

Humus for the Biosphere

A Climate Project from the EUKI 2021-23 programme



Results obtained from activities on our experimental plots, research, visits and interviews with farmers and citizens, observations, and recommendations to contribute to eco-sustainable Sicilian agriculture with a positive impact on the climate



Intended for the Sicilian Region in anticipation of new strategic agricultural plans in the future. For the 27 municipalities aspiring for UNESCO recognition as 'Lands of the Biosphere - Etna's river valleys' (TB) to valorise their rural landscape and to encourage, through support, farmers and consumers. For the European Agriculture and Environment Commission, for the FAO. For the farmers, thank you for your availability and participation.

Manfred-Hermsen-Stiftung and Giacche Verdi Bronte

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1. INTRODUCTION

The project 'Humus for the Biosphere' is promoted by Giacche Verdi Bronte (GV) and Manfred-Hermsen-Stiftung (MHS) within the EUKI (European Climate Initiative) programme of the German Ministry BMWK and realised in synergy with the University of Catania (Departments of Agriculture, Food and Environment). It was developed as a supplement to the previous EUKI project 'Fruits for the Biosphere', and includes recommendations from the project 'Farming in Sicily's Lands of Biosphere'.

This paper analyses the current state of agriculture in relation to the insights gained, environmental and social demands and allocations. It is based on observations carried out in collaboration with the University of Catania and a survey of 106 farmers and 119 TB residents between 2019 and 2021 (during the project 'Farming Sicily's Lands of Biosphere'). It also refers to two questionnaire analyses by the University of Catania and an analysis of the PSR Sicily by LIPU. The paper also presents the challenges for increasing humus as a CO₂ sequestration, restoring soil fertility, conserving biodiversity and their integration in the new EU CAP regulations for the next funding period.

2. MOTIVATION AND AIMS OF THE PROJECT

The project aims to demonstrate examples of good 'climate- farming' practices through experiments on our own land and to recommend these practices to farmers, increase biodiversity and make suggestions for optimising economic and institutional support to traditional Sicilian farms. The sample area, called 'Terre della Biosfera' (TB), is located between the Simeto and Alcantara river valleys and is of significant importance due to the presence of sites of community environmental interest (SCIs and SPAs). It features widespread agricultural activities that are still largely traditional and linked to typical cultivations. Underlying the project is the hypothesis that this maintenance of agricultural traditions is in favour of climate, nature and biodiversity and deserves to be supported economically and institutionally through appropriate measures. Through the evaluation of the results of the submitted questionnaire, the working group intends to contribute to the discussion of national strategic plans, which are based on the CAP¹ 2023-27 onwards, so that it can be truly aligned with the European Green Deal and the Biodiversity and Farm to Fork strategies, but above all, be responsive to the needs of smallholder farmers. The main CAP subsidy paid per hectare distorts the production model in favour of large farms and landowners, who are not necessarily farmers. As payments are based on farm size, their distribution is distorted: 80% goes to just 20% of farms². It is necessary to create new perspectives for small family-run farms which, while playing a very important role in protecting and enhancing the land, receive much less support than large 'industrial' companies.

¹ Politica agricola comune - Wikipedia

² European Commission, Direct payments, 28 febbraio 2018/Atlante della PAC 2019 Cambiamo Agricoltura

It is no coincidence that 96% of farms which were closed between 2003 and 2013 had an extension of less than 10ha, resulting in a clear loss of jobs, a dramatic factor considering that in 2013 only 6% of farm leaders in the EU were under 35³.

The current CAP 2023-27 already takes into account the negative effects of the past and aims at increased protection of biodiversity and climate, securing a sustainable future for European farmers and providing more targeted support for small farms. At the same time, however, it allows Member States greater flexibility in adapting measures to local conditions.

In this context, the key objectives of the project have become to identify, which good agricultural practices are already adopted by farmers in the study area, and which challenges need to be addressed to help them operate in a manner conducive to increasing humus and biodiversity without compromising the profitability and competitiveness of their economic activity. In fact, the development of large-scale agro-ecological practices, together with the valorisation of local food products and short, traced and distinctive supply chains, make it possible to counteract the various phenomena of environmental degradation mentioned above and revitalise rural territories.

