

T5.2 Case study report (Code IT4B)

## **Successful agro-ecological and multifunctional successors in Sicily region**

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## Acronyms & Abbreviations

<b>AIAB</b>	Italian Association of Organic Agriculture (Associazione Nazionale di Agricoltura Biologica)
<b>GAS</b>	Solidarity Purchasing Group (Gruppo di Acquisto Solidale)
<b>ISTAT</b>	Italian National Institute of Statistics (Istituto Nazionale di Statistica)
<b>RDP</b>	Rural Development Programme

## Regional context of the practice

### General Description

Sicily is the largest island in the Mediterranean Sea and the widest region in Italy. Together with the islands around it (Ustica, Pantelleria, the Aeolian Islands, the Aegadian Islands and the Pelagian Islands), it covers an area of 25.714 square kilometres. It is an autonomous region and has a special status: vertical co-ordination between regional and national authorities is ensured by the Framework Programme Agreements signed between the Regional Administration, the Ministry of Economy and Finance and the Ministry of University and Research. The Conference of Regions and Autonomous Provinces is instead the main interregional coordination mechanism.

Sicily is divided into nine provinces (NUTS 3) and 390 municipalities (*comuni*, NUTS 4). With the Italian Law n. 56 (2014) and the following Sicilian decree (2015, n. 15), three pre-existing provinces are now 'metropolitan cities'. It is one of the most urbanised Italian region, with more than half of its territory classified predominately urban (61,5 percent) and more than one-third (38,5 percent) intermediate.

### Population

Sicily has about five million inhabitants (4.875.290 residents), but the migratory balance, positive until 2014, presents increasingly consistent negative values from 2015, recording a reduction of 33,258 inhabitants compared to 2018. The territorial distribution of the population highlights a significant imbalance between the coastal area (more than 70 percent of the population, high population density) and the non-coastal area, characterized by slow but constant depopulation over the various decades. Palermo, Sicily's capital, is the largest town (647.000 inhabitants) on the island; Catania area has the highest population density (ISTAT 2021).

The structure of the population by gender and age shows that the Sicilian population has a significantly younger age than the Italian one (an average age of 43.9 years against 45.2 as domestic average) and a greater presence of the female component (in 2019 it stood at 51.4

percent of the total, equal to 2.5 million) (ISTAT 2021). However, in 2019, the youth (15-24 years) unemployment rate climbed to over 50 percent and Sicily was one of the top EU regions with the widest employment gender gaps (EU 2020). Despite the increase in the participation of Sicilian women in the labour market, the gender imbalance persists and takes on values that are wider than the national average. In 2019, the gender gap in the activity rate (36.2 percent for women and 58.7 percent for men) is 22.5 points, the distance between the employment rate of women (25.3%) and that of men (45.3 percent) is 20 points, the unemployment rate of women (30.1 percent) is seven points higher than the corresponding value of males (22.8 percent). Nationally, the gender gap is 17.5 points for the activity rate, 17 points for the employment rate and 3.5 points for the unemployment rate (ISTAT 2021). In 2018, Sicily was the second EU region with the largest share of the population at risk of poverty or social exclusion (51.6 percent of the population, a share of 40,7 percent). In 2018, the share of people living in households with very low work intensity was 25.8 percent. In 2019, less than half of the working-age population was employed (EU 2020).

### Agriculture

Land use in Sicily is predominantly agricultural: agricultural land covers 68.5 percent and forestry about 15 percent. Its main crops are grain and vine, olive, citrus, pure and mixed orchards, various traditional mixed agroforestry systems. Some 97 percent of the total area is classified as rural.

The total utilised agricultural area (UAA) is 1.438.680 million ha in 2016. Arable crops are the principal form of land use (41,5 percent of the UAA); 30,6 percent is used for permanent crops and 27,7 percent for permanent grassland.

The vast majority of the Sicilian's farms are family farms of relatively small size (9 ha in average); about 64 percent of farms have less than 5 ha of UAA and only 3.3 percent have more than 50 ha of UAA in 2016. In 2016, the average standard output of agriculture product (SO) per fam was 28.022 euros, below the Italian average (EUR 45.115); more than one-third of the farms have less than EUR 4.000 standard output per year, almost half have between 4000 and 50 000 EUR, and only a small percentage reaches more than 50.000 EUR of standard output per year.

In 98,8 percent of the cases the owner is a natural person and manages directly the farm (84 percent) with only or prevailing family labour. More than half (65,6 percent) of all farm managers is over 55 years, while only 4 percent of farmers are younger than 35 years. However, the majority is relatively young: more than one-third (34 percent) is below 54 years. The percentage of female managers on the total reaches 33,3 percent.

Numerous quality products (PDO/PGI and organic) is the significant mark of the regional agricultural sector.

Sicily is one of the most relevant biodiversity hotspots in the Mediterranean area. It is characterised by an outstanding naturalistic heritage: the surface covered by protected high value natural areas (parks, reserves, Natura 2000 sites) is 502.618 hectares. In addition to 223 SCI, 30 ZPS and 2 wetlands of international interest, Sicily has 238 sites part of the Natura 2000 network, covering 24.8 percent of the total surface area, 56.4 percent of the total forest area (512,121 ha) and 18.6 percent of the UAA. To date 55 Natura 2000 Management Plan for the conservation of biodiversity are in place, in compliance with the Habitat Directive 92/43/EEC (EU 2020b).

## Organic Agriculture

Sicily is among the EU regions around the Mediterranean Sea particularly prone to soil erosion by water because of long dry periods followed by heavy bursts of intense precipitation on steep slopes with fragile soils. In 2016, Sicily was the second Italian region where it was recorded the highest risk, since upwards of 40 per cent of non-artificial areas were estimated to be subject to severe soil erosion by water (Share of erosion by water Sicily was at 43,9 per cent) (EU 2020).

