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BETWEEN TERRITORIAL AGENTS AND SPATIAL PLANNING
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WEAK FOOD RELOCATION: DISCONNECTION BETWEEN TERRITORIAL AGENTS AND SPATIAL PLANNING

I. INTRODUCTION. RELOCATING FOOD SYSTEMS

The globalization models, which transformed the food systems and relationships between cities are at a crossroads (Marsden, 2013). The planet is facing an imminent socioecological crisis (de Castro et al. 2007) and food is one of the critical sectors where profound changes are needed (de Benito Morán et al. 2018). The group of high-level experts (HLE) of the United Nations Committee on World Food Security defines sustainable food systems as ones which respect the environment, protect biodiversity and ecosystems, allow satisfying nutritional needs, providing culturally acceptable, accessible and healthy food while protecting and improving rural means of life, quality and social wellbeing. Meanwhile, the Milan Urban Food Policy Pact (MUFPF), launched in October 2015, has become a frame of reference, as a voluntary treaty signed by cities on committing to working in the development of sustainable, inclusive, resilient, secure and diversified food systems, to guarantee healthy, accessible food for everyone. This in a frame of action based on rights, aiming at reducing food waste and preserving biodiversity, while mitigating and adapting to the effects of climate change. In many ways, this matches the Sustainable Development Goals outlined in the United Nations summit. Food systems strategies, a relatively new tool for making local policies in the Global North, have the potential to amplify and consolidate national and international efforts in this direction and facilitate a more synergic approach to implementing SDGs. (Ilieva, 2017)

The supply model based on nearby production, which was normal in the past, was broken up by widespread industrialization, modernization and urbanization (Simón Rojo, 2015), completely changing the land's biophysical matrix. However, since the mid-1980s, the interest of local food networks and a reconnection between production and consumption has been growing, whether through direct sales, short routes, community-backed agriculture, farmers markets, labelling (Feenstra 1997; Jarosz 2008; Marsden et al. 2000) or participative social certifications. Reflections about the relocation of the food system connect with now veteran concepts like "bio-region" and other more recent ones like city-region agro-food systems (Renting et al, 2012; Dubbeling et al. 2017), foodsheds (Baysse-Lainé & Perrin, 2017), agricultural bio-districts. These all seem to be associated to designing sustainable food strategies and plans for cities. In turn, the crisis and the proximity to the city induces changes in agricultural practices, adapting to the urban context and the growing urban demand for healthy nearby food and new

relationships between producers and consumers.

It is therefore seen that a wide range of agents stand up for relocation, be these institutions with lines of research and policies focused on the matter, or social collectives that are addressing it, like ecologists, health activists or social justice activists, even farming unions, movements of cities and lands in transition, of slowfood and of degrowth. However, despite all these interests, urban food systems continue to essentially depend on global flows (Toth et al, 2016). Aiming at exploring the situation of the food system's relocation processes, and how different representatives of the agricultural sector, academia, municipal institutions and civil society perceive the dynamics that affect these processes and the key factors behind redirecting production towards local markets. All this, bearing in mind the importance of food governance as a key instrument for progress towards territorial cohesion and sustainability (Zazo Moratalla, 2015).

For this reason, the case study of Vega del Bajo Jarama, next to the metropolitan area of Madrid, is presented. Here, the changes experienced in the agrofood system are analyzed from the perspective of the production sector and how the role spatial planning has had was perceived and what it might play in the future. The three municipalities (Ciempozuelos, San Martín de la Vega and Titulcia) exemplify how proximity to large centers of activity and consumption expels or complicates primary production. This article assumes the continuation of prior research on how spatial planning is a necessary element to radically transform the organization of the production and collective consumption (Simón-Rojo & Sanz Landaluze, 2019).

II. METHODOLOGY

The analysis is addressed at a local scale, focusing on Cuenca Baja del Jarama and Titulcia. The main changes seen in the last ten years and the perspectives for the next thirty, regarding the agrarian systems and practices and the orientation of food production towards local markets, are identified through a case study that covers three municipalities. Two representative products are analyzed, namely asparagus and olive oil. A first research project is done, starting from orthophotos, geographic information systems and statistics databases about the agricultural sector and the area's population (Agricultural Census and Demographic Census). This documentary analysis is complemented with a second stage that involves making surveys to relevant advisers and a participative assessment and scenario-based workshop.

