

Article

# Social Farming in the Promotion of Social-Ecological Sustainability in Rural and Periurban Areas

Marina García-Llorente <sup>1,\*</sup>, Cristiano M. Rossignoli <sup>2</sup>, Francesco Di Iacovo <sup>2</sup> and Roberta Moruzzo <sup>2</sup>

<sup>1</sup> Madrid Institute for Rural, Agricultural and Food Research and Development (IMIDRA), Ctra. Madrid-Barcelona (N-II), KM. 38.200, 28802 Alcalá de Henares, Spain

<sup>2</sup> Department of Veterinary Sciences, University of Pisa, Viale delle Piagge, 2, 56124 Pisa, Italy; cristiano.rossignoli@vet.unipi.it (C.M.R.); francesco.diiacovo@unipi.it (F.D.I.); roberta.moruzzo@unipi.it (R.M.)

\* Correspondence: marina.garcia.llorente@madrid.org; Tel.: +34-91-887-39-32

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**Abstract:** Rural areas are facing a spectrum of landscape changes and vulnerability as a consequence of financial and environmental crises. Innovative approaches are required to maintain the provision of social services and manage ecosystem services in these areas. We explore the capacity of social farming to create viable and sustainable rural and periurban areas according to a social-ecological perspective. We use the key elements of social-ecological systems under social farming practices to analyse (1) the role of local communities and non-formal institutions; (2) the involvement of target stakeholders; and (3) the explicit connection between agroecosystems and human wellbeing. To do so, we selected and described four cases of local social farming initiatives in terms of the key elements of social-ecological systems and conducted a literature review to provide an overview of the explicit impact of social farming on the quality of life. We found that social farming illustrates hybrid governance solutions beyond market instruments that could be applied for the governance of agroecosystems. It can also provide a range of other wellbeing and cultural ecosystem services to rural and urban inhabitants. Greater cooperation between social farming and ecosystem service science could rebound in rural landscape sustainability.

**Keywords:** agroecosystem; community-based governance; ecosystem service; farming for health; innovation; social service; vulnerable people

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## 1. Introduction

Predominantly rural areas cover over 52% of the territory in the European Union and involve approximately 23% of its population [1]. Its agrarian landscapes hold cultural, ethnological and environmental values. This has also been considered in the recent Cork Declaration on Rural Development and Agriculture, which recognizes new roles for agriculture and rural areas to better face emerging challenges and societal demands in terms of the provision of public goods, environmental sustainability, and improved quality of life for both rural and urban inhabitants [2].

However, in the context of globalization and urbanized societies, rural areas are vulnerable to financial and environmental crises. Due to the increasing scarcity in public resources, innovative agricultural practices are needed to create viable and sustainable rural and periurban areas, embracing and making explicit the ecosystem services and benefits provided by it. The financial crisis, begun in 2007–2008, has had a significant impact on public expenditure (the decline of social spending is below average in some Mediterranean European countries such as Greece, Portugal or Italy). Following OECD projections, public spending on health and long-term care services for the older population

might need to almost double from on average 7% in 2009 to 13% in 2050 across the OECD [3]. Thus, rural areas are particularly vulnerable to the decline in public services and social support, as these areas are characterized by a depopulation pattern, aging of rural communities and geographical isolation due to the specific settlement of the population and the difficulty in organizing effective services for the local inhabitants [4]. Mediterranean systems, such as agroecosystems, can be considered complex adaptive social-ecological systems in which the relationships between humans and nature have created the socio-cultural and ecological conditions to deliver a diverse flow of ecosystem services [5]. In this way, the social-ecological system framework recognizes that biophysical and social systems are interdependent [6,7], being a suitable framework for exploring sustainability through the study of complex relationships established between ecosystem services and the factors that generate and influence the provision, governance and use of ecosystem services [8].

The ecosystem services approach was popularized by the Millennium Ecosystem Assessment (MA) in the early 2000s [9] and has become one of the strongest arguments promoting nature conservation because of humans' dependence on it [10] through its direct and indirect repercussion on economic, cultural, ethnological and environmental values. In this sense, agroecosystems are the source of the most essential landscape services demanded by both urban and rural populations, such as provisioning ecosystem services (e.g., food from farming, forestry and genetic materials), regulating ecosystem services (e.g., climate regulation, water regulation, pollination, soil fertility, mass stabilization and control of erosion rates) and the preservation of cultural ecosystem services (e.g., cultural heritage, recreation and spiritual interactions with nature) [11–14]. Following economic theory, many ecosystem services delivered by landscapes have a public good character—i.e., they are accessible (non-rival) and can be enjoyed jointly by society (non-excludable)—at the same time, they are not tradable in conventional markets and are invisible to institutions regulating and maintaining their use [15]. The current human transformation of land cover has led to the loss and abandonment of most intangible ecosystem services, especially those involved in the regulation of ecological processes (regulating ecosystem services) or those related to spiritual enrichment, culture or local identity (cultural ecosystem services) [16,17]. Farming intensification has been promoted, in the most productive areas, for the maximization of provisioning ecosystem services with market prices [18,19]. This conversion threatens sustainable landscapes and the ability of an agroecosystem to provide a diverse flow of services [18,20]; thus, these public goods cannot be taken for granted [15]. At this point, rural areas and their ecosystem services are vulnerable to global change consequences and to the predominant land use planning trends [21,22].

