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Social Farming in high mountain regions: The case of the Aosta Valley in Italy

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Abstract

This paper investigates and analyses social farming in the Aosta Valley, a tiny Italian mountain region in the Alps. It aims to highlight the features of social farming in this region, focusing on the social mission and economic sustainability. The paper first presents the literature on social farming, focusing on marginal and remote areas, and illustrating the main characteristics of Italian social farms. Secondly, it focuses on the findings coming from a qualitative investigation of three case studies of Valdostan social farms based on data collected from semi-structured direct interviews. The analyses reveal that social farming in the Aosta Valley fulfils a crucial social mission in areas with poor accessibility to social services. It is economically sustainable, basing its business model on the environmental and agricultural resources typical of high mountain regions.

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1. Introduction

Social farming (SF) is an innovative practice that links multifunctional agriculture and the supply of health, social, education, and employment services in rural and peri-urban areas (Di Iacovo & O'Connor, 2009; Di Nazzaro *et al.*, 2021; Henke, 2004; Wilson, 2007).

Literature provides several definitions of SF and different ways of discussing the phenomenon (care farming, green care, social farming). These concepts are often used interchangeably, but they all have different backgrounds and meanings according to the country (Bassi *et al.*, 2016; Di Iacovo & O'Connor, 2009; Guirado *et al.*, 2017, Hassink *et al.*, 2020). Care farming focuses on mental and physical health through routine farming activities on a farm or with a rural landscape (Dessein, 2008; Leck *et al.*, 2014; Hine *et al.*, 2008; Sempik *et al.*, 2010). Social farming refers to all the activities mobilising agricultural resources, both from plants and animals, aimed at promoting the care, rehabilitation, life-long education, and sheltered employment of the most vulnerable and marginal segment of the population, i.e., people with social, physical, or mental disabilities, children with a learning disability, detainees or ex-prisoners, drug, or alcohol addicts (Bassi *et al.*, 2016; Di Iacovo, O'Connor, 2009). Finally, green care is a broad concept that encompasses all the benefits of contact with nature (Galardi *et al.*, 2022). It's an umbrella term that includes therapeutic, social and educational practices involving farming, farm animals, gardening, social farming, care farming, therapeutic horticulture, and animal-assisted intervention (García-Llorente *et al.*, 2018; Hine *et al.*, 2018).

International empirical research has highlighted heterogeneous approaches in Europe to SF (Tulla *et al.*, 2014; Guirado *et al.*, 2017; Hassink *et al.*, 2016). There is diversity in goals, type of organisations promoting the activities and target group to which the practices are addressed. For instance, SF is primarily managed by third-sector organisations in Italy, while in Netherlands and Belgium by the private sector. In Ireland, institutional initiatives are dominant (Di Iacovo, 2020; Di Iacovo, O'Connor, 2009; Nazzaro *et al.*, 2021).

As the literature shows, SF is a phenomenon rich in innovative practices, which has been drawing the attention of a larger crowd, from researchers and scholars to politicians and policymakers. SF initiatives are considered innovative both from an economic and a social point of view (Hassink *et al.*, 2020). SF provides essential services to local communities through an intersectoral approach (De Vivo *et al.*, 2019, Borgi *et al.*, 2020). It links different sectors (social assistance, health services, agriculture, food processing, landscape conservation, etc.) by creating networks of cooperation aimed at meeting the needs of disadvantaged people (Borsotto *et al.*, 2019;

Dalla Torre *et al.*, 2020). Moreover, the collaboration between private and public actors is essential since SF responds to multiple difficult situations and aims at a plurality of target audiences (Di Iacovo & O'Connor, 2009). In this way, SF represents an innovative, multi-actor, and interdisciplinary approach able to create social cohesion and support the quality of life of the most vulnerable segments of the population. Furthermore, sectors that have rarely been considered related can respond in an unconventional way to the many challenges the rural world faces (Di Iacovo *et al.*, 2014, 2017; Gramm *et al.*, 2019). As a model based on the interaction of different stakeholders, it may generate benefits for all sectors involved (Bassi *et al.*, 2016). It differs from other innovative practices in farming (e.g., extension activities in helping new farmers, farming in prison grounds to provide food, subsidies to help out-of-school youth to undertake farm-related entrepreneurship), as clear social objectives are for the well-being of a wide range of marginal groups of the population.

Several benefits and positive externalities arise from the SF practices, as demonstrated by recent research (Borgi *et al.*, 2020; Di Iacovo, 2020; Finuola & Pascale, 2008; Hemingway *et al.*, 2016; Musolino *et al.*, 2020). Considering the main target of these practices is to the most vulnerable and marginal socio-demographic groups, their primary benefits encompass a general improvement in skills, opportunities for work placement and social integration, self-confidence and assumption of responsibility for their actions etc. (Bassi *et al.*, 2016; Di Iacovo & O'Connor, 2009; Giaré, 2012; Giaré & Macrì, 2012; Hine, 2008; Hine *et al.*, 2008). In addition, there are long-term advantages that can affect the farmers, the local institutions, and the entire community. Such as:

- benefits for the public sector which, thanks to the additional and innovative services supplied by SF, can overcome constraints due to the limited availability of financial resources (Di Iacovo, O'Connor, 2009; Di Iacovo *et al.*, 2017; Giaré *et al.*, 2018; Guirado *et al.*, 2017; Hine *et al.*, 2008);
- opportunities for the farms to expand and diversify their business and extend their reputation in the local market, either in rural or urban areas (Di Iacovo, O'Connor, 2009; O' Connor *et al.*, 2010, Tulla *et al.*, 2014);
- chances for the whole community to increase the supply of essential services in rural areas, generating and strengthening a network of relations and connections (effects in terms of social capital). Indeed, the interaction and cooperation among many sectors and actors spread information and knowledge throughout the territory and then contribute to the development of the countryside itself (Hassink *et al.*, 2020; Hine *et al.*, 2008; Leck *et al.*, 2014; Musolino *et al.*, 2020; Tulla *et al.*, 2014);
- outcomes for sustainability by safeguarding the environment and supporting lively and healthy rural communities. Primarily, SF uses

natural organic farming techniques. In Italy, more than 60% of the social farms have turned to organic farming (CREA, 2018). Thus, SF may contribute to generating economic, social, and environmental sustainability (FAO, 2015).

