



# Sowing landscapes: social and ecological aspects of food production in peri-urban spatial planning initiatives - a study from the Madrid area

SALVATORE PINNA<sup>\*1</sup>,

<sup>1</sup> Department of Civil Engineering, Environmental and Architecture, University of Cagliari, Italy

\* Corresponding author: [pinna.salvatore@unica.it](mailto:pinna.salvatore@unica.it) | Tel.: +39 328 75 38 907

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## Abstract

Multifunctional and Peri-Urban Agriculture (MFA and PUA) have spread all around the world as new, alternative means of food production. Due to their non-productive services, they are considered fundamental for food sovereignty and rural development, and also as tools to conserve the rural-urban fringe and limit sprawl. MFA and PUA are very often embedded in Alternative Food Networks (AFNs), which represent a change in food production and consumption practices. Drawing upon the definition of landscape according to the European Landscape Convention, this paper aims to show how a municipal rural park in the region of Madrid, established to boost local and seasonal produce, plays a significant role in agricultural landscape enhancement. In-depth interviews and website analysis have been used to highlight how spatial, ecological and social outputs of MFA, conceived and promoted by farmers, interact with the park management framework. Results are discussed in light of the Spanish environmental and landscape laws, focusing particularly on the connection between food, territory and traditional landscape. This relationship could open a new spatial planning mindset, taking into account cultural and social aspects of food production and consumption, boosting sustainable tourism and reinforcing the relationship between rural and urban spaces.

## Introduction

Within the broad debate about agriculture and environmental and landscape protection, this paper aims to analyse the role of Multi-functional Agriculture (MFA) and Alternative Food Networks (AFNs) in the maintenance of rural landscapes with a case study in the urban-rural fringe of Madrid, Spain. Nowadays, two fifths of the European continent is cultivated (Eurostat, 2013) and 45% of the European Union budget is dedicated to the Common Agricultural Policy (CAP) (European Commission, 2014). The shift of the CAP from providing mere economic support to production in the 50's to establishing the current complex set of norms including environmental themes (European Union, 2015) reflects the importance of the environmental impact of food production.

There are three levels of agricultural landscape manage-

ment that must be considered (Lefebvre, et al., 2015): i) farm level, where the choice of production methods shapes single parcels; ii) landscapes formed by the aggregation of single parcels; and iii) the whole EU territory. It is important to focus on how the first two levels interact with each other. If the management of farm micro-landscapes is generally based on cost-benefit assessments made by farmers (Lefebvre, et al., 2015), the global impact is evident on the secondary level, formed by "area[s] of coherent landscape character or [...] sub-unit[s] of a natural region" (Lefebvre et al., 2015, p. 4). Although many papers have investigated the role of MFA in landscape protection, analysis has often been restricted to the farm level (Busck, 2002) and rarely addresses larger scales (Hedberg II, 2015). With respect to AFNs, studies related to their role in landscape (Hedberg

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II, 2015) and biodiversity conservation are insufficient (Simoncini, 2015). A number of investigations of rural parks in Europe and Spain in particular have been conducted (Yacamán Ochoa, et al., 2015; Yacamán & Mata Olmo, 2014; Fanfani, 2006), but there is lack of evidence concerning the interaction between farm and landscape scale management.

Drawing on these considerations, this paper aims to study the aforementioned interplay in the context of a rural park that was created based on the concepts of MFA and AFNs located in peri-urban space, through the analysis of in-depth interviews of producers and farm websites, to discover whether and how landscape level goals are embedded in the management and promotion of single farms belonging to the park. In order to contextualise these goals, the first part of the literature review presents the scientific debate over MFA and AFNs. Subsequently, the Spanish legislation system regarding environmental protection is explained, with a particular focus on landscape. The following section describes the working principles of the case study. After presenting the methodology, results are listed and discussed. Conclusions highlight the novelty of the results and their contribution to the literature, as well as their potential application to other case studies.

## Literature review

### **Agricultural multi-functionality**

Due to their non-productive outputs (Brinkley, 2012; Mata Olmo, 2004), the importance of MFA and Peri-Urban Agriculture (PUA) nowadays in protecting the environment and rural landscapes is well-recognised by scientific research. Non-commodity outputs are described by the concept of Ecosystem Services (ES), which refer both to ecological and cultural benefits (Lovell, et al., 2010). Regulating services refer to the ecological mechanisms that can be maintained and improved by agriculture practices (Swinton, Lupi, Robertson, & Hamilton, 2007), such as biodiversity conservation (Renting, et al., 2009), water management and carbon sequestration. Cultural Ecosystem Services (CES) include aspects such as aesthetic concerns as well as conservation of tradition and history (Hedberg II, 2016). Other services provided by multifunctional agriculture include land-use diversification (Paül & McKenzie, 2013), urban sprawl limitation (Nahmias & Le Caro, 2012), and proficient management of the urban-rural fringe, in contrast to the traditional zoning and land-use restrictions (Zasada, 2011).