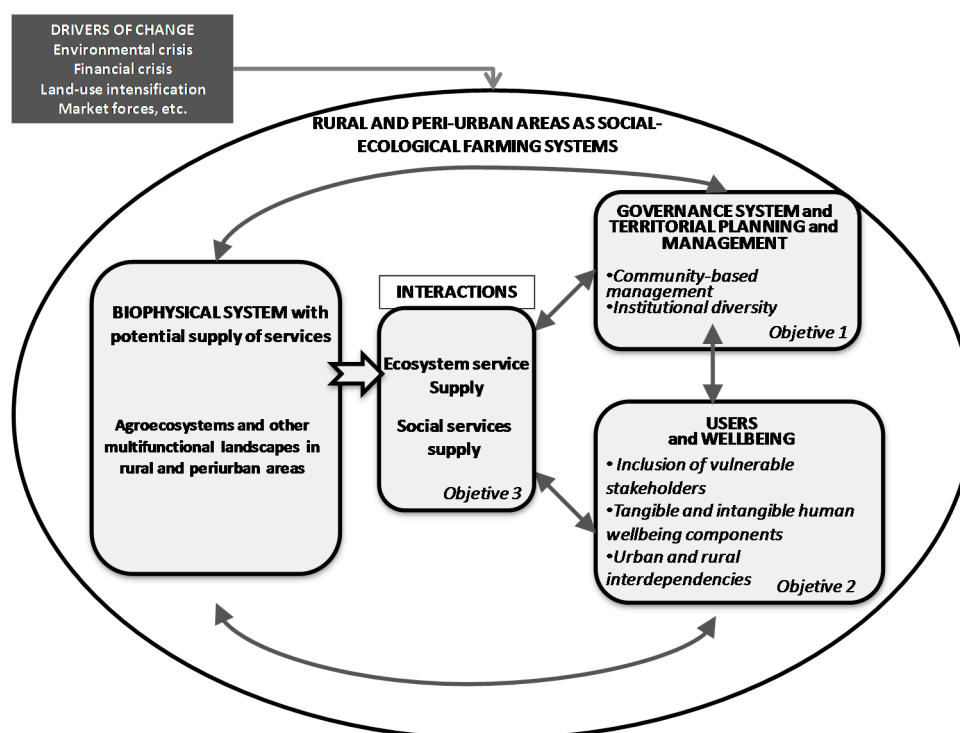
To promote landscape sustainability, the ecosystem service approach has focused on the argument of how human wellbeing depends on nature [9]. As stated by [23], there is a growing body of literature that demonstrates how contact with nature positively impacts human wellbeing not only in terms of extractive products (e.g., food, freshwater, timber). In spite of the mainstream of the ecosystem service approach and its repercussions at international forums, the explicit connections between ecosystem services and human wellbeing have been infrequently studied and have rarely been incorporated effectively into environmental and land-use planning policies. Some work has been done on how ecosystems regulate infectious diseases or extreme natural events [24] through the ecohealth perspective (<http://www.ecohealth.net/>); however, it is notable how there has been no impact on the most intangible components of wellbeing, such as mental health, freedom of action and election and having good social relationships [25,26].

At this point, innovative solutions are needed to maintain the provision of public services and manage ecosystem services in both rural and periurban areas. Better understanding, valuation and promotion of the ecosystem services supplied by agrarian landscapes are needed, in addition to using public funds effectively and efficiently [27].

In this light, social farming (SF; also called care farming or green care) could be considered an example of transition management and social innovation in rural and periurban areas [28]. SF emerged over the last decade from social and health sciences in the search for a synergy between

promoting landscape multi-functionality (maintaining extensive agriculture in rural landscapes) and community-based social and health care. SF involves all kinds of interactions and activities with natural environments, such as agroecosystems and farming land, including plants and/or animals. These interventions are conducted in order to promote the quality of life of a given group of users (people with diverse disabilities, children, young people, elders, offenders, refugees, people from trafficking, people suffering long-term unemployment, gender violence victims, etc.) with established and well defined wellbeing objectives (to reach physical, psychological, emotional, social, educational benefits, etc.) [29,30]. It involves a different understanding and use of rural space and the rhythm of nature and promotes social services in many different areas, including rehabilitation, care, therapy, lifelong education, employment support, and women's empowerment, which contribute to social inclusion, to the reinforcement of social protection nets and to the quality of life of rural and periurban inhabitants [30]. SF also works on how community-based management with a bottom-up approach could furnish social services and build non-formal regulating institutions.

