

Crowdfarming. A public-private crowdfunding campaign to finance sustainable local food systems: A case study of short food supply chains in Madrid

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DOI: 10.30682/nm2303f

JEL codes: C25, C42, Q11

Abstract

Civic crowdfunding (CiC) and matchfunding (MF) are innovative private-public financing tools that can back projects with positive social and environmental characteristics. The purpose of this study is to analyse the potential opportunities and challenges of CiC with MF as a policy tool for local governments to finance place-based food initiatives and promote sustainable local food systems. The Matchfunding Madrid-Km-Región case study comprised three CiC calls in which institutional funds supplemented the money raised by crowdfunding campaigns for innovative short food supply chain projects. The results highlight the potential of CiC/MF to help local food project promoters to raise financial resources, as well as learn marketing skills and build a social support base around their projects. With the launch of CiC/MF campaigns, local and regional governments can enable innovative local food producers to launch their projects through community commitment. Further CiC/MF campaigns can support the entrepreneurship of agrifood initiatives in the region of Madrid. To do this, there is a need for more research and the dissemination of good practises.

Keywords: Spain, Matchfunding, Civic crowdfunding, Short food supply chain, Finance, Local food system, Regional policies, Innovation.

1. Introduction

The transition to more sustainable food systems involves strengthening local food systems (LFS), being short food supply chains (SFSCs) an essential part of these local food systems.

Due to their proximity and close interaction with key local actors, local and regional governments are strategic actors in establishing resilient and economically prosperous LFSs (Galli *et al.*, 2020). In this sense, local and regional authorities are increasingly taking

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a leading role in supporting more sustainable food systems. This is highlighted by a variety of international agreements that put the emphasis on delivering actions for the sustainability of food systems at the subnational level (e.g., Milan Urban Food Policy Pact, New Urban Agenda-Habitat III [NUA], Glasgow Food and Climate Declaration).

There are various ways in which local administrations can promote SFSCs. However, one of the critical hurdles for local food initiatives is funding (Kneafsey *et al.*, 2013). This project analyses public-private partnerships as a way of financing SFSC-related projects. Specifically, it analyses a form of financing, civic crowdfunding (CiC) with matchfunding (MF), which involves local administrations and citizens who are interested in supporting local food initiatives.

Given the limited amount of research on community financing from the agrifood sector (Behrendt *et al.*, 2019), there is a call for more investigation and dissemination of CiC with the participation of subnational governments (Charbit and Desmoulins, 2017; Wenzlaff, 2020; Van Montfort *et al.*, 2021). In particular, more research is necessary in non-Anglo-American countries, especially taking into account the place-based nature of this mechanism (Wenzlaff, 2020). Furthermore, more research of crowdfunding dynamics in urban case studies (Langley *et al.*, 2020). This paper aims to contribute to filling the research gap on CiC as a tool for local governments by analysing its potential to foster local food initiatives. This research agenda can provide policymakers with more information on CiC and MF, providing for a greater number of such initiatives to be implemented and increasing their potential positive impacts.

The objective of this article is to analyse the potential opportunities and challenges of CiC with MF as a policy tool for local governments to finance place-based food initiatives and promote sustainable local food systems. The analysis is based on the results of the Matchfunding Madrid-KmRegión case study and their stakeholders' feedback. Matchfunding Madrid KmRegión is a CiC with MF campaign aimed at financing innovative projects related to short food supply chains (SFSCs).

2. Literature review

2.1. Sustainable food systems and short food supply chains

The complexity and length of the current globalized food system causes a concentration of power, social inequalities, and environmental issues (Princen, 2010; Blay-Palmer *et al.*, 2018; Corvo *et al.*, 2021). Sustainable food systems provide “food security and nutrition for all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised” (HLPE, 2014, p. 12). Sustainable local food systems are based on the idea that local food can be more economically, environmentally, and socially sustainable than conventionally produced food (Jarzębowski *et al.*, 2020; Marusak *et al.*, 2021). Sustainability depends on several factors, including food shelf life, spoilage rates, transportation distance, and costs associated with production processes along with transportation costs. Food system (re)localisation involves moving food systems back to local areas (Burgess *et al.*, 2022; Kapała, 2022). In this regard, an increasing number of consumers and producers are looking for alternative food systems such as SFSCs (Renting *et al.*, 2003; Kneafsey *et al.*, 2013; Kamble *et al.*, 2020). SFSCs can be seen as an alternative form of consumption, which allows consumers to reconnect with producers and with their production area (Marsden *et al.*, 2000; Corvo *et al.*, 2021). This reconnection can be seen as a way to strengthen relations between consumers and producers toward more equitable, social and fairer practices (Vittersø *et al.*, 2019). The European Union has also highlighted the importance of strengthening LFSs and SFSCs (European Commission, 2019), and its Farm to Fork Strategy calls on public policies to support them (European Commission, 2020).

SFSCs can be characterised through different approaches: physical distance, number of intermediaries, or its sociological implications (Grando *et al.*, 2017; González-Azcárate *et al.*, 2021a). In fact, European authorities defined SFSCs as “a supply chain involving a limited number of economic operators, committed to cooperation, local

economic development, and close geographical and social relations between producers, processors and consumers” (EU, 2013, p. 499). SFSCs meet the social demand to provide quality food while having the potential to reduce the environmental impact of agriculture (Jarzębowski *et al.*, 2020). Additionally, the development of SFSCs and preference for local food products was also found to be an effective strategy for preservation and development of urban agriculture, addressing the issue of food quality and security (Kamble *et al.*, 2020). Furthermore, alternative food networks such as SFSCs seem to bring producers and consumers with the aim of enhancing social equity and democracy to develop a more sustainable food system (Feenstra, 1997). The main niche for products arising from SFSCs are consumers with higher income, urban and educated ones (Kneafsey *et al.*, 2013). Some of the consumer interests on SFSCs are to access higher quality food (González-Azcárate *et al.*, 2021a), to fight climate change (Yu and Rehman Khan, 2022), to support more sustainable agriculture (Smith, 2008), or to provide better incomes for farmers (Marsden *et al.*, 2000; European Commission, 2019).