A growing number of scholars have been investigating SF in Europe and Italy (Carbone *et al.*, 2009; Ciaperoni, 2011; Dell'Olio *et al.*, 2017; Di Iacovo & O'Connor, 2009; Giaré *et al.*, 2018; Gramm *et al.*, 2019; Hassink & van Dijk, 2006; Hassink 2009; Hudcová *et al.*, 2018; Leck *et al.*, 2014; Moriggi, 2019; Musolino *et al.*, 2020). Nevertheless, there is a shortage of specific studies focused on extremely marginal areas, especially on remote regions like mountain regions – e.g., the Alps.

Mountain regions more than others are experiencing a socio-economic and demographic decline, due to several reasons such as lack of services, climate change and decrease of winter tourism. Mountain regions are therefore in search of new models of socio-economic development, i.e. new drivers of development capable of producing positive effects on the territory economically, socially, and culturally. In this respect, it is relevant to know whether new activities, especially new agricultural practices like SF, can contribute and reverse the declining trend observed in the last decades. Therefore, this paper aims to fill the research gap concerning this "branch" of agriculture in high mountain regions.

This study aims to analyse and discuss the phenomenon of SF in the Aosta Valley, focusing on the findings of a qualitative investigation on the valdostan social farms, based on case studies using face-to-face semi-structured interviews. The research questions of this paper can be summarized as follows:

1. Can SF be implemented in a remote high mountain region such as the Aosta Valley? Is SF suited to high mountain regions' geographical, social and economic characteristics?
2. What are the unique features of SF in high mountain regions?
3. What is its role, and what socio-economic benefits it can have on the local communities?

This paper is structured as follows. The next section presents the literature review on SF, focusing on the Italian model and the remote areas. The third section presents SF in Italy, as defined and framed by the national laws, also describing the main characteristics of Italian social farms (and social services offered) based on the empirical evidence coming from the latest surveys. The fourth section focuses on SF in the Aosta valley and on the qualitative field investigation: first, it describes the Aosta valley, its main geographical and socio-economic characteristics, focusing on the agricultural sector; secondly, it defines the method used for the field investigation; thirdly, it describes and analyses the three case studies of social farms investigated, both taken

individually and comparatively (the three social farms are analysed each of them individually, and from a comparative perspective). The last section contains conclusive remarks and policy implications.

2. International studies on social farming, with a focus on highly remote areas

The first experiences of SF in Europe developed around the 1960s but have been kept aside from the institutions and the scientific community for a long time (Di Iacovo *et al.*, 2014; Genova *et al.*, 2020). Finally, since 2000 scientific and public debates started talking about SF (Braastad & Bjornsen, 2006; Dessein *et al.*, 2013; Giarè *et al.*, 2018a; Hassink & van Dijk, 2006; Gallis, 2007; Gallis, 2013).

Numerous health, economic and social benefits of SF have allowed these practices to spread all over Europe (Di Iacovo & O'Connor, 2009). In every European country, SF has developed to include specific categories of vulnerable subjects such as people with disabilities, detainees or ex-prisoners, drug or alcohol addicts, unemployed.

The common feature in SF throughout Europe is that it represents an innovative approach to facing the social crisis in rural and peri-urban areas. It provides types of social services other than the typical standard offered by the welfare program. The numerous benefits are for the farmers, the beneficiaries of the services offered and the whole community (Katonane *et al.*, 2016; Lanfranchi *et al.*, 2015). SF has reached a significant level of development in the Netherlands, Norway, France, Germany, and Belgium, though different business models have been applied (Carbone *et al.*, 2009). For some social farms, agriculture and farming still represent the main business and income, while the therapeutic aspect is prevalent for others.

A recent study by Di Iacovo (2020) focuses on the different forms of SF in the EU, offering some interesting considerations about the basic principles of the ventures according to the welfare models, together with the analysis of their strengths and weaknesses. The author underlines that in Northern Europe, SF is supported by robust state intervention and accompanied by the public health system. Thus, social farms are suppliers of social services based on the needs of public institutions. In France and Germany, most social services are undertaken and supplied by medium and large organisations supported by the government. In this case, SF makes it possible to involve vulnerable people, supporting and taking care of them in a sheltered environment upheld by public policies. In the UK and Ireland, SF is characterised by the relevant presence of foundations and NGOs that play a crucial role in sustaining social farms. Instead, in Italy, Spain and Portugal,

but also Greece, Malta, and Cyprus, SF derives from mixed welfare models, which include the public sector and private stakeholders such as NGOs, farms, households and individuals.

The Netherlands is one of the pioneering countries of SF in Europe. SF in the Netherlands developed more rapidly and massively than the other European countries, based on the number of social farms and the government support policies (Hassink *et al*., 2014; Hassink *et al*., 2018; Hassink *et al*., 2020). The Dutch experience is well represented by the care farms, often born from family-run businesses (Berget *et al*., 2008; Di Iacovo & O'Connor, 2009; Elings *et al*., 2008; Hassink *et al*., 2009; Hassink *et al*., 2020). In the Dutch care farms, social activities have a principal therapeutic goal (Hassink *et al*. 2018), differently from other countries, like Italy, where SF is more aimed at social inclusion (Di Iacovo, O'Connor, 2009).

As seen above, the literature on social farming is vast and varied. However, specific studies focused on highly remote regions, like high mountain regions are lacking. However, there are some recent studies focused on Trentino-Alto Adige, Northeastern Alps, dealing with SF and social innovation (Gramm *et al*., 2019; Gramm *et al*., 2020; Gretter *et al*., 2019); and an investigation of SF in Calabria, a high remote region in southern Italy (and prevailingly mountainous region, although surrounded by the sea) with extremely low socioeconomic development (Musolino *et al*., 2018; Musolino *et al*., 2020). In addition, some studies on diversification and multifunctionality in mountain farming in the Pyrenees mountains (López-i-Gelats *et al*., 2011; Barnaud & Couix, 2020) also deserve to be mentioned. Interestingly, several positive effects produced by SF in these highly remote regions came up. They are:

- territorial dispersion of essential services, which might be characteristic of rural and poorly inhabited areas like mountain regions, may be limited or reduced. Due to the multifunctional and diversified nature of farms engaged in SF, it can create proximity for the users and easier access to social services;
- contribute to fostering the reputation of local products and services in areas where remoteness and marginality limit their visibility. This was evident in a marginal region like Calabria, where many social farms were started on the land confiscated from organised crime (in this respect, SF contributed to reversing the image of these places);
- enhance relations and networks both formal and informal, which are generally weak in remote regions. As said above, it usually involves a specific number and range of participants: users, producers, institutions, associations, local communities and more, therefore increasing potential and actual relationships and networks;

- create new job opportunities, not only for vulnerable people but also for professionals, in areas where employment is still unattainable for specific social groups, like females, due to gender inequality and discrimination. In Bolzano province, SF is mainly run by women who also offer educational services, especially in petting farms, thus tackling the rural society based on a patriarchal system;
- provision of educational services on social farms located in remote areas has proven to be an effective strategy for transmitting traditional knowledge and practices, respect for the environment and social values from the rural community to the urban context.