3. PROJECT AREA

The territory in which the project has been developed is about 120,000 ha large and is subject to the candidature proposal for a UNESCO MaB area called "Lands of the Biosphere - the river valleys of Etna" by the Lands of the Biosphere Promoting Group⁴, involving 27 municipalities in Etna and more than 100 associations. The main idea behind the 'Lands of the Biosphere' (TB) initiative is to maintain the rich biodiversity of the Simeto and Alcantara river valleys, (not only, but to a large extent) through the benefits deriving from the current eco-sustainable use of agricultural land, connecting it to the ecotourism sector. This would entail an economic valorisation of what already exists with a view to strengthening the path towards sustainable development, a propaedeutic element to a widespread improvement of socio-environmental conditions.

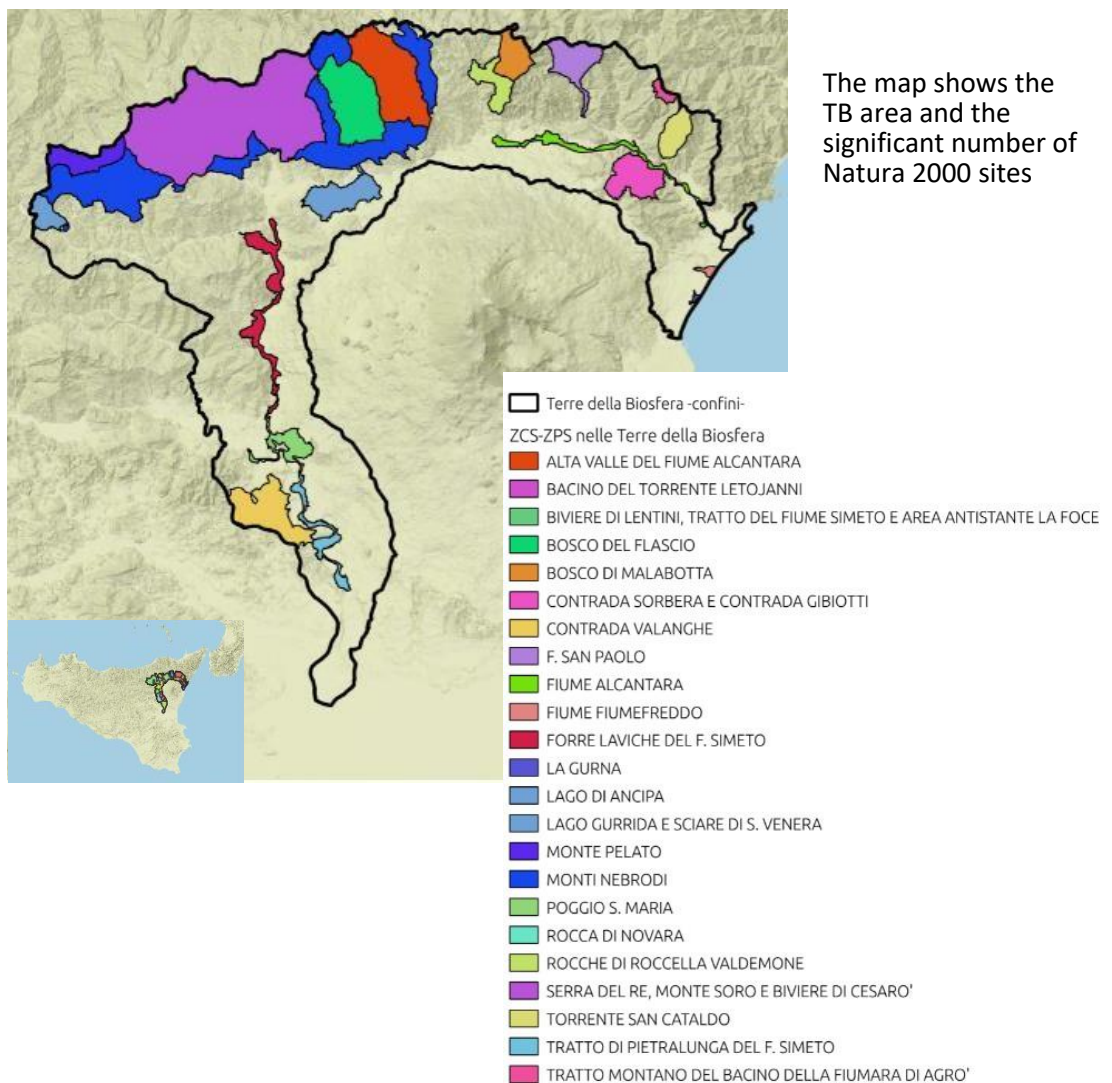
Currently (as of 2019), the dossier for submitting the candidature to UNESCO is being examined by the Ministries of the Environment and the Region of Sicily.