2.2. Financing sustainable local food systems: Public-private crowdfunding

Local and regional policymakers need useful policy instruments by which they can exert a significant impact on fostering sustainable local food systems (Kapała, 2022). There are many strategies that can be implemented in this regard, such as land use planning (Desjardins *et al.*, 2011), sustainable food procurement (Braun *et al.*, 2018; Lehtinen, 2012), farmers markets (Foti and Timpanaro, 2021), or local food awareness campaigns (Jia, 2021). These tools can support local food initiatives in several respects, but they do not eliminate the financial constraints facing them.

These funding barriers are caused to an extent by a financial sector that focuses its investments on an unsustainable food system, hampering the growth of local and alternative food systems, and forcing small and agroecological farmers to seek out loans on less favourable terms (Kneafsey *et al.*, 2013; Stephens *et al.*, 2019; Stephens, 2021; Yu and Rehman Khan, 2022). The current finan-

cial structure must be redesigned and equipped to support a radical transformation of food systems (CIDSE, 2020). This must go hand in hand with effective support from the public sector to foster an environment for small-scale investments in agriculture and supporting entrepreneurship in local food production, processing, and commercialization (Wezel *et al.*, 2018; CIDSE, 2020). In this regard, there is a need for changes in institutional tools to reduce the administrative and financial burden on the enterprises involved in LFS and SFSCs (Kneafsey *et al.*, 2013). This lack of funding also affects innovative small-scale food businesses (Stephens *et al.*, 2019).

To this end, socially responsible and impact investing-based financing mechanisms can be great allies in fostering sustainable local food systems (Behrendt *et al.*, 2019; Stephens *et al.*, 2019). In this sense, the consideration of broader social and environmental values is what sets up financing mechanisms based on the social and sharing economy as useful pathways for promoting sustainable food systems. The sharing economy is based on, usually digitally, interconnected networks of individuals and communities that transform the system of production, consumption, financing, and money lending (Méndez and Castaño, 2017). Also, the concept of the sharing economy is often linked to the social economy. The sharing economy and the social economy can have an important impact on building a more sustainable world (Ertz and Leblanc-Proulx, 2018; Stephens *et al.*, 2019). A potential example is civic crowdfunding (CiC) and matchfunding (MF) to help finance local food initiatives.

Crowdfunding has emerged as an important alternative to traditional financial mechanisms (Ljumović *et al.*, 2022; Kragt *et al.*, 2021). Crowdfunding came to the fore as a consequence of technological progress, combined with the funding shortages due to the 2008 financial crisis (Daskalakis and Yue, 2018). In this respect, the European Commission recognizes the potential of crowdfunding to finance social companies that have limited access to conventional sources of funding but are able to find the necessary funds for their projects through the wisdom of the crowd (European Commission, 2013). Consequently, crowdfunding can be seen as a tool to

democratise finance in Europe (ECN [European Crowdfunding Network], 2018).

Ojo (2021) highlighted some benefits that crowdfunding offers entrepreneurs: (1) financing new ideas or existing business, (2) marketing purposes, (3) awareness among potential customers, the general public, and the media, (4) market test that signals whether potential customers are interested in the respective offering of a crowdfunding campaign, and (5) signaling public approval of a cause. However, there are no studies that investigate the characteristics and motivations of crowdfunding entrepreneurs in an agribusiness context (Kragt *et al.*, 2021). On the donor side, the behavior of contributors is based on a combination of intrinsic and extrinsic motivations (Bagheri *et al.*, 2019). The key to the concept of local crowdfunding in the agricultural sector is whether people ascribe a higher value to local causes, those that are visible in their neighborhood (Stoknes *et al.*, 2021)

CiC defines a subcategory of crowdfunding whose aim is to collect funds for projects in the public domain or with a common social objective (Davies, 2014). This modality is normally based on public-private partnerships that mobilize the community to offer infrastructure and services, facilitating coproduction, information exchange and citizen commitment (Davies, 2014; Charbit and Desmoulins, 2017). CiC does not necessarily have to produce a public good; it can offer spillover benefits derived from private goods (Davies, 2014). In this respect, CiC can encourage business investment in certain areas and can be very useful for governments to address challenges such as social or environmental sustainability (Charbit and Desmoulins, 2017). In fact, successful crowdfunding campaigns are more likely to have highlighted their larger social or environmental purpose of the enterprise or project in question (Langley *et al.*, 2020). Regarding public spending, CiC can be a great opportunity to carry out projects in a context of limited resources, allowing the implementation of projects that would not otherwise be feasible without private donations (Davies, 2014; ECN, 2018; Gasparro, 2018; Brent and Lorah, 2019; Langley *et al.*, 2020). In this sense, CiC has certain characteristics that stress its role as a complement rather than a substitute for public

spending. First, CiC is not suitable for projects that depend on sustainable financial support over a long period (Charbit and Desmoulins, 2017; Hong and Ryu, 2019). Furthermore, CiC is normally intended for small-scale projects and cannot be conceived as a direct replacement for all government spending on infrastructure (Brent and Lorah, 2019; Langley *et al.*, 2020). In other words, CiC is a mechanism to foster one-off projects that have broad social support, but do not receive funding through conventional channels. It is the interaction with the local community that makes CiC a tool with enormous potential for local and regional government initiatives (Charbit and Desmoulins, 2017).