However, Sicily has already achieved the main objective of the “Farm to Fork Strategy” for sustainable agriculture, aiming to ensure 25 per cent of total European farmland is organic by 2030. According to the latest data available (2016), in Sicily 26% of the total utilised agricultural area is used for organic farming (375 000 hectares) (EU 2020). Data processed by SINAB (National Information System on Organic Agriculture, 2020) for the year 2019 show that Sicily is the Italian Region with the highest number of operators in the organic sector (10.596 units).

Sicilian organic agriculture is shaped by at least twelve different agronomic techniques. The use of fewer fertilizers is combined with innovative approaches such as synergistic agriculture, biodynamic agriculture, agro-homeopathy, quantum agriculture, permaculture, agroforestry, agroecology, regenerative agriculture (IT4B/Int.1).

A draft law proposal on organic farming has been submitted to the Regional authority as a collective shared path among civil society actors and sector's stakeholders. As a result of the social mobilisation, a table of discussion has been set up to channel Regional agricultural policies towards agroecology and organic agriculture.

As the national draft law on organic farming approved by the Senate of the Republic on May 20 2021 and will now be discussed in the Chamber of Deputies before the final approval, also the Sicilian draft law aims at promoting biodiversity protection and climate action, encouraging the conversion to organic production of small and medium-sized farms.

However, the proposal coming from Sicilian social actors is innovative in many respects. First, it pursues the aim of developing short supply chains (short range chains, farmers market, neighborhood shops, GASs) as a way to foster local organic production and consumption, including public green procurements.

Second, it provides the establishment of bio-districts, an innovative approach promoted by Italian Association of Biological Agriculture (AIAB): according to the AIAB's definition, "Bio-district or Eco-region is a territory naturally devoted to organic, where farmers, citizens, touristic operators, associations and public authorities realize an agreement aimed at the sustainable management of local resources, based on the principles of organic farming and agro-ecology".

In Sicily four AIAB bio-districts are operative. They involve hundreds of municipalities and tens of thousands of farms. If recognized by the regional law, they could access contributions and foster public procurement to supply public canteens such as school canteens, since in Sicily there are no organic public school canteens (IT4B/Int.1).

## Study Area and Methodology

### Agricultural Landscapes and Agro-Systems

The study focuses on generational changes occurred in 15 family farms took over by successors. The investigated farms are located mainly in the territories of three Sicilian Provinces (Catania, Enna, Palermo), as figure 1 shows.

To better understand the style of farming put in place by farmers, in this section we refer to Barbera and Cullotta (2012) analysis of the differentiated landscapes and agro-systems within which the investigated farms operate.



Figure 1. Localisation (in red) of the Sicilian successor's farms (Sicily)

At the crossroads of several civilisations, and thanks to its environmental variability, Sicily has an extraordinary heritage in terms of rural and agricultural landscapes, historically developed around mountains, plateau, and plains along its shores: Greeks and Romans implanted extensive agrarian systems mainly orbiting around crops such as wheat (all over

the island) - Sicily was the 'Granary of Rome' - and olives, while wine production became a major export source during the Roman Empire; the Arab "agricultural revolution" of the Middle Ages introduced ingenious irrigation systems that spread the cultivation of specialised orchards like citrus; exotic plants from America were introduced in the fifteenth and sixteenth centuries.

Annual herbaceous crops—almost exclusively wheat—either alone or occasionally in rotation with forage (leguminous) crops dominate the central hills' landscape. The extensive farm crops make up the specificity of the inland hills. Occasionally include scattered fruit trees (olive, almond, carob) and vegetable crops within the matrix of wheat fields. trees (olive, almond, carob) and vegetable crops within the matrix of wheat fields. The open lands also include the polyspecific meadows-pastures.

Among tree crops, the olive tree is the species that significantly characterises both the rural economy and the landscape of the entire island, especially along the coastal and sub-coastal hills, or in more inland areas and the inland mountain bases whenever there are favourable pedological conditions. Illy areas landscape comprises the traditional nut crops, including almond trees in association with other wood species such as manna ash (*Fraxinus ornus*, *F. oxycarpa*), that now can only be found on the Tyrrhenian Hills of the north-eastern slopes of the Madonie Mountains. A great number of minor tree species also characterise several of these area (they include pear, apple, peach, chestnut, cherry, persimmon, loquat, citrus and prickly pear trees). These landscapes include: mixed farm crops, arable land, vegetable crops, vineyards associated with planted crops, and in general, crop diversification conditions and small, often unevenly shaped, plots.

Crop varieties such as irrigated fruit tree and vegetable growing are mainly distributed on the plains and along the main waterways, where water for irrigation is abundantly available and there is a particular mild climate, areas where the presence of modern intensive farming systems is widespread (e.g. Catania Plan in eastern Sicily).

## Methodology

Sixteen interviews with farmers and four interviews with key informants and actors involved in different social networks active in the territory were conducted. The interviewees were contacted by the snowball method. As part of the case study, a focus group has been carried out (on June 24, 2021) and a feedback to participants has been undertaken (on July 7, 2021). Due to the epidemic situation, interviews, focus group and feedback were conducted online.

## Origin of the Practice

### Farm Transfer Process

Succession is a process that grows up within the family: family farm is passed from parents, grandparents or a close relative such as an uncle or aunt. However, it occurs when successors take over the farm by choice, even if they are not supported by public funds. Successors are not necessarily socialised into farming to develop a 'natural' successor identity and role, although they often experienced practical involvements in farming or in activities related to the direct sale of products since young age. This is especially the case of small farmers' offspring.

Motivations in taking over the farms are related to specific subjective life path. Half of the successors interviewed had already started working in other sectors, delaying the decision of succession.