The research has shown that, taking several criteria into account, the territory in question 'Lands of the Biosphere - Etna's river valleys' represents a very active territory from an agricultural and productive point of view, with the consequence that the prevailing interest is devoted to the criterion of profitability, according to the results of our analysis.

The high valuation given to the landscape aspects of the territory for potential future tourism developments is interesting (Etna Park 2020; Scuderi et al 2021). Regarding the environment, there is limited attention to the pollution of conventional agricultural production, although there is an interest in organic farming. These data show that there is still little awareness of the environmental benefits of organic farming. Policy makers should therefore take appropriate measures to better direct local farmers towards organic farming. The Sicilian Region is still far from adopting a fully sustainable environmental model, but by adopting the necessary measures and tools, it could become the ideal destination for tourist flows that wish to combine enjoyment and optimal use of natural resources (Spadaro et al. 2020). A survey on the above-mentioned topics among the inhabitants of the Biosphere Lands underlines this observation and at the same time the sensitivity on environmental issues and the preference for healthy/organic (see attachment).

³ European Commission, Statistical Factsheet European Union, maggio 2018/Atlante della PAC 2019 Cambiamo Agricoltura

⁴ Terre della Biosfera (terrebiosfera.org)



4. METHODOLOGY

The project Humus for the Biosphere is based on agricultural experiments implemented in synergy with the Department of Agriculture, Food and Environment (Di3A) of the University of Catania, on agricultural fields managed by GV.

In summary, the proposed actions are:

- Planting edible hedges in the erosion lines of the soil to prevent further erosion and provide nutrition for fauna, as well as to increase the water efficiency of the soil. Rows of fruit trees were planted in the steep part of the terrain for the same reasons.
- Production of biochar from pruning wood and application of Terra Preta, useful for water supply, carbon return to the soil and sustainable fertilisation.
- Experimental application of effective microorganisms.
- Creation of an artificial pond located upstream of the land for irrigation. This is to show an alternative model to the often illegal extraction of water from Sicilian rivers.
- Minimal tilling of the soil; sustainable pruning with polyconic pots.

Furthermore, we refer contextually to face-to-face interviews conducted by GV and MHS during the project 'Farming in Sicily's Lands of Biosphere'. The two aforementioned questionnaires were addressed to 106 farms located in the area under analysis and to 128 citizens of the same territory.

In this regard, the selection of interviewed residents did not follow strict criteria, but sought to obtain a representative mix of sex and age of random individuals.

The selection of the farms interviewed, on the other hand, was defined in advance:

- Small to medium-sized (about 40% of the total are under 6ha)
- Certified organic 27%, traditional pesticide-free 43%, conventional 21% and semi-natural 9%
- With a high degree of wildness (especially large pastures retain large areas of wilderness)
- Characterised by the cultivation of traditional local products

The questionnaires can provide a basis for further studies. The results that appear to be of significant importance in the current context are described in the following paragraphs.

5. CATEGORY EVALUATIONS:

5.1 Climate Change and Soil

The majority of farmers (72%) say they are negatively affected by weather phenomena due to climate change. Above all, instability and unpredictable weather cause them problems. In addition to bad weather, late frosts, rain in the 'wrong' season, excessive heat and drought, soil erosion due to heavy rainfall events is also playing an increasing role.

 **According to analyses carried out by the University of Catania during the Humus project, the absence of chemical treatments in the GV soil showed better soil respiration and more efficient permeability compared to the adjacent conventional farm.**

A study⁵ stated as early as 2014 that with current land use and management about one third (32.6%, 8382.9 km²) of the Sicilian Region (excluding urban areas, water bodies and rock) is threatened by complete erosion to the rooting depth within a maximum of 100 years, and about 1.3% (about 323.6 km²) in less than 10 years. Soils at high or very high risk are shallow and have a water-accelerated erosion rate.