The main goal of this study is to explore the capacity of SF to create viable and sustainable rural and periurban areas according to a social-ecological perspective, embracing and making explicit the ecosystem services and benefits provided by it. To do so, we cover three specific objectives. First, we analyse the role of local communities and non-formal institutions under SF practices in order to present alternative governance situations that could apply for ecosystem service management (objective 1). Later, we analyse the target stakeholders of SF practices and the way that they become involved (objective 2) and examine the explicit connection between ecosystem services and benefits provided by areas agrarian landscapes under SF practices and human wellbeing components (objective 3) (Figure 1). To address objectives 1 and 2, we illustrate four empirical cases in which SF is being conducted in Mediterranean countries (Italy and Spain). In objective 3, a literature review is performed.



**Figure 1.** General framework for analysing sustainability in social-ecological systems adapted for social farming (SF) practices (based on [7,8]) and used to achieve three specific objectives. Under this framework, a biophysical system with the capacity to supply services is represented with the services supplied, the system's users and the governance system, which are jointly affected by direct and indirect drivers of change.

## 2. Materials and Methods

We use social-ecological framework components to analyse the complex relationships between biophysical and social systems [6,7] in agricultural areas conducting SF. In other words, we conceptually identify and characterize the governance system (objective 1), the system's users (referring to all branches of stakeholders involved in SF; objective 2) and the supplied services (ecosystem services and the social services co-produced as a result of biophysical and governance dynamics and social needs; objective 3) (Figure 1).

To support the conceptual arguments at objectives 1 and 2, we selected and described four cases of local SF initiatives. The case studies used describe two SF projects developed in a specific area involving different rural initiatives (Era Valley and Turin area in Italy) and two SF projects related to specific initiatives (Orti ETICI, Italy and L'Olivera Cooperative, Lleida, Spain). In detail, the Era Valley SF experience (Pisa, Tuscany, Italy) is an important and advanced case in Italy, where there is a network of citizens, farms and other private actors aiming to provide innovative social services for diverse target groups. The case of civic food in the Turin area (Piedmont, Italy) was developed as a network of approximately 35 farms and 15 social cooperatives organized around the city of Turin and provides social services, job inclusion and innovative services for the local population. As specific projects of SF, first we describe Orti ETICI (San Piero a Grado, Pisa, Tuscany, Italy), organized on 3.5 hectares of public land belonging to Pisa University, where horticulture production is linked to the inclusion and wellbeing of less empowered people. Second, we present the case of L'Olivera Cooperative (Vallbona de les Monges, Catalonia, Spain), an agricultural cooperative working for social integration that is currently both a social centre for adults with mental disabilities and a farm. These cases were selected because they are representatives of SF conducted in the Mediterranean region, where the rural system has faced many difficulties in maintaining its traditional farming style and ecosystem services and where the existence of rural communities is increasingly challenging. Within the general framework of the rural transition that is taking place in Europe, these cases are particularly relevant because they can be recognized amongst the most structured experiences of SF, where rural activities have moved away from the ethics of profit towards the provision of social services for the community.

The design of a long-term study is particularly relevant for promoting SF at different geographical levels, ranging from local, national to European. In this regard, since 2004, we have explored and studied SF in several areas while investigating the pathway development of SF in various Italian and European regions [28,30,31]. During this time, the method that we most often used was based on participatory action [32], focusing on social services and SF in rural areas. In this research, data gathering was both quantitative (e.g., number of projects, type of agriculture production and its surface) and qualitative (e.g., the viewpoints of the various stakeholders, the common steps in building a common framework, and the identification of influential political stakeholders). Thus, the learning cycle was repeated and adapted in several case studies [33]. Therefore, information and data about the case studies presented here were collected mainly from our research group within this long-term study using different data-gathering tools (Table 1). In particular, the data presented in the manuscript have been systematized following different descriptive fields in order to facilitate consultation. The information compiled is related to the following: (a) SF activity start date; (b) location of the area and type of landscape where activities are performed; (c) type of agricultural production; (d) forerunners (the pioneering or innovation brokers who have promoted and developed the activity); (e) stakeholders groups (the group of actors with a stake on SF); (f) governance systems (the systems for governing ecosystem and social services developed within different SF initiatives); (g) services supply (the ecosystem and social services supplied); (h) human wellbeing (the benefits produced for humans through the use of agricultural and rural resources within different SF initiatives); and (i) aspects of innovation (the innovative models developed to manage agricultural and rural resources and produce ecosystem and social services).