Conflicts in the handover process are not recorded. Nor do there appear to be conflicts among offspring over the inheritance of the farm: normally, the divisions of the family assets have already been fairly determined, thus avoiding the split-up of the farm. Only in one case there was conflict among siblings.

Only in two cases tensions have arisen due to parental pressure to prevent offspring from leaving a steady well-paid job to become full-time farmers:

*"[...] because obviously, like all the southern Italian families above all, who let their child study, what is it that they want? the place behind the desk, nice quiet, with a fixed seat and so on, is'n it?, the classic Checco Zalone movie. On the other hand, with a permanent job I go crazy and I don't... I really miss something .... And I looked at those walls every day and said "but do I have to die in here?" ... it was a hallucinating fight it was [when he decides to leave his job and return to Sicily to take over the family business]. I remember that period, however, one of the most stressful periods in my life practically, where I constantly receive phone calls and even my wife was called to convince her not to help the idea" (IT4B/int.7).*

*"The intention [was] to continue my studies, studies and then do research, graduate and continue in faculty or continue my passion for agriculture by applying it to the farm, dad thought well instead of diverting me to a permanent job, choosing him for me.... when I*

*returned to Palermo I decided to take care of the farm and that's it, I told him bringing him the letter of dismissal” (IT4B/int.19).*

The generational change in the management of the farm is not without problems. It essentially concerns the introduction of innovations that are generally received with skepticism by the previous generation.

Women encounter difficulties in attending and entering what is considered to be a male world, both in the public sphere and in the real world of work. The major problems emerge in the initial management phase of the farm and mainly concern the relationship to be established with the old workers of the farm, who need time to recognize their professional role.

## Actor Involved

Strong and lively social networks and social movements operating in the area study are very supportive and their action is crucial for the successors interviewed:

The association of farmers “Simenza—Cumpagnìa Siciliana Sementi Contadine” plays a very relevant role in supporting organic farmers in enhancing on-farm biodiversity, especially landraces, as many of the respondents underlined. Founded in 2016, it promotes the protection and enhancing of the vast heritage of Sicilian agrobiodiversity as embedded in cultural traditions and local knowledge. To the association belong different social actors social actors (farmers, breeders, processors, advisors, communicators, researchers, chefs and other stakeholders): in 2020 there were 181 firms associated, of which 129 are farms, 13 are mills, 10 are bakery, 3 are small-medium pasta-factory and the rest conduct other types of business (Varia et al. 2021).



Figure 2. Map of Simenza members (2020).

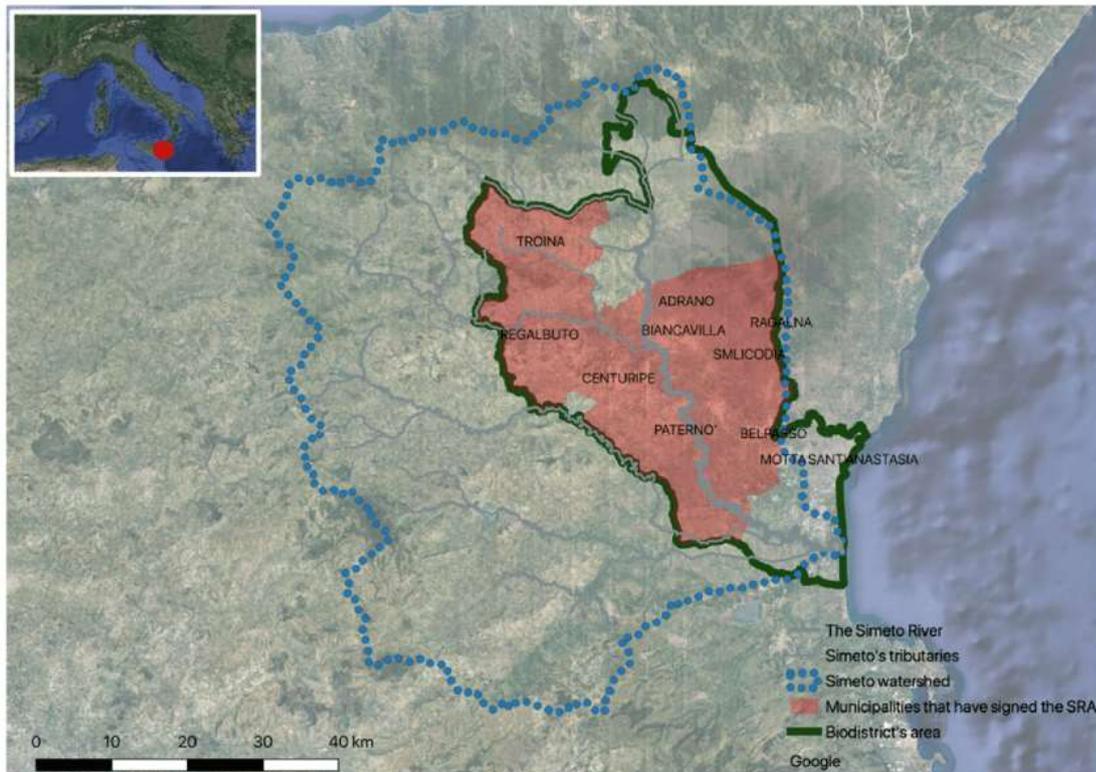
Source: Varia et. al.

The Sicilian Consortium ‘Galline Felici’(Vitale, Sivini 2017), which is a "galaxy" of producers and consumers associated to Solidarity Purchasing Groups (G.A.S., which is the acronym for the Italian expression ‘Gruppi di Acquisto Solidale), a group of people who decide to reflect

collectively on their consumption and to buy food (but also other products) adopting as choice criteria concepts such as justice and solidarity, which, for them, define the social quality of a product. The consortium refuse to sell to the large supermarket and favor neighborhood shops and GAS, both Italian and foreign, especially in France (IT4B/int.01). It has signed a solidarity economy pact with the non-profit association “Les Givrés d’Oranges” of Lille (France) and others Italian Solidarity Purchasing Groups.