MF is a crowdfunding mode in which citizen contributions are supplemented by a substantial contribution from a private or public institution that seeks to foster a specific line of action. The additional contribution from the public or private institution encourages private microdonations, which raises the total amount collected compared to a traditional crowdfunding campaign (Senabre and Morell, 2018; Brent and Lorah, 2019). MF tends to be used more frequently in CiC campaigns than in other types of crowdfunding campaigns. This is because CiC pursues objectives of general interest that justify the contribution of funds by public institutions, while companies can also contribute as part of their corporate social responsibility. Therefore, CiC campaigns are not only a tool for financing local projects that contribute to sustainable development but can also set a political and social local agenda around the SDGs (González-Azcárate *et al.*, 2021b). Through CiC and MF, local or regional governments can promote a particular line of action that benefits the community, such as culture or sustainable mobility. Note also that crowd participation is not limited to funding, but the projects can be also crowd-designed/crowd-sourced. In this regard, CiC can also be a guide for public investment, as a CiC campaign can be used by governments to gauge the acceptance that certain initiatives are likely to have among citizens and schedule larger investments in the future (Langley *et al.*, 2020). In this sense, it has to be considered that CiC promoted by governments could be unequally since only those with the social capital

necessary to encourage private cash, capital, and collective enthusiasm necessary for the crowdfunding campaign can drive priorities of public spending (Langley *et al.*, 2020). For this purpose, it is necessary to analyse the source of contributions and how participatory the crowdfunding campaign was (Davies, 2014; ECN, 2018; Brent and Lorah, 2019). Although a lot of diverse information about the dynamics of CiC and MF is already available, more practical studies of CiC carried out by local governments in different areas are needed to understand CiC in practise (Van Montfort *et al.*, 2021).

2.3. Short food supply chains and matchfunding: Promoting social capital for sustainable food systems

Social capital has become an important analytical concept and a policy tool, in local development (Rivera *et al.*, 2019) and agricultural innovation (Cofré-Bravo *et al.*, 2019). The notion of social capital reflects the links between people who know each other and the trust between them (Rivera *et al.*, 2019). Social capital refers to resources embedded in networks that can be mobilized through social interactions, and that can lead to potential benefits for both individual and collective actors (Lang and Fink, 2018). Ding *et al.* (2020) distinguish between two distinct features of social capital. The first category of social capital focuses on community involvement, providing information on the community's ability to cooperate and provide public goods. The second category of social capital focuses on individual commitment to social institutions, when people demonstrate that they are willing and able to incur a cost to contribute to societal objectives. This provides information on the community's ability to mobilise its individuals to address collective problems.

Social capital has been identified as a critical entry point for community change (Lamm *et al.*, 2022). In the context of LFS and SFSC, the nature of the connections among stakeholders is an important feature, and there is a potential to generate social capital by facilitating connections between producers and consumers. At the same time, social capital can contribute to the development and strengthening of SFSCs and LFSs,

although it is difficult to quantify (Thilmany *et al.*, 2021). In this line, Béné (2020) suggested that strengthening social capital contributes to a more resilient LFS.

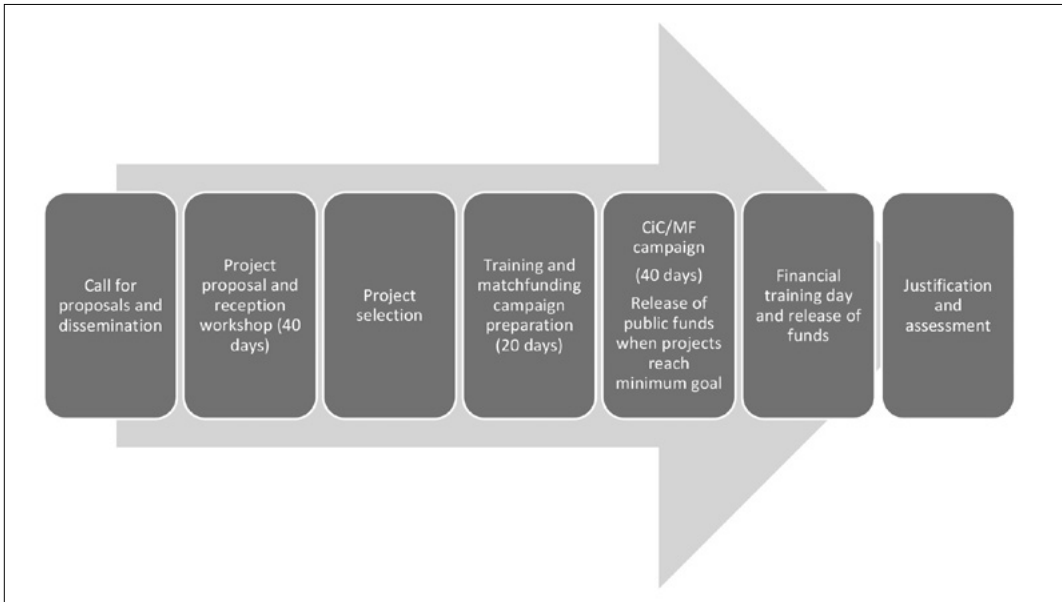
According to previous sections, SFSC and MF are supported by the connections of farmers-consumers and farmers-donors. In both cases, social capital is generated, and it can be used in the development of sustainable local food systems, being local public policies a relevant success factor. In this sense, little research explores how rural social entrepreneurs deal with the complex interplay of different forms of social capital when developing their business model (Lang and Fink, 2018). Additionally, little has been reported on the utility of rural social capital (Li *et al.*, 2022).

3. Materials and methods

3.1. Description of the case study

The Madrid region is an urbanised and densely populated region in central Spain, where the primary sector has only a small share in the regional economy. However, proximity to such a huge market has fostered the development of SFSC initiatives (Yacamán Ochoa *et al.*, 2019). Regarding the current state of SFSCs in the Madrid region, public policies can reduce the difference between current SFSC consumers and consumers willing to buy from SFSCs (Cruz-Maceín and Dorrego-Carlón, 2019; González-Azcárate *et al.*, 2021a). The Matchfunding Madrid-KmRegión was defined as a CiC call with institutional support for innovative local and sustainable SFSC projects in the Madrid region. It was led by the Madrid-KmRegión operational group (for more information about operational groups, see EU, 2013) within the framework of the Rural Development Programme for the Autonomous Community of Madrid. Three Matchfunding Madrid-KmRegión project calls (2018-2021) were launched. These calls were aimed at new or existing SFSC projects in the Madrid region, whose promoters wanted to make innovative investments and acquire new loyalty links with consumers. For this purpose, institutional funds supplemented the money raised with citizen support in crowdfunding campaigns carried out by the selected

Figure 1 - Matchfunding Madrid-KmRegión stages.



projects, making this a MF and CiC campaign (hereafter CiC/MF). As defined by Davies (2014), the operational group played a facilitator role, in which authorities launched calls for specific proposals on a given issue, trained project promoters, and topped up the financial resources provided by the crowd. After the launch call, 43 projects were submitted and evaluated by a panel made up of university scientists in SFSC, consumer and producer associations representatives, MF specialists and experts from the Spanish agroecology association. They evaluated the projects considering: (1) agroecological criteria such as sustainable and zero waste production criteria, technical-commercial criteria of the projects, or packaging and wrapping procedures. (2) Economic-financial criteria such as clarity and detail of the budget presented, viability of the investment, coherence of the economic information with the objectives of the project presented. (3) Community and communication criteria such as commercial networks already created, project's dissemination capacity, presence in social networks, and the scope of the promoter's community.