**Table 1.** Data-gathering tools and period of investigation for the case studies presented.

	Case Study	Principal Data-Gathering Tools Used	Period of Investigation
SF area projects	Era Valley SF experience (Pisa, Tuscany, Italy)	Direct observations, focus groups, key informant interviews	2003–today
	Civic food in the Turin area (Piedmont, Italy)	Direct observations, personal communication, focus groups	2010–today
SF farm projects	Orti ETICI (San Piero a Grado, Pisa, Tuscany, Italy)	Direct observations, personal communication, focus groups, key informant interviews	2008–today
	L'Oliviera Cooperative (Vallbona de les Monges, Catalonia, Spain)	Direct observations, personal communication, key informant interviews	2010 and 2015

For objective 3, a compilation of SF benefits was created following a literature review. For this compilation, we reviewed published papers (peer-reviewed) that were indexed in the ISI Web of Science (<https://www.accesowok.fecyt.es/>) and were on the topic of SF (using the following existing terminology: SF, care farming, green care and therapeutic horticulture, among others). We also reviewed papers focused on ecosystem services and health benefits from interactions with natural environments and home gardens. This literature review is not a systematic analysis of all publications regarding SF but provides an overview of the positive impacts of SF on landscape management and governance, users, ecosystem services and benefits for wellbeing.

### 3. Results and Discussion

#### 3.1. Managing Agrarian Landscapes under SF Practices

Some proposed solutions for managing agricultural ecosystems involve government regulation or market incentives. However, a growing number of approaches focus on cooperative solutions [34], such as SF in the Mediterranean context, where community-based management and a bottom-up approach provide and manage social services, thus creating an institutional change where social services depend not only on public expenditure but on the responsibility of many private and public actors that adopt proactive and collaborative attitudes. This is the case of Era Valley (Table 2, case one), which is the most advanced case of SF in Italy in terms of structure and governance and currently represents a model for many other local initiatives. This project progressively involved local farms and institutional actors in the formal recognition of SF and was the first case in Italy. In fact, the approach developed in the Era Valley has impacted other areas of Tuscany (e.g., Pisa, Lucca, Grosseto and the Valdarno area). The governance system implemented was based on using two tools: a Memorandum of Understanding and an SF Board. The Memorandum of Understanding aims to promote SF as a way to foster social cohesion, sustainability and participation in local development. It has supported and consolidated the participation of public bodies, local associations, universities, trade associations, cooperatives and agricultural enterprises. The SF Board is a permanent forum on SF and aims to promote community interventions and methodologies in the development of the multifunctionality of the agricultural system. Within the SF Board, which can be divided into thematic working groups, stakeholders discuss, share opinions and ideas and take collective initiative. By participating in the SF Board, a plurality of public and private organizations or bodies with their own roles contribute to the local system of governance of SF in the Era Valley.

Table 2. Case studies description.

	SF Area Projects		SF Farm Projects	
	Era Valley (Pisa, Tuscany, Italy)	Civic Food in the Turin Area (Piedmont, Italy)	Orti ETICI (San Piero a Grado, Pisa, Tuscany, Italy)	L'Oliviera Cooperative (Vallbona de les Monges, Catalonia, Spain)
Start date	2005	2010	2008	1974
Landscape	The valley is close to the city of Pisa. It has an important industrial focus; however, agriculture, through the quality of products, remains valuable for the economy, the environment and the community, and a strategic asset for future resilience and quality of life	It is an urbanized area where a better connection among agriculture and urban needs is the basis of the wide promotion of nature-based solutions for a smart city	It is a rural land in a periurban area 7 km from the city of Pisa that is under pressure due to the city's growth. The project offers a diverse perspective for the use of land in relation to emerging urban needs regarding health, fresh and safe food, and environmental management	Vallbona de les Monges (Baix Urgell) is a small town (approximately 100 inhabitants) in a rural area with a unique landscape. Forests and agricultural fields are increasingly abandoned as an effect of increasing urbanization, lack of innovation and market competition
Agricultural activity	Horticulture, olive and grape cultivation (olive oil and wine production) and food processing	Fruit and horticulture, as well as animal production, wine and food processing	Horticulture	Olive and grape cultivation for olive oil and wine production
Forerunners	A local NGO started a successful experiment in the area by involving people with mental health problems in rural activities	A research action on transition management in agriculture set up between Pisa University and a local farmers' association	An agreement between the university, an organic family farm and a social cooperative	A group of youngsters moved from the city of Barcelona to a small rural village (neo-farmers) to build a viable community farm in which less-empowered people can be actively involved
Stakeholders groups	<p>Union of Municipalities of the Era Valley (13 municipalities) is the coordinator of local SF initiatives, including:</p> <ul style="list-style-type: none"> <li>○ Farms</li> <li>○ Social cooperatives</li> <li>○ Vocational agencies</li> <li>○ Local government</li> <li>○ Pisa University</li> <li>○ Local public health authority</li> <li>○ Farm associations</li> <li>○ Voluntary associations</li> </ul>	<ul style="list-style-type: none"> <li>○ Local Action Groups (LAGs)</li> <li>○ Pisa University</li> <li>○ Farm association (Coldiretti): the largest in the area, with a strong voice at municipality, metropolitan and regional levels and with other public bodies in different areas (agriculture, social services, education)</li> <li>○ A network of producers (approximately 50)</li> <li>○ Associations of people with disabilities</li> <li>○ A religious group</li> </ul>	<ul style="list-style-type: none"> <li>○ Pisa University: providing expertise, networks and farm lands</li> <li>○ Social Cooperatives (Arnera and Ponteverde): training and the rehabilitation of users</li> <li>○ Farm (BioColombini): a private farm responsible for the economic and technical solutions employed in agricultural activities</li> <li>○ Public social and health services</li> <li>○ Vulnerable and disadvantaged people and families</li> <li>○ Purchasing Group from the urban area (Pisa City)</li> </ul>	<ul style="list-style-type: none"> <li>○ Local farmers</li> <li>○ A house for disadvantaged young people</li> <li>○ Local authorities: Barcelona municipality</li> <li>○ Public health services</li> <li>○ Consumers and associations from the Barcelona area</li> </ul>