The research provided the quantitative base, while the interviews and workshop were essential to outline the qualitative aspect, exploring the perception the representatives have regarding limiting factors and drivers of change. In the second phase, the issues related to public policies (urban and territorial plans, food strategies, public procurement, markets, labels, access to land and equipment, training, financial support and the creation of companies, sensitization programs), new technologies (with special attention on IT), and socioeconomic

factors (dietary patterns, consumption guidelines, lifestyle, economic context, effect of the crisis) were explored. The perception analysis of the agents who manage the territory, has been based on semi-structured individual interviews, made to key informants from the organized production sector, local governments, technical administrative staff, researchers and representatives of social movements (Figure 1). 13 interviews were made between January and March 2019, applying the following key representative selection criteria:

- Representativity (favoring people from groups or entities which comprise different entities, producers, etc.).
- Knowledge of the study area, and in the case of the interviews about relocating the food system, having people who have first-hand knowledge about the market in the chosen products' area (asparagus and olive oil).
- Empirical or research experience in the relocation of food systems
- Diversity of profiles, with people from a broad range of sectors, from the primary sector to the administration, including expert researchers, agricultural organizations, consultants or social movements.

The participative workshop is based on a consolidated methodology developed by Sylvie Lardon (Lardon & Piveteau, 2005), called Territory Game. The participants are divided into groups formed by a person from each sector (production, agricultural organizations, administration, consulting, research and social movements), a moderator, an observer and a notetaker. It is important that the people taking part know the study area well.

Figure 1. Map of the study area, support for the participative workshop. Source: prepared by the authors.

The workshop is outlined starting from two key questions, supported by a series of previously prepared thematic leaflets and a few schematic maps. It comprises three phases: assessment, scenario and actions:

- Phase I. Assessment (60 minutes). The leaflets, which are different for each participant, are handed out. Every participant, after analyzing them, chooses the one they wish to present to the rest, leading to a short discussion with the rest of the players. All the players have to take at least one turn talking about a leaflet. When they finish, if there is still time, they take a second turn with a second leaflet. They mark the issues covered on the territory map. On finishing, the results are presented.
- Phase II. Scenarios (40 minutes) and definition of actions (30 minutes). Free participation dynamic, without preset turns, to discuss what the territory will be like in 30 years. The scenario that arises from group consensus is drawn out on the map. After this, they look to find the necessary actions (up to four per team) to reach the agreed upon scenarios, as well as to identify the agents responsible for carrying them out or enabling them, linking them with the

dynamics highlighted in the diagnosis.

- Phase III. Discussion (30 minutes). The scenarios and actions of each group are pooled.

Figure 2. Territory Game Workshop. January 2019

The results allow comparing which factors identify the different agents as drivers of change and barriers to relocating the food system and, in general, to the viability of the sector. Specifically, the perception they have of the spatial planning and its role in the materialization of the desired scenario is also analyzed.

III. RURAL MUNICIPALITIES TOGETHER WITH THE METROPOLITAN AREA OF MADRID. VEGA DEL BAJO JARUMA AND TITULCIA

Currently having, a food system relocated in the Community of Madrid is a remote idea. In 2010, imports represented 98% of the total. This is a figure which gives a clear idea of the food system's dependence on global chains. In that sense, according to the assessment of the Rural Development Program (PDR in Spanish), the Community of Madrid is a region that "due to its high population and strong hotel, restaurant and catering sector, is characterized for being a great buyer of food products, given that its own food industry cannot serve the existing demand". Reducing the dependence on outside food comes from supporting the local production sector, especially in areas with the best farming conditions and potential, like the district of Las Vegas, which is being analyzed in this research. The area being analyzed was historically the foodshed for the capital, Madrid. It comprises a total of 165.47 km² and covers three municipalities (See Figure 2): Ciempozuelos, with a population of slightly over 24,000; San Martín de la Vega, with the most fertile soils and a great environmental value, whose population is around 19,000; and Titulcia, a small municipality of just 9.9 km² and 1,304 inhabitants (INE, 2018). The relative importance of the industrial sector stands out. This is very much above the average of the Community of Madrid, especially in San Martín de la Vega, where it comprises 24% of the GDP.

Figure 3. Location of the study area

The area is part of the Las Vegas district. It has a Mediterranean climate, which is characterized by the large thermal oscillations between summer and winter and one of the lowest average rainfalls of the Madrid area.

On the grassy plains, or *vegas*, formed by floodplains, there is a mosaic of irrigated crops. Historically, these plains focused on growing early crops and fruit trees, but today they have extended to cereal crops, mainly corn and barley. It was a high quality cattle grazing area, but there has been a substantial drop in grazing land over recent decades. A part of the area falls

under the Southeast Park or *Parque del Sureste*, a space that is environmentally protected.