The crowdfunding campaign had to achieve a minimum collection goal and a minimum number of donors to unlock the matching funds that doubled the minimum target amount, thus ensuring

the viability and public interest of the co-financed projects (Minimum target for €2,000: 30 contributions, Minimum target for €3,000: 50 contributions; minimum target for €5,000: 70 contributions). Citizens had the option of donating an amount of money of their choice or of contributing an amount associated with a reward. In Figure 1, the whole process of the Matchfunding Madrid-KmRegión is displayed.

3.2. Methods

To achieve the objective of this study, analyses were performed on a combination of qualitative and quantitative data sources. In addition, the authors of the present paper attended all meetings during each phase of the three Matchfunding Madrid-Km Región calls during 2019, 2020 and 2021: Madrid-KmRegión operational group meetings, public announcements of the CiC/MF calls, workshops with the promoters, and events during the crowdfunding campaigns.

First, quantitative data was collected from the crowdfunding platform, from which anonymized information about the monetary contributions was extracted (amount, project, date, location, donation-based or reward-based). Second, an online survey was sent through email to every crowd-

funding contributor after each campaign ended. A total of 212 respondents completed the survey. Sixty-four people took the survey after the first CiC/MF campaign in 2019, fifty-one people completed it after the second call in 2020, and ninety-seven contributors filled in the survey after the last campaign in 2021. The survey was presented by a summary of the research purpose and contained questions about the nature of the contribution (project, date, and amount, reward-associated or donation), motivations to contribute to the campaigns, previous knowledge of crowdfunding, campaign communication, the public sector matching fund incentive, food-buying related habits, and sociodemographic data (age, occupation, family unit size, post code, incomes). The full content of the survey is available in Appendix I. Both data sets were descriptively analysed using SPSS version 24.

In addition to quantitative data, semi-structured interviews with every project promoter ($n = 13$) were held in each call approximately one month after their crowdfunding campaigns were over. The interviews were divided into three parts, one about the situation of the venture before applying for the CiC/MF call, another about the crowdfunding campaigns, and the last one about the output of the CiC/MF. The interview guide is available in Appendix II. These interviews were recorded and transcribed. A textual analysis was then performed to pinpoint common perspectives among promoters. Lastly, a discussion group was held with the stakeholders involved in the development and implementation of the project (operative group partners, crowdfunding platform technicians, and researchers) to discuss and evaluate the results of the three Matchfunding Madrid-KmRegión campaigns, providing feedback for this research. A thematic analysis was performed to validate the conclusions of the present research.

4. Results

4.1. Project characteristics and results of crowdfunding platform

Of the 43 projects submitted to the three CiC/MF calls, 13 were selected. All crowdfunding campaigns were successful and reached the established minimum collection goal and the

minimum number of donors, thus releasing the matching funds.

Table 1 shows the main data on the objectives and results of each campaign. Most of the projects reached their minimum goal toward the end of the campaign. The only two projects that reached the minimum within the first 13 days were based in the city of Madrid. The other projects were based in rural or peri-urban areas of Madrid.

In total, 1331 private contributions were made. About two out of every three contributions had an associated reward, while the other third were free donations. Additionally, six people offered their services to collaborate on the project (web setup, filmmaking, etc.). Lastly, it should be underlined that 10% of the donors contributed around one third of the total amount collected. The crowdfunding campaigns lasted between 42 and 44 days and were much more active at the beginning and especially at the end, with a slowdown during the middle period.

4.2. Donor feedback

This section reports the results extracted from the survey sent to donors. Table 2 shows the sociodemographic profile of the survey respondents. The median distance between the donor's home and the project was 12 kilometres (Min: 0,5 km, Max: 501km), which highlights the localism of this financing mechanism (mean distance can be highly distorted by occasional donations from other parts of Spain). Most of the donors surveyed live in the city of Madrid. The shortest distance to donors was for projects based in the urban area of the Madrid region and for the two CSA (community-supported agriculture) projects. On the other hand, other projects that are based in rural areas received donations from more distant locations, mainly from the urban areas of Madrid, where most respondents lived.

Motivations based on the project and the community were more highly rated than individual benefits, where the project topic was the most highly rated (Table 3).

The sample is made up of consumers with wide-ranging relationships with promoters. One third of the donors had a previous business relationship with the project, another third had a prior

Table 1 - Matchfunding Madrid-KmRegión selected projects and crowdfunding results.