The Simeto River Valley Agreement, a process of participatory water management of the Simeto River by a self-organised Participatory Presidium, one of the most relevant Italian experiences. It the result of a huge citizen mobilisations and successful struggles to contrast the Region’s decision in 2002 to construct an incinerator in the middle course of the Simeto river, the largest hydrographic Sicilian basin, an area of very high value, in terms of landscape, agricultural, but also archaeological and cultural. Concerns were also linked to the suspected mafia infiltration in the Sicilian waste business. Between 2009 and 2010, thanks also to the involvement of the University of Catania, starts the Community Mapping Initiative, whose work led to the formulation of a local development plan, followed by the establishment of the Simeto River Agreement (Participatory Presidium, University of Catania and 10 municipalities). Among the excellent results obtained in the course of the collective work, there is the creation, with the participation of AIAB, of a bio-district involving farmers (mostly small farms and also some medium farms), consumers, associations and citizens. Short chain involving some municipalities of the Simeto Valley was also supported by the regional RDP (measure 16.4, cooperation) (IT4B/int.2).

The initiative of a group of young women participating in the Presidium has led to the creation in 2015 of the Simeto Valley GAS called “FOODia ca Furria”. To date it involves around 14 producers and 40 families. With the technical support from Catania University, the GAS has designed an app of e-commerce to put producers and consumers in close contact, to lean the logistic for the activation of home delivery. The project has been submitted to Banca Etica, the first Italian ethical bank, and implemented through a crow-funding which reached almost 75 percent of the financial resources needed; Banca Etica added the rest (IT4B/int.6).



**Figure 3. The Simeto River Agreement Area**

Source: Mendez, Pappalardo, Farrell (2021)

In the area is also active the largest Italian public forestry-pastoral farm owned by the Municipality of Troina (EN), a great ethical project located in the heart of the Nebrodi mountains, managing 4.200 hectares of forest subtract to mafia's control after a hard struggle. The mechanism of land renting was controlled by breeders connected to mafia families, they had organized a whole system to grab the land at very low rent prices, receiving also millions of euros from European contributions. Then, in 2013, with the change of municipal administration, this forest resource has become the center of political action, the strategic axis for local development. The new administration transformed the system opting for municipal direct management of the farm, with 115 - 116 Ragusan donkeys, a specie that was at risk of extinction, and 19 *San Fratello* horses, a breed from the Nebrodi mountains, donated by the Sicilian region. There are 8 local youths working in the project (IT4B/int.5).

## Style of farming

### Innovation: Organic Diversification and Beyond

Sicilian successors choose to adopt strong multifunctional and agro-ecological approaches. The study shows that this is a way to deal with the more relevant problem successors have to face, that is the transfer of farms that are already structured by past generation farming trajectories, a very location and crop-specific land, often dispersed and fragmented agricultural units. The adoption of new models allows them to change farm organization and management, overcoming the constraints inherent in this sort of 'path dependency' and setting new trajectories.

Organic conversion represents the initial major change to the farm system. All the successors manage organic farms, except in two cases that can be however be considered *de facto* organic: three farms inherited were already organic and nine were converted from conventional to organic production by the successors. Eight of these twelve farms have organic certifications.

The remaining ones have mixed systems. In the first case, the process of succession is ongoing and the successors has already started the transition, avoiding chemical fertilizers and pesticides. In the second case, the integrated production is implemented by the use of cover crop technique ensuring sustainable farming compatible with environmental protection. In the third case, part of the farm devoted to produce flours for sale and for pasta is naturally cultivated; in the other section, farmed animals both fertilize the land where they graze and where the forage for feeding the same cows is produced.

Most of them practice polyculture, including multiple cropping. They grow multiple plants and different cultivars in the same farm, according to the size e location of the farm: permanent crops such as citrus, olive, almond, traditional and conventional legumes, vegetables (such as tomatoes or artichokes among others), cereals (wheat, durum wheat and ancient grains). Some of the traditional or local varieties of permanent crops (almond trees, manna tree, 'blood oranges') had already been in the orchards for a long time since they were grown also for family self-consumption. Polyculture allows farmers to diversify the range of agricultural production (olive, grain, vegetables) in order to increase profitability.

Only one of the farms is an organic specialised dairy farm, producing milk and cheese. The farm has around eighty head of Bruna and Meticcia cattle – momentarily reduced at forty because of covid - raised in a semi-wild state; the cows feed on pasture, their diet is supplemented with local organic hay and a mixture of organic cereal flours (barley, fava beans, soy). Her farm applies also the principles of agro-ecology, as she explains,

*“breeding is an activity in itself, and therefore the management of the pastures, the sowing, the improvement, the stone removal and making sure that the typical tabular essences of this mountain area also remain... in the management of the pastures we intervene with the improvement, year after year, in the management in the shifting of the pastures, all my properties are divided into different fenced particles, so that the animals move from a fence to more without overgrazing” (IT4B/int.14).*

Organic conversion and polyculture are not the sole innovation introduced. As a general strategy, successors innovate by relying on local biodiversity (traditional and ancient crops, indigenous breeds), by internalizing value added activities (food processing, short supply chains, on site and online sales) and by offering new services (educational and didactic activities, recreational activities, social agriculture, production of renewable energy, agri-wellbeing, rural tourism).

As well as with polyculture, diversification is achieved through the rediscovery of traditional and ancient eco-types, especially landraces, that were abandoned because of low yield after the modernization and mechanization of agriculture during the second half of twentieth century. Two companies have focused on aromatic and culinary plants (oregano, rosemary, sage, lavender, thyme, lemongrass, mint, saffron, wild fennel) to be sold as fresh, dried in granular form or processed (sauce, essential oil); two farm on vegetable and fruits.