Although the definition and theoretical use of MFA are still somehow fuzzy (Zasada, 2011), they are based on the term *function* - "the provision of goods and services by 'land systems', which include the natural environ-

ment and human activity" (Huang, et al., 2015, p. 140). As a response to pressures on peri-urban agricultural spaces (Zasada, 2011) as well as the growing demand for leisure activities within rural spaces and regional food, multi-functionality is very often embedded into PUA. This demand might contrast with the exile of agriculture from urban empty spaces, which are seen purely as lots for future city growth (Nahmias & Le Caro, 2012).

Due to the large impact that decisions regarding non-productive functionality can have on agricultural landscapes (Lefebvre et al., 2015), MFA plays an important role in the conservation of these aspects, as the landscape is "the system where farmers interact with both natural and social resources through the management of their fields" (Benoit, et al., 2012).

The importance of ES as public goods is recognised and supported at a normative level, for example by the Agri-Environmental Schemes (AES) of the CAP, which aim to implement and boost ES by changing practices at the farm level (Home, Balmer, Jahrl, Stolze, & Pfiffner, 2014) to those which have the potential to restore the former quality of farmlands (Wade, Gurr, & Wratten, 2008). These incentives are often established because, at the farm level, it is difficult to see (and, thus, understand and accept) the link between agricultural practices and non-productive outputs (Swinton, Lupi, Robertson, & Hamilton, 2007). The importance of each of these functions depends on the context where the activity is located, not only because of the territorial characteristics, but also according to policies and regulations (Renting, et al., 2008).

Multi-functionality also characterises Alternative Food Networks (AFNs) (Migliore, et al., 2015; Renting, et al., 2003), since these networks of producers, consumers and other actors are "mechanisms that allow certain environmental benefits to be included in the price of production, [...] and also have social benefits" (Fielke, 2015). Indeed, these environmental and social benefits change according to the farmers' specific attitude and their way of conducting business (Pinna, 2017; Morris & Kirwan, 2011b).

In recent times, scientific interest has increased in the role played by AFNs in conserving biodiversity (Brunori & Di Iacovo, 2014), focusing on the safeguarding of traditional and local varieties formerly abandoned by conventional agriculture (Simoncini, 2015).

### **Embeddedness and 'geographic lores': tools for the study of AFN multi-functionality**

In the vast AFN literature, many theoretical tools allow examination of how multi-functionality is embedded in



the working system. The concept of embeddedness is one of these tools. Defined in 1944 by the economist Karl Polanyi, embeddedness is the degree to which non-economic institutions (e.g. politics, religion and society) constrained the economy in pre-industrial societies. Polanyi's theory was a contrast to classical economics positions, which considered economy to be dis-embedded from society and believed in market self-regulation. In 1985, Granovetter revisited the concept, demonstrating its influence even in capitalist societies and the non-existence of "pure" economic models. The concept of embeddedness started being used in rural and agri-food research since the study by Murdoch, Marsden & Banks (2000), which stressed the influence of natural and social relations on the food supply chain.

According to Penker (2006), three dimensions typify embeddedness: i) social, ii) spatial, and iii) ecological. The first explains how the social background drives the relationships between producers and consumers (e.g. the generation of trust through direct sale). Spatial embeddedness is based on the reorientation of society to the importance of location (e.g. the fame of a territory as a guarantee for product quality, short food supply chains, and origin labels). Finally, environmental consciousness and the associated practices (e.g. organic production and Agri-environmental Measures) connote the ecological embeddedness.