Figure 4. Land uses in Titulcia and Vega Baja del Jarama

Different environmental aggressions are produced along the rivers, especially in areas closest to urban settings, with uncontrolled tipping, unauthorized underground water pumps, publicly owned hydraulic breakwaters and ramparts and easement areas that interfere with the riverside forest and natural floodplains. The ecological state of the waters of the Tajuña and Jarama has worsened (Tajo Hydrographic Confederation, 2018).

IV. RESULTS

The main features and changes experienced in the study area are presented below, following the cartographic, statistical and documentary analysis, the interviews made and the workshop held. What has happened in the Las Vegas district in recent decades has been happening throughout the Madrid region, namely the loss of agricultural land in favor of building land, a more limited diversification of crops at a local level, which has led to a relevant loss in biodiversity, the disappearance of extensive cattle farming, a higher reliance on external markets and socio-economic alterations in the smaller rural communities which were more connected to the production.

Transformations in farming and territorial systems Main changes in land use

Between 1990 and 2016, the main changes in land use have been due to the development of new artificial uses: urban and industrial land around central areas (especially in Ciempozuelos), new tertiary uses like the Warner Park (in San Martín) or the opening up of new gravel pits (throughout the floodplain, but especially to the north of San Martín). Overall, the agricultural surface used has fallen considerably in San Martín de la Vega and Ciempozuelos, while in Titulcia, a process of concentrating the land in fewer hands has occurred.

Replacement of crops and abandoning cattle rearing

The district of Las Vegas, regarding crops and usage, was traditionally the vegetable garden of the capital's south. However, its importance has seriously waned, substituting its crops for corn and winter cereals, mainly used to feed the herds. The area was very popular, decades ago, thanks to the asparagus grown there and, in Ciempozuelos, the agricultural cooperative, San Isidro Labrador, traditionally sold artichokes and, to a lesser extent, other vegetables. This same cooperative, that has lost a great deal of importance and influence in the lands, only sells corn today. Grazing land and livestock trails have also been lost as the traditionally important cattle rearing has disappeared.

Towards quality production

The area has hardly seen any changes in agricultural practices. The presence of ecological production is limited to an ecological

cattle farm using indigenous breeds, an olive oil producer and two agroecological projects: in Ciempozuelos, "Huerta La Madre Vieja" and in San Martín de la Vega, "Conciencia Grows". In the case of oil, the quality has improved in general terms, thanks to picking the olives earlier and including better facilities. New companies focused on the ecological consumption niche have also appeared, like the Olive Oil Company, Aceitera de la Abuela, in Titulcia.

Sales channels

Most of the agricultural production is sold through MercaMadrid, the Spanish State's main distribution, sales, transformation and logistics platform for fresh food. Small-scale sales still survive, almost residually, through direct sales. Even though none of the three municipalities have a municipal market, the sale of vegetables can still be seen on the doors of some houses. These short routes still remain with vegetables taken to some stores and restaurants in nearby towns. On the other hand, some local companies have adopted more complex direct sales strategies. In the case of Aceitera de la Abuela, they have diversified and adapted product formats to satisfy more types of consumers, entering other market niches and revealing to Madrid, high quality locally produced oil. Meanwhile, the agroecological producers have focused on selling directly to groups of consumers, in street markets, through personalized orders or direct contracts with restaurants and shops.

Figure 5. Sale of the analyzed products: asparagus and oil

In recent years, a series of quality seals and local product labels have been used to promote local produce. In the Madrid area, the M brand of Madrid is used to identify quality products grown or prepared in the region. The Oil of Madrid denomination is a seal which covers extra virgin olive oil obtained using mechanical procedures of olive varieties, mainly Cornicabra and Manzanilla and other suitable minor variants. The three municipalities are covered by this Denomination of Origin. Likewise, the wines of Titulcia receive the Wines of Madrid, Arganda subregion, Denomination of Origin. At a local scale, Ciempozuelos implemented the Vega de Ciempozuelos label, aiming at "encouraging the consumption, identification and sale of the municipality's vegetable products". They also provide a technical support service for local market gardeners to support their sales.

Figure 6. Territorial assessment prepared in the Territory Game Workshop

Drivers of change

According to what was said in the interviews and in the Territory Game, previous changes had been mainly caused and/or favored by three factors: public policies, the price and system of competition, and the pressures of artificial uses. In some cases, the people spoken to were asked to identify the factors which, in the short-term, can contribute towards relocating the food system.