| Call | Project | Location | Definition | Status | Objective | Number of donors | Min. goal | Day when minimum objective is reached | Optimum goal | Raised amount | Matched funds | Most demanded reward |
|------|---------|------------|--|-----------|--|------------------|-----------|---------------------------------------|--------------|---------------|---------------|--|
| 2019 | 1 | Rural | A cooperative logistical center for small agroecological food producers | Creation | Cover communication costs, wages for coordinator and salesperson. | 92 | €3,000 | 33 | €9,500 | €7,642 | €3,000 | Public acknowledgement (€15) |
| 2019 | 2 | Peri-urban | An alliance between two projects to deliver agroecological products to Madrid by bicycle | Creation | Adapt delivery management software, buy an electric bicycle, acquire a second-hand van, cover publicity and communication costs. | 135 | €3,000 | 38 | €15,000 | €7,950 | €3,000 | 5 kg agroecological food basket (€60) |
| 2019 | 3 | Urban | A cooperative consumers' supermarket | Expansion | Rent bigger premises, buy an industrial fridge, update computer and software, acquire shelves and furniture. | 85 | €3,000 | 13 | €10,000 | €14,120 | €3,000 | One-year membership + agroecological food + acknowledgement + merchandising (€100) |
| 2020 | 4 | Rural | The creation of a cooperative composed of five agroecological farms | Creation | Cover rewards costs, coordination issues, commercial issues, logistic coordination, marketing campaign. | 140 | €4,500 | 19 | €12,000 | €10,945 | €4,500 | 5 kg agroecological food basket (€30) |
| 2020 | 5 | Rural | A farm based on community-supported agriculture | Expansion | Increase wages by 10%, increase working hours of administrative assistant, buy a container. | 137 | €4,500 | 24 | €14,000 | €14,040 | €4,500 | One-year membership (€40) |
| 2021 | 6 | Urban | A cooperative consumers' supermarket | Expansion | Buy displays, advertising materials, communication, educational actions, web improvement. | 244 | €2,000 | 2 | €10,000 | €13,533 | €2,000 | A mixed basket (soap, magnet, stickers, fabric bag, etc.) + food basket raffle participation (€30) |
| 2021 | 7 | Rural | A farm based on community-supported agriculture | Expansion | Hire a second farmer. | 121 | €3,000 | 30 | €12,000 | €13,305 | €3,000 | Donation of choice |

| <i>Call</i> | <i>Project</i> | <i>Location</i> | <i>Definition</i> | <i>Status</i> | <i>Objective</i> | <i>Number of donors</i> | <i>Min. goal</i> | <i>Day when minimum objective is reached</i> | <i>Optimum goal</i> | <i>Raised amount</i> | <i>Matched funds</i> | <i>Most demanded reward</i> |
|-------------|----------------|-----------------|--|---------------|---|-------------------------|------------------|--|---------------------|----------------------|----------------------|--|
| 2021 | 8 | Rural | Agroecological farm that produces local traditional varieties | Creation | Buy a stone mill, rent a storehouse, rent more land, raise workers' wages. | 58 | €2,000 | 38 | €6,000 | €4,285 | €2,000 | One-year membership to participate in the activities + 7 kg of potatoes, flour and chickpeas (€30) |
| 2021 | 9 | Rural | A small company that grows different species of edible and medicinal mushrooms in Madrid | Creation | Air condition facilities, buy raw materials, acquire automatic watering and humidification equipment. | 38 | €2,000 | 37 | €7,000 | €4,305 | €2,000 | 3 kg of assorted mushrooms (€30) |
| 2021 | 10 | Rural | Agroecological farm that produces local traditional varieties | Expansion | Create promotional materials, renew pergola, buy fridge, acquire furniture for the visitor zone. | 92 | €3,000 | 33 | €10,100 | €6,943 | €3,000 | 10 kg of agroecological fruits and vegetables and vouchers to buy in the store (€30) |
| 2021 | 11 | Peri-urban | Shepherds that herd their flocks to clear green spaces around Madrid | Expansion | Build a mobile dairy to produce cheese while the sheep are clearing green spaces around Madrid. | 60 | €3,000 | 38 | €8,000 | €6,050 | €3,000 | Cheese tasting (€30) |
| 2021 | 12 | Rural | Shepherds located in the northern part of Madrid | Expansion | Create a CSA, acquire machines for food processing. | 55 | €2,000 | 25 | €5,000 | €5,197 | €2,000 | Donation of choice |
| 2021 | 13 | Rural | Association of agroecological producers | Expansion | Create sales web, improve the farm, buy second-hand van, renew greenhouse. | 74 | €3,000 | 33 | €10,500 | €6,665 | €3,000 | 5 kg of agroecological fruits and vegetables and a fabric bag (€40) |
| | | | | | <i>TOTAL</i> | <i>1331</i> | <i>€38,000</i> | | <i>€129,100</i> | <i>€114,980</i> | <i>€38,000</i> | |

Table 2 - Sociodemographic data of the survey respondents.

| | | |
|--|------------------------|--------|
| <i>Age group</i> | 18 - 35 | 12.4% |
| | 36 – 55 | 53.6% |
| | 56+ | 34.0% |
| | Average age (years) | 50.0 |
| <i>Education</i> | Uneducated | 0.0% |
| | Primary education | 1.9% |
| | Secondary education | 11.8% |
| | Higher education | 86.3% |
| <i>Monthly net income per household</i> | Up to €1,000 | 4.5 % |
| | From €1,000 to €2,000 | 22.5 % |
| | From € 2,000 to €3,000 | 32.5 % |
| | From €3,000 to €4,500 | 29.0 % |
| | More than €4,500 | 11.5 % |
| <i>Number of people per household (mean)</i> | 2.5 | |
| <i>Monthly net income per household (mean)</i> | € 2,50 | |
| <i>Monthly net income per person (mean)</i> | €1332.6 | |

Table 3 - Survey results regarding motivations for contributing, food purchasing habits and donated amount.

| | <i>Mean</i> | <i>SD</i> |
|--|-------------|-----------|
| <i>How much money did you donate? (€)</i> | 69.7 | 62.1 |
| <i>MOTIVATIONS FOR CONTRIBUTING (where 1 is unimportant and 5 is very important)</i> | | |
| Project topic (agroecological food SFCSs in the Madrid region) | 4.7 | 0.7 |
| Support for a project that will benefit the local community | 4.6 | 0.8 |
| Project information | 4.3 | 0.9 |
| Support for the people behind the project | 4.0 | 1.2 |
| Support for a project from which I will benefit as a customer | 3.0 | 1.3 |
| Amount of money raised before my contribution | 2.2 | 1.2 |
| Direct reward in return for my donation | 2.1 | 1.2 |
| Recognition as a donor | 1.7 | 1.1 |
| <i>HOW OFTEN DO YOU BUY... (where 0 is never and 10 is always)</i> | | |
| ...organic food | 6.9 | 2.6 |
| ...local products | 5.9 | 2.6 |
| ... directly from producers | 5.5 | 3.2 |
| ...products with a Protected Designation of Origin label (PDO) | 5.4 | 2.5 |

