, at the request of the participants, overcome certain weaknesses in collective learning processes. Decisions are the responsibility of the participants
8. Self-mobilization	People participate regardless of any external inputs. External services can be used to identify issues, provide funding or give practical advice, etc. but participants retain control of the process and the resources.

Source: Caporal, F., (1998: 452).

exchanges, and discourage interaction between people and research teams, since it is the latter that take the decisions, define the process and use the results; and that they fail to encourage positive future initiatives for the social actors involved, since they prompt no real change in the maturity of the group. Moreover, their methods and characteristics render them readily-susceptible to external manipulation (Pretty, 1995). The fifth type of participation places outside agents in a dominant position, since the decisions taken by the group are secondary and subordinate to those already taken by other actors. Those invited to participate can at best hope to influence the implementation of pre-established initiatives. By contrast, in opting for the latter types of participation agroecology seeks to foster and enhance the skills of the main actors in rural contexts, encouraging them to develop and promote their own processes.

A major criticism of the widespread school of Agroecology[1] has been that its deconstructionist attitude to conventional science could encourage populist practices. As a result, research in the field of participatory rural development has paid careful attention to methodological issues, seeking to chart both the progress made and the obstacles encountered when implementing applied programmes as part of a specific experiment, with a view to ensuring a holistic, horizontal and creative methodology for participatory action research. The present paper provides an illustration of the methodological goals and analyzes new insights into the development of sustainable agrofood systems.

1.1. Agroecology and the practice of science with people

From the outset, agroecology has been an open, creative field of cross-discipline research, involving agrarian ecology, post-development studies, political ecology, social mobilization and change, and participatory methodologies (Sevilla, 2006). To facilitate the approach to rural and agrarian processes, a number of authors (cf. Ottmann, 2005; Sevilla Guzmán, 2006) suggest that the Agroecology paradigm should be seen as comprising three complementary dimensions:

1. The *ecological and technical-productive dimension:* this includes all agriculture-related elements of the production process, in accordance with agroecological principles.
2. The *socioeconomic dimension*: this includes all livelihood-related elements involved in the production, distribution and consumption of foods. It also includes the organizational forms associated with different forms of agricultural product output and distribution.
3. *The political and cultural dimension*: the analysis of both dimensions in every rural process constitutes this third dimension, which involves an examination of the power relations obtaining in the socio-political context within which agricultural activity takes place, bearing in mind the need to respect cultural diversity in the solution-building process (Cuéllar, 2009). Emphasis is thus placed on: a) the role of the various actors involved in the social relations and socioeconomic framework established, as well as the role of the environment itself (Garrido Peña, 1996; Martinez Alier and Guha, 1998; Redclift and Woodgate, 2010); and b) the comparative advantages of implementing programmes in rural areas that avoid homogenization and provide specific endogenous solutions to problems, despite their global dimension.

Agroecology can also be considered, therefore, as part of the contemporary "sociology of emergence", to use Sousa Santos' (2005) term, in that it seeks to reveal what it is concealed in the conventional scientific paradigm of modern culture itself and its direct descendant, industrial modernization. The guiding principle of this new approach has been termed "*science with people*". It has become especially widespread in Latin America, where participation, social mobilization and rural development go hand in hand (cf Sevilla, 2006). This is so for two reasons. In social terms, the main reason is the crucial role played by new social movements in rural areas in the voicing of grievances concerning land tenure. Good examples are the Landless Workers Movement (MST) in Brazil, and the indigenous community movements in Bolivia, Ecuador and Mexico. Studies by Toledo (1989) and Leff (1995) have sought to understand and explain the grounds for these claims and protests by land workers.

The second reason for this close link between social movements and agroecology in Latin America concerns the historical permeability of the participation process, and the widespread recognition of local knowledge as part of teaching methods aimed at increasing literacy, social awareness and agricultural extension; examples have been reported by Freire (1970) and Fals Borda (1985). The co-production of new cross-cultural knowledge was, and remains, an essential starting point, since the agroecological approach arises from very different worlds (Cuéllar and Sevilla, 2009).

However, "neoliberal globalization" has led – in the United States and elsewhere – to these innovative networks being seen as leading actors in the critique of the dominant agrofood system. In voicing their grievances and advancing their claims, they lay bare the underlying conflicts of the first and second green revolutions (Ploeg, 2008; Holt-Giménez et al., 2009). Thus, the agroecological approach adopted by American and European authors with strong ties to Latin America through their applied research, explicitly assumes that alternative agrofood systems and rural development processes are inconceivable without the innovative input of these social networks and movements (Sevilla and Martínez-Alier, 2006).

Agroecology implies the promotion of processes that respond to the local contexts in which they are implemented, and a refusal to accept forms and approaches imposed from outside; this does not mean, however, that new meanings and alternatives devised elsewhere cannot be incorporated or transferred. Agroecological processes should foster the autonomy and the native skills of the lands and collectives in question. This implies minimizing agricultural dependence on external inputs, and profiting both from locally-produced resources and from local opinions regarding sustainability. Where dependence is institutionalized, agroecological processes may provide a counterbalance that allows small producers to surmount the obstacles imposed by the legal frameworks in force. In such cases, successful non-formal "bottom-up" programmes could benefit from institutional changes at this macro-regulatory level[2]. In this respect, a major cause of the environmental crisis detected in the late 20th century arose from legal, institutionalized and largely profit-driven support for an intensive "green revolution", with little attention to the global management of natural resources such as soil and water, little respect for biodiversity and little awareness of potential effects on climate change (Sevilla-Guzmán and Woodgate, 1997; Aguilera Klink, 2001: 461).

[1] See for example the close relationships between agroecology and contemporary social movements, reported by the interdisciplinary ISEC research group (Instituto de Sociología y Estudios Campesinos, University of Córdoba, Spain), over the last 20 years: http://www.unia.es/component/option,com_hotproperty/task,view/id,531/pid,3/Itemid,445/

[2] The focus of this article provides a clear example: the only guarantee system for organic production legally recognized throughout the European Union is a third party certification system that excludes other types of participatory initiatives.