3. Social farming: evidence from the italian experience

In Italy, SF has developed since the mid-1970s (Giarè *et al*., 2018) due to economic and social factors which have contributed to the recognition and strengthening of the disadvantaged people's constitutional rights, like addicts, people with mental disorders or disabilities, unemployed, and detainees (Di Iacovo & O'Connor, 2009). The first experiences were born without any institution support or regulation and by getting inspiration from the principles of self-help and solidarity. Finally, though, with some delay[1], SF was reformed in 2015 with law *141*, «Disposizioni in materia di agricoltura sociale». This law defines SF as the sum of all the activities performed by the farmers and agricultural entrepreneurs and by social cooperatives, as listed below:

a) social inclusion and work placement for people with disabilities and disadvantaged workers, disadvantaged and vulnerable people[2], and young working-age people in rehabilitation projects and social support protocols;
b) services and social activities for the local communities through the use of tangible and intangible agricultural resources aimed at promoting and developing skills and abilities, fostering social and working integration, and providing valuable services for daily life;
c) performances and services to support medical, psychological and rehab therapies aimed at improving health, social, emotional, and cognitive functions in the subjects involved, with the help of pets and livestock, crops and plants;
d) environmental and food education projects aimed at safeguarding biodiversity and transmitting knowledge of the territory through social and

1. See the Italian laws l. 118/1971, 180/1978, 381/119.
2. Disabled and disadvantaged workers are defined in reg. (UE) 651/2014 (Art. 2, n. 3); disadvantaged and vulnerable people are defined by l. 381/1991 (Art. 4).

didactic farms that host children of preschool age and people with social, emotional, and physical disabilities.

Moreover, interestingly law 141/2015 also states that in Italy, SF businesses encourage cooperating with other entities, such as public healthcare services, NGOs, volunteering organisations, social assistance associations, foundations, charitable institutions etc.

SF in Italy, whose quantitative relevance cannot be precisely measured due to the lack of systematic and periodic surveys, presents a wide variety of initiatives, subjects, products, and services offered and beneficiaries and goals are reported by the recent study by CREA (2018). The primary legal status of Italian SF companies is the social cooperative, with 46% of the subjects interviewed and their companies being type B[3] (19% refers instead to individual companies, while 24% to associations and organisations from the third sector). The role of social cooperatives is a feature of SF in Italy, as several authors underlined (Di Iacovo & O'Connor, 2009; Finuola & Pascale, 2018).

According to the categorisation introduced by law *141/2015*, the most popular activity achieved by Italian SF companies is the social and working integration of disadvantaged people. Regarding the beneficiaries, the survey observed that 54% of the Italian SF companies work with people with disabilities. However, relevant is also the share of SF companies serving the types of vulnerable people, like unemployed with socio-economic disadvantages (31%), minors (27%), students in *alternanza scuola lavoro* - work-school young apprenticeship programmes (30%) and ex-prisoners and inmates (27%). Data also reveals that all the types of people involved but the minors and students are hired as employees.

As far as production is concerned, 63% of the production is annual crops, particularly highly labour-intensive horticulture. Perennial crops represent 24% and animal husbandry 23%. Moreover, the survey showed that 6% do beekeeping also. Greenhouses and garden centres, on the contrary, are the less represented category, probably because of the investments required. In addition, as reported by the survey, SF companies carry out more than farming. Didactic farms or direct selling are the most popular ones, followed by garden maintenance, stables, products processing, *agrinido-agriasilo* (nursery/kindergarden on a farm) catering and food service, social tourism,

3. According to the Italian law 141/2015, there are two types of social cooperatives: Cooperative A deal with the management of social-health, training and lifelong learning services; Cooperative B instead deal with the management of activities aimed at the employment of disadvantaged people in the sectors: industry, commerce, services and agriculture.

and hospitality. It is significant to notice the association between SF and organic farming and 68% of Italian social farms adopted this practice.

The social farms surveyed by CREA (2018) are mainly classified as small to medium size companies due to their revenue: only 10% reached an annual income of over 1 million euros. The social cooperative type B is the most common among the largest social farms. To achieve their economic sustainability, it has been proved that in the last five years, the investments have been 55% either self-funded or private, including crowdfunding and donations, while only 20% were funded by public resources and 17% by banks or foundations. However, it is also said that one of the most relevant threats for SF remains the lack of financial resources. Moreover, 87,6% of the social farms surveyed sell to private individuals and more than 67% get 50% of their income from transactions with private individuals. Finally, creating networks and agreements is a fundamental feature of Italian SF companies. The most common agreement with external parties is the informal one (46,8%), followed by the formal one (22,8%).

4. The analysis of social farming in mountain areas: the Aosta Valley

4.1. *The socio-economic context and agriculture*

Aosta Valley is the tiniest Italian administrative region, with a 3.263 km^2 surface, bordering France and Switzerland (Figure 1). The area is small even in demographic terms. According to ISTAT[4], in 2021 there were 124.089 inhabitants, corresponding to only 0,21% of the national population. It is an entirely mountainous region with a predominantly rural character. It has the lowest population density rate in Italy (only 39 persons per km^2), presenting only a relatively large urban center, the capital city Aosta, which has about 27% of the total population living in the region. According to the most recent classifications carried out at the EU level (Dijkstra & Poelman, 2018), Aosta Valley is a remote region.

It is a region with a high level of economic development. According again to ISTAT, in 2020, GDP per capita was 36,295 euros, the third among the Italian regions, while the employment rate of 15-64 years old people was 66.5%, higher than the national employment rate. However, both indicators in the region are declining in the medium and long run, in particular the GDP per capita (since 2011, it has been decreased in real terms by almost 15%). Even the population has been in declining in the last five years, Aosta

4. demo.istat.it.

valley lost about 3k inhabitants. The most important economic sector is the services sector, which is the public sector, based on the relevant role of the Regional Government (Regione Autonoma Valle d'Aosta), and tourism (thanks to important winter tourist resorts, like Cervinia, Courmayeur, la Thuile, Pila). The number of employees in Aosta valley in 2018 nearly reached 55k people, with more than 77% employed in the tertiary sector, 19% in industry and construction, and 3,6% (corresponding to about 2k people) in agriculture and forestry. The number of employees in the primary sector is slightly lower than the national average but in line with other European countries.