The theoretical framework proposed by Crang (1996) and Morris and Kirwan (2010) for the analysis of promotional material has also been considered. Crang's original model draws upon the concept of *displacement*, explaining how purchasing decisions are influenced not only by the geographical origin of food, but also by every type of information flowing through the whole supply chain. According to Crang, this information collectively comprises the food biography (i.e., the history about its place of origin and distribution chain) and "appropriate settings for use" (Crang, 1996, p. 48). Morris and Kirwan (2010) adapted Crang's original theory to the case of Natural Embedded Food Products (NEFPs), a particular type of AFNs based on a broader concept of quality including, besides the organoleptic characteristics, cultivation territory characteristics and production methods (Sage, 2003). The categories proposed by Morris and Kirwan to justify food quality (and, sometimes, its price) (2010) are: i) *geo-historical knowledge* provided by textual and visual materials portraying the story of food and of its territory of origin; ii) *naturalistic knowledge*, which recounts the ecological background in the food production-distribution process; and iii) presentation of "topical discourses within the food supply chain" (Morris & Kirwan, 2010, p. 138). The application of these models to the case study is described in the methodology section.

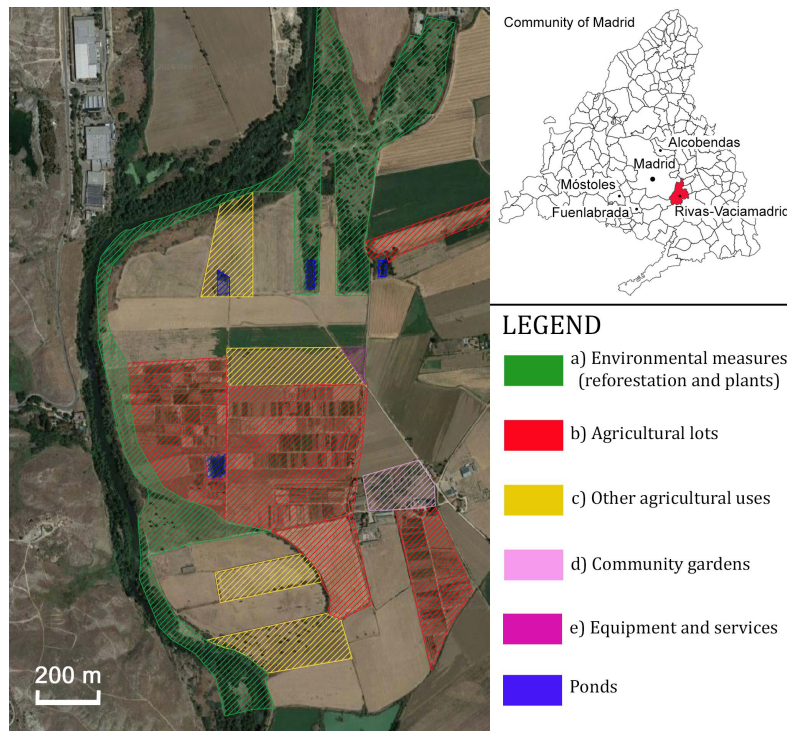
## Case study presentation

### ***Landscape governance within the Community of Madrid***

Landscape conception has radically changed over the years. In the 1980's, landscape ecological aspects were added to the aesthetically-oriented vision of the 19th century. With the establishment of the European Landscape Convention (ELC), landscape has assumed a multi-faceted character as "the result of the action and interaction of natural and/or human factors" (ELC, 2000, art. 1), encompassing "agronomic, environmental, social, cultural and economic dimensions" (Lefebvre et al., 2015, p. 2). Within this vision, instead of representing a specific landscape typology (Mata Olmo, 2004), agricultural and rural landscapes are the consequence of the interaction between the natural and social context (Troitiño Vinuesa, 1995). As a consequence, it is fundamental to analyse "the elements forming the rural landscape [...] as the formal and all-encompassing expression of the combinations among agricultural practices, history and nature" in order to channel non-sectorial policies into rural landscape protection (Mata Olmo, 2004, p. 110).

Since the 1990's, the Spanish environmental legislation has focused on the abandonment of the "museumological" concept of environment and landscape and moved towards a sustainable approach. Two planning tools born out of this focus are noteworthy. The Natural Resources Arrangement Plans (in Spanish: Planes de Ordenación de los Recursos Naturales, PORN) regulate protected spaces at the national and autonomous regional level, whereas the Use and Management Master Plans (in Spanish: Planes Rectores de Uso y Gestión, PRUG) administrate protected spaces and parks (Troitiño Vinuesa, 1995; Ley 4, 1989). This policy framework evolved further by incorporating the ELC principles. For example, the law 42/2007 regarding natural heritage and biodiversity refines the concept of landscape to include its natural and cultural components (Mulero Mendigorri, 2013). However, the specification of rural and agrarian landscapes is still missing at all levels (Mulero Mendigorri, 2013; Troitiño Vinuesa, 1995), with the exception of some isolated protected spaces (Mata Olmo, 2004; Troitiño Vinuesa, 1995). Moreover, there is a lack of autonomic coordination among PORNs, PRUGs, and other planning tools (Mulero Mendigorri, 2013).