Public policies. Communal Agriculture Policy

The assistance from the Communal Agriculture Policy (PAC in Spanish), the sociological circumstances of the primary sector in the region, the use of land for urban interests and the lack of effective local policies are behind this, which reinforces the dependence of the sector versus the global market and that destroys the local economic fabric. According to all the representatives spoken to, the main factor, but not the only one, which has caused these dynamics in the area is the PAC's support system, which has conditioned the Spanish production system, leading to the intensification of cereal crops, like corn and other winter crops. To this, the limited profitability of vegetable produce and cattle rearing compared to the yield that cereals and their more stable price produce must be added.

Pressures from Artificial Uses, Urbanistic Plans

The three municipalities have a planning instrument: General Plan in Ciempozuelos (2006), Subsidiary Regulations in San Martín de la Vega (1997) and in Titulcia (2000). A large part of the study area is located within the Southeast Regional Park, an environmentally protected area, and the affected land is classified as not for building in the planning instruments. In the land located on the edges of the Regional Park, a border effect is generated where, in general, these lack protection and the land is classified as building land. The General Plan of Ciempozuelos considered 590 hectares of building land, covering all the surface area between the park's edge and the eastern border of the municipality. The Subsidiary Regulations of San Martín set aside 218 hectares of building land and 324 urban land development units, with a capacity for almost 2,000 homes. In Titulcia, the regulations considered 28 hectares of building land and 8 for urban land developments.

Figure 7. Border effect of the protections

In La Vega, gravel and gypsum pits are a serious problem that affects the crops, causing relevant changes in the ecosystems and landscape that are often not reversible.

Table 1 Open pit mining

Other conditioning factors

Aging of the sector², the lack of generational relief, conformity and individualism and the lack of cooperativism in the sector have aggravated the issues that the agricultural landscape is experiencing. The loss of the social fabric between producers leads to a reduced competitiveness and production profit, which is added to the lack of a sound transformation industry in the region.

In recent years, marked changes have been seen due to new consumer habits. On one hand, the demand for local produce increases and, on the other, in some large cities like Madrid, a battery of public food policies has been implemented comprising new food strategies which go beyond just encouraging another type of consumption. These measures

look to reach the land where our food comes from, the rural areas, and build direct relationships with the producers, creating local economy networks that have the potential to have repercussions on these areas' development. For this, it is necessary to involve all the local and regional administrations, not just the metropolis'.

Although limited in number, there are some examples of new market gardeners in the area who have been using agroecological techniques and short sales channels. These come from a new profile which is spreading over the region, who use a good part of their time working in direct sales, be this in neighboring populations, food markets, with Madrid consumer groups, or directly in small stores or restaurants.

In both the interviews and workshop, it was seen that the great population density in the Community of Madrid provides the largest potential for the development of the entire region's production sector and, concretely, of this study area. Food system relocation strategies in the entire territory should encourage the agricultural use of the land. However, the administrations' attempts to foster local consumption has not improved the conditions of the area's vegetable producers, who are subject to price fluctuations, limited profits and major competition of imported produce with much lower prices. The qualitative results also acknowledge the potential of this region, a traditionally important farming region. These suggest it can be recovered by diversifying crops, reintroducing indigenous cattle breeds, recovering grazing areas and livestock trails. In this sense, the agricultural sector states that this evolution would be possible, if farmers and cattle herders had the support from local development organizations and administrations.

Scenarios and Actions

In the Territory Game, the representatives from the two groups reached the two desired future scenarios, setting out the actions to follow. In the first group, with a more generalist profile, as most of the people did not directly work in the territory, they proposed a scenario "2050. Intertwining the living land", where they set the ecological transition and support of all the agents involved in the territory's transformation as a fundamental core aspect. This would be done by a two-way knowledge transfer between people from the world of research and the production sector, including the figure of an "example farmer", the diversification of crops and activities, while including cattle farming and encouraging small scale transformation industry. All accompanied by educational programs on eco-social values and support for short sales channels.

The second group, where there was a higher local agriculturally-based presence (directly or indirectly), suggested a scenario "2050. Back to the Future", where it was supposed they would recover some traditional agrarian dynamics, but with time-appropriate innovations. Both scenarios coincide in suggesting production diversification, recovering vegetables and fruits, biodiversity and the landscape. Under this scenario, they forecast an increase in work positions related to the agricultural sector, linked to the creation of an agricultural cooperative and

the strengthening of local sales and short circuits. They also mentioned regulating the gravel pits and the environmental recovery of their spaces, improving the water quality of the Jarama (even with bathing areas), developing tourism, connecting and integrating this with the land.