In Aosta Valley, there are 2.320 farms, 0,20% of all the Italian farms (ISTAT, 2016). Importantly, though agriculture is a small economic sector, agriculture represents the only job opportunity contributing to the survival of a vital social fabric and producing public goods (e.g. landscape conservation). Women working in agriculture are only 26,8%, in line with the national trend. Foreign immigrant workers are an important share of regional employment in agriculture, as they are 41% of all Aosta Valley employees (ISTAT, 2018).

The morphology and climate of the mountain region with average altitude is over 2k m AMSL, with steep slopes, low amount of flatland and having a long cold winter, makes for sure Aosta Valley extremely attractive for winter and summer tourists (but also for tourists coming out of the peak seasons), and for residents as well (Baldazzi *et al.*, 2016; Musolino & Silvetti, 2020). However, clearly it is the main factor which limits agricultural productivity.

Aosta Valley agriculture also has a strong environmental added value, which derives from the care of the territory and the landscape. Traditional farming practices, such as the practice of montication or the cultivation of vines on characteristic terraces (terracing), contribute to the maintenance of environmental public goods, through the prevention of hydrogeological risks, the promotion of biodiversity and landscape conservation

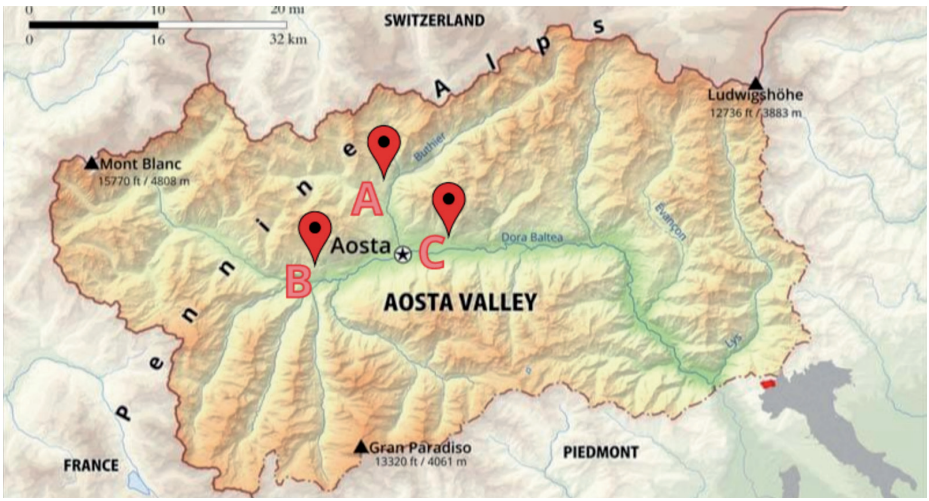
Traditional farming includes permanent crops, forage vineyards and fruit farming. The rearing of cattle also has a very important role in Aosta valley farming. The Census data (Eurostat, 2010) highlights that pastures and fields cover 97,7% of the regional agricultural utilized area. In some of the most remote zones of the Aosta Valley (e.g., the least touristic and inhabited lateral valleys), bovine zootechnics constitutes a fundamental driver of the local economic system.

4.2. *Methodological approach*

4.2.1. The field research approach: case studies and direct interviews

Considering the lack of studies about SF in mountainous areas like the Aosta Valley, and the shortage of data and literature referring to SF in Italy, the best methodological approach to investigate and study SF in Aosta valley be the exploratory and qualitative through the conducting case studies of individual social farms. This research, therefore, has followed a case study approach, particularly trying to develop an exploratory and instrumental type of case study (Stake, 1995; Yin, 2009).

Figure 1 - Map of Aosta valley and location of the case studies of valdostan social farms



Source: www.freeworldmaps.net/europe/italy/aostavalley.html.

The case studies of social farms located in Aosta valley (Figure 1) were in total of three entities (see Table 2). They were identified using, sources like the report by CREA (2018) and the online database built by the same institution (CREA)[5]. At the same time, we have also used a snowball approach (Biernacki & Waldorf, 1981), in the case of a new research population, a "hard-to-reach population" (Goodman, 2011) such

5. https://rica.crea.gov.it/APP/agricoltura_sociale.

as this study. We have not been able to find other social farms in the Aosta valley considering the demographic and economic size of the Aosta valley, which means that all the valdostan social farms, at the time of our study have been included in this field investigation.

All these social farms in this study conduct activities for social inclusion and work placement of disadvantaged and vulnerable people, and they grow crops. They are different in terms of economic size, the number of employees, and other essential characteristics (see Table 1).

Table 1 - Profile of surveyed social farms in the Aosta valley

Company	Founded (year)	Revenues* (Euros)	Employees	Main agricultural products	Social services offered	Other services offered	Role of the interviewee
A	2019	25.000-30.000	4 seasonal employees with disabilities and 1 expert agronomist	Potatoes and berries	Work placement, social inclusion, training for people with disabilities	–	Founder of the cooperative
B	1988	2.000.000-2.500.000	35 permanent employees and 105 seasonal employees (part of them with disabilities)	Floriculture	Work placement, social inclusion, training for people with disabilities and disadvantaged people	Social activities; conservation of green spaces, 2 laundry services (subcontract)	Manager and administrative assistant in charge of the plant nursery
C	1999	< 8.000	9 permanent employees (farm workers and social educators); and 26 beneficiaries with disabilities	Horticulture, ancient grains, vineyard, beekeeping, poultry	Work placement, social inclusion, training for people with disabilities	Educational activities, projects for students with learning difficulties, lab and training	Agriculturalist

* Coming from market activities.

The three cases of valdostan social farms have been studied and data gathered through face-to-face semi-structured interviews with one company's representative (Cardano & Ortalda, 2016; Silvermann, 2003). The semi-structured interviews were based on an outline survey with open ended

questions, made of three sections: the first section contained questions about the social mission of the social farm (type of social services provided, categories of disadvantaged people benefiting from them, relationships with the local community, etc.); the second section included questions about the company (structure, organisation and processes, human resources, performance, strategies and business model, etc.); finally the third section focused on the specific characteristics of the social cooperative (partners, funding, the role of the public institutions, etc.). As said in ch.3, indeed social cooperative is the most typical legal form taken by social farms in Italy. At the beginning of the interviews, we also asked for basic information about the interviewee (role, age, education level, etc.) and the social farm (year founded, location, number of units, etc.). In total, the survey contained almost forty questions.