Table 2. Cont.

	SF Area Projects		SF Farm Projects	
	Era Valley (Pisa, Tuscany, Italy)	Civic Food in the Turin Area (Piedmont, Italy)	Orti ETICI (San Piero a Grado, Pisa, Tuscany, Italy)	L'Olivera Cooperative (Vallbona de les Monges, Catalonia, Spain)
Governance system	Public-private co-governance promotes dialogue, facilitates comparisons among stakeholders and encourages the construction of shared visions and innovative solutions to ensure that direct rural resources meet community needs and manage health, social and educational services	Most new opportunities are not funded by direct payments but towards the re-organization of local food markets, which are the basis of the success of farmers from the perspective of civiness and reputation	Improved communication with local health authorities is being fostered, and new activities are being developed to build greater awareness in the Pisa area, enlarge the network and increase opportunities. Contacts with other farmers are also promoted in order to broaden the possibilities for the people participating in the project	L'Olivera receives payments from the state for the provision of residential services. In addition, they sell agricultural products. The cut in the public budget has reduced the first source and has increased the efforts to increase independent resources. A stronger dialogue with local actors is also being developed
Services supply (in terms of ecosystem services or social services)	<ul style="list-style-type: none"> <li>○ Organic food</li> <li>○ Local products and varieties, increasing biodiversity and the gene pool</li> <li>○ Education and awareness of the importance of farming for the quality of local life through initiatives with local schools and families</li> <li>○ Training, everyday support for less-empowered people and their families</li> </ul>	<ul style="list-style-type: none"> <li>○ Civic and organic food</li> <li>○ Local products and varieties, increasing biodiversity and gene pool</li> <li>○ Short food chains connecting producers and consumers</li> <li>○ Job opportunities for users (approx. 38 in 3 years)</li> <li>○ New services for the elderly on the farms</li> <li>○ Families and children are supported in their daily lives</li> </ul>	<ul style="list-style-type: none"> <li>○ Food from horticultural production</li> <li>○ Work and welfare</li> <li>○ Opportunities for the inclusion and reintegration of vulnerable people</li> </ul>	<ul style="list-style-type: none"> <li>○ Production of civic food</li> <li>○ Preservation of ecosystem (soil, freshwater, biodiversity)</li> <li>○ Inclusion of vulnerable people</li> </ul>
Human wellbeing	<ul style="list-style-type: none"> <li>○ Work: a shop run by a social cooperative was established</li> <li>○ Educational activities for families and youngsters on lifestyles</li> </ul>	<ul style="list-style-type: none"> <li>○ Training and work inclusion</li> <li>○ Farms involved produce approximately three million euro every year, and farmers in the network have increased their visibility and reputation, their self-esteem and their identity</li> </ul>	<ul style="list-style-type: none"> <li>○ Enhances social inclusion</li> <li>○ Training and employment of vulnerable groups and/or with low contractual capacity</li> </ul>	<ul style="list-style-type: none"> <li>○ Contributes to the market economy</li> <li>○ Enhances social relations</li> <li>○ Connects formal and informal networks of services</li> <li>○ Job inclusion of socially disadvantaged people</li> </ul>
Aspects of innovation	It is the most advanced case in Italy in terms of structure and governance and represents a model for many other local initiatives. The pro-active participation of the local community is conceived as a tool for the health promotion	The project mobilizes farm resources in order to offer innovative answers to local social needs. The link between economic actors and public bodies introduces new economic energies in the provision of social services	Aims to build and test a collaborative welfare and productive model among actors from the social-business-research fields	Promotes a change in the traditional language of economics and in the application of theoretical paradigms on environmental protection, in health and in the inclusion of vulnerable people