Figure 8. Scenario defined during the Territory Game

A series of **actions** were suggested to reach these scenarios. These are explained below, regarding the aforementioned drivers of change and factors. The first group proposed making a participative assessment and directed the rest of the actions towards the agricultural extension and training in ecological agriculture for farmers with environmental sensitization programs for consumers, supported by vegetable plots and consumer groups. These actions would be accompanied by forming Governing Councils within the cooperatives. The institutional action and sensitization receive a good part of the attention. The second group identified the agricultural sector as the protagonist and leader, once the individualism that it is characterized by is overcome. An essential action proposed was creating a single agricultural cooperative. It was also considered key to mentalize the agriculture sector about the need of recovering traditional horticulture and receiving training in this sense. The leadership by agricultural professionals and unions was to be complemented by public policies that support the local market and encourage short sales channels, affecting public land procurement and strengthening the quality brand. They also demand the support of the public administration to support modernization, innovation and renewal of infrastructures, especially irrigation. Regarding the references about the effect land management has on the food system, the actions are focused on aspects which refer to land uses. This is a view shared by the production sector, the social movements and the research area. In general, they identify the plans and urban growth as a factor that distorts and complicates agricultural practices. The potential this can play in the sector's dynamization is focused on its diversification, linked to tourism and leisure and connected to the Regional Park's protections and plans. This is an already consolidated protection figure and one which is understood that pays attention to the territory where agriculture takes place, while the urban plans are identified as development plans for the building land. Representatives with knowledge about the area, state that once the land is classified as building land, it ends up in the hands of investors and agriculture ceases. On some occasions, on unirrigated wasteland that is awaiting urban development, farmers from the area decided to occupy the land and farm it on their own.

V. DISCUSSION

More than a decade has gone by since the American Planning Association published their *Policy Guide on Community and Regional Food Planning* (APA, 2007), which called out

to urbanism and planning professionals to give food the importance it deserves. The publication was a milestone, and since then, guidelines and recommendations have multiplied (de la Salle and Holland, 2010; Viljoen, 2005). However, these have not been applied in land management. At an institutional level, attention is focused on planning sustainable systems without going into depth in the spatial component (de Canto et al. 2017). The case study of Vega Baja del Jarama has allowed showing that, at least in this area, there is also a gap between the small group of professionals and activists that are working in the relocation of food systems and the land management agents who would be involved in its materialization.

The broad diverse market that a region of more than 5 million people involves, the changes in consumer habits, the successful experiences of ecological and agroecological production projects in the region, the birth of consumer groups, producer markets and other means of short sales channels constitute a great opportunity. A good number of the measures that would be favored have a spatial component, like those related to land access and to production means, logistics or training spaces and that can likewise be linked with spatial plans related to maintaining biodiversity, planning and management of spaces with a high natural value. All these are elements that appear in the FAO and RUAF's City Region Food Systems (CRFS) methodology (Dubbeling et al. 2017). However, only one of these recurrently appears in the responses of the representatives: the regulation of urban sprawl and the conservation of agricultural land. In the case of the farmers and social movements, they connect this element with the need of facilitating access to resources. None of the groups of agents connect either urbanism or spatial planning with the rest of the CRFS elements, which refer to local production and short circuit support, with spaces to display this production and infrastructure and equipment for processing, storage and waste management. There are international factors, like globalization, corporate power and competition within areas (Maye, 2019) that all the agents acknowledge. However, other global issues like resilience planning or the reduction of disaster risks (concretely, food security) in a context of climate change and prolonged crisis are absent (Foster & Getz Escudero, 2014).

In academia, they consider the hybridization concept, applied on all sales and consumption, stating that the supply system unites local and global, agroecological, ecological and conventional production. When listening to the producers, they also support a hybridization of the production and diversification of channels, without finding contradictions between both options, in their logic recovering the support for local production connected to sustainability policies is compatible with seeking export options for their production, if these get better prices. Only the agroecological sector looks to exclusively aim their production at local markets. In any case, the productive sector agrees with their peers in other points of the globe, whose concern about economic viability is above the rest of the issues and makes other goals invisible (Ross, 2006). The consumer groups, social movements and social

researchers give as much importance to encouraging production as the sensitization and education in consumption. As Mount (2012) says, connecting these diverse goals with the potential of planning (Simón Rojo et al., 2017) would not lead to seeking shared goals and values, but rather to reconciling diverse values and goals.

VI. CONCLUSION

If the agents managing the land and the institutions which adopt policies are not capable of recognizing the role of planning and spatial management in the relocation of food systems, they will leave out of the new “food equation” (Morgan & Sonnino, 2010) a factor which could be a facilitator in relocating the system and the transition towards more sustainable models. Bearing in mind that more and more relevance is given to the aspects of governance and the participation of local agents in the design and reconfiguration of the food system, the perception they have about the usefulness of the planning tools will be essential so that they apply them and take advantage of their potential.

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