Agroecology, understood as the sum of practices and philosophies underlying alternative food systems, has its roots in both traditional practice and innovative experiment, and is thus at once *pre-modern* and *post-modern* (Toledo, 1993: 52–53). The challenge to the established order at institutional level may come from either or both of these two cultural and social categories. The pre-modern roots of Agroecology involve practices employed by traditional farming communities, i.e. cultures or groups into which modern values, practices and actions have only partially penetrated. These practices are associated with production processes based on family labour and a considerable degree of subsistence farming and on-farm consumption. The second context in which Agroecology is rooted is one of ideological and political rebellion, i.e. the activity of social movements and *countercultural* networks that challenge the foundations of modernity and the whole thrust of capitalist and ethnocentric modernization (Toledo, 1993: 53). These movements seek to solve the perceived environmental and social crisis by generating structural changes in relationships within society and with nature. These two sectors, the traditional and the post-modern, share the desire to build alternatives to the current public and legal frameworks established in the field of natural resource management. However, that shared desire stems from different motivations and different situations.

Agroecology, in this setting, focuses on recovering and recognizing the knowledge held by these groups, with a twofold purpose: a) to protect the remaining pre-modern areas; and b) to promote the recovery of their technology and their knowledge, in areas where they are in constant decline. This is a global response to certain, primarily environmental, problems seen as resulting directly from inappropriate industrial management strategies and unbalanced exchange processes introduced under neoliberalism. Agroecology, moreover, is an innovative science, open to a range of social discourses; as a result, it enjoys the support of numerous movements, all of which share the goal of developing sustainable agrofood systems based on the participatory and endogenous management of natural resources. Two major types of support group can be discerned:

1. Groups involved in a scientific approach to ecology and social change: i.e. *agroecology as a transdisciplinary science*
2. Practitioners or facilitators involved in supporting initiatives, production systems and social movements which challenge global-market-driven agrofood systems: i.e. *agroecology as a philosophy for critical and collective action*

Of course, as a number of authors have stressed, among them Sevilla (2006) and Wezel et al. (2009), Agroecology must inevitably draw both on real practice (e.g. the organic farming methods supported by new global movements like La Via Campesina) and on the scientific systematization of social and ecological processes that characterizes the pioneering work carried out in the 1980s by Altieri (1995) and Gliessman (1998). This view of Agroecology as the ecological science of developing sustainable agrofood systems has been well illustrated, more recently, by Francis et al.(2003), Uphoff (2002) and Gliessman (2008).

The socio-political approach to agroecology is exemplified by Martinez Alier (1992), Martinez-Alier and Guha (1998) and other exponents of the political ecology school, by and González de Molina (2007), whose ongoing research focuses on the structure and culture underlying global interactions between society and nature, and by the discussion of applied participatory research to be found in Kindon et al. (2007). More recently, the power structures behind globalized agrofood systems have been questioned in studies of gender and ecofeminism in agroecology (Siliprandi, 2009); in research into intercultural sustainable approaches to the governance of natural resources (Rist et al., 2007); and in critiques of contemporary democracies as producers of social institutions that fail to democratize – and in fact oligopolize – global access to basic needs, and in particular the development of sustainable agrofood systems (Calle et al. 2011; Holt-Giménez et al., 2009).

As a result, Agroecology emerges as a set of ongoing studies permeating and interweaving the three dimensions examined above. Nevertheless, given its holistic nature, the critique of power means that participation is seen as the core of any single process, and an integral part of both applied research and support for critical networks. The following section therefore looks in greater detail at the concepts of "science with people" ("post-normal" science) and participation (in its varying forms and degrees).

1.2. What do we mean by "science with people"?

Participation allows agroecology-based assumptions and paradigms to be put into practice. Agroecological principles are thus given operational expression, facilitating discussion and reflection on the basis of *multivalent approaches* (Garrido Peña, 1996). In other words, participation fosters a dialogue between different types of knowledge: scientific, cultural, local and indigenous. A true *science with people* can only be achieved through mechanisms that encourage meeting, joint reflection and the collective development of findings and conclusions (Funtowicz and Ravetz, 1993), thus bridging the chasm between science and people.

Participation-based research processes provide a means through which agroecology can assume a cultural and political dimension (Caporal and Costabeber, 2002: 79). In this epistemological approach, the object is no longer the passive element it was under conventional research; instead, it is turned into an active subject. It is this subject, now, who voices social needs and demands research activity. This, in turn, requires interaction between the subject and the researcher, and the joint planning and implementation of research activities. Given the contexts in which agroecology operates, these new active agents are likely to be members of rural or urban communities involved in natural resource management. Participatory mechanisms will help them to feel more closely involved in the structures through which agricultural products are produced, marketed and consumed. The internal power relations between formal researchers and local individuals are thus wholly transformed. Participation is conceived as a mechanism through which local subjects gain the *power* required to voice their demands and to embark upon the intellectual process of finding solutions (Ottmann, 2005). One of the main effects is the gradual disappearance of uncritical, passive social trends (Sampeu, 2001: 523). The power of the action thus generated is shared amongst the people involved, enhancing their ability to lead local co-evolution between ecological and social systems, and maintaining feedback between the two systems over time (Noorgard and Sikor 1999: 27). This latter objective focuses on the idea that agricultural production must take place in contexts where the integrity of natural resources is protected, collectively, and harmonious interactions between humans are encouraged (Goodman and Redclift, 1991). In 1977, Kapp (cf. Aguilera Klink, 2001: 129–148) argued that such innovations in scientific paradigms require a wider range of reference than that used by most fields of study within "normal science".

