



Towards an agroecological transition in peri-urban agrarian systems in Madrid (Spain)

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Abstract – This study describes a participatory action research used to reconnect urban and rural environments through collaborative agricultural practices and its related ecosystem services. The project is conducted in a periurban municipality of Madrid (Spain).

Keywords – ecosystem service, collective farming, urban-rural relation.

INTRODUCTION

Rural areas cover 90% of the territory in Europe and its ecosystems are the source of most essential ecosystem services (ESs) demanded by both urban and rural populations. However, the human transformation of land cover during the last five decades has promoted farming intensification in the more productive areas and the loss and abandon of rural areas. The conversion of multi-functional landscapes into more simple, productive, and mono-functional ones, threatens the agroecosystems preservation and many intangible ESs, but also the social and economic viability of rural populations (lack of employment opportunities, ageing population, loss of local knowledge). This is a key challenge affecting Madrid, one of the largest cities of Spain with an important metropolitan area and an evident urban and rural gap. Under this context, a transition from industrialized towards an agroecological model is starting to be considered as an innovative strategy (Guzman et al., 2013). In this project we are combining research and action, trying to promote and support the agroecological transition of Madrid through the creation of a permanent agrarian network based on collaborative work with local communities and urban dwellers (reconnecting urban and rural environments). To do so, we are running a pilot experience in Perales de Tajuña, a municipality at 38 km to Madrid, with one of the best agrarian periurban areas of Madrid.

The main goal of this research is to reconnect urban and rural environments through collaborative agricultural practices and its related ESs. Specifically, our aims are to: (I) describe the research action approach used in this process, (II) analyse which are the most socially important ESs provided by agriculture in the empirical case, and (III) explore how far collaborative farming might strength urban-rural relations. The collective character of this initiative could help to elicit the shared and social values of agroecosystems (Kenter et al., 2015), to reconnect human wellbeing with nature, and to value ESs beyond markets.

METHODS

We are using a participatory action research approach based on a series of steps. Here we describe the key events conducted and the outputs obtained in each of them (objective I).

In order to answer to objective II, a deliberative workshop was conducted in July 2015; where 20 participants living in the study area and from Madrid city were involved. During the workshop, participants completed individual questionnaires on ESs preference with a list of ESs, where they chose the contribution of each service to social wellbeing. The idea of this first exercise was to give participants time to thought individually on the topic. Then, they were split into five groups to choose by consensus the top five ESs delivered by agriculture. After that, they discussed about the selected ESs and the reasons of its relevance. Giving answer to objective III, a specific open question was asked focused on the project capacity to enhance rural-urban relations and in which way.

RESULTS

Project brief description

In a previous research we identified the relevant agroecological potential of the study area. Since February 2015, we have run several participatory workshops to reflect and shape the project collectively. The main idea was related on how to promote agriculture on the municipality as a source to revitalize local development, taking into account its environmental, economic and social sustainability. During this process 50 people have expressed their interests and needs.

The first results shed light on: the wide range of stakeholders interested on agriculture. With this information, we conducted a stakeholder mapping (see Fig. 1). Then, an agrarian plot of 3000 m² was rent by local authorities for a training purpose in phases: from training and education on small orchards (50m²) to future early experiences in marketing agricultural products (forthcoming stage) (following Llobera & Redondo 2014). Later, several action priority lines were detected by participants in relation with: designing a training program, designing the main land uses in the plot, preserving traditional varieties, maintaining the essential ESs behind agricultural activities (ie. hydrological regulation, freshwater availability, soil conservation and habitat for species), etc. With this information in mind, working groups have been created (Fig. 1).

Socio-cultural assessment of ESs provided by agriculture

During the deliberative workshop, 15 services were selected by at least one group, showing the variety of ESs attached to agriculture. They were: two provisioning services (quality food products and genetic resources of local varieties), four regulating

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(soil fertility, air quality, water retention, and habitat for species), and nine cultural services (exchange of information and knowledge, being part of a community, preserving cultural agrarian landscapes, environmental awareness, entertainment, self-esteem, physical exercise, local identity attached to agriculture, and satisfaction for preserving other living things). From those, quality food products and knowledge exchange were highlighted by all (5/5) or almost all groups (4/5).

Collaborative agriculture to strength urban-rural link

All participants highlighted the project capacity to build bridges between urban and rural areas. Arguments have been grouped in four main discourses:

1. Collective project vocation: decisions and farming task are taken and performed collectively. The

opportunity to rediscover collective wellbeing going beyond individualism was mentioned.

2. Engagement of rural and urban participants: participants highlighted the impact of including people living in both environments that promote the integration of different sources of knowledge and skills, comprising innovation with traditions.