Table 4 - Survey results regarding donors' relationship with the promoters and perceptions of other aspects of the campaigns.

| | |
|--|-------|
| <i>Did you know the promoter/s before?</i> | |
| Business relationship (customer) | 39.2% |
| Personal relationship | 37.7% |
| I had heard about him / her / them, but I had never had contact | 8.0% |
| I didn't know him / her / them | 15.1% |
| <i>How did you find out about the crowdfunding for the project? (Mark only the main source)</i> | |
| From promoter social networks | 35.4% |
| In person from the promoter/s | 34.9% |
| From family and friends | 17.4% |
| From the TRIODOS Foundation | 11.3% |
| Others | 1.0% |
| <i>Did you promote the campaign?</i> | |
| Yes, on social networks | 26.9% |
| Yes, by word of mouth | 25.5% |
| Yes, on social networks and by word of mouth | 23.1% |
| No | 24.5% |
| <i>Would you participate in another civic crowdfunding campaign within a year?</i> | |
| Yes | 58.5% |
| Only MF (where local or regional governments supplement the funds raised by crowdfunding) | 8.0% |
| Only for similar projects (projects by local food producers from the Madrid region) | 8.0% |
| No | .5% |
| I don't know | 25.0% |
| <i>Now that the crowdfunding campaign has ended, what information do you want to receive about the progress of the project to which you donated?</i> | |
| Regular information about project progress | 48.1% |
| A final report once the project has been fully implemented | 39.6% |
| I am not interested in receiving more information | 4.7% |
| I don't know | 7.5% |
| <i>Did you know before that the public administration participated by selecting the projects and doubling the funds?</i> | |
| No | 69.3% |
| Yes | 30.7% |

personal relationship with the promoter/s, and the last third had no prior knowledge of the project (Table 4).

In fact, most of the respondents learnt about the CiC/MF call through promoter networks, and three-in-four helped to disseminate the CiC/MF. After this experience, a large percentage (74%) of the respondents would be willing to participate in a crowdfunding campaign again,

regardless of the crowdfunding topic, and most (88%) are interested in receiving updates on the project progress (Table 4).

Interestingly, most (69%) of the sample did not know that the money raised was topped up by public funds (Table 4). This is mainly due to the fact that the 2019 crowdfunding campaign did not highlight this point, while the 2020 and 2021 campaigns placed a bigger emphasis on

Table 5 - Survey results regarding donors' perceptions about the involvement of the public administration.

| <i>If the public administration had not contributed extra funds, how much would you have donated?</i> | |
|---|-----------|
| I would have contributed the same amount of money | 80.0% |
| I would have contributed less money | 6.3% |
| I would have contributed more money | 4.2% |
| I would not have contributed | 0.0% |
| I don't know | 9.5% |
| <i>Rate how the participation of the public administration has contributed to the following aspects of the project (where 1 is unimportant and 5 is very important)</i> | |
| Confidence in the proposed budget | 1 = 16.5% |
| | 2 = 9.4% |
| | 3 = 29.4% |
| | 4 = 22.4% |
| | 5 = 22.4% |
| | Mean: 3.2 |
| | SD: 1.3 |
| Confidence in how the money would be spent | 1 = 15.6% |
| | 2 = 11.1% |
| | 3 = 18.9% |
| | 4 = 21.1% |
| | 5 = 33.3% |
| | Mean: 3.5 |
| | SD: 1.4 |

this issue. In fact, most (80%) contributors would have donated the same amount with or without match funds, although it did have a positive impact on donors' confidence in the feasibility and accountability of the selected projects (Table 5).

Finally, it has to be considered that the survey sample might be somewhat biased as, possibly, contributors that have a closer relationship to the promoters are likely to feel more duty bound to fill out the form.

4.3. Promoter perceptions

The feedback from the promoters had some points in common with the issues raised by the survey respondents. Firstly, 77% of them heard about the CiC/MF call through regional agroecological and local food networks. Secondly, all promoters already had an interest in raising financial resources for investment in their projects, although the CiC/MF call was the trigger

that finally set the ball rolling. The campaigns required considerable effort but paid off in view of the results.

We had to work long working hours. Rather than investing in resources, it takes a long slog. However, I think the work effort is proportional to what a crowdfunding campaign entails and it is definitely worthwhile in view of the results. (Rural project)

In this vein, all promoters were satisfied with the results and would again participate in a CiC/MF campaign. According to them, direct communication channels (email, instant messaging, and word of mouth) were the most efficient channels for encouraging donations from friends, family, partners, and regular customers, who normally donated at the beginning of the campaign. On the other hand, social media campaigns were more effective at engaging with new supporters who normally donated

towards the end of the campaign. In general, most campaigns stressed project proximity and environmentalism, as well as particular project features (e.g., involves young farmers, led by women, etc.).

Thanks to the matchfunding, we have been able to move away from the precarity in which we were operating. We were able to change the business model for next year and hire more staff. Also, thanks to the preparation of the campaign, we learnt to better specify our marketing plan and managed to expand our structure by reaching out to new interested customers. (Rural project)

The CiC/MF has meant a leap in project scale not only in economic terms but also through the generation of bonds of trust with customers/consumers and the community. This was a huge boost in morale, as promoters realized that there is a social base that supports the project. In this sense, most promoters acknowledged other returns of CiC/MF, such as an expansion of their customer and supporter base, the acquisition of knowledge about marketing tools, and an increase in their business online visibility of their business. Many promoters also remarked that MF paperwork was easier to fill out and assured a greater social interest than a subsidy process. All projects were intended to continue to engage donors by providing updates on the progress of the project. Furthermore, they highlighted that since their projects had been selected and supported by a public authority, they had greater credibility and visibility, as if they had been awarded a “quality seal”. Regarding points for possible improvement, many producers commented on the possibility of dividing the minimum goals for releasing the funds into more progressive bands, more flexible deadlines, and more counseling after the end of the campaigns (rewards management, how to establish further links with donors, etc.).