2. A context for collaboration between science and society: organic products and small-scale producers

Officially-certified organic farming is enjoying a worldwide boom. Planted areas and production have both increased steadily

over the last 10 years (Willer and Kilcher, 2010). Its share of total world agricultural production is somewhat uneven; Australia is the leading organic producer, with more than 12 million hectares, followed by China, with 2.3 million hectares and Argentina with around 2.2 million hectares (Argentina was previously the second largest producer in acreage terms, but the area devoted to organic produce has declined from 3.192.000 hectares in 2000). The fourth largest producer is the United States (1.620.351 hectares), followed by Italy, with around 1.1 million hectares (Willer et al., 2008). Officially-certified organic farming is also on the increase in Spain, but data and trends suggest that small- and medium-scale producers are being excluded from the official system. Strikingly, the average area per farmer in organic production is more than double that found in conventional agriculture (Llorens Abando and Rhone-Thielen, 2007: 4). Whatever the reasons, the fact is that certified organic production both in Spain and the European Union in general covers average areas well above those under conventional management (in Andalusia, the area devoted to organic farming is up to 400% greater, according to statistics published by the former Ministry of Agriculture, Fisheries and Food in 2006 – cf. Subdirección General de Calidad y Promoción Agroalimentaria, 2006). The trend over the period 2003–2008 pointed to an ever-increasing difference.

The limited contribution of small- and medium-sized farms to the Andalusian organic sector contrasts with data showing that around 95% of farms in Andalusia have a Useful Agricultural Area of less than 10 ha (Junta de Andalucía, 2007b: pp. 13). This would suggest that the vast majority of Spanish farms are not involved, at least officially, in organic production; this is a key issue, since organic production by small- and medium-sized farms is seen as essential to achieving a sustainable agriculture (Toledo and Barrera, 2008; Rundgren, 2008). The Andalusian government itself recognizes the importance of organic farming. It explicitly notes, in the Rural Development Plan for Andalusia (2007–2013), that increasingly intensive farming is responsible for the major problems of declining biodiversity and environmental pollution, and urges that measures be taken to avoid it (Junta de Andalucía, 2007b: 24). The Plan also recognizes the importance of smallholder agriculture, stressing the need to maintain farming and ranching in the so-called *disadvantaged areas*[3], and to preserve certain habitats by encouraging a stable rural population. It is noteworthy that 70% of Andalusia's Useful Agricultural Area is classified as *disadvantaged.*

Beyond the official discourse itself, which tends to be contradictory[4], an agroecological analysis of the situation highlights the inherent unsustainability of the rural Andalusian environment due to inappropriate public policies. Traditionally, smaller organic farms such as those producing vegetables, as well as small- and medium-sized farms producing major crops such as olives, nuts or cereals, have been poorly covered by official censuses. There may be many reasons for this relative neglect, but two causes stand out from the rest:

a. Public policies still do little to promote small- and medium-scale organic farming, and remain heavily influenced by the productivist approach that prevailed during the 20th century, in which modernization and progress were seen to depend on increases in scale and the intensification of production (Goodman and Redclift, 1991; Friedmann, 1991).
b. The existing certification system is based on uniform standards and technical indicators, which base the cost of certification in part on the simplicity or complexity of farm production, with certain additional fixed costs, regardless of the planted area. Complex (diversified) production systems are therefore more expensive to certify as organic than ecologically simplified systems (monocultures). The fixed costs are the same for large farms as for small- and medium-sized farms.

So Andalusia's organic farming model is dominated by farms whose planted area is considerably above the national and regional averages. Moreover, it focuses on very specific crops: traditional crops (pasture and forage or grains) and monocultures (especially grains and olives). This structure reflects the fact that exports account for around 64% of total organic sales, leading to a concentration of production on a small number of products with relatively-consolidated international markets (Junta de Andalucía, 2007a: pp. 12–14).

The basing of a productive sector on exports has certain implications, in that it leads to agrofood systems in which relationships tend to be *vertical*, i.e. aggregation and cooperation between actors are the result of an organizational process in which external factors predominate over the areas of influence of each actor (Sousa Santos, 2000). In that setting, farmers have very little power or control over the marketing process, and the mechanisms available for small-scale producers to exchange their surpluses are sparse or poorly developed (Ploeg, 2008). The power is in the hands of transnational actors with considerable logistical capacity, for whom the organic sector represents only a niche market (Ureña et al., 2008; Seyfang, 2006). This system of food distribution has important repercussions for the consumption of energy sources, mostly fossil-based, and for climate change. As noted by Seyfang (2003), centralized systems of food production and marketing have increased the distance between producer and consumer; the ingredients of a traditional British Sunday meal travel approximately 81.000 km (or twice around Earth) and their transport is responsible for the emission of at least 37 kg of carbon dioxide. However, if these same products had been grown and eaten within a radius of 45 km, the carbon dioxide emissions related to transportation would be only 0.2% of those for food that was transported worldwide.

Any agrofood system which involves a production sector closely reflects the structure of that sector. An industry that wants to defend small and medium production structures must recover or protect markets as areas of networking, in which relationships are developed *horizontally* (Sousa Santos, 2000). Thus, it must build agrofood systems which are distanced from the major distribution channels and which promote the rebuilding of local and regional economies (Sampeu, 2001). The network mechanisms of short marketing channels can be enhanced in two ways: a) in terms of distance, reducing the maximum economic and environmental costs resulting from packaging, long-range transport and storage in freezers; and b) in terms of intermediaries, recovering the decision-making and action-taking capacity of local producers and consumers. And although these mechanisms run counter to the empire-building trend (Ploeg, 2008: 221), they are taking place and generating alternative spaces (Holtz-Giménez et al., 2009: 73, 213, 219)

Thus, to build a sustainable agriculture and rural environment as indicated above, partnerships between production and consumption will be a key instrument (Rundgren, 2009). A consumption that poses alternatives to the option of "*giving* (goods or money) *to remote corporations and unknown destinations*" (Sampeu, 2001:

[3] *Disadvantaged area* is a regional protection category covering areas with certain obstacles hindering continuity: topographical limitations, depopulation, and the threats posed by certain specific constraints (sites of special environmental value, areas of high salinity, etc.) (Junta de Andalucía, 2007a,b: 37). These areas were under review in 2010

[4] A review of the fate of agricultural policy budgets shows that there is little specific attention to the real situation of small- and medium-sized farms, which are forced to compete with large-scale producers for financial support and marketing/processing mechanisms.