Interviews lasted from one and a half to two hours. Interviewees were later contacted by email or phone to ask if they were fine with the release of the interview data. Then, the date was arranged, and interviews were conducted at the social farm. So, the interviewer could visit the social farm, see and experience the activities there, and take some pictures. Therefore, on top of the transcripts of the direct semi-structured interviews, additional elements, like pictures, have enriched and completed the information and data on the three social farms (Corbetta, 2015). Interviews were conducted from January to March 2021. The interviews have been recorded upon informed consent of the interviewee and later transcribed.

4.3. *Cases of social farming in the Aosta Valley: a description based on a field investigation*

4.3.1. Company A

Company A is a social cooperative of the type B situated in a small village in the Aosta Valley at 1.176 m AMSL. Due to the location in the central valley, the company site benefits from a pleasant climate all year. The company has an innovative approach to business combining it with social goals, environmental sustainability, and producing high-quality products.

This social farm was created in 2019 complementary to the activities carried out by a previous association founded in 2015 to create job opportunities for people with disabilities.

Its mission is clear:

> *"The mission is not to make a profit, but to create job opportunities and develop working independence for people with disabilities who may emancipate through it…".*

"The main goal, the only one, is working inclusion. Workers come from different associations and have different disabilities. Our mission is to integrate everybody, even the weakest".

The social cooperative cultivates potatoes and berries such as raspberries and blueberries. Their farm use different areas of the region, reaching 1.190 m AMSL. Along with farming, they carry out other activities like promoting and selling their products at social events, and making handicrafts, like building wooden cases for potatoes or wrapping cakes produced by local bakeries.

Figure 2 - Workers in Company A

The farming techniques used are natural and respectful of the health of the environment and the people. The social cooperative avoids any chemical pesticides and synthetic fertilisers and uses crop rotation:

> *"We decided to grow crops respecting strict standards, with no chemicals, because our children are growing crops with us […] and in high mountain fields, potatoes get no parasites".*

The social farm employs 4 seasonal workers with disability, who have a regular contract, and an expert agronomist as a tutor. Several volunteers also work for the farm for free, helping and supporting the workers with disability. The employees with disability do the harvesting of potatoes and berries and create wooden handicrafts. They even take part in social events to promote and sell their products. The workers work for 4 hours per day. The company pursues its social mission by trying to satisfy the real needs of all the beneficiaries involved:

> *"Our cooperative helps young people get adults through a job and economic emancipation".*

> *"If you do not know the need, it is hard to satisfy it, you can try hard, but you will end up investing your resources in the wrong way […] our motto is nothing for us without us".*

The social component plays a central role in the choices of the cooperative, including the crops chosen:

> *"We grow simple crops to simplify the work for our employees: they can harvest strawberries and potatoes without difficult tasks, feeling skilled and confident".*

Their mission and approach aim at economic independence and self-sufficiency. The business strategy implies quality products in the medium-high price category:

> *"Poor quality products are bought once, while our goal is to offer a good product at the right price, and customers trust us buying our products for their quality, and because they have been grown and harvested by workers with disabilities".*

The social farm's primary income comes from selling potatoes and berries, with only a tiny part of the production stored for self-consumption. The

average annual income is quite low, between 25 thousand and 30 thousand euro. They do not make profits, and occasionally they also benefit from donations from individuals.

Collaborations with other subjects in the region are crucial. In particular, company A cooperates with a well-known Aosta Valley cooperative with several shops selling local products. Thanks to this collaboration, Company A benefits from the partner's visibility and popular stores for its products. The company has also established informal relations with other more experienced cooperatives to seek advice and exchange information. For instance, the social farm also cooperates with Company B:

> *"One year, we had to prepare a plot of land by removing shrubs that looked like trees; it was not a job we could do. We asked Company B for help, and they did it for us".*

The social farm approaches food production and social services innovatively. Their products are characterised by high ethical and social content recognised by consumers. Growing exclusively organic products, with full respect for the environment and people's health, combined with the work of people at risk of social exclusion, gives excellent added value to the company's products.

However, since the company is strongly dependent on agriculture for its survival and has limited resources to deal with natural risks, and with other types of risks, any unforeseen reduction in agricultural production can have a significant impact of the farm's performance. For example, in 2021, the social cooperative suffered from a theft of its strawberries production, resulting in a economic loss of 7 thousand euros.

4.3.2. Company B

Company B was created in 1998 but started its activity in 1990. It is a social cooperative type B, located in a village with almost 5 thousand inhabitants, with excellent exposure for cultivation.

They started with 1,2 hectares of vineyard and also created a plant nursery (Figure 3) where they cultivate aromatic herbs, plants and flowers, plants for viticulture, fruit, and garden transplants. They also produce and sell soil, fertilisers, and pots. Unfortunately, the vineyard was not economically sustainable, so they sold the vineyards to a local producer in 2000. On the contrary, the floriculture and nursery grew and became the core business with two points of sale open, one in Aosta, the main town in the region, and the other in the plant nursery. In total, the company has an administrative office, two shops, plant nurseries and a warehouse for storage.

Quality product is fundamental in the business model of company B:

"What we want to make it clear is that the product you buy from us, flowers, for example, is not that we do it worse, that the flowers are not beautiful, or our product is uglier than the others, none of this… We care about the final product, which is produced on time, and which respects the wishes expressed by the customer… So, I would say that the quality of the products is our strength…".

The customers of the floricultural business are mainly residents, locals, and hospitality entrepreneurs from the different mountain villages, who appreciate these products. They recognise and reward the social value incorporated in their products, which fit their needs well:

"Our relationship with the residents is generous and supportive; the population comes to us to buy flowers because there is a social added value. People buy flowers, and they know the added value that these flowers have been produced by workers who make a certain path in our cooperative…".

"For the floriculture activity, the territory of the Aosta Valley is, in my opinion, very suitable, because it is a tourist region… so there are hotels and restaurants that buy flowers and buy a lot from us".

The social mission includes work placement, training, and social inclusion of the disadvantaged people. Its employment-oriented initiatives are directed at people with gambling disorder or ludopathy, recovering from drug and alcohol abuse (Aosta valley is the Italian region with the highest share of alcohol consumers[6]), ex-offenders in rehabilitation, people with disabilities and socio-economic disadvantage people certified by the local institutions.