Six farms grow – together with traditional legumes, vegetables and permanent trees – ancient Mediterranean grains and wheat such as: einkorn (*farro monococco*) suitable for growing in marginal areas; timilia (*tumminia*), khorasan (*perciasacchi*), maiorca, biancolilla, gioia, senatore cappelli, russello, maiorcone, solibam (a mixture of soft grains). In the extensive adoption of these ancient grains a preminent role was played by *Simenza* association.

## Environment and Agrobiodiversity

Since these crops have been adapted to local agro-ecological conditions, they show high level of resistances to stresses, pest and disease than modern cultivars. Moreover, they are competitive against weeds.

As a result, farmers relying on natural system of crop maintenance are lowering the costs of external input requirements (chemical fertilizers, pesticides, fertilizer, herbicide).

*“And there we really realized how nature works by itself, that is, the weeds have suffocated compared to these grains that really soared upwards, because the ancient grains have this wonderful power upwards, a root system very strong which is able to destroy weeds”* (IT4B/int.13).

*“what immediately fascinated me about the officinalis is that simply with the hoe or with a tractor, therefore an agricultural vehicle, and therefore minimal processing without any type of input, thanks, let's say, to the good exposure of the soil, to the good texture of the soil, to our microclimate that is present in our area, we have, let's say, started to obtain perfumed products without any kind of input”* (IT4B/int.18).

Another way to avoid external input is to use sustainable advanced technology. One of the farm managed by a young farmer growing prickly pears is using the so-called method of “cover crops”: leguminous plants grown as non-cash crop for their potential benefits in absorbing carbon dioxide from the atmosphere and transforming it into azote, thus enriching the soil and reducing erosion.

These styles of farming applying the principles of organic and regenerative farming increases the range of high-quality products. Two farmers are directly involved in producing the following Slow Food Presidia under specific production protocols which guarantees traceability and high quality label: honey from the Sicilian black bee, which is an endemic species more resistant to parasites and thermal changes, needing few external nutrition operations on the part of the beekeeper: because the floral essences of the place, its honey is very representative of the Sicilian territory, has a lower concentration of water than other honeys, nutritional properties are more concentrated, and it has a greater quantity of nutrients and enzymes. Madonie Manna, a typical product obtained by the lymph of ash trees (*Fraxinus ornus* and *F. angustifolia*): cuts are made in the trunk, the lymph flowing out is liquid, when exposed to the sun it solidifies and sticks of sugar are formed, skills and

knowledge to stabilize the product and making it as healthy and clean as possible are very relevant, since the resinous substance could develop impurities. Polizzi Generosa Badda Bean, a local ecotype reproduced for centuries by peasants, a bean almost unknown outside the Madonie Mountains. Madonie Provola, which is a cheese made within one of Italy's most biodiversity-rich areas, the Madonie mountains: its quality derives from the milk, which comes from cows raised in wild and semi-wild conditions in the Madonie pastures.

Other quality products are ancient legumes typical of Enna hills, grown in rotation with wheat according to the organic production principles: the black lentil, a plant that needs few irrigation work, it is very rich in iron and proteins, and improves soil fertility; the Leonforte's fava bean, the Cianciana's red chickpea, the Aidone's cicerchia (grass peas).

## Food Processing

Most of the farmers in the study (twelve) conduct in-farm and off-farm food processing, generating added value for what they grow and diversifying products they sale (jams, honey, liquor, extra-virgin olive oil, flour, pasta, cheese). Seven of them conduct or will conduct within some months on-farm processing, closing the circuit from production to sales. Such activities have allowed these farmers to gain control on the whole process and to become autonomous from the pressure on prices coming from strong actors of the value chains.

*"this thing [the strong position of the dairies in bargaining the price of milk] every time gave me great annoyance, because of course they knew we had few alternatives we farmers, because a farmer either transforms the milk or has to succumb to these conditions or under the conditions they dictate. So what precisely the realization of the dairy is born from my will to say "I have to continue here I have to try to achieve something else.... I don't like these people" (IT4B/int.14).*

*"We have had our own company oil mill since 2003, we have our own line of organic products, which we pack both in cans and in bottles, so from this point of view we are autonomous and self-sufficient, and we have actually increased the market year after year" (IT4B/int.16).*

*"The turning point was the mill, because having the transformation in the farm is what makes you free and gives you the possibility to do everything at low cost, because going on*

*behalf of third parties costs, transport costs and costs of invoices that you have to pay” (IT4B/int.10).*

Even though they do not have the same level of autonomy, farmers who conduct off-farm processing activities retain all or part of the final product for themselves (flour, artisanal wholemeal pasta, olive oil, wine, almond cream, etc.), maintaining the control on the process and on the marketing activities by innovation. In one of the farm, for example, all the vineyards are IGP and DOC; the farmer has reorganized the olive production chain by registering a brand for her extra virgin olive oil and since now she sells much better than before on the farm she increased the olive grove area by four hectares. Another farmer, about 34 years old, creates a superior quality extra virgin olive oil, taking care of the product from cultivation to marketing: in 2020, his olive oil has had a trail of prestigious awards such as the “5 Bibenda drops” (Italian Sommelier Foundation), the A.I.R.O. (International Association of Oil Restaurants) award as the best IGP in Italy, the inclusion in the Gambero Rosso “Oli d'Italia guide”, the Slow Food award, recognition of the “Grande Olio Slow Food 2020”.

Another way to regain control over the chain is by networking. Four farms of the study process their food by referring to collective structures or to processors affiliated with the network.

Five farms have successfully combined organic agriculture with sustainable agro-tourism, ranging from simple accommodation with home cooking to full accommodation with meals. They have focused on specific resources supplied by their agro-ecosystem, cultural heritage and culinary traditions to organise various on-farm activities such as special events (i.e. wedding, cooking courses, yoga courses), farm tours to teach sustainable methods of farming and processing employed, outdoor recreational activities (picnicking, swimming), educational activities (farm and ranch work experience, camps, classes, petting zoos, etc.). Three of them have diversified by producing clean energy (photovoltaic systems on the roof).