3. Strengthening inhabitants bonds with nature: this discourse was related with the increase of connectedness to nature, the improvement of environmental awareness and the respect to the rhythms of nature due to the time spend in nature.

4. Urban dwellers as consumers of local farming products: it was related with the possibility to create producers-consumers networks, establishing relationships with urban dwellers interested on purchasing locally produced food.

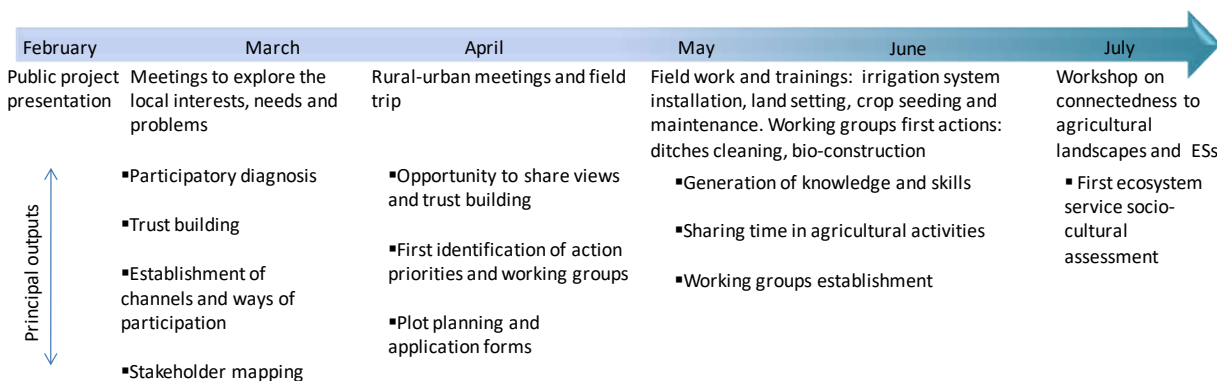


Figure 1. Key milestones taken place during the participatory action research study

DISCUSSION AND CONCLUSIONS

We have found the use of collective approaches and deliberative techniques as suitable tools to create spaces for social learning and knowledge co-production around innovative way for sustainable agriculture; as suggested by recent publications (Kenter et al., 2015). Following our findings, collective farming provides a large and diverse flow of ESs, being cultural ESs the most valued, which is congruent with the tendency of previous studies in home-gardens (Calvet et al., 2012). It is also remarkable the large number of cultural ESs mentioned which were particularly attached to physical and emotional health and other most invisible human wellbeing components, as the establishment of farming networks. As Plieninger et al. (2015) highlighted cultural ESs could help to engage different actors with agricultural landscape management.

In spite of the mainstream of the ES concept, it has remained almost absent in agricultural sciences (Tancoigne et al., 2014). The ES approach could help to understand agroecosystems in terms of its tangible and intangible contribution to human well-being. We hope to contribute to the design of a new model (applicable to other areas) in which collective learning and community management feed agricultural practices to reconnect urban and rural areas, unravelling the multiple ESs provided by farming practices.

ACKNOWLEDGEMENT

The authors gratefully acknowledge all of the participants, for their compromise with this initiative.

Funding for this research was provided by a postdoctoral grant from the Spanish National Institute for Agriculture and Food Research and Technology, which is co-funded by the Social European Fund, and by the project FP13-EMPL funded by IMIDRA.

REFERENCES

Calvet-Mir, L., Gómez-Baggethun, E. and Reyes-García, V. (2012). Beyond food production: Ecosystem services provided by home gardens. A case study in Vall Fosca, Catalan Pyrenees, Northeastern Spain. *Ecological Economics* 74:153–160.

Guzmán, G., López, D., Román, L., and Alonso A.M. (2013). Participatory action research in agroecology: Building local organic food networks in Spain. *Agroecology & Sustainable Food Systems* 37:127–146.

Kenter, J.O., O'Brien, L., Hockley, N., et al. (2015). What are shared and social values of ecosystems? *Ecological Economics* 111:86–99.

Llobera, F., and Redondo, M. (2014). Dinamización de iniciativas locales agroecológicas: el método TERRAE. Consumo gusto TERRAE. Diseñando estrategias de transición agroecológica desde la iniciativa de las administraciones locales. Red Terrae, MAGRAMA y Fundación Biodiversidad

Plieninger, T. (2015). The role of cultural ecosystem services in landscape management and planning. *Current Opinion in Environmental Sustainability* 14:28–33.

Tancoigne, E., Barbier, M., Cointet, J.P. et al. (2014). The place of agricultural sciences in the literature on ecosystem services. *Ecosystem Services* 10:35–48.