An awareness of ones own contribution to climate protection and soil fertility through the incorporation of organic material into the soil is not yet sufficiently developed. 36% of farmers incorporate tree prunings into the soil, 16% compost the organic material.

 **29% of farmers burn organic material (tree prunings) produced on their farms in the field.**

Especially in organic and traditional agriculture, the practice of burning is common, as it can thermally destroy pest larvae. Education on alternative practices is needed and, if necessary, further field trials and models should be implemented.

Agroforestry is a partially traditional technique that is gaining in significance. This form of land management has the potential to become increasingly important, especially for Sicilian agriculture, with the growing impact of climate change, because it protects soil and carbon sequestration, binds water and provides shade. The labour input, however, is higher and the costs and profit losses for managing agroforestry systems are not yet covered. This should be compensated by adequate remuneration within the eco-benefit already foreseen in the CAP.

A new study by the Thünen Institute⁶ demonstrates the great climate protection potential of hedgerow planting. On average, almost as much carbon per hectare is sequestered in a hedge as in forests over many years. In the long term, a newly planted hedge of 720 metres on arable land can offset the entire greenhouse gas emission that an average German emits in ten years.

⁵ "Soil erosion risk, Sicilian Region", M. Fantappiè et al 2014

⁶ "Carbon sequestration in hedgerow biomass and soil in the temperate climate zone", 2021

By storing carbon in the biomass of the hedge and as humus in the soil, new hedges can absorb carbon dioxide from the atmosphere and turn it into a climate-friendly form. This easy-to-implement method of soil and climate protection is also remunerated by eco-schemes; at the same time, it makes an immensely important contribution to biodiversity.

5.2 Biodiversity

Biodiversity is decreasing dramatically with negative effects also on agriculture, and consequently its protection is becoming more and more important and urgent in the CAP; 20% of direct payments must go into compulsory ecological programmes (eco-schemes).

According to the 2019 United Nations Global Status of Biodiversity Report⁷, one million species are threatened with extinction worldwide. The rate of species extinction is ten to one hundred times higher than the average of the last 10 million years and continues to rise, according to the report. Besides population growth, global warming and environmental pollution, important factors in the extinction of species are the effects of insufficiently sustainable agriculture.

As far as Europe is concerned, a recent study⁸ shows that the number of breeding birds living in Europe dropped by 17 - 19% between 1980 and 2017. This means that there are now about 600 million less birds living on the continent than about four decades ago. Bird populations of species that are linked to agricultural land have been decimated the most.

Alongside the use of pesticides, habitat loss is to blame for this development. In fact, one study⁹ states that at least 20% of the agricultural field must be wild to maintain biodiversity. To date, it has not been possible to investigate the degree of biodiversity in the field due to the post-pandemic impacts, but several scientific studies in the literature confirm a significant occurrence of the species chosen as representative, particularly pollinating and beneficial insects, as the size of the field decreases. This environmental value is largely the result of traditional wild or artificial boundary elements, e.g. hedges and dry stone walls - both between individual fields and between farms. Furthermore, these small fields/farms are characterised by many different crops, which are also significant for biodiversity. So far, this factor has been underestimated, according to Tschardtke's study: 'The key to restoring biodiversity on a large scale is a small-scale land-use mosaic, with fields averaging less than six hectares in size, and increasing crop diversity both temporally (through long crop rotations) and spatially (through mixed cropping, strip cropping, etc.). In addition, a goal should be to maintain or restore 20 % of the remnants of near-natural habitats in all agricultural landscapes and to encourage the incorporation of appropriate biodiversity-enhancing structures on farms through appropriate measures. The greatest obstacle inherent in the certification/quantification of natural features on farms is the lack of mapping by the relevant institutions.'

 **40% of all farms surveyed have more than 20% wildlife. But only 29% receive compensation for preserving wildlife.**

In view of the above-average presence of biodiversity, which is derived from the studies on the designation of Natura2000 areas in the TB study area, among others, our hypothesis is that this is closely related to the size, structure and cultural diversity of the farm. In particular, we hypothesise that small farms maintain a large part of the natural habitat for biodiversity, which seems to be confirmed by the questionnaires.