## Marketing

All the farms have invested in the shortening of the supply chain, which takes different shapes depending on the type of product marketed and the quantity and quality proposed, and tend to diversify their channels. Some farms practice direct marketing to final distributors or retailers, as, for example, the youngest farmer interviewed: she gives her certified fresh product to an organic platform delivering it to France, guaranteeing a higher price than local markets; the product of lower quality is sold to a local processor. Local and urban small retailers specialized in selling typical and high quality products are also used.

Some of the farms interviewed jointly decided to create networks of producers composed by the different actors working within the chain (farms, custodian farmers, mills) to sell collectively their organic products. For example, one of the networks, promoted by Simenza Association, involves a water-powered stone mill that, thanks to an innovative milling technology, supplies high quality Sicilian wheat to pizzerias and bakeries all over Italy; from a rib of Simenza in 2019 an association composed by farmers, custodian farmers and processors has been formed, with the aim of create a basket of products to be sold to a Sicilian retailer. Other two networks, operating within the solidarity economy, have closed the short supply circuits with the involvement of consumers: for example the consortium 'Galline Felici' has strongly supported the creation of a Sicilian short supply chain (FICOS, Filiera Corta Siciliana) among farmers that signed a business network contract to promote their products using an open source platform dedicated to ethical supply chains (the Open Food Network).

The totality of farms sell farm products directly to the final consumers using urban organic small farmer markets, farm sale points, restaurants and pizzerias, chefs using high quality products or chefs working with km0 products. Agro-tourism structures consume their own products for meals. The dairy farm sells part of the milk production through an automated distributor, situated in a central street of the village.

Personal relationships entertained over the years by attending markets, fairs and exhibitions or word of mouth prove to be powerful basis for direct sales at local, national and international levels; relationships developed through hospitality in agro-tourisms or through the organization of educational activities seem to be particularly effective. All the farms

promote their products by social media and by own websites, also using them for formal or informal on-line sales.

## COVID Effects

The COVID effects on farms depended on the type of products farmers offer and the channels they use for sales: the most affected were agro-tourisms, restaurant and pizzerias, farmer markets, whose closure was imposed by the lockdown.

However, farm activities were not totally interrupted, and most of the farmers continued to sell to small retailers and to final consumers thanks to the solidification of direct relationship previously developed and intensified during the lockdown.

*“And then the experience of the lockdown and home deliveries made me also create a customer base in the Catania area, because it is my catchment area. I have origins in Catania, I have a lot of support there and I organized home deliveries during the lockdown and many customers have remained fond of me, so once a month I continue with my round of home deliveries” (IT4B/int.17).*

*“After the covid we have intensified the sale in the small shops, therefore above all the sale of fresh product because, rightly, having the agri-tourism closed, and a lot of product, that is, we focused on the sale of the fresh product, while in normality we did not do it, but inevitably because we used vegetables in the preparation of dishes, vegetables and fruit. And so we focused more on direct sales of fresh products too and we intensified the sale in small shops, but I repeat it was a need, because with the covid also the line of hotels and restaurants, for example, has disappeared, because we make a lot of jams, including the other organic jams with our fruit, and a good part of the .. let's say one of the main channels for these products was precisely the sale in hotels, B&Bs, restaurants, and therefore this portion decreased” (IT4B/int.15).*

## Synergies and Networking

Siblings that take over and manage together the farm tend to cooperate sharing the different tasks, according to their competencies and motivations in being involved. This happens above all in the most multifunctional farms, where the greater range of services offered allows everyone to find their place and to perform their role: agronomists, lawyers, agrichefs, educators, tour operators, managers of the social communication, and so on.

The generation that gives way to the new generation is still active in the farm, also carrying out significant support tasks, such as, for example, some work in the fields with mechanical means; or in direct communication with guests during the various activities carried out in the farm.

Farmers have a central role to play within their communities. They organise social events, promote quality products and biodiversity, organic production and agro-ecological model of farming and consumption; they work on cultural heritage. Significant is the success of an association to which two of the young farmers interviewed belong in introducing the traditional local dessert into the basket of products protected by Slow Food.

Networking is a crucial resource for successors, more relevant than institutions. Most of the successors interviewed are involved and refer to three major Sicilian networks: *Simenza*, which is an association promoting biodiversity; *Galline Felici*, which is a consortium of more than 30 organic farmers; *Simento River Valley Agreement*, a process of participatory water management of the Simeto River, which includes one GAS and one bio-district working for the creation of an alternative food system.

## Policies and institutional Support

Rural Development in Italy is managed on a decentralised basis by the main administrative Regions of the country through 21 Rural Development Programmes (RDPs), setting out priority approaches and actions to meet the needs of the specific geographical area they cover.

In the Sicilian RDP 2014-2020, generational changes in farms (Submeasure 6.1 " Business start-up aid for young farmers") has been promoted through the provision of an incentive bonus of 40,000 euros per capita for young farmers as head of the company, to which it has been added the co-financing of projects to be implemented under complementary measures (support for investments in farm, for the diversification of agricultural activity towards the creation and development of non-agricultural activities, support for afforestation) for the activation of the so-called "Youth Package". The call was launched in May 2017: of 3.189 applications submitted 2.606 were eligible for the technical-administrative analysis; only half of those eligible were financed (48% of those eligible), 35% of which proposed by farmers belonging to youngest age group (18-25 years) and 33% proposed by female farmers (Agosta, Macaluso, Vaccaro 2020).