Despite the large amount of protected spaces in the Community of Madrid – 70% of the regional territory (Mata Olmo, et al., 2009) – the *protected landscape*, introduced by the law 42/2007, is absent in this region (Mulero Mendigorri, 2013). This protection not only establishes the conservation of singular values characterising those landscapes that "deserve special attention", but also aims



**Figure 1:** Zoning of Soto del Grillo Park. Source: Romea Rodriguez, 2013 (personal author's elaboration)

to “preserve the harmonious interaction between nature and culture in a given region” (Ley 42/2007, art. 35). This lack of protection, together with the unsuccessful initiative for a Land Strategy Regional Plan in 1995 that was supposed to be a territorial model for Madrid (Mata Olmo & Yacamán Ochoa, 2015), appears to be in contrast to the large potential offered by certain municipal territories that have great agricultural suitability. Within this high-quality agro-ecologic background, “Madrid has still a peri-urban agriculture with opportunities, but without a project” (Mata Olmo and Yacamán Ochoa, 2015, p. 267).

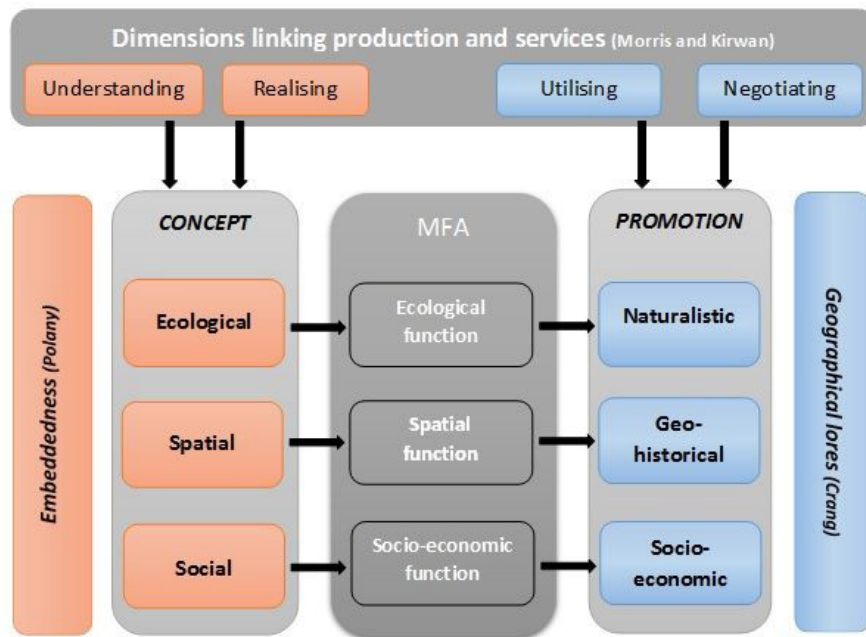
Some municipal initiatives have tried to link spatial planning to rural-based landscape, with the idea to “strengthen the base for a regional green infrastructure” (Mata Olmo & Yacamán Ochoa, 2015). Such projects attempt to incorporate agriculture into the concept of space as a “common good” and to reinforce food production within the urban-rural fringe as niche initiatives in a conventional system (Simón Rojo & Morán Alonso, 2014).

### **Agri-food landscape protection in Rivas-Vaciamadrid**

Among the aforementioned initiatives, the Soto del Grillo Agro-ecological Park was established in 2013 in Rivas-Vaciamadrid, within the metropolitan area of Madrid. Despite the excellent agrarian suitability of the municipal territory, and its high percentage (71%) of protected areas (García Alvarado, 2000), the project was conceived as a response to the abandonment of agricultural lands due to the lack of generational replacement and ecosystem degradation (Yacamán Ochoa et al.,

2015). The park aims to: i) promote fresh, local and seasonal food consumption; ii) create new jobs, and iii) improve shortened food supply chains, in accordance with sustainable development and conservation of typical landscapes and natural resources (Rivas-Vaciamadrid, 2015). The achievement of these goals was boosted by a bi-weekly farmers’ market (Campelo & Piedrabuena, 2013). In addition, a quality label named “Fresh Produce from Soto del Grillo Agro-ecological Park” was created in April 2015.