⁷ [IPBES Home page](#) | [IPBES secretariat](#)


⁸ "Abundance decline in the avifauna of the European Union reveals global similarities in biodiversity change", Royal Society for the Protection of Birds, BirdLife International, Czech Society for Ornithology 2021

⁹ "The importance of a diversified small-scale farming structure for biodiversity and its promotion under the Common Agricultural Policy" (titolo tradotto del Tedesco) Teja Tschardtke, 2021

5.3 Pesticide Reduction, biological agriculture with and without certification


The goal of the 'farm-to-fork strategy' to reduce pesticides by 50% by 2030 reflects the global shift in sentiment against their use in society and also in agriculture. The serious impacts on human health, the environment and biodiversity, as well as the negative economic side effects of their use in agriculture, including the killing of beneficial insects (75% of our crops depend on pollinating insects) and the increasing dependence on this industry sector, are leading to an increased demand for organic food in more and more countries. The European citizens' Initiative¹⁰ 'Save Bees and Farmers' has found 1.2 million supporters by 2021, and they are pushing policy makers to adopt pesticide reduction strategies or even establish 'pesticide-free regions'¹¹.

Our survey of TB residents also showed a clear preference for organic and pesticide-free land use and a high interest in rural biodiversity.

 **49% of TB residents surveyed are definitely concerned or moderately concerned about the use of pesticides.**

Interesting in this context is a recent study¹². It argues that pesticides can be eliminated - not only through organic subsidies, but also through additional taxation.

In the TB, whose microclimates and soil conditions around Etna are very different, special crops have developed over the centuries, producing excellent local products in relatively small areas. For instance, the pistachios of Bronte and the blood oranges of Paternò are famous. One might think that the cultivation of such crops continues with traditional-ecological methods. The argument that the production of products/autoctones benefits biodiversity, because hypothetically such typical crops find an ideal environment and can be cultivated traditionally, is inherently incorrect. In particular, the example of the Maletto strawberries, which are cultivated, even on very small farms, largely with the massive use of pesticides, is contradictory. The situation is similar for vegetables, both in Adrano (lettuce) and Moio Alcantara (cabbage) and vineyards from Randazzo towards the coast. Bronte pistachios are also often cultivated with the help of chemical herbicides. These farms partially compensate through the natural structures present and through other organic/traditional cultivation. Farmers who use intensive methods for one crop and extensive methods for another are already quite sensitive to the minimal use of pesticides, but many do not have the knowledge or experience of organic farming even for the most sensitive crops. It is precisely in these cases that help is needed, both in terms of training and financially, to fully convert farms to organic. This should be done through CAP support, plus additional support to make the sale of organic products more profitable.

 **66% of the organic and conventional farms answered that they had gained benefits as a result of converting to the organic production model. (24% did not answer the question).**

As a result, EU regulations in the new CAP period explicitly ask member states to create conditions for conversion from intensive to organic farming and to provide adequate support for organic farming.

¹⁰ The 'European Citizens' Initiative' (ECI) is an instrument of direct participation in European Union policy, provided for in the Treaty on European Union: "Not less than one million citizens who are nationals of a significant number of Member States may take the initiative of inviting the European Commission, within the framework of its powers, to submit an appropriate proposal on matters where such citizens consider that a legal act of the Union is required for the purpose of implementing the Treaties."

¹¹ In Europe, Luxembourg is a pioneer, having already decided in 2016 to completely abandon pesticides on public land; Sikkim in India is converting the state's entire agricultural production to organic after intensive use of poisons.

¹² "Effect of different levy concepts to reduce pesticide use in Germany - a simulation analysis", Helmholtz-Zentrum für Umweltforschung, 2021. The study shows how the use of such chemicals could be reduced by introducing a tax on pesticides in Germany. This could help achieve the European Commission's goal of halving the use of pesticides by 2030. The authors of the study analysed the use of pesticides in Germany and Denmark and developed a database model with which they were able to simulate the effects on prices, sales volumes and treatable area, as well as estimate the volume. For those already working in organic farming (or with less pesticides, like our farmers) a pesticide tax would mean an additional market advantage.



In the TB, 70% of the farms interviewed work without pesticides, but of these only about 1/3 are certified organic, the others are defined in this study as traditional farms.

Our survey revealed that many of the traditionally organic farmers cannot afford organic certification, either because of the small size of the land and the cost of a fixed base amount for the certifying organization, or because the local market does not reward certified quality.