536), and builds other avenues to boost agroresistance to globalization trends is an essential element in this process (Calle et al., 2009).

The initiative reported on in this paper was intended to encourage this kind of resistance on the part of producers and consumers of organic food. In the conviction that other elements of sustainability must urgently be brought into the official organic production system (a conviction shared by many authors working in this field outside the European Union – Howard and Allen, 2010; Goodman and Goodman 2007; Lockie et al., 2006), the initiative was based on the following:

a. A social approach: support for small producers to facilitate settling in rural areas.
b. An economic approach: enhancement of domestic and local markets to reduce the number of intermediaries and therefore achieve fairer prices for both ends of the agrofood chain (producers and consumers).
c. An environmental approach: diversification of farms, both small and medium size, in order to enable more agroecological management, in a more dynamic and stable balance with the natural environment and with less use of external inputs. By this means, the movement of materials and energy within the local agro-ecosystem can be made more sustainable and efficient.

Official figures and the real situation observed shows that the ideals put forward in public policies discourse are not being implemented. This paper seeks to analyse if participatory approaches could be a solution in the building of structural alternatives. For that purpose, we have analysed the attempt made in Andalusia to provide collective responses to the obstacles or problems faced by small- and medium-sized farms. Problems of two types: first, when starting out on the transition to organic management and, second, when seeking official organic certification.

3. Finding collective solutions to the problems faced by small- and medium-scale organic farming: certification as an initial problem

The starting point for this case study came in 2005, when various organic producers' groups in Andalusia warned the then Directorate General for Organic Agriculture (DGAE) (Agriculture and Fisheries Department of the Andalusian Government) of the need to address the issue of organic product certification. The main concerns expressed were about costs and levels of bureaucracy that made the organic certification process very difficult for small farmers; in 2007, Stock drew attention to this issue in other countries such as the UK.

We might usefully start by providing a brief summary of the question of guarantees and certification within the European organic regulatory framework. The guaranteeing of organic products is the process whereby, firstly, producers can show that the products offered have been obtained through a defined system of organic management; and, secondly, consumers can be confident that what they purchase is organic. Guarantees can be provided through a range of different mechanisms. The simplest of these is a direct relationship of mutual understanding between producers and consumers, while more complicated systems include various actors and combine procedures of several kinds. The mechanisms that seek to distinguish a differentiated product from the *standard* one are called, generically, *guarantee systems* (Medaets, 2003: 25).

In Andalusia, entry into a guarantee system is compulsory for any producer wanting to market products under the organic label. This is a European Union requirement, laid down in the Regulation governing the organic production sector (EC No. 834/2007). There is only one officially-recognized guarantee system – third party certification – which entails a procedure through which either the government or duly-accredited private companies inspect production and testify to its organic nature. The mechanism is based on annual technical audits and a complex network of *accredited entities, supervisory authorities* and *accreditation authorities.* Other guarantee options, such as Participatory Guarantee Systems (PGS), are not recognized, neither allowed.

In the light of the demands voiced by organic producers' groups, the DGAE decided to promote a participatory process with a view to building an alternative certification system, adapted to the real situation of these groups. To this end, the Institute of Sociology and Peasant Studies (ISEC) at the University of Cordoba agreed to take responsibility for methodological coordination. The process designed by the ISEC to meet the demands of local organic producers was based on two methodological considerations:

a. Focus on building sustainable alternatives to the certification issue, in the aim of Participatory Guarantee Systems (PGS), adopting solutions that would empower the people involved and enable them to acquire the skills necessary for efficient action and decision-making.
b. Tackle all aspects related to certification, by encouraging reflection on the whole issue, together with a joint search for solutions. This led to the idea of working together to build an alternative system, by means of a process drawing on Participatory Action Research (PAR) methods.

PAR was seen as an essential framework for the collective (participatory) development of an epistemological approach (research) in parallel with a process of social change (action), in continuous feedback. Careful reference was made to earlier uses of this kind of scientific approach in similar contexts (Guzman-Casado and Alonso-Mielgo, 2007; Villasante, 2006, 2002; Encina et al., 2003).

The three producers' and consumers' groups involved in this initiative were located in the Sierra de Segura (Jaén), Castril and Castilléjar (Granada) and the Serranía de Ronda (Málaga), in the region of Andalusia, Southern Spain. These three geographical areas share two key features: the landscape is mountainous, and farms are split into multiple plots, which are well adapted to farming which is not highly mechanized. As a result, farming systems tend to be traditional, and thus lend themselves to an agroecological approach. Nevertheless, a number of major differences between the farms enabled researchers to analyse the influence of certain variables, such as surface area and type of farmer, on the success of participatory action research (Table 2).

The process lasted about two and a half years, and comprised five stages, developed independently by each of the areas.

The initiative was implemented in the form of three parallel processes, one for each geographical area, in order to enhance the endogenous potential of each area in terms of local organic production and relations between producers and consumers. Each stage is shown in Fig. 1 as a rhombus, representing the idea of opening up to all the visions and concerns expressed by the participants, at the start of each stage, followed by consensus and specific measures, thus leading into the next stage. One key feature of the initiative, reflecting its particular nature, was that field visits and trials of the new certification procedures were carried out in each area, with the involvement of all the participants; consensus decisions taken in open meetings and subgroups were then discussed and debated on farms and in outdoor spaces. Schematically, the content of each stage (lasting 4–6 months) is described in Table 3.

Table 2
Characteristics of the areas and participants involved in the research.

Characteristics	S. de Segura	Castril and Castilléjar	S. de Ronda
Surface area (km^2)	1931	374	1389
Municipalities involved	13	2	24
Type of farmers	Professionals (farms as first source of income)	Professionals (farms as first source of income)	Amateurs (farms as second or third source of income)
Group size	26 producers/consumers	8 producers/consumers	18 producers/consumers

Source: Adapted from Cuéllar and Torremocha (2008: 163).