The park is currently administered by the environment and mobility councillor but, in the future, a management body including private owners, producers, association networks and users will be formed (Romea Rodriguez, 2013). The park territory is included into the D2 zone of the South East Regional Park (a protected space established in 1994) for the orderly exploitation of natural resources (Parque Regional del Sureste, n.d.). Soto del Grillo also belongs to a Special Protection Area (SPA) and to a Site of Community Importance (SCI). For these reasons, according to the PORN and the PRUG of the South-East Regional Park (Yacamán Ochoa, et al., 2015), the Municipal Master Plan of Rivas-Vaciamadrid classifies the park area as non-building land, where “transformation and urban development are forbidden due to its incorporation to special protection regimes” (Rivas-Vaciamadrid, 2003). The park does not have an internal plan, but rather defines simple prohibitions regarding natural resource usage, protections for fauna and flora, and rules regarding agricultural methods, traffic, fire prevention, noise and



**Figure 2:** Theoretical framework of the study (Source: Author)

camping. The first phase of the project involved a municipal area of 85 ha. A second step will include other 300 ha of private property (Yacamán Ochoa, et al., 2015). The zoning is defined as follows (Romea Rodriguez, 2013): a) environmental protection; b) agricultural production; c) other agricultural uses; d) agricultural training and community gardens, and e) equipment and services (**Figure 1**).

Zone a) is comprised of reforestation interventions, riparian forest establishment and hydraulic heritage (ponds and natural lagoons) restoration. The productive area is composed of zones b) and c), which are dedicated to irrigated agriculture (vegetables and fruits) and rain-fed agriculture and grazing, respectively. The agrarian lots, delimited by living fences, have been assigned to farmers according to the following criteria:

1. experience of the project developer;
2. aspects of production innovation;
3. marketing strategies (distribution channels and promotion);
4. economic and financial viability;
5. job creation and social and local initiatives.

## Materials and methods

The theoretical tools described in the section 2.2 have been modified in order to underscore the diverse *functions* of MFA and AFNs in the interviews and websites. The concepts of ecology, space and society that define embeddedness were considered a good base upon which to build the methodology because they encompass a broad range of dimensions where functions develop. Moreover, by partially changing the models of Crang

(1996) and Morris and Kirwan (2010), website contents could be schematised according to the same concepts. Thus, the first step was the addition of the concept of *geographical lores* to the model in order to study the correspondence of geo-historical and naturalistic knowledge to the concepts of space and ecology. This social dimension previously had no match in the Crang's and Morris and Kirwan's models. For this reason, the "topical discourses within the food supply chain" (Morris & Kirwan, 2010, p. 138) have been widened to include, besides the ideas about food quality, all the socio-economic implications of alternative cultivation and distribution systems. The new category is called *socio-economic knowledge*.

The second step consisted of choosing a way to clearly identify and classify farmers' insights, practices, and promotional strategies. Another work of Morris and Kirwan (2011) was helpful in reaching this goal. The authors suggest the use of four dimensions to link the production process to its services and outputs. The first three dimensions are managed by farmers, whereas the fourth relates to consumers' choices: i) *understanding* how production methods generate ecological and socio-economic benefits; ii) *realising* these benefits through productive and non-productive practices; iii) *utilising* the previous two dimensions in order to exchange information with customers, and iv) *negotiating*, which consists in evaluating the information received by producers to choose the best option.

To organise the themes that emerged from the data and describe the results, *understanding* and *realising* were linked to the concept of functions (analysed through embeddedness), whereas *utilising* and *negotiating* re-



late to the promotion of functions (analysed through geographical lore). **Figure 2** schematises the theoretical framework.

7 of the 17 producers enrolled in the municipal project were chosen with the snowball sampling technique (Goodman, 1961). Interviews and websites were analysed by the codification method (MacQueen, 1998). Texts were labelled with codes to bring similar ideas together (Fernandez Nuñez, 2006; Rubin & Rubin, 2011), and each code was linked to one of the dimensions of embeddedness.

## Results

Agricultural functions are presented according to how they were conceived, i.e. understood and realized, by farmers and promoted, i.e. utilized in the customer's evaluation of the websites. In the former case, farmers' insights and descriptions of multifunctional practices are reported. In the latter, website contents are described. With the aim of doing a discursive presentation, outputs are reported in the form of descriptions and text quotations, which embody the repeated incidences of a single idea (Corbin & Strauss, 1990).