A complex governance system is also found in the Turin area in Italy (Table 2, case two), where various institutions and actors, including local action groups, collaborate to promote SF initiatives and networks. These actors are fully aware of the importance of designing innovative welfare models, which can be defined as mixed, based on subsidiarity, coproduction and civic economy. SF could also help create public goods in the health and social field by connecting the public and private interests. It is particularly evident in the case of Orti ETICI (Table 2, case three). Orti ETICI works in an environment where various actors and stakeholders have common and integrated objectives through a process in which food production, research and inclusion coexist at the same time and place. The marketing of the agricultural production of Orti ETICI in the local urban market produces a virtuous circle between rural production and the urban community. In other words, the sale of agricultural products through purchasing groups meets the need of local urban consumers for high-quality food while economically sustaining social and labour inclusion. Thus, public and private stakeholders, users and the urban and rural communities around Orti ETICI co-produce food, work, welfare and opportunities of inclusion and reintegration—social, economic and environmental values—where all parties involved benefit. In all cases, it is also important to highlight some weaknesses. Building a structured dialogue among actors coming from different domains, as SF proposes, is not easy and requires lots of effort, a significant level of collaboration, and a partial shift from personal to community interests. Thus, the application of SF governance models it is not easy, particularly when many stakeholders from different domains are involved, as the level of complexity of governance system can affect functionality, efficacy and response capacity.

In biodiversity and ecosystem service conservation, this community-based governance approach has been implemented in particular cases, such as in the inclusion of indigenous communities or other local communities for biodiversity conservation or resource co-management [35]. However, legal institutions and markets have taken central stage in environmental policies. On the one hand, the principal use of legal instruments is the declaration of natural protected areas as the more extended strategy for biodiversity conservation [36] where there is a top-down intervention by the state. Under this model, local actors have restricted access to decisions and interactions with protected areas. In the case of the Doñana natural protected area (Southwest Spain), for instance, local actors feel that they have no say in decision making regarding ecosystem services in the protected area [37]. On the other hand, market instruments, as described by [38], follow two main trends: in the first, public intervention corrects market failures through state taxes and subsidies (i.e., payments for ecosystem services), and in the second, private transactions in markets are created for ecosystem services (e.g., wetland banking or emission trading systems). This extended commodification of nature is under discussion in relation to the ethics of trading with nature, obscuring the significance of the ecological processes behind landscape service provision (masking the ecological complexity), equity issues and the simplification of the institutional diversity required to manage social-ecological systems [39].

The most recent ecosystem service literature on governance suggests that sustainable social-ecological systems require institutional diversity, i.e., understanding institutional diversity as the presence of non-formal institutions, legal institutions and market institutions [40] across organization scales [7,37]. Recent examples in home gardens managed by the community show that an individual's sense of belonging to a community might act as an incentive itself to conserve landraces as a way of maintaining cultural identity [41]. It could also help to resolve social conflicts over access to ecosystem services and to promote social justice, participation, stakeholder engagement, more socially supported decisions and incentives for conservation. As stated in [42], there is little experience in the design of multi-level governance systems. Thus, the practical application of SF represents experience gained in this direction, as it promotes building new networks with consumers as well as connections between urban and rural citizens (see Table 2).



### 3.2. Target Stakeholders in SF Experiences: Towards Social Inclusion and Urban-Rural Interdependence

The ecosystem service approach recognizes that in landscape planning, there are different types of stakeholders with different degrees of dependence and influence on ecosystem service delivery. Those who stand to lose or gain significantly from ecosystem services but who are not directly involved in decision making, such as non-associated farmers, are vulnerable [43]. In fact, as [44] has shown, if such less-visible stakeholders are under-represented, there is a risk of masking their participation in environmental management policies.

SF especially focuses on vulnerable stakeholders in two different ways. On the one hand, the direct beneficiaries of these practices are disadvantaged people who could be integrated into a living context where their personal capabilities are valued and enhanced. Through SF, it is possible to support a range of less-empowered or marginalized people, including those with intellectual, physical or sensory disabilities, people with mental health issues, those with a history of addiction, prisoners and ex-prisoners, women, young people, the elderly, those experiencing social disadvantages, immigrants and ethnic groups, HIV-positive people and others [28]. This is a crucial aspect in all SF practices and is particularly evident in the case of L'Olivera Cooperative (Table 2, case four). L'Olivera was developed under the idea of an innovative model of responsible agriculture for co-producing economic and social value, but at the same time, it helps to preserve rural areas in Catalonia that otherwise would have been impoverished socially, environmentally and economically. L'Olivera is an agricultural cooperative for social integration that aims to organize rural resources to meet community needs and manages health and social services through the employment of socially disadvantaged people. L'Olivera stresses the importance of social and moral values based on giving and reciprocity, which together produce new value in the creation of private and public goods. The L'Olivera model supports society while operating in the market economy and enhancing social relations, the connection of formal and informal networks of services and the active employment of socially disadvantaged people.