In a subsidy process, you normally have to advance the money and receive a refund a long time afterwards after justifying all payments. Matchfunding bureaucracy is much simpler. Besides, I prefer crowdfunding because I engage with my community, which analyses and

controls the investment. I think financial relationships are healthier. (Urban project)

Lastly, the discussion group offered positive information on Matchfunding Madrid-KmRegión results. One of the main common points of this discussion was that the people/institutions involved in the project will look for ways to foster more CiC/MF campaigns related to local food initiatives in the region. Municipalities appeared to be the most suitable partners to develop future initiatives. In this vein, participants also noted that the major barriers to fostering this mechanism in local governments were the lack of knowledge, as well as legal and administrative methods to carry out CiC/MF campaigns.

Based on trends in participatory budgets and so on, I believe matchfunding would be well received by municipalities. However, they are unfamiliar with this system, and, those who are, do not know where to start and how to fit this mechanism into their subsidy processes. (Researcher)

5. Discussion

5.1. Crowdfarming as a tool to support sustainable local food systems

The results section implies that CiC/MF entails interesting options for promoters, donors, and local and regional governments. In the Matchfunding Madrid-KmRegión initiative, promoters not only collected resources for their projects, but also obtained different benefits that go beyond the simply act of receiving funding, such as visibility increase or customer base expansion. In line with the literature, it can be considered as a tool that tackles several project fronts, such as visibility (Baeck *et al.*, 2017; Ojo, 2021; Stoknes *et al.*, 2021), marketing (Stephens *et al.*, 2019), consumer interactions (Bitterl and Schreier, 2018), and market test to explore specific product or service acceptance among potential consumers. The success of the Matchfunding Madrid-KmRegión reinforces the potential of this tool to promote SFSC, as it tackles finan-

cial constraints of these chains (Kneafsey *et al.*, 2013; Wezel *et al.*, 2018; Stephens *et al.*, 2019; CIDSE, 2020), while also providing promoters with more tools for their projects.

It was observed how CiC/MF about SFSCs strengthens the commitment of existing consumers to projects. Donors directly funded the initiative, going beyond the simple purchase of food, and having main motivation to support a project within a model of agriculture that they are demanding, therefore generating social capital. In addition to the links generated by a closer relationship between consumers/producers based on SFSC, there are also the links (promoters/donors) derived from CiC/MF. This engagement of donors, as well as their willingness to support similar projects in the future, demonstrates how CiC/Mf can be a great tool to generate social capital in the context of SFSCs (Ding *et al.*, 2020), thus promoting more sustainable food systems (Béné, 2020). The CiC/MF campaign appears to be an outstanding approach to mobilizing the community around a project or line of action. The present paper highlights two main donor profiles: the local community (family, friends, and neighbours) and consumers from urban areas demanding SFSC products. These links (local producers/consumers and rural/urban areas) through SFSC contribute to the development of a stronger sustainable local food system and to the promotion of rural development. This is consistent with the findings of Behrendt *et al.* (2019), who stated that community financing models can encourage committed consumers to develop a more sustainable food system. It has to be noted that the sociodemographic profile of the donors was people with higher income, urban and educated ones, in line with the main market niche of SFSCs (Kneafsey *et al.*, 2013).

In terms of social capital, these links could translate into community engagement and individual commitment to social institutions (Ding *et al.*, 2020). In our case study, the community engagement could be mainly associated with the links between local producers and local consumers. On the other hand, individual commitment could be mainly associated with the support received between rural and urban areas. In terms of SFSC, both types of social capital contribute to

reduce the physical distance and number of intermediaries between producers and consumers.

Developing social capital requires a good communication strategy. CiC/MF has to be widely disseminated and clearly specify its objectives. Local and direct communication plays an important role, especially to reach the closest contacts (family, friends, neighbours). As the results showed, these are the first support for CiC/MF and SFSC initiatives. However, there are donors who do not fall into these direct relationships (at least 23% of donations came from outsiders). Social media and communications through regional networks made possible to spread this project beyond direct contacts to build new rural and urban links. In these cases, the motivations for the donation focus on attractiveness of the project and the affinity with its objectives. In the present case study, the environmental dimension and interest in more sustainable food systems was what mainly drove this type of donations.

5.2. Fostering “crowdfarming” from local and regional policies

The involvement of local and regional governments presents additional advantages. Firstly, these calls reinforce the advantages for consumers, producers, promoters, and donors. For promoters, the most important contribution from local and regional governments involvement seems to be in terms of generating credibility and gaining visibility. For donors, the fact that public funds were provided to supplement private donations was not a major driver, especially in the first campaign. However, donors who knew about the complementary funds positively rated their impact on confidence in and accountability for the selected projects. In the Matchfunding Madrid-KmRegión initiative, the “match” with public funds tended to encourage producers rather than consumers to participate in the CiC/MF. However, this may not be the general case and further research on the role playing by governments to involve more consumers should be carried out in other study cases. There are also advantages for local and regional governments insofar as they contribute to closer links between production and consumption, between rural and

urban areas. The social capital derived from these links is also key for other regional and local food policies (Thilmany *et al.*, 2021).

In addition, more institutional tools to reduce the administrative and financial burden weighing on SFSC enterprises (Kneafsey *et al.*, 2013). The success of this case study suggests that CiC/MF is potentially a very suitable alternative for this purpose. One advantage that CiC/MF has over traditional public sector subsidies is that it assures that a project has interested people willing to support/participate in the project once it has been implemented. Traditional public subsidies are hard to provide any such guarantee. Another advantage of MF over direct payments highlighted by promoters is less bureaucracy and fewer administrative procedures, as it was raised by promoters. Public grants are intended for the same purposes as CiC campaigns but require open tenders and complex administrative processes to ensure transparency and the correct management of public grants. On the other hand, CiC/MF provides for fundraising in a shorter time and with a lower administrative workload, while simultaneously guaranteeing transparency throughout the entire process (Baeck *et al.*, 2017; ECN, 2018). In the Matchfunding Madrid-KmRegión initiative, the requirement to achieve a minimum collection goal and a minimum number of donors was the main mechanism used to avoid cronyism in the release of public funds. This mechanism can be effective in redefining current public subsidy systems, tackling the financial problems of the small-scale agroecological sector, and supporting entrepreneurship about local food initiatives. These transparency and accountability features offered by CiC/MF are also a requirement for a well-functioning participatory and democratic food system (Feenstra, 1997; Stephens *et al.*, 2019). This makes CiC/MF a mechanism that is very well matched with the creation of democratic food systems, where consumers are involved in defining the model of the food system they want.