### **Spatial function Concept**

This function reflects ideas and actions aiming to "re-embed food systems" (Penker, 2006, p. 369) that generate trust between producers and consumers, as well as the *zero miles* and *localness* concepts. Territorial identity, including heritage from ancient generations, justifies the importance of consuming local food and restoring lost varieties as a way to maintain unique regional environmental conditions. The use of certified seeds is considered a hindrance to this end:

"Seeds produced by multinationals are nonsense. Although they produce more, their results are the same here as in China. We cannot use indigenous seeds produced by the Institute of Agrarian Research, because they are not included in the list of the Ministry of Agriculture for organic production. Yet, they are suitable for this territory."

Food seasonality, instead of being approached just through a discourse of freshness and quality, is the consequence of respecting local traits. Furthermore, it is a way to educate people about local consumption, which can be a critical issue in organic agriculture:

"My project is dedicated to seasonal vegetables, suitable for the weather and the climatology, that are very specific here. Local produce gets people used to seasonal consumption. In this way, we do not bring products from far away,

which happens very often in organic markets." Recovering heirloom regional varieties is linked to culinary history, confirming the importance of cultural factors for the conservation of biodiversity (Simoncini, 2015):

"The richness you are introducing in the kitchen to people suddenly becomes something cultural. People usually eat four tomato and pear varieties, but many others that are indigenous exist. Producing these "new" types [has resulted in] lost flavours of produce that is no longer cultivated, which pushes people to look for lost things. Tomatoes that taste like tomatoes!"

This culture of food is what Bessièrè (1998, p. 23) calls "food as an emblem". Through food, people identify themselves with the history and cultural heritage of a specific geographical area.

### **Promotion**

On three websites, farms promote themselves by mentioning their location within the park and describing their surroundings. One of them, although in very few lines, presents the park evocatively:

"The farm is located in Soto del Grillo, a kitchen garden blooming within the boundaries of Rivas, to the edge of the Jarama River. It is a natural setting extending in the shade of the Piul cliffs, embedded in the South-East Regional Park."

Another website offers a deeper description of the farm's surroundings:

"The whole region belongs to the natural protected "South-East Regional Park", a unique place because of its lagoons, shelter and mating areas for protected avifauna, and for some botanical rarities."

Furthermore, the website promotes tourist activities like riding, hiking, and biking, including a project to create a biking route through the municipalities belonging to the region. The same website also explains how the region has been suitable for agriculture historically:

"A region of agricultural beauty and richness, shaped as a big valley with fertile irrigated plains embedded among gypsum hills and cliffs. In the past, it formed the fertile region of Madrid, whereas nowadays fodder and cereals (maize) cultivation predominate."

The historical heritage of the zone is presented by mentioning a chapel close to the park in the third web page:

"In this picture of our two-ha farm in the Soto del Grillo, you can see the "Cristo de Rivas" at the bottom-right, above the magnificent cliffs, at the feet of which the Jarama River flows."

These quotations show how the interaction between the *farm* and *landscape* levels is a win-win situation for both. Through agricultural land-use and organic produc-



tion, farms contribute to maintaining the landscape that draws tourism to the park, where people can buy local produce. In this case, the park promotion – through the municipal farmers’ market and the label – encourages tourism at a level that is beyond the single farmers’ control (Brunori & Rossi, 2000). Promotion is also effective in turning the “attitudes of customers into reasons for changing landscape plans” (Brunori & Di Iacovo, 2014, p. 142), shaping the way of *conceiving, perceiving and living food* (which entails indicating the values attributed to food, the knowledge about food, and the way in which food is embedded into practice, respectively) (Brunori & Di Iacovo, 2014, p. 144).

### **Ecological function Concept**

This function encompasses farmers’ ecological insights in embracing the otherness of MFA and AFNs with respect to conventional food chains. Besides the mandatory organic practices, farmers highlight how they try to practise clean and green production. Along these lines, biodiversity is conceived differently with respect to spatial function. The role of beneficial insects and their habitat is one of the emphasised aspects:

"We don't use any type of selective pesticides, because they would kill both the parasites and their predators. This would destroy the natural equilibrium among them."

The theme of insects is mentioned as a non-productive function, too:

"I want to plant living fences, because a plot rounded by them has significantly more biodiversity than others. I think it is a good idea although it has nothing to do with food production."