The national design of the CAP is a key instrument for achieving the organic acreage targets of the EU, the federal government and the federal states by 2030. The prerequisite for this goal requires that the current CAP strengthens the position of organic farming in the overall support structure of the first and second pillars and thus prioritises this environmentally friendly farming system. In particular, this means full access to organic subsidies ("organic schemes") for certified organic farms while at the same time fully utilising the subsidies for the maintenance and introduction of organic farming in the second pillar. This is the only way to avoid the disadvantages for organic farms with their extensive services compared to conventional forms of cultivation.

If society wants to ensure ecologically sound and poison-free production, as long as poisons in agriculture are still allowed, there must be a strong incentive to convert and maintain organic certification.

Instead of weakening the economic profitability of organic farms, eco-schemes should be designed in such a way that organic farms can fully participate in support schemes. In principle, the implementation of the national CAP in the interrelation between the first and second pillars must create sufficient incentives for farms interested in conversion, as well as motivate those that maintain organic farming methods to participate in an additional support period. Incentives for conversion to conventional agriculture should be avoided at all costs.

5.4 Hunting Controls

A huge challenge to biodiversity concerns birds and mammals still threatened by hunters. Numerous farmers (who stressed that they wished to remain anonymous) told us that they still hunt almost undisturbed whatever they can, even protected species such as hares or partridges.

5.5 Use of Water

Agriculture accounts for a quarter of all water withdrawals in the EU, where water is mainly used for irrigation. Many regions, such as Sicily, are already affected by water scarcity and climate change is likely to exacerbate this problem. The Water Framework Directive has set the goal of good status for all water bodies by 2027, but there are considerable delays in achieving it.

The European Court of Auditors found in its recent report¹³ that agricultural policy is not consistently aligned with EU water policy. The Court assesses that, the funds of the new CAP are more likely to promote greater water use than greater efficiency. "There are no economic incentive systems for efficient water use," says the court, "The inadequate economic incentive systems in the form of water withdrawal fees and the inadequate controls on water withdrawal and related monitoring of compliance are glaring."

The Biosphere Lands are characterised by the two large rivers Simeto and Alcantara, which represent an ecologically valuable habitat that absolutely must be preserved.

Of the farmers interviewed who irrigate artificially (49%), 85% say they irrigate only in emergencies.

¹³ "Utilizzo idrico sostenibile in agricoltura", Relazione speciale no. 20/2021

5.6 Good practices in the Biosphere Lands

Although many farmers indicate a substantial number of traditional good practices applied on their farms, many are not aware that they already serve as models for sustainable agriculture. Such practices should be complemented by additional actions already applied during the Humus project.

In fact, extensive grazing, which is common in TB, is of high value for biodiversity conservation and should be taken into account in eco-scheme subsidies at a sufficient level, both for suckler cow breeding and milk production.

Among the good practices tested, one aspect to promote would certainly be the use of manure as a fertilising component for Terra Preta production. This ties in with the concept of transforming prunings, all too often exclusively burnt resulting in obvious environmental problems, into charcoal. This practice, handed down by the Amazonian people and now promoted at different latitudes of the world, could represent a decisive step towards returning carbon to the soil and the accompanying fertilising role in addition to the organic part, be it manure, compost, etc.

➡ **Taking the GV experimental plot as an example, prunings from olive and almond trees produce 1 tonne of carbon per hectare. By carbonising it, this results in the production of approximately 750 kg of carbon and 580 kg of permanently sequestered CO².**

Finally, in addition to manure, the use of compost for fertilisation could be incentivised by tax breaks for conscientious farmers who do not deliver their organic matter to contractors..

➡ **For every tonne of compostable organic waste, a company could sequester 65 kg of CO₂. By mixing it with biochar and incorporating it into the soil, it results in long-term sequestration.**

Good practices in terms of business services (such as waste disposal and infrastructure) by municipalities are rated as good or satisfactory by farmers in 23%. However, more attention must be paid to illegal micro-dumps in order to keep the countryside attractive for visitors.



5.7 Market and business sustainability

For 73% of the farmers surveyed, the price they receive for their products is too low. The insufficient income for dairy and meat products is serious; in particular, organic or traditional cultivation is not or barely rewarded.