As for start-up grant, the following critical issues were highlighted:

The RDP measures are not effective in overcoming the various obstacles young farmers have to face before and after accessing the funds they apply for. The transfer of resources occurs only after activities start to be implemented, consequently farmers have to anticipate their own resources. Considerable expenses are also needed for the fees to be anticipated to the technicians who help draw up the project. It implies that young farmers who access the grant need strong financial basis of their own. Or of his/her family, as one of the few young farmer funded by start-up grant says

*"And I consider myself very lucky because fortunately the financial strength we had at home allowed me to take a few steps faster than my other peers"* (IT4B/int.18).

Complementary measures linked to support investments in the farm are positively valued by informants, however resources allocated are considered insufficient:

*“[it] has certainly favoured a more realistic start-up and this has been positive. It must also be said that there are many applications in relation to the resources allocated, so there are some young farmers who are unable to enter in the list, for which there is certainly a lot of demands, and therefore from this point of view the political decision-maker should pay more attention to the next programming, to insert additional resources to favor this generational change for ... so, I am absolutely in favor of putting more resources into these measures for young people” (IT4B/int.16).*

A serious problem concerned a delay of more than two years in the process related to sub-measure 6.1: due to the high number of appeals received after the first provisional ranking (in August 2018) several revisions and preliminary activities were conducted. In this case, administrative timing clashed with the business timing of farmers in implementing the projects.

Bureaucracy is a very important issue for all interviewees. The organic certification system, for example, in many cases is weighed down by the excess of documentation to be produced, which takes time away from the most pressing farm work.

Territorial policies deserve a separate chapter. Investment in rural services is particularly scarce: respondents complain about the lack of network services, which was particularly relevant for online sales during the lockdown; the absence of qualitatively significant services for young couples with children; the lack of an intervention policy on the surrounding conditions of organic production, such as the need to have a sustainable territory that can be "sold" in support of the promotion of organic products.

A good practice put in place by the Region has been the initiative “Terra ai giovani” (land to young farmers) in the wake of Sicily’s primacy as the region with the largest number of under-35 young owners of farms. Part of uncultivated or abandoned of land (430 hectares) owned by the Region was granted to young farmers under-41 for twenty years as concession under easy payment terms. The tender call provided the submission of land use and enhancement project. One of the investigated farm conducted by two young people were assigned twenty hectares.

## Impacts and perspectives on rural regeneration

The findings of the study highlight that we are facing a real generational change made by successors. The complexity of the demographic dynamics within agricultural families is reflected in the professional roles of the components, intertwining with the last decades of the Island's economic history: on one side, the older farmers belong to the generation that, between the end of the 1950s and the beginning of the 1960s, remained active in agriculture adopting new agricultural techniques oriented to maximize the profitability of the farm as the sole source of income; part of the following generation, however, switched to organic farming during the 'silent revolution' of the 1980s (IT4B/int.01). On the other side of the spectrum, the exit from agriculture for a job in public or service sectors was matched by the maintenance of the farm – with investment coming from extra-agricultural income - to make it productive anyway, but at a minimum level of profitability when it was not the main source of family income.

Successors, if male or female, open a new chapter in the history of family farming. They are changing the image of the agricultural sector and of the rural life and development: many of them obtained university degrees, including PhD (in two cases), experienced urban life and/or work outside the farm before the choice to be farmer; they look at their farm in a holistic vision and in a completely different approach from their parents, combining tradition and environmental modernity, in a way that is more than simply 'farming without chemical inputs' (Migliorini and Wezel, 2017).

During the succession process in small-medium farms, Sicilian successors choose to diversify their organic production by re-using ancient crops or indigenous breeds, adopting either strong multifunctional approach or agro-ecological approach (Altieri 2018). Drawing on local biodiversity (traditional crops, breeds and landraces), they combine local and scientific knowledge applied to traditional methods and advanced technologies in a way that tend to mimic the inner rationality of agro-systems.

They diversify by broadening the range of agricultural production (goods and services, even with respect to non-agricultural activities) (Henke 2004: 15). These activities, however, are implemented in a multifunctional framework (Ploeg 2008): as a general strategy, they innovate by internalizing value added activities (food processing, short supply chains, on site

and online sales) and by offering new services (education and agri-kindergarten, recreational activities, social agriculture, production of renewable energy, agri-wellbeing, rural tourism).

Positive results that strengthen the resilience of family farms and rural areas are the following.

First, successors develop the ability to diversify products and processes, thus relying on different sources of income and maintaining a substantial consistency in the various actions implemented.

Second, they improve different on-farm resource, increasing farm profitability and income, which results in the creation of new jobs and services, with positive impacts on local communities.

Third, multifunctional diversification opens new spaces for siblings with specific skills and competencies who want to perform differentiated functions, thus hindering the fragmentation of family farms in the present and future succession process.

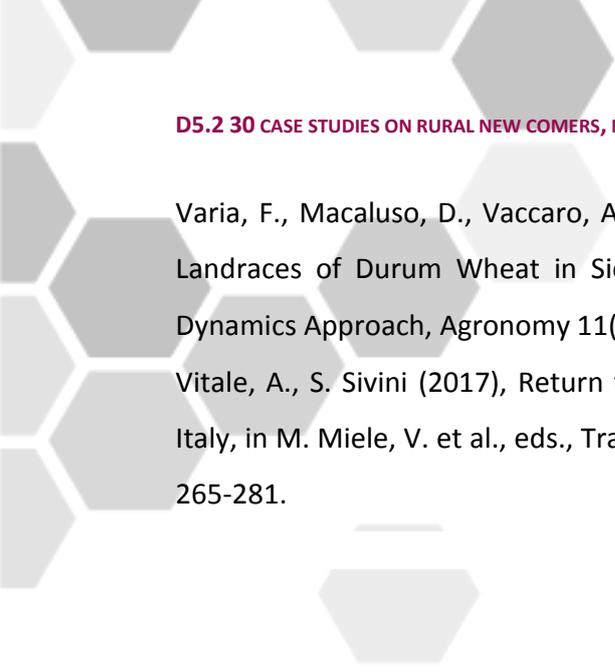
Fourth, this model of farming structurally promotes the active role of women in the farm management. Three of the female successors received the "De@Terra Award" issued by the National Observatory for Entrepreneurship and Women's Work in Agriculture, which is headed by the Ministry of Agriculture, Food and Forestry. It was a group of young women that promoted the first GAS in the Simeto Valley.