Some farmers highlighted the aesthetic function of plantation diversity as a landscape component:

"Since our farm is located within the Regional Park, garden biodiversity can be part of landscape diversity. Agrarian landscape has the same dignity as pine groves."

This idea shows how the park – and the protected spaces included within it – can work as an “integrative instrument to coordinate the scattered actions [of single farms]” (Lefebvre, et al., 2015, p. 12). According to one interviewee, organic agriculture has inherited methods that date back to prehistory. Besides enhancing landscapes, crop rotation and plant association generate environmental benefits like water saving: indigenous plants require a quantity of water suitable to the local climate. Many farmers think that simply avoiding chemical products does not make the difference between organic and conventional agriculture. Rather, the heart of the matter is leading a lifestyle based on adaptation to

the ecosystem:

"At the beginning, we had some problems with rabbits and wild boars. We are within a protected space and we cannot fence off the farm. So, we will learn to relate with the local environment, with animals that lived here before our arrival and that sometimes eat something in our garden."

Organic producers consider themselves as nature protectors (Home, et al., 2014). Beyond the mandatory actions, “being ecologic” consists of paying attention to many aspects related to farm activities. For example, caring for the environment by using water rationally and by respecting bugs as important ecosystem components:

"Protecting the environment is being polite; don't do to the land what you don't want to be done in your house. If your home is dirty, your garden will be the same."

### **Promotion**

Within the scope of promoting the business, websites put effort into explaining the whole process of production and highlighting what makes the difference with respect to conventional methods. However, they simply describe organic farming and its benefits for health in general terms, without deepening how their own cultivation methods make the difference. Some themes highlighted in the interviews are not described on the websites, such as water management. On the other hand, energy is quite an important issue: three websites underline the energetic benefits of seasonal and local produce.

Biodiversity is also a recurring theme but, unlike in the interviews, it is presented on the websites in general terms of organic farming, with one exception:

"Our philosophy is based on the exploitation of local resources and product diversity. So, we cultivate vegetables, berries and legumes, trying to select suitable varieties for our region, and drawing upon the knowledge of local farmers."

All the websites declare their compliance with organic production norms, thus confirming the use of certification as a way to build trust with people who do not purchase directly. One website declares their farm’s involvement as a seed producer in the local seed bank.

### **Socio-economic function Concept**

This function was the one most often mentioned in the interviews. Producers recognise that organic consumption is an educational channel to develop environmental consciousness:

"People who buy organic are very interested in



health, but less in where the produce has been cultivated, and its environmental impacts."

On the contrary, according to another farmer, people are very interested in alternative forms of business structures, such as the cooperative where she works. People can become consumer partners, which allows them to feel involved in a societal change. This closer relationship between producers and consumers also generates trust:

"Consumers come here to visit the farm. They can see how we work."

It is interesting to note how product diversity is a multi-faceted concept. In terms of the socio-economic function, it is related to economic advantages for producers, as the following statement shows:

"In winter, we are used to cultivating the same products at the same time: cabbage, cauliflower and broccoli. Logically, the market cannot absorb the whole supply."

This fact, besides generating less income, can give rise to unfair competition, as in the event of farmers offering the same vegetables at a different price. In the interviewee's opinion, creating a cooperative where each producer commits him/herself to cultivating different produce would be an interesting solution. Vegetables could be commercialised under the cooperative label. This statement highlights a park weakness in managing the interaction between the farm and the landscape level, which causes a lack of so-called *collective actions*, i.e. "the capacity to create alliances beyond the locality" that "enables small entrepreneurs to mobilize social relations to improve their economic performances" (Brunori & Rossi, 2000, p.409).

### Promotion

Four web pages promote their involvement in social projects. One of them explains the reason for choosing the cooperative formula as a way to change society. The discounts offered to consumers who join the cooperative makes it unique from "usual shops":

"We do not offer a discount card like supermarkets. We go for a different economic and labour model, locally embedded and rooted in the respect for environment, people, and animals. A social economy model."

Another website presents initiatives with schools and hospitals. In the case of schools, the aim is to create a stronger relationship between urban and rural zones, offering the opportunity to discover the ecological and social values of agriculture, as well as other lessons:

"Connecting school activities with the ecological garden, such as math (plantation framework, weight of harvested products, calculation of areas), language (new vocabulary), P.E. (outdoors exercise), natural science (climatology, meteor-

ology, botany, biology) and technology (workshops for fungicide elaboration, greenhouse construction)."