➡ **90 % of all farmers who produce milk and meat without processing complain that their selling prices are too low.¹⁴**

In view of the fact that all the farmers interviewed practise typical species-appropriate extensive grazing, promoting biodiversity, there is an urgent need to support this sector through adequate and easily accessible subsidies!

➡ **Although almost all farmers enjoy their work very much (65%)¹⁵ and many of them also have children who are interested in continuing, 14% of them see no (4%) or only low future profitability of their farm due to low earnings.**

During the period of this study, two of the 106 farmers quit farming without any family members taking their place.

A comparison¹⁶ of the economic viability of farms selling directly from the farm or on the market to end consumers shows:

➡ **Nearly all, 75% of the farms that market their products at least partly directly or over short distances see a continuation of their activities. More or less the same applies to the small 5% that participate in sales cooperatives. These two categories account for 35% in our survey. Of the remaining farms that sell through traders or wholesalers, only 47% see a future for their farm.**

The way to proceed here is consumer awareness and offerings at the point of sale itself (especially at local markets). For the sale of organic products outside their own production area, synergies should be created and farmers themselves should be encouraged to form cooperatives to obtain higher sales prices. Unfortunately, about 36% of those interviewed do not trust cooperation in Sicily, while theoretically a large number of them (67) consider it useful. In this regard, training, with some functional and working examples taken from other realities, would be an excellent way to encourage cooperation.

However, institutions can do even more with environmental and agricultural education to make a decisive contribution to climate protection, soil fertility and sustainable agriculture and short supply chains. This is already possible by sensitising school children to the above-mentioned issues in a practical way, with appropriate educational programmes. Good experiences have taken place, for example, in the EUKI project 'Fruits for the Biosphere'¹⁷ with the creation of school gardens and compost heaps.

This study shows how important targeted financial support for farms is for their economic survival and for the preservation of biodiversity. In the future, however, CAP reform must place much more emphasis on welfare-oriented services and adequately reward climate protection and environmental services provided by farms.

Although 82% of the respondents consider financial aid money important, only 56% make use of it. The main reasons are bureaucratic obstacles (26%), small agricultural area, lack of interest or knowledge (21% each).

¹⁴ Confronto domanda 1/12 e domanda 1/19a

¹⁵ Domanda 4/3

¹⁶ Confronto domanda 1/18 e domanda 4/7

¹⁷ [Frutti per la Biosfera – Terre della Biosfera \(terrebiosfera.org\) 2018-19, educational materials for schools](#)

➔ In rural development and biodiversity (RDP) measures, 61% of farmers have never participated. Of these, 41% cultivate only a small area of less than 5 ha.¹⁸

We have noticed that participation depends very much on the support of appropriate agronomists and on the financial possibilities of farmers to pay in advance and to be able to cushion the risk of their application being rejected. This requires institutional help.



6. RESULTS FROM QUESTIONNAIRES AND DISCUSSION

The gender distribution of the interviewed group: there is a male predominance of 85%, and only 15% of the sample are women. The distribution by age group confirms that the majority of the respondents are adults between the ages of 18 and 60, while agricultural entrepreneurs over 60 are only 17% of the group. This confirms that young people are also interested in the sector. Regarding the educational level of the farmers interviewed, 38% of the respondents have a secondary school diploma, 26% a university degree, 15% a middle school diploma and 12% a primary school diploma. Farmers are, in fact, the main actors in this European policy, which through financial support under the first and second pillars also aims to contribute to farm development and income stabilisation. Farmers themselves are also the ones who, if properly involved, supported and trained, can develop their ecological knowledge and provide ecosystem services and other benefits for the environment and society.

It is widely known, in fact, that the impact of the current food system, from field to fork, is responsible for approximately 21-37% of total greenhouse gas emissions, according to the IPCC. The largest contribution to this estimate comes from agricultural production, with crop and livestock farming and changes in land use, such as deforestation and peatland degradation. These figures are also partly the result of an ongoing process of moving away from traditional agricultural methods: the latter, unlike the industrial farming model, which is geared towards increasing production through the use of monocultures, fossil fuels and chemical inputs, are generally based on ecological principles, which can ensure soil regeneration, the preservation of biodiversity and the production of healthy and nutritious food for the community.