The mission of company B, better defined by the manager as its *"dream"*, is:

"To spread the culture of social inclusion and work placement for disadvantaged people, not only in social farms. Our goal is that those people will find their future even in other types of companies […]".

The company accomplishes its goal of work placement and social inclusion of vulnerable people through internships and hiring with a fixed-term

6. See Osservatorio Nazionale sulla salute nelle regioni italiane (2019).

employment contract. The company carries out different projects, responding to the diverse needs of the vulnerable workers. The duration of these contracts can vary, they may be renewed, and in some cases, they may even be transformed into permanent contracts. Hence, the social farm is meant to be a training centre for the disadvantaged people.

The company cooperates with public institutions such as departments of the Regional Government (e.g., Dipartimento delle politiche del Lavoro e formazione della Regione Autonoma), centres specialised in support and assistance to the disadvantaged and disabled people (e.g., Centro per il Diritto al Lavoro dei Disabili e degli Svantaggiati), the regional healthcare service for addiction and dependence (Servizio per le dipendenze azienda USL), and with other private associations working in the non-profit sector.

Figure 3 - Plant nursery in Company B

Although specialized in floriculture, the company has been able to diversify its activities in the last two decades. It offers additional services like:

- management of community services promoted by local public bodies (e.g. Comunità montane della Valle d'Aosta) to support work placement for people at risk of social and working exclusion (since 2005). Community services include public urban and rural ambience maintenance and

care, decoration of the cultural, environmental, and artistic heritage[7]. In particular, local public bodies entrust the management of these services using direct assignment or tendering. This represents the primary source of income for the company, allowing it to carry out further investments in future social projects;

- environmentally friendly maintenance of the public green areas like parks and gardens, and of public building decorations, paths and streets, cemeteries, roundabouts; bush and tree pruning, felling logging, and steam weeding (since 2006);
- laundry service for the regional jail and for a local nursing home (since 2013).

Other projects are carried out by cooperating with private partners, such as an important iron and steel factory, a graphic design and publishing company, and a brewery in Aosta.

There are 35 people employed in company B, and during the peak season, there can be around 140 employees, including social workers.

The activities not linked to farming represent an important opportunity to integrate disadvantaged people and help the company grow significantly. Diversification is fundamental to achieve economic sustainability. Thanks to the additional and diversified activities, the cooperative can be self-sufficient in generating relevant revenues and profits (Total annual revenue in 2020 was around 2.400.000 euros, upward trending in the last three years, and profit was 110.000 euros). In addition, this has allowed the company to be more flexible than a typical agricultural firm, enabling it to work even in the winter. Similarly, some workers in cooperatives benefit from annual contracts and not just seasonal ones.

Company B is well-known in the region. The company created its brand and identity that the workers themselves sponsor, as the company manager explains:

> *"Every morning, the company's employees carry out environmental maintenance in our territory wearing our uniform. In this way, citizens see the employees of the cooperative taking care of the territory, for example by cleaning up green spaces. The local community thus recognizes and appreciates us…".*

Therefore, the local community associates the company with care of the territory and social and work inclusion. It is a great added value in places with a strong natural and environmental characterization.

7. Workers are supported by the healthcare system and registered as social workers by the local job centers. Municipalities and public associations may ask for these disadvantaged workers through a direct agreement or a bidding process.

The cooperative represents an innovative business management model based on a system of integrated skills. Diversifying activities allows the social farm to deal with the many risky situations the agricultural sector faces. The distinctive feature of the cooperative is the presence of solid entrepreneurship alongside the provision of social services. In addition, the company represents an innovative business model as it collaborates effectively with different organisations in the area, both public or private. These collaborations stimulate the company to grow economically and in terms of skills training. Finally, the cooperative's entrepreneurship enables social and employment opportunities for many people.

4.3.3. Company C

Company C is situated in one of the widest municipalities of the region, on a hill at 700 m AMSL. It is a farm for people with disabilities and differs from the two companies analyzed above for its peculiar features.

The social farm is managed by a Foundation owned by the Regional Government. The company promotes activities and services linked to farming, and supports people with physical, intellectual, sensory, and psychiatric disabilities. It started its activity in 2001.

The company has a large building with a kitchen and leisure rooms, owned by the Regional Government. Next to it, there is the store where products are sold. Around the building, there are 3 hectares of cultivated land, mainly dedicated to horticulture.

Horticulture is the leading business; however, the social farm is also involved in other farming activities such as beekeeping, cultivation of medicinal plants and herbs, ancient varieties of grains, maize, and other crops (7000 m^2 are dedicated to grow potatoes, rye, and corn).

The company also run a small vineyard and a henhouse. They adopted organic farming with the aim of respecting the health of their workers, customers, and nature. The products have been certified organic since 2016. Every year the social farm is inspected to guarantee its quality and meeting the organic protocol. They also introduced biodynamic methods, such as crop rotation and conservation practices.

The employees work on the farm, in the kitchen and take care of the cleaning and housekeeping of the premises. The company provides daily meals to the workers, prepared with self-made products. It also prepares and delivers daily meals to two assistance centres in the Aosta Valley. Moreover, the company makes cosmetic products.

The company hosts over 18 people with mental, intellectual, and sensory disabilities with limited working abilities. Its goals are:

- promoting and supporting work placement;
- working, educating and training activities for people with disabilities;
- providing temporary housing of patients in psychiatric therapy;
- training disadvantaged workers in cooperation with public institutions (such as school and local government);
- hosting internships for students and employees of the healthcare service dealing with people with disabilities;
- promoting partnerships in social projects and initiatives.

The farm opens from Monday to Friday from 9.00 am to 5.00 pm. Employees with disabilities work on the farm, in the kitchen, and they also take care of the cleaning, generally rotating. They carry out different farming activities and tasks: sawing, planting, seeding to harvesting, poultry farming, feeding, and collecting eggs. The social farm does not pay the workers, but they receive their wages from the government.

There are nine permanent employees, including three farmers and a qualified expert in agriculture who supervise and tutor the workers with disabilities; a cook with some assistants among the employees with disabilities; two instructors taking care of the educational activities and the relationship with families and healthcare staff. The number of beneficiaries of the services of Company C is 26.