Two of the first issues addressed in the preliminary stage were of an organizational nature: the composition of the Monitoring Committee[5], which was led by the funding institution (the DGAE); and the selection and recruitment of the technical staff who would be responsible for stimulating participation at local level and for the technical-political coordination of the project. In order to identify the context and reach a preliminary diagnosis, semistructured interviews were carried out with key informants.

In the first stage, work focused on identifying the issues to be borne in mind when constructing the alternative certification system. To this end, an in-depth analysis was made of the problems inherent in the official certification system, and the first outlines of what was to be the new model sketch. The second stage focused on giving specific shape to what was starting to become known as the PGS for Andalusia. At the same time, the elements comprising this guarantee mechanism were subjected to preliminary trials (e.g. cross-visits between producers and consumers), the appropriate documents were drawn up and a field visit manual was prepared by the participating groups. The consensus guarantee system drawn up in the second stage was broadly implemented during the third stage. This helped to consolidate the internal organization of the groups, as well as to provide an opportunity for identifying weaknesses, suggesting improvements and starting work on building elements that might facilitate coordination between the three groups: the potential Andalusian Participatory Guarantee System *Network*. The fourth stage was marked by the end of the legislature in the Andalusian Government and the departure of the political figure who had been supporting the project. This change took place before the issue of regulation could be properly addressed. By this time, a collectively-designed PGS model had been built, but was still not legally recognized; the new government team expressed uncertainty regarding this proposal.

One effect of this uncertainty was that the contracts of technical staff who had been stimulating grass-roots involvement in the various processes were terminated. Given this setback, the fourth stage focused mainly on the work of the consolidated groups in each area with regard to their own internal organization. Researchers also encouraged a process of reflection on the future of the initiative as a whole, the groups' willingness to defend the initiative and their ability to engage the new administration on this challenge.

In all four stages, a range of collective techniques for discussion, reflexion and decision-taking were used. In the first and fourth stages, semistructured interviews were conducted with over 40% of participants, in order to contribute to the established objectives.

[5] The Monitoring Committee, in PAR methodology, is a meeting to be convened periodically with those institutions and entities that in one way or another have something to do with the process and its possible outcomes and decisions, in terms of political support, funding, etc.

4. Processes that generate changes beyond the solutions sought

In addition to constructing an alternative guarantee system that would reflect the real situation of Andalusian small-scale producers, the PAR sought to bring about social changes. Changes were measured through qualitative semistructured interviews, carried out at the beginning and at the end of the process. Interviewing the participants at these two points in time enabled us to analyse the changes that had taken place with respect to their willingness to work together to solve farming problems. The extent of the change varied from one group to another. At first, participants' attitudes were marked by distrust of their neighbours. Serious doubts were expressed regarding the success of a process that aimed to solve the problems detected in a participatory manner.

> *"Here, it is difficult to relate to people. Here we are very independent for everything" (P6)*
> *" We're very bad at working together (…) I think it will fail; we're very individualistic, we don't share, we don't work together" (P18)*

These comments indicated a complete absence both of social processes and of public policies aimed at generating social networks and promoting interpersonal relationships within the agrofood system. The prevailing view suggested that the general tendency in the area was to complain and to wait for solutions from outside. Therefore, the possibility of active personal involvement in finding solutions was not a feature of collective discourse.

> *"what I fear is that as soon as you go away we'll collapse (…) when there is no coordinator, no-one from outside…" (P5)*

Given this passive, individualistic attitude, the public administration had an essential role to play. Informants noted that few people were willing to spend their limited time on running the process. They spoke of the need for the public administration to establish a reward or issue a directive to drive the process. This approach was thought to be more in accordance with the procedures that they were used to.

> *"…there should be more people involved, and this is something that the public administration has to decide, not us" (P1)*
> *"Round here, the model that works is - <I can't do anything, I'm not budging and I'll wait for it to be done from outside>"(P22).*

Discourse of this sort may in part reflect the approach adopted by the European Common Agricultural Policy, based on subsidies. This welfarist and vertical public policy may have influenced, decisively, the adoption of passive attitudes in rural areas of Andalusia. The perceived attitude of the people involved was one of expectation. There was no real intention of getting involved, until the first results were evident. The success of the project was a matter of considerable debate.

> *"Some people are in the rearguard, just waiting for things to be sorted out; you have to drag them in" (P2)*