The results highlight the barriers that lead to farmers' non-participation in the financial proposals promoted by the Pillar I and II funds of the Common Agricultural Policy, specify the needs and expectations of respondents towards these economic-financial instruments, and verify the level of exercise of good agricultural practices for the conservation of biodiversity.

¹⁸ Confronto domanda 1/3 e domande 2/4+5

7. COUNCILS FOR REGIONAL INSTITUTIONS AND MUNICIPALITIES

From the results of the project and the exchanges with farmers during the workshops and farm visits, it is clear that

- farmers are willing to make their own contribution to biodiversity conservation;
- that most farmers use water sparingly, but the bureaucratic and economic facilitation of the creation of small artificial water reservoirs (such as ponds) should be increased and promoted. [We recommend that in the second pillar, agricultural subsidies are made available to promote water storage, water recyclers and innovations in economic irrigation technology to overcome obsolete systems.]
- farms in the area that routinely apply good agricultural practices are present;
- there is a need for training on good agricultural practices, including innovative approaches, e.g. in relation to climate and soil protection and also to increasing biodiversity, and information on how to obtain subsidies that reward such measures, including for small farms;
- the call for a reduction in bureaucratic and administrative burdens is associated with access to funding measures;
- the advantage for farms is to be able to refine their raw products themselves, and the consequent need to reduce the non-compulsory requirements for domestic slaughtering and dairies; simplified access of farms to subsidies for the valorisation of their products would also be favoured. [It would also be necessary to verify whether the European directives and related constraints applied by the Sicilian Region on production and processing methods are really respected, since during the administration of the questionnaires, numerous reports were collected on how the Region's interpretation is likely to be stricter than European regulations].
- there is the necessity to diversify the areas of support and the criteria for access to funding according to farm size, type of production and type of territory
- eco-schemes' under Pillar I can be an important support for farmers to continue their near-natural farming practices. Incentives to participate in eco-schemes must be large enough to be accepted by farmers and to induce them to implement them;
- there is a need for regular and systematic communication and training of the agricultural and rural population on the content and aims of European, national and regional policies on agriculture, food and the environment;
- more funds would also be needed for training services and information and support bodies, such as the U.I.A. (avoiding their demobilisation), as they act as a link between farmers and the bureaucratic machinery of the institutions;
- not only is more education in the management of agroforestry systems necessary, but also the level of support must be sufficient to ensure acceptance of this practice and to establish it
- there is also an urgent need to support companies in the promotion of their products on the market, e.g. through 0-km markets, markets of a certain quota in organic products and a consumer awareness campaign; possible support for the marketing of products through an educational course on the advantages of cooperation, with the aim of encouraging and fostering synergies that lead to more advantageous sales prices for producers.

- **it is important to provide institutional communication campaigns that illustrate the role of agriculture in the preservation of the environment and the different types of initiatives that can be classified as 'good agricultural practices', in order to activate a greater degree of awareness among the population (demand subjects) towards these important functions of agriculture so that a 'premium price' can be acknowledged;**
- **A Sicilian regional fund should be set up for environmentally friendly farmers, including those who implement practices to counter soil degradation and recover degraded land with ancient and indigenous crops, also and above all to reverse the trend of intensive monocultures, which are increasingly present to an alarming extent in Sicily as well.**
- **Hunting controls should be intensified to protect species at risk with the consequent loss of biodiversity.**

On the current CAP, which has higher environmental standards, and which requires flexible interpretation by member states, and given that the interviewed TB farmers appear to be representative of sustainable Sicilian agriculture, relying precisely on these subsidies, we expect the largest possible budget for organic schemes in direct payments. Premiums should be attractive and easy enough to apply for to strengthen nature-friendly agriculture in the TBs and the rest of Sicily.

Otherwise, there is a risk that the funds allocated to ecosystems will not be utilised, which would be in contradiction with the fundamental objective of implementing greater environmental and climate protection with the CAP. Therefore, the use of agri-environmental support measures must be planned realistically.

If (organic) farms want to make use of eco-schemes such as fallow land, legume cultivation, agroforestry in Pillar I, it is important that there are no financial losses for them in Pillar II eco-support.

Sicily, and especially the TB area, has the chance to become a model region in terms of ecological and economic sustainability in Europe through a skilful interpretation of European requirements. It is precisely on this last aspect that we insist and aim for the long term.