Its products can be found and bought at the point of sale next to the headquarter:

> *"We decided not to distribute our products to retailers because we want our customers to come and see what we are doing to understand our mission and the history of our company and products; we love people to come and visit our farm".*

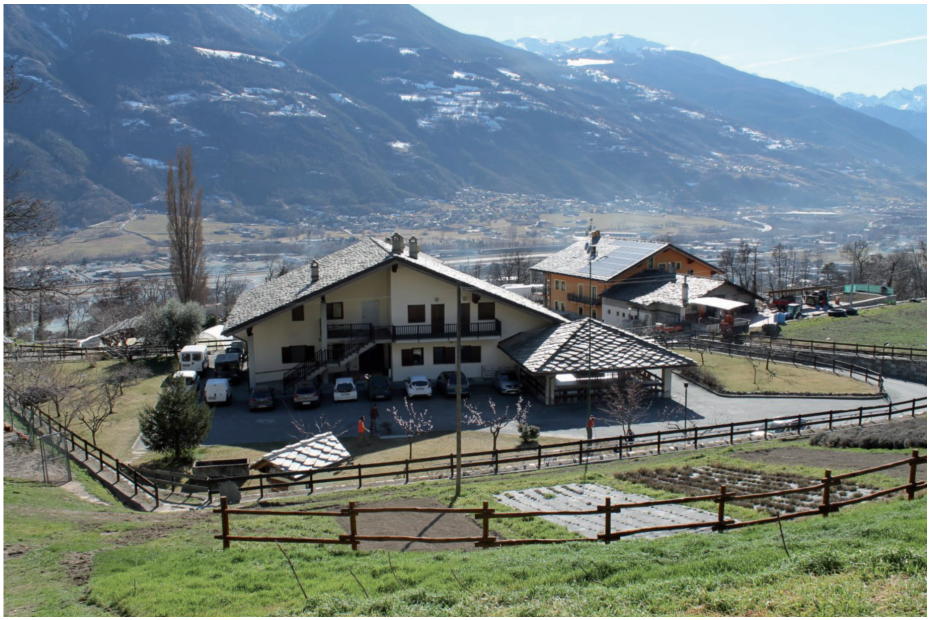
The farm also dedicates some initiatives to school children in cooperation with local schools: it involves them in a wide range of educational activities such as the petting zoo.

Company C is funded by the Regional Government, which covers the bulk of the costs through a fund budgeted yearly by the Regional Council (Giunta Regionale). For the period 2021-23, it assigned an annual grant of 400.000 euros, same as what they have received in the previous years[8]. The Regional Government may also give additional grants when specific conditions occur.

The sale of products contributes only partially to the cost coverage (see Table 1). Indeed, the grant from the regional government is essential to cover company costs. However, it is necessary to consider that about 50% of the production is destined for self-consumption.

8. Approval by Giunta regionale n. 244, 9 March 2021.

Figure 4 - Main building of Company C



This social farm cooperates mainly with public institutions: the Regional Government, in particular with one of its Departments (Assessorato alla sanità, all'agricoltura e alle politiche sociali); and the *Institut Agricole Régional*, the local agrarian high school. Further partnerships involve other local cooperatives, social farms, and associations in the Aosta Valley.

Company C responds innovatively to the need to find new non-medicinal approaches to social services. Indeed, social service users actively participate in agricultural tasks in a familiar and pleasant context.

4.4. *Similarities and differences among the cases: a comparative perspective*

Our case studies have been analysed cross-comparatively with the aim, on the one hand, to find out and highlight the common features of SF in a mountain region like the Aosta Valley; on the other hand, to observe and understand the differences in their activities.

We have compared their social mission and their economic sustainability, particularly, their business models.

4.4.1. The social mission

The three case studies analysed, albeit starting from different approaches, are all pursuing the same goals and social mission: to integrate and include disadvantaged and vulnerable workers and improve their social status.

Company A's beneficiaries are people with disabilities hired with a contract: the goal is to promote the economic independence of workers with disabilities. Company B, instead, organizes activities for disadvantaged people with gambling disorders, drug and alcohol addicts, ex-offenders in rehabilitation and people with disabilities and socio-economic disadvantages certified by the local institutions. People with disabilities can be hired on a regular contract or can have their internship and training. The goal is to offer better employment opportunities and to enhance the worker's potential and personal capabilities and skills to facilitate their future working life. Company C's beneficiaries are people with disabilities who can't be hired because they are supported by a different social programme managed by other public bodies. They can be hosted and receive boarding for a short or long time in a protected and tutored environment where they live and work with experts taking care of their health, education, and training.

Diversity in the approach to the social mission is a unique added value for the whole valdostan community and territory, which may have access to and benefit from the heterogeneous and complementary social and healthcare services otherwise not available in such a remote and sparsely populated region. This heterogeneity shows the flexibility and innovative drive of SF i.e. the ability to adapt and meet the new and changing needs of society in a rural mountain context.

The three companies analysed have also some common features, which is the model of social inclusion of vulnerable people and the benefits for social life in rural areas:

- the beneficiaries of social services are actively involved. Active participation and integration is an element that can be defined as vital for SF, as underlined by Di Iacovo & O'Connor (2009);
- they follow a generative model of social inclusion, therefore acting as an alternative to the traditional models of social and healthcare assistance and public welfare (Giarè *et al.*, 2018);
- they contribute to creating and enhancing social relationships and networks, formal and informal, which are usually weak in remote mountainous areas.

The social mission of these three companies, with their differences and common features, is recognised as an added value for their products and services, which add reputation and visibility. Therefore, residents, tourists and the whole community "reward" the social farms by buying their products and services:

"People buy flowers and know that they have been grown by vulnerable workers protected and assisted by the cooperative".

"Since we started working in the fields, people passing by and the locals stared at us with curiosity and then immediately rolled up their sleeves and helped us, even people we didn't know. This is an amazing experience. After curiosity comes commitment, and people love us".

Finally, the achievements of the three companies interviewed are gratifying from the community support, thus, stimulating the social farms to grow, evolve and innovate:

"Our strength is represented by the guys with disabilities working with us who can surprise us day after day […], reaching goals we could not even imagine".

4.4.2. Economic sustainability and business models

The comparison among the three cases of SF revealed heterogeneous business models. An outstanding characteristic performed by company B is its economic performance, i.e., its annual revenue and profit. According to the report on SF in Italy (CREA, 2018), only 10% of the social farms have an income of over a million euros. The entrepreneurial skills of this company are evident from the ability to diversify the initiatives and activities carried out, allowing the firm to reduce the risks considerably, as opposed to the experience by company A:

"We lost all our strawberries because of two violent storms, a hailstorm I had never seen before. We lost all our crops in the most crucial time of the harvest".