According to the advantages referred to CiC/MF in the literature (Senabre and Morell, 2018; Brent and Lorah, 2019), this study has shown how public policies (for example, facilitating management, complementary funds) are

strengthened by citizen support. The results presented also show how these CiC/MF calls can contribute to the long-term viability of the supported action by the administration, insofar as 87% of donors wanted to remain informed about the projects they have funded. In this sense, the support that CiC/MF campaigns bring to future local food policies is an additional advantage that can be inferred from the results of both consumer surveys and producer interviews.

The joint analysis of the Matchfunding Madrid-KmRegión case study offers insights into the potential of CiC/MF as a tool to foster local food initiatives. This crowdfunding mechanism is suitable for financing small local agricultural initiatives, which is another way of shortening the food chain by putting consumers in contact with producers not only with a view to food purchase/sale but also to raising the funds that many of these projects need to start up or expand. This case study has substantiated how this instrument enables innovative local producers that have difficulty gaining access to traditional financing (ie, small-scale family or young farmers) to materialise their projects through a community commitment to local agriculture.

Note that although CiC/MF is a potentially great mechanism to support sustainable local food systems on the local and regional scale, only around 2% of the total number of CiC campaigns belonged to the food field in Spain (Díaz and Cacheda, 2016). Therefore, this is an area with a huge potential for growth considering that European institutions are developing policies aimed at supporting local food products and the circular economy.

5.3. Limitations of “crowdfarming”

Many proposals were submitted, but only a few projects were approved by the selection board. The first step in a successful MF call depends on an expert previous selection of projects. This selection avoids promoters to implement an exhausting but fruitless crowdfunding campaign. The selection process requires a considerable number of experts in different disciplines to carry out a good selection procedure, which can be a limitation in some contexts.

Furthermore, running a successful crowdfunding campaign takes a lot of time and effort, as the promoters. Additionally, promoters need a relevant previous network to ensure the success of the crowdfunding campaign. Additionally, the communication campaign should be oriented to a general public but also it must elaborate strategies to reach specific targets, which requires a good strategy. All this necessity reflect that this mechanism is not an option for every kind of producer or promoter, narrow down the number of projects that could be supported through CiC/MF.

On the contributors' side, the general profile reveals that CiC/MF for local food projects needs a critical awareness population on the topic. The calls should be focused on topics that have a minimum of concerned population, which is a limitation for many contexts without an enough number of concerned consumers. In the case of SFSCs, CiC/MF seems to be a useful tool in these territories where these initiatives are relevant to a certain number of consumers, as is the case of the Madrid population. In addition, CiC/MF campaigns about SFSCs seems to embrace a very particular social profile (i.e., high education and incomes), also limiting his impact in broader segments of the population.

Other barriers to CiC/MF identified in previous research are the lack of technical and administrative knowledge about CiC/MF, a possible shortage of projects submitted by private initiative, or the failure to encourage citizens to contribute (González-Azcárate *et al.*, 2021b). Furthermore, this research highlighted that CiC/MF was a totally unknown to local policymakers within the Madrid region, although there was a great deal of interest in implementing CiC/MF campaigns related to local food chains in their municipalities (González-Azcárate *et al.*, 2021b). However, CiC/MF calls need for partnerships with specific platforms and specialised professionals to run them, which may be a limitation for small councils.

5.4. Research limitations and perspectives

Those who responded to the questionnaires appear to be mostly those who personally connected with the promoters, which can bias the

results on the perception of the donors. In addition, since the research is based on a single case study, there is a need for more research on CiC/MF campaigns to foster LFSs on different contexts to be able to confirm the external validity of the present results. In this sense, further research should address other benefits of CiC in addition to funding, such as building networks or creating synergies around a line of action (Stiver *et al.*, 2015). According to Charbit and Desmoulins (2017), more research is also needed on barriers and good practices in the field of CiC with the participation of regional and local governments. Senabre and Morell (2018) also remarked on the need to compare CiC/MF with other collaborative financing mechanisms, such as municipal participatory budgeting, digital social currencies, and time banking. Lastly, although crowdfunding for the agrifood sector is growing globally, there is still a need for more research in this area (Troise *et al.*, 2021). This could provide a better understanding of viable alternatives for social initiatives that would otherwise not have access to resources. On another note, the campaigns faced more hurdles in rural areas due to less consumer awareness of the projects. This should be further studied in search of possible adaptations that increase the impact of CiC/MF in rural areas.

6. Conclusion

This case study has highlighted a number of benefits of CiC/MF as a tool to support sustainable local food systems. This tool offers interesting options for promoters, donors, and local and regional governments. The combined analysis of these results shows important synergies that reinforce the benefits of public-private partnerships for the financing of local and regional food projects. However, it is a tool applicable only in specific contexts, and some limitations are discussed in this paper.

The CiC/MF represents both an opportunity and a challenge for local and regional governments that want to support rural development by creating and expanding agrifood initiatives that contribute to the establishment of a more sustainable food system. As the knowledge of CiC/

MF among governments appears to be limited, there is a need for a greater dissemination of good practises, more research, and support to enable local and regional authorities to launch CiC/MF calls.

Acknowledgments

We thank every member of the operative group Madrid-KmRegión for their collaboration and assistance in the present research. A special recognition to Elena Hernando and Ricardo Colmenero from TRIODOS for their assistance in the data collection, as well as to Franco Llobera and Monica Cuende from EBR for their involvement in the development of MF calls.

Funding sources

This work was funded by the European Union EAFRD, Ministerio de Agricultura, Pesca y Alimentación (MAPA) and Comunidad de Madrid (through IMIDRA), grant PDR18-MadridKmRegion, under the Madrid Rural Development Programme PDR-CM 2014-2020.

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