Fifth, the productive use of local biodiversity has a key role in the reproduction and improvement of local agro-ecosystems, thus enhancing biodiversity conservation.

Finally, these processes of broadening the range of on-farm and off-farm activities are often pursued by, and are productive of, networking, which generates an increase in social collaborative connections among different local actors, thus feeding the regeneration of rural areas.

## References

- Agosta, I., Macaluso, D. and Vaccaro, A. (2020), *Insediamiento giovani nel PSR Sicilia 2014-2020: la lettura del fabbisogno attraverso il Piano di sviluppo aziendale della sottomisura 6.1*, Rome: CREA.
- Altieri, M. A. (2018), *Agroecology. The Science of Sustainable Agriculture*. Second Edition, New York: Boca Raton.
- Barbera, G., and Cullotta, S. (2012), *An Inventory Approach to the Assessment of Main Traditional Landscapes in Sicily (Central Mediterranean Basin)*, *Landscape Research*, 37(5), 539-569.
- EU (2020), *Eurostat regional Yearbook. 2020 Edition*, Luxembourg: Publications Office of the European Union.
- European Commission (2020b), *Factsheet on 2014-2020 Rural Development Programme for Sicily*, [https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/key\\_policies/documents/rdp-factsheet-italy-sicily\\_en.pdf](https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/key_policies/documents/rdp-factsheet-italy-sicily_en.pdf).
- European Union (2020), *Eurostat regional yearbook 2020*, Luxembourg: Publications Office of the European Union.
- Henke, R. (2004), *Introduzione. Agricoltura multifunzionale, intervento pubblico e sviluppo rurale*, in R. Henke (a cura di) *Verso il riconoscimento di un'agricoltura multifunzionale. Teorie, politiche, strumenti*, Edizioni Scientifiche Italiane, Napoli, pp. 1-18.
- ISTAT, *Il Censimento permanente della popolazione in Sicilia. Prima diffusione dei dati definitivi 2018 e 2019*, 22 febbraio 2021, [https://www.istat.it/it/files//2021/02/Censimento-permanente-della-popolazione\\_Sicilia.pdf](https://www.istat.it/it/files//2021/02/Censimento-permanente-della-popolazione_Sicilia.pdf).
- Mendez, G.R., Pappalardo G. and Farrell, B. (2021), *Practicing Fair and Sustainable Local Food Systems: Elements of Food Citizenship in the Simeto River Valley*, *Agriculture*, 11 (1), <https://doi.org/10.3390/agriculture11010056>.
- Migliorini, P. and Wezel, A. (2017), *Converging and Diverging Principles and Practices of Organic Agriculture Regulations and Agroecology. A Review*, *Agronomy for Sustainable Development*, pp. 37–63. ISSN: 1774-0746. <https://doi.org/10.1007/s13593-017-0472-4>.
- Ploeg, J.D. van der (2008), *The new peasantries, UK and USA*, Earthscan



**D5.2 30 CASE STUDIES ON RURAL NEW COMERS, NEW ENTRANTS TO FARMING AND SUCCESSORS**

Varia, F., Macaluso, D., Vaccaro, A., Caruso, P. and Guccione G.D. (2021), The Adoption of Landraces of Durum Wheat in Sicilian Organic Cereal Farming Analysed Using a System Dynamics Approach, *Agronomy* 11(2), <https://doi.org/10.3390/agronomy11020319>

Vitale, A., S. Sivini (2017), Return to the Land: Decommodification of Local Foods in South Italy, in M. Miele, V. et al., eds., *Transforming the Rural*, Emerald Publishing Limited, Bingley, 265-281.

## Appendix 1. The list of interviews

Code	Gender	Role	Place and date of the interview	Other information
IT4B/Int.1	Male	AIAB member, key informant	Skype, 18.12. 2020	
IT4B/Int.2	Male	Simento Agreement Member, key informant	Skype, 9.01 2021	
IT4B/Int.3	Male	Successors' father		Written Interview
IT4B/Int.4	Female	Successor	Skype 9.02 2021	
IT4B/Int.5	Male	Troina's Public Farm	Skype 12.02. 2021	
IT4B/Int.6	Female	Founders of the GAS "FOODia ca Furria"s, key informants	Skype 10.03 2021	
IT4B/Int.7	Male	Successor	Skype 9.03 2021	
IT4B/Int.8	Male	Successor	Skype 19.03 2021	
IT4B/Int.9	Female	Successor	Skype 20.03 2021	Succession is in process
IT4B/Int.10	Male	Successor	Skype 8.04 2021	
IT4B/Int.11	Male	Successor	Skype 19.04 2021	
IT4B/Int.12	Female	Successor	Skype 19.04 2021	
IT4B/Int.13	Female	Successor's wife	Skype 23.04 2021	
IT4B/Int.14	Female	Successor	Skype 24.04 2021	
IT4B/Int.15	Female	Successor	Skype 5.05 2021	
IT4B/Int.16	Male	Successor	Skype 5.05 2021	
IT4B/Int.17	Female	Successor	Skype 11.05 2021	
IT4B/Int.18	Male	Successor	Skype 10.05 2021	
IT4B/Int.19	Female	Successor	Skype 11.05 2021	
IT4B/Int.20	Male	Successor	Skype 13.05 2021	

Table 1. Interviews