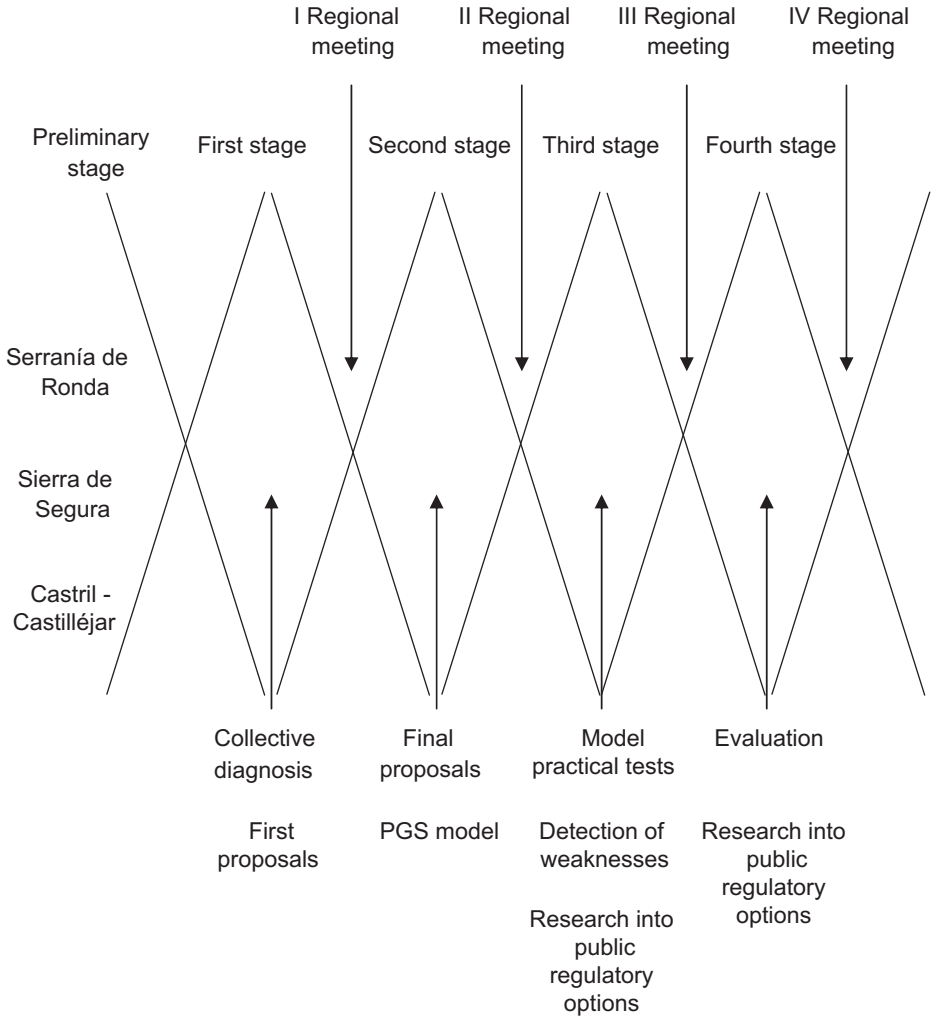

Fig. 1. Flowchart for building an alternative guarantee system in Andalusia.

"Some people are very pissed off (…) I'm afraid there's going to be jealousy and attitudes like " (P22)
"The trickiest issue is people's willingness or availability (…) the real problem, as far as I can see, is that people are not really willing" (P10)

Table 3
Research stages and methods.

Stage	Objectives	Methods
Preliminary	Identify the socioeconomic situation in each area Open the process up to all interested parties in the area Collectively establish a first approach to the problem	Review of literature and secondary sources Semistructured interviews with key informants
First	Reach a consensus diagnosis and prepare first draft proposals	Group reflexive dynamics Semistructured interviews with participants
Second	Draw up final proposals for the alternative Guarantee System	Group reflexive dynamics
Third	Implement the model Participatory Guarantee System	Group reflexive dynamics Field visits and collective trials of the PGS model
Fourth	Evaluate the model and the processes used. Identify any new issues	Group reflexive dynamics Semistructured interviews with participants

Some participants indicated that a process like this required a change of attitudes, to address local apathy. In this sense, the process was considered complicated, and was questioned in terms of both time and goals: "*You want to organize a "self managed" group and you want that group to work independently; well, that doesn't happen in a month and a half*" (P21)

These were the views expressed at the start of the project. After one and a half years' work on a collective, dialectic process, which promoted dialogue and joint reflection, the situation at local level had changed. The project prompted a shift in attitudes; instead of passively waiting for external solutions, people displayed a more responsible, active attitude, and a willingness to work together. The process of change was seen as slow, but people appreciated that the project had brought some changes in this respect.

*"Solving the problem of out of habit is usually difficult (…) It's not an issue you can deal with in a few months. You can lay the foundations, but… it's a long-term job" (P44)*However, in Castril/Castilléjar and Sierra de Segura, there was clearly a sense of a process of alignment and communication between people, through which participants recognized that they shared the same problems, and faced the same daily obstacles in their work. This mutual recognition laid the foundations for a satisfactory approach built around shared problems. One direct effect was that informants expressed confidence in the group and the ability of its members to communicate.

"It brings us together, the issue of promotion and consumption of organic products, but we are all pretty different from each other" (P27)

*"We're all clear about the group, and in general we've all been very much in agreement on the matters raised (…) it has all gone along very well. (P45)*In Castril this trust has matured, and there is confidence in the group's ability to work together to build endogenous processes: *"At first, we were almost all speaking just for ourselves, then we accepted that we have things in common, and at least use the same language, (…) what's more, groups are now starting to be formed '(P28)*

In Sierra de Segura, confidence was built up with a greater degree of empathy and involvement; this was a somewhat emotional issue for participants. This is perceived as an element of strength and motivation for the group: *"And the other night I was thinking (…) what is the thread that holds us together? Because it's very difficult to explain and very varied, but there is a sediment (…) we know it's there, right?" (P44)*

In these two areas, there was a perceived across-the-board need for continued technical support to constantly drive the process, and to guide the implementation of the actions arising as a result of this dialectic process. The results in the Serrania de Ronda, where a part-time dedication to the primary sector is usual, were quite different. There was no question that the project had been a failure, and that it should finish. However, some valuable progress was observed, albeit at a very slow rate. Given this shared analysis, which pointed to a certain lack of cohesion within this group, the participants stressed the need for a dynamic coordinator who would continue to help drive the process.

"We worry a bit, when we actually have to lose the coordinator, whether or not the group will have the energy, the time, and sufficient motivation and support" (P33).

In this area, only a few participants saw the future of the process as a source of motivation, and the group as a positive, optimistic unit: *"The people are hyper, hyper, hyper, hyper, hyper-open, hyper-emotional, hyper-cooperative. That's the way I see it (…) People are very receptive but pushy" (P35).*

In view of the perceptions voiced, it might be assumed that a dialectic process, in an agricultural setting and in areas of this kind (part-time nature of agricultural sector), is unlikely to achieve big results. One option might be to place this project within a wider, more comprehensive approach, and relate it to other economic sectors. This would ensure that problems were addressed with a response well-suited to the social and economic situation in these areas.