Company A in 2020 recorded only 30.000 euros in revenue, much lower than company B's. Company A's business model is the typical small family-run business and the cooperative's founders are parents of young people with disabilities.

"Our strength is the enthusiasm which has risen from the direct involvement in the business because it is about our children and their future, and it gives us the energy to face and overcome any trouble anyway".

In this context, the founders have a significant interest in the company's success, constantly tackling the problems with entrepreneurial skills. However, the strictly sectoral and non-diversified activity offers limited resources to deal with agricultural and related types of risks.

An interesting common feature shared by companies A and B is the total lack of support from public funds. However, it does not prevent them from achieving economic sustainability. The excellent entrepreneurial skills of B and the strong emotional motivation of A have allowed both companies to overcome the challenges and constraints of SF in the mountains (Gramm *et al.*, 2019). Company B is a clear example of a modern enterprise that combines social welfare organisations and for-profit companies, responding to the crisis of traditional welfare systems.

The business model of company C stands out for its different approach, being deeply connected with public institutions on this social farm. Here public financial support is necessary to cover the operating costs. But it is more than financial aid. Company C is a well-defined organisation with the management, monitoring and evaluation of the company made possible by public ownership through establishing specific corporate bodies (for example, the appointment of three experts in environmental and scientific matters). Not all agricultural firms, in fact, have an expert in environmental disciplines, social policies or labour policies. The public partner's economic and management support creates a model that is not easily replicable.

It is not easy to identify the best management and business model; however, the different models analysed enrich and represent an added value for the community, with social farms being collaborative and supportive even among themselves.

A key element for economic sustainability that emerged from the interviews and case analysis is the relevance of collaborations. As observed in the case of company A, partnerships with other cooperatives are crucial for placing products on the market and to deal with difficulties in managing the social farm. Relations with local public bodies also represent a significant opportunity, as demonstrated by the case of company B.

An interesting final reflection may derive from the traditional differentiation between social welfare institutions and profit organisations. Company B is a clear example of a successful modern combination of the two, solving the old issue of the crisis of the social healthcare system. Company A represents a valuable and meaningful example of SF as a new welfare model. Finally, the experience of company C, notwithstanding the public support, represents an alternative to the traditional medical approach to caring for people with disabilities followed by the public social healthcare system (which is carried out in nursing homes).

Lastly, a common factor of the business model of these social farms is the naturalness of their products, which is something associated with their location in a high mountain region like Aosta valley, recognized and appreciated by the consumers. In particular, Company C has adopted a biodynamic cultivation system and, since 2016, has been certified as an organic producer. Company A provides for the total absence of chemical treatments and offers consumers the opportunity to visit the farm one day a week to show how they cultivate. Using natural cultivation methods represents an important competitive factor, as it benefits the organoleptic quality and safety of the products.

5. Conclusions

In conclusion, the findings of this investigation answer to the research questions of this study. Even in a remote high mountain region like the Aosta Valley, SF may be implemented suiting its geographical, social and economic characteristics, and taking advantage of unique features which are different from other rural and peri-urban contexts (i.e., unpolluted and pure natural environment, landscape, characteristics and quality of agricultural products, territorial identity). Moreover, it produces benefits for the community and region.

The three social farms analyzed share the achievement of the social goals as the fundamental and primary principle of their existence. Their social function is appreciated as an added value by the customers which enables SF practices to be economically sustainable (at least in the two cases which do not benefit from the support of the government), but also by the entire local community. The whole community benefits from the wide and diverse range of services that they supply, which in a remote region like this are not easily accessible. The appreciation of the local community is also demonstrated by the numerous collaborations and the partnerships of the three companies investigated with local actors. Not by chance, indeed, they cooperate (and not compete) not only among themselves, but also with companies of other sectors, and with other public institutions, associations or private entities in the Aosta Valley.

The varied models of SF in terms of products and services, governance, partnerships, etc. investigated here demonstrates again how widely is the range of actions and practices of SF can be, therefore to what extent that SF is flexible and able to adapt to different needs even in the most marginal contexts. This flexibility shows also that mountain areas can be a suitable place for SF.

From the cases analysed, the mountain territory in fact does not represent a limitation but rather a place rich of unique assets which can

be advantageously exploited for the social mission and the and economic sustainability of these social farms. If when traditional agriculture in the mountain territory poses a constraint, such as not to achieve scale economies and affects negatively yields and productivity, having SF, which represents quality and naturalness, unique location in the alpine areas, it represents an advantage.

In exploring the literature on the history of Aosta valley, we can point out that high mountain regions might even have a vocation for practices like SF. The Aosta Valley, indeed, has developed several forms of collective ownership and social solidarity over time (Brix *et al.*, 2013; Louvin, 2012). This is why SF may be a rediscovery of what already happened in the past, i.e. what was probably normal in mountain regions in ancient times.

SF, providing an innovative, modern, and stimulating response to the needs of local community, has the potential to affect the future development of this region and, generally speaking, of high mountain regions. SF manages to restore meaning to agricultural work, enabling the work placement and social inclusion of disadvantaged people. It represents an important opportunity for innovating mountain farming, typically more backward than that of the lowland areas. At the end, it might contribute to reversing the processes of depopulation of rural areas that seem to be inevitable in several European countries (ESPON 2018; Pociute-Sereikiene *et al.*, 2014). This is why policymakers at the national, supranational and local level should give SF sector a central role in the future strategies and policies for rural and mountain development (Chmielinski *et al.*, 2018).

Policies for developing social farming in mountain areas should be given priority to support recruitment and training of qualified technical and managerial staff. As we have seen from our investigation, some of these social farms have poor entrepreneurial and managerial skills. Second, it is no less important to support them when they make new investments to increase their technological level and to improve their processes. Third, they should be supported to improve the distribution and sales stages, which are crucial in order to expand their market area. Currently, it is still very limited at the local scale.

Clearly, this research has several limitations; it is solely based on a qualitative methodological approach, and it is an investigation on some case studies limited to a very small Alpine region. Future research may widen the geographical scope of the investigation, for example, to the entire Alpine arc, focusing on a much higher number of cases. Therefore, researchers in the future might even realize quantitative analyses on social farming in mountain regions. Moreover, future research could better focus on the analysis of the economic performance of social farms in mountain regions, for example using balance sheet data.

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