In the case of hospitals and elderly care homes, people can escape from their daily routine to experience something different. At the same time, they can feel useful by making their knowledge available, since many of them come from rural backgrounds. The third website offers nutritional and naturopathy consulting in the shop and the last provides assistance for the creation of urban gardens, and courses about agrarian and rural development in order to create "a transition towards rural life, as a solution for the current economic crisis".

### Discussion

The results show how the three functions (space, ecology and socio-economy) work within the framework of AFNs in a rural park enclosed in a protected space. Instead of being enclosed within the boundaries of single farms, these functions are collectively conceived, implemented and promoted in a continuous dialogue at the landscape level within the context of the park.

It is interesting to note how some themes – such as biodiversity and landscape – lie in more than one discourse – such as ecological and cultural – demonstrating an overlap of the three functions of MFA within AFNs, and making the rural landscape a "formal expression [...] of the relationships between agro-silvopastoral practices, history and nature" (Mata Olmo, 2004, p. 110). This shows how rural landscape and agricultural policies need to consider and include non-productive aspects.

Making people once more accustomed to "lost" flavours, for example, creates a demand for produce heterogeneity, thus boosting biodiversity improvement through market mechanisms. On the other hand, visits to farms and activities with schools and other institutions enhance environmental education and promote the understanding of the ecological benefits of unconventional agriculture. Within this scope, the park label and the municipal market are strategic tools that establish a trusting relationship between farmers and consumers, and promote the park by making people aware of their territorial resources. In addition, the park has created a commercial space which empowers producers' and consumers' power of decision (Yacamán Ochoa, et al., 2015).

However, some limitations threaten these actions. The most frequently outlined problems are the excessive cultivation homogeneity and the restriction that producers can only use certified seed. For the former, the introduction of "produce zoning" or some type of eco-





conomic incentives in order to differentiate varieties could enable a synergistic mechanism between the Park and the farms, improving agricultural biodiversity and allowing supply diversification. In order to solve the second issue, the park could, for example, lift the regulation that all production must be organic in order to permit the use of local seeds that are not certified by the Ministry of Agriculture. Such a solution could open up collaboration with regional or national research institutions that study, conserve and reproduce local and regional seed varieties that have fallen into disuse. This would drastically change the initial project configuration, but it would give more flexibility to the park. These points represent good starting points for further investigations of other cases and possible developments in the Spanish legislation about rural and agricultural protected spaces. These ideas could also act as a base for the development of a common strategy aiming at creating and managing a network of protected agrarian landscapes within the Community of Madrid (Mata Olmo & Yacamán Ochoa, 2015).

## Conclusions

The paper represents a starting point for broader studies regarding agricultural landscape and environment protection in peri-urban territories through the union of data and insights derived from different levels of landscape management, in order to discover how these levels interact. Until now, few studies have focused on this interaction, preferring to study landscape-oriented actions in single parcels, from the producers' point of view, or at a landscape scale, with a planning focus. Within this new vision, the integration of Morris and Kirwan's categories and Crang's geographical knowledges regarding the spatial, ecological, and social context of MFA and AFNs is a powerful tool to analyse productive and non-productive services that originate at the farm level but show their effect at a landscape scale. The proposed methodology is effective in assessing the elements of rural landscape generated by agriculture due to its multi-faceted nature, and also in highlighting the weaknesses of planning instruments and management tools (as in the case of certified seeds and the low variety of agricultural products).

The results underscore how Soto del Grillo and its label create synergies between agriculture and landscape and biodiversity protection, and how the MFA functions overlap each other within this process. This mix is crucial for landscape protection, because other benefits besides economic profits are taken into account in shaping farm landscape features. The study demonstrates how the Soto del Grillo, through its unique characteristics,

preserves and boosts the "interaction between nature and culture in a given region" (Ley 42/2007, art. 35) and, in doing so, represents a practical, though unofficial, example of a protected landscape. The park features, together with other, similar rural spaces, could be used as a guide for good practices in the establishment of such planning experimentation.

Further analysis is needed in order to study the interplay between MFA, AFNs and spatial planning. To reach this goal, it is fundamental to take into account the points of view of all the involved actors, in order to embrace the complexity of such a theme as much as possible. As the paper has presented a small-scale project, scientific studies about different geographical contexts and types of rural parks are also needed in order to discover the potential role of non-specific policies (such as the CAP) on rural landscape management.

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## Conflict of Interests

The author hereby declares that there are no conflicts of interests.

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