On the other hand, the farmers are indirect beneficiaries because they can build new networks with consumers, create new short supply-consumption chains, involve more stakeholders in agricultural activities, and enhance the image of agriculture in society as well as their own reputation and visibility. All these impacts could increase their empowerment, giving farmers a voice in planning as well as engaging them in social activities. In addition, SF may help to improve the economic status of farmers by diversifying their sources of income. This is the case of civic food in both L'Olivera and Turin. In L'Olivera (Table 2, case four), the traditional language of economics is being changed as well as the application of theoretical paradigms to environmental protection, health and the inclusion of vulnerable people who can enrich the business and its productivity. In the Turin area (Table 2, case two), SF promotes the creation of public goods—social and environmental—intersected with the production of private goods—economic—where business activities are linked to the state and local communities in a subsidiary form following a relational and productive model. The SF network in the Turin area has created job opportunities for several disadvantaged people, but it has also produced innovative services (e.g., rural kindergartens, daycares, etc.) for families and the elderly. The participation of farmers in the SF network has provided them with an invaluable benefit in terms of the reputation and recognition of their products in the food market. Local organic agricultural products with social content (civic food) are recognized by urban consumers in the area as meeting their social, environmental and economic needs both as individuals and as a community.

SF not only focuses on generating positive outcomes for service users but also provides an opportunity to increase the economic viability of individual farms and the socio-personal satisfaction of farmers. The integration between agricultural and social activities can also empower farmers and enhance the image of agriculture as perceived by public opinion. As a result, SF practices can be supported by urban dwellers who can purchase the agricultural products directly (i.e., a short value chain) or through intermediaries. People in urban poles can redefine their own survival strategies and support local producers who share common ethical concerns, as in the case of farmers involved in SF, to indirectly provide both people and farmers a better quality of community life. The organization

of such civic markets could increase the income opportunities for SF farms as well as for the people involved in the working activities. This relation with urban centres can therefore have a positive impact by supporting social and economic activities in rural areas [28].

### 3.3. Ecosystem Services and Human Wellbeing Benefits Provided by Agrarian Landscapes with SF Practices

Through SF practices, agroecosystems deliver multiple ecosystem services, ranging from provisioning ecosystem services, such as the acquisition of quality food products, which are often attached to organic production and local consumption patterns [45,46], to regulating ecosystem services (spending time in healthy outdoor spaces) and cultural ecosystem services (Table 3). Regarding the latter, cultural ecosystem services have received less attention in environmental research and policy [47]. The few studies on cultural ecosystem services are restricted to aesthetic or recreational values and their assessment in economic terms [48]. This may be explained by the fact that cultural ecosystem services are more intangible and subjective than other service categories and by the difficulty of defining ecosystem structures and the processes underpinning their provision [47].

Under SF practices, cultural ecosystem services can be clearly established in terms of intellectual (e.g., intellectual stimulation, improved working skills and engagement in meaningful activities), spiritual (e.g., expressing emotions, being appreciated, feeling connected to nature, and landscape aesthetic enjoyment) and physical (exercise) interactions within the agrarian landscape (Table 3). SF has the potential to draw on human wellbeing-nature connections, social interactions and cohesion, since these are part of a social community, self-efficacy, self-esteem, etc. Additionally, contact with nature has a positive effect on health indicators by reducing stress levels, enhancing mood, facilitating social contact and providing opportunities for personal development (Table 3). In this way and independent of economic assessments, the ecosystem services provided under SF practices could be valued following socio-cultural and health indicators. SF can generate positive health-related benefits [49] thanks to contact with nature, which is important to human beings simply because people can find relief from being in natural places [30].

Within the context of global change, a profound reconfiguration of the relationships between human wellbeing and nature is occurring [50]. Human disconnection and disaffection with nature can lead to (1) higher environmental degradation because underestimations of its importance lead to depleted resources, investments and efforts in conservation and lower environmental concerns, and (2) unhealthy and unhappy populations [51,52]. Consequently, it is important to implement nature-based solutions, such as SF, aimed at reconnecting human wellbeing with natural landscapes through the ecosystem services and benefits obtained by this interaction.

**Table 3.** Impacts of SF (derived from four key elements: relationships with the farmer, natural surroundings, activities performed and contact with animals, plants and other living things) on various beneficiaries (users and their families, farmers, land use and environmental managers, consumers and society in general) and their relation to social-ecological components (in terms of management-governance, users and wellbeing and ecosystem services (the ES nomenclature follows the CICES classification system; see <http://cices.eu/>). Key papers investigating each impact are mentioned as sources obtained from the literature review. ES: ecosystem service. MG: management governance.

Impacts (Direct or Indirect)	Sources	Main Beneficiaries	SES Component Related
<i>Relationships with the Farmer (and Other Participants)</i>			
Social interactions and cohesion	[53,54]	User	Users and wellbeing
Be part of a social community, sense of belonging	[41,55,56]	User	
Involve more stakeholders in agricultural activities	[30]	Farmer	
More free time (less care work involved) for users' families	[30]	User family	
Connect with people	[57]	Farmer	
Altruistic satisfaction of providing ethical care	[57]	Farmer	
Build new networks with consumers (e.g., ethical or environmental consumers)	[30]	Farmer	MG
Enhance the image of agriculture in society	[30]	Farmer, manager	
Establish new connections between rural and urban citizens	[30]	Society, manager	

Table 3. Cont.