It is interesting to note that the original problem of distrust in the government did not appear in the views expressed by informants at the end. This may be due to the serious, committed approach to implementation of the project. The collective establishment of goals and planning, the ongoing monitoring and direct involvement of the technical staff meant that people were able to overcome that initial distrust. Initially, however, distrust was a reason for limited involvement of others in the project. This suggests that there is little point in public bodies promoting processes of this nature if there is no real commitment to its ongoing support and continuity.

5. Contrasting the speeches with the facts

One of the items selected to assess the local impact of the project was the number of references in the interviews to perceived changes in the area. Implementation of the process, as we have seen, was different in each area, due to physical differences, to the particular outlook of the people involved, and to the dynamization process itself. The first outcome emanating from regular meetings between the three areas was their joint participation in the "Bioferias"- organic markets organised by the regional government. The then DGAE proposed that stakeholder groups should operate a shared stall in these markets.

The actual participation of each of three local areas differed, largely as a reflection of the level of group cohesion attained. The Castilléjar-Castril group displayed the most active involvement, taking part in all the Bioferias and taking responsibility for logistics and stall organization. The Segura group was involved, providing goods and staff, in half of the Bioferias, and helping with organizational and logistical tasks. The Serranía de Ronda group failed to participate in any of the Bioferias, providing neither goods nor people.

In all three areas, the process of mutual understanding and exchange generated through the project had direct consequences. The sharing of experiences and knowledge provided opportunities for reflection, and allowed the pooling of ideas and the drafting of joint proposals. This strengthened the trust between the people involved and established relations of mutual support.

In the two areas where the process worked positively, Castilléjar-Castril and Sierra de Segura, there was evidence of the creation of a social fabric related to the project, enabling the organization and development of specific proposals for action. In this sense, the participants stressed the interdependence created between producers and consumers, and between both groups and other local people.

*"It has given me a chance to find out more about the countryside and farmers, who have a different philosophy of life and work from dawn to dusk (…) and I found all that that very striking " (P29)*In Ronda, the exchange process was valued as a chance to meet and bond with people with shared affinities. Although synergies did not go beyond this perception, the potential for interaction was acknowledged: *"You've met other people, seen how they think, how they cope, and you realise that even if the thing hasn't turned out as well as perhaps expected, it is a seed that has been planted and you've had a part in it" (P36)*

Many participants, however, perceived that the promotion of mutual understanding, exchange and joint reflection facilitated the acquisition of knowledge. The project enabled them to acquire certain technical, organizational and self-management skills. It also broadened their horizons, and encouraged them to appreciate other viewpoints and work together.

"There is a group that feel empowered. If they attend a conference or something like that on Organic Agriculture, and if you put your hand up with a question, they know the answer. Credit where it's due. "(P43).

The perceived changes prompted by the process went beyond the provision of spaces for discussion and joint analysis. As the result of a project in which their voice could contribute to solving their own problems, participants became more aware of their own situation, expressed their view and generated proposals for action; that in turn prompted a change towards a more active approach. This served to overcome the initial apathy and passivity.

"I believe the major achievement is that people feel that as if they're helping to build their lives, in many cases they say so, before they've even had the chance to be builders… and now at least, even if only a little, they feel they are having their say and can decide on some things, and that may affect some others "(P25).

In the Serrania de Ronda, the view of the informants indicated disappointment at failing to achieve the objectives. However, the process was seen as a seed that had been planted: *"I think we are*

getting together. After all, we are here…" (P33). A minority of interviewees noted that frustration due to disappointing results may lead to discouragement when involved in new projects or processes. This aggravated a situation already marked by a certain initial distrust and by apathy with regard to participating in group projects.

> *"When the experiences we've had in most cases haven't been too positive, then we don't have a lot of motivation to keep going, right? At least in the short term"(P34).*

Where the process has had positive results both for the participants and for the local area, i.e. where shared efforts have generated a degree of self-management and self-organization, the informants themselves have perceived this. This attitude has overcome the initial preference for complaints, driving participants to initiate and develop their own proposals.

In Castril, the creation of a social fabric based on relationships of trust between producers and consumers, together with the acquisition of certain organizational skills, meant that informants felt they were leading their own processes, which resulted in a number of initiatives. In summer 2008, this group established three *Bio-puntos (*organic stalls) in local markets and in nearby towns; the group supplied organic produce to six schools in three districts of Granada, and took part in the DGAE-organized *Bioferias*, with their own stalls in addition to the stalls shared by all the Andalusian PGS groups. They also reached an agreement with an organic producers' and consumers' cooperative in the city of Granada, El Encinar, for the supply of a pre-established volume of organic products at prices negotiated in a transparent manner.

Similar developments took place in the Sierra de Segura, although group actions began later and progressed at a slower pace. In one of their meetings in 2008, they raised the idea, currently being implemented, of establishing a collection point for organic produce in the town of Puente Génave, with the idea of supplying a consumers' group then being formed, through an on-line ordering system of weekly organic produce baskets. In terms of openness to the general population and the local area, they supported the Biosegura Conference, held in August 2008 in Beas de Segura, organizing part of the program's activities.

By contrast, the progress of the project in the Serranía de Ronda partly accounts for the feeling of not having achieved the desired objectives. The low level of maturity and group cohesion reached in Ronda meant that there had been no real and visible initiative on the part of those involved in the group. While there was some motivation to create a consumer group in the summer of 2008, it failed to fully develop.

6. Main lessons learnt

At the start of the PAR project, participants had a limited preliminary idea about guarantee systems for organic products. They had not envisaged other possibilities or options beyond third party audits. Among other reasons for this, it is clear that official regulations excluded the possibility of any other option, and no information was provided on other possible mechanisms. Going back to Foucault's question "who is speaking?", we identify that institutional voices (namely EU) regulate over, and also against, the possibility of incorporating and learning from sustainable experiencies driven by agroecological-participatory approaches to rural changes.