Impacts (Direct or Indirect)	Sources	Main Beneficiaries	SES Component Related
<i>Natural/Outdoor Surroundings</i>			
Non-care context	[58]	User	Cultural ES: spiritual, symbolic and other interactions with biota, ecosystems and land-seascapes
Connectedness to nature and the land and sense of belonging to the natural world	[59]	User	
Spaces for relaxation and tranquility	[41]	User	
Aesthetic enjoyment of landscape	[41]	User	
Spiritual enrichment through respect for nature	[59]	User	Cultural ES: Intellectual and representative interactions
Inspiration and intellectual stimulation	[58]	User	
Environmental awareness	[41]	Manager	
Spending time in healthy (non-polluted) outdoor places	[41]	User	Regulating ES
Preserving multifunctional landscapes	[59]	Manager	Regulating ES: habitat
<i>Performing Activities in Natural/Outdoor Surroundings</i>			
Work opportunities, work skills	[53,58]	User	Cultural ES: Intellectual and representative interactions
Engaging in meaningful activities	[53]	User	
Maintain local identity	[41]	User	
Cognitive functioning and learning skills	[41]	User	
Maintain traditional and cultural practices and knowledge	[41]	Farmer, manager	
Forget problems	[60]	User	Cultural ES: Spiritual, symbolic and other interactions with biota, ecosystems and land-seascapes
Exercise	[41]	User	Cultural ES: Physical and experiential interactions
Entertainment	[53]	User	
Self-efficacy	[56,61]	User	Users and wellbeing
Self-esteem (depression)	[56,58,61,62]	User	
Physical health	[53,58]	User	
Ordinary work/life (work habit)	[58,60]	User	
Routine (but flexible)	[60]	User	
Obtaining quality food products	[41]	Consumer, user	Provisioning ES: nutrition
Promote and shape healthy and clean natural environments	[41]	User, farmer	Regulating ES: Maintenance of physical, chemical, biological conditions; and mediation of waste, toxics and other nuisances
Improve rural development	[29]	Manager	MG
Carry out alternative services to broaden and diversify farming activities	[63]	Farmer	MG
New sources of income, diversification of opportunities	[64,65]	Farmer	Users and wellbeing
<i>Contact with Plants, Animals and Other Living Forms</i>			
Empathy and skills in interactions with humans	[58,66]	User	Cultural ES: Spiritual, symbolic and other interactions with biota, ecosystems and land-seascapes
Expressing emotions	[60]	User	
Being appreciated	[60]	User	
Tranquility	[60]	User	
Non-judgemental	[60]	User	
Patience	[60]	User	
Respect	[60]	User	Cultural ES: Intellectual and representative interactions
Satisfaction for preserving other living things and the earth (existence value)	[41]	User, farmer, consumer	Cultural ES: Other cultural outputs (existence value)
Conserving/improving local varieties	[41]	Farmer, manager	Provisioning ES: gene pool
<i>Others Factors</i>			
Stimulation of diet intake	[67]	Users	Users and wellbeing

#### 4. Conclusions

In the current financial and environmental crises in which public services are scarce, particularly in rural areas and agrarian landscapes, sustainability is threatened. However, hybrid governance models, such as those provided by SF experiences, could be created where state and community work together to co-produce social services. In fact, as observed in the case studies, by linking economic actors, local communities and public bodies, SF could offer innovative solutions to maintain the provision of social and ecosystem services in rural and periurban areas that could be explored for new rural development

policies for the period 2014–2020 [68]. Despite some weaknesses that can emerge from the application of SF governance models due to their complexity, SF offers a governance innovation highlighting the significance of bottom-up approaches and mixed possibilities in the governance of agroecosystems to increase their sustainability.

At the same time, this specific management practice and multi-actor involvement can provide a range of other wellbeing and cultural ecosystem services to human communities. The Millennium Ecosystem Assessment establishes clear relations between provisioning ecosystem services and the wellbeing components of security—the basic material for a good life and health. Similarly, regulating ecosystem services are also linked to health and security. However, the importance of cultural ecosystem services in terms of health, good social relations, or freedom of choice and action remains almost invisible [9]. SF offers an example of how human wellbeing is linked to the conservation of agroecosystems through cultural ecosystem services and health benefits. In the future, higher cooperation is needed between SF and ecosystem service science to better understand the explicit connections between nature and human wellbeing, from biophysical systems and ecological processes to the supply of services, institutional dynamics and social needs. In fact, the health, economic, socio-cultural and environmental values associated with multifunctional areas in rural communities should be considered as effective arguments for their enhancement and sustainable conservation.

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