The process of evaluation, through group meetings at the end of the PAR and semistructured interviews to compare early views with final views, provided a clear idea of the social changes taking place. The researchers had no intention of describing these social changes by means of quantitative variables, as suggested by other authors (see Garmendia and Stagl, 2010). Instead, changes were analysed using reflexive-dialectic and structural methods, opening chances to speak and to propose, unlike the top-down perspective of conventional science. This approach enabled us to ascertain that the main perceived changes were related to early passive attitudes and entrenched views on the whole issue. The provision of spaces for meeting, discussion and joint reflection among participants was an essential factor. In this respect, results showed that it was possible to transform not only the concept itself (organic certification) but also the practice, through social learning processes, as shown by other interesting research in this field (see Rist et al., 2007).

First, the PAR broke down what Guzman-Casado and Alonso-Mielgo (2007) call the social barriers hindering an honest assessment of one of the main problems faced by organic producers in rural areas: the feeling of loneliness and lack of social support. The process brought together people with similar views, a similar mental 'model of the system' being managed and a shared philosophy of relationships with the natural world (Sterling, 2001). These meeting points facilitated mutual recognition, and enhanced the feeling that they were not as alone as they had thought. Problems, causes, and threats identification, as well as possible solutions were shared.

This mutual recognition was useful not only for the process itself and for the solution of the preliminary problems identified; it also generated a network of trust and mutual support relationships between local and external actors. As other authors have reported (Castellanet and Jordan, 2002; Bacon et al., 2005; De Leener, 2005; Rist et al., 2007), the organizational development of local actor networks is one of the strongest points of this methodology. Mutual trust and support relationships are deeply uplifting. The direct effect of this social change is the empowerment (for a discussion of this term see Cuéllar and Reintjes, 2009) of groups that realize their capacity to face shared problems and to propose solutions. At the same time, it strengthens group abilities to initiate processes of self-organization and self-management (this is evident in the present analysis of real changes at local level).

The role of the research and facilitating team was central to the whole process. In fact, most of the difficulties and obstacles encountered during the process arose from what Beck (1992) terms the "institutionalised rationality" of scientists and technicians. The position aimed at in the process was what Ison et al. (2007: 507) terms the "third position" of a research group (co-construction knowledge-in-action with stakeholders in a joint process with shared responsibility). The fourth position (punctual collaboration with self-organising stakeholders that are engaged in concerted action as active citizens) was ruled out, since the preliminary group situation was marked by participant passivity and expectant attitudes, rather than by the required active and self-organising stakeholder engagement (Ison et al., 2005: 507).

One clue to success is the duration of a process. Social change based on mutual recognition and understanding needs a long-term approach, which multiplies the opportunities for interaction among the stakeholders (Bacon et al., 2005; Garmendia and Stagl, 2010). The process itself was the main element throughout the project, rather than research outcomes. Facilitating social change and learning through PAR entrains spontaneous positive effects unimaginable in other research methodologies (Wals et al., 2004; Wildemeersch, 1999).

Nevertheless, we have identified four major practical constraints to this type of induced process. First, the facilitators' profile is essential. Here, the key requirement was that facilitators should have considerable knowledge of organic production, enabling them to provide practical advice and production assistance, and to help solve technical problems whilst simultaneously

facilitating the dialectic process. Given the importance of changed relationships and network building in this type of process, organizational and strategic abilities are also essential. One guarantee of success is the establishment of clear and achievable objectives at each stage, easily measurable, and adaptable to immediate requirements, purposes and stakeholders' needs.

A second potential constraint is the socioeconomic importance of farming. In some rural areas of Andalusia, farming has lost importance, becoming a part-time economic activity for those who still practice it. Participatory processes in agriculture should recognise that part-time producers are likely to participate less in this type of project, unless it can be linked to a wider view of the rural environment and development.

A third element that may hinder initiatives of this kind is the negative experience of earlier participatory projects, which either remained unfinished or failed to achieve established goals, due to an inability to resolve local conflicts. The feelings of frustration and apathy that these failed experiments generate can easily hamper the development of new projects.

Finally, the experience of this initiative has shown that although processes of this kind can serve as a catalyst for social change and learning initiatives, passive attitudes can be difficult to overcome. In settings like this, there is a clear need for medium and long-term participatory action research processes (Garmendia and Stagl, 2010). Technical support will continue to be needed for these processes in the long-term, and a premature withdrawal may generate feelings of abandonment, frustration and distrust.

7. Concluding remarks

As our work has illustrated, agroecology is part of the "science with people" philosophy for action research that currently provides epistemological and methodological answers for a participatory and sustainable development "from below". Through a dialectical process that involves stakeholders and facilitators, alternative guarantee systems can be built up. The result, a Participatory Guarantee System, provides to be sustainable in both social and environmental terms, as a consequence of the empowerment of the people involved and the organic perspective that underlines the whole process of production and distribution. Even more, the passivity and individual attitudes detected initially in local areas were partially reversed through the dialectical process of PAR. Projects of an agroecological nature that would hardly arise spontaneously or endogenously, due to these initial attitudes, can be encouraged using this approach under an interactive participation design. However, the researcher and the technical team must have in mind a deep concept of both agroecology and participation:

a. Elements from the three dimensions described (*ecological and technical-productive; socioeconomic and political and cultural)* must be considered at the same level of importance, as their influence in the success of any agroecological PAR process is equally essential
b. The starting point of any agroecologucal PAR process must be the problems or "pains" identified at local level by local stakeholders; and the solutions must rise up from the reflexive PAR process. It entrains a practical limit to the epistemology of agroecology: the need for long-term processes in areas where passive attitudes are the starting point and the difficulty to connect this need with research rhythms and financial procedures.

In any case, agroecology remind us the need of an holistic approach, in which sociotechnical aspects are examined also under socio-political and cultural premises. By analysing the power relations in the context within which agricultural activity takes place, endogenous solutions can be collectively found out, in spite of the fact that some of the constraints could come from a global scope. As our work has illustrated, technical support is needed and quite frequently demanded from potential participants. However, this technical support should not be oriented to accomplish a pre-defined agenda, but to allow the emergence of those sustainable responses (in environmental and social terms) that are under exploration by innovative practices at rural contexts and agrifood systems.

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