

GRAPE

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INTRODUCTION

The present document contains the four Local, Social, Green Resilience Action Plans developed by the four communities engaged in the GRAPE project: of Bonares (ES), Malegno (IT), Mirabella Imbaccari (IT) and Sifnos (GR).

Each Action Plan contains an analysis of the territory in economic, demographic and social terms, highlights the needs expressed by the local community and presents the actions that each community aims at implementing for a sustainable and just development of the territory, starting from the main common pillar identified during the first phase of the project:

1. Protection and promotion of local culture: how to valorise local cultural heritage to enhance higher social cohesion and sustain community local development;
2. Efficient and sustainable use of resources: how to preserve and manage resources (water, soil, energy, etc.) in a sustainable way for local development;
3. Healthy and ecologically sustainable agro-food system: how to develop a sustainable agro- food productive sector.

The Action Plans here collected have been developed following the common framework and approach designed during the Social Economy Missions hosted in Mirabella Imbaccari, Sifnos and Bonares between July and October 2022, adapting however the structure to the local needs and processes.

Each Action Plan has been drafted in partners' national languages (Spanish, Italian and Greek); we propose here the full translation of each text in English (without annexes).

Local Social Green Resilience Action Plan

Community: Mirabella Imbaccari (Italy)

TABLE OF CONTENTS

1	INTRODUCTION	4
2	CONTEXT ANALYSIS	5
2.1	The context of Mirabella Imbaccari.....	5
2.1.1	Geographical context.....	5
2.1.2	Demography	5
2.1.3	Economy	7
2.1.4	Climate change	8
2.1.5	Social economy.....	9
2.2	SWOT Analysis	10
2.2.1	Strengths.....	11
2.2.2	Weaknesses	11
2.2.3	Opportunities.....	12
2.2.4	Threats.....	12
2.3	Previous programmes and actions	12
2.4	Action Plan vision	13
2.5	Priorities of action	15
2.5.1	Development of a hub for the elaboration and dissemination of local transition processes .	16
2.5.2	Initiatives fostering sustainable tourism	16
2.5.3	Relamping.....	17
2.5.4	Renewable energy community (REC)	18
2.5.5	Sustainable agri-food system	18
2.5.6	Synergies among initiatives	19
3	GOOD PRACTICES	21
3.1.1	Development of a hub for the elaboration and dissemination of local transition processes .	21
3.1.2	Fostering sustainable tourism	21
3.1.3	Relamping.....	22
3.1.4	Renewable energy community (REC)	22
3.1.5	Healthy and sustainable agri-food system	23
4	CONSOLIDATED VISION	24
4.1	Stakeholders' mapping.....	24
4.2	Stakeholders' engagement.....	26

4.2.1	TSR questionnaire	26
4.2.2	Questionnaire for entrepreneurs	27
4.2.3	Events	29
4.3	Gathered results	30
4.4	Legal framework	31
4.4.1	Development of a hub for the elaboration and dissemination of local transformation processes31	
4.4.2	Sustainable tourism	31
4.4.3	Relamping	32
4.4.4	Renewable Energy Community (REC)	33
4.4.5	Healthy and sustainable agri-food system	34
4.5	Financial resources	34
4.5.1	PNRR Promotion of renewables for energy communities and self-consumption.....	35
4.5.2	Regione di Sicilia Public Notice for the establishment of Renewable and Solidarity Energy Communities.....	35
4.5.3	FESR 21-27	36
4.5.4	Support Fund for Marginal Municipalities 2021-2023	37
4.5.5	PROSPECT+	38
4.5.6	INVITALIA CULTURA CREA 2.0	38
4.5.7	INVITALIA- ITALIA ECONOMIA SOCIALE.....	39
4.5.8	Fund for small municipalities with a tourist vocation	40
5	FUTURE ACTIONS.....	41
5.1	Action program for each priority.....	41
5.1.1	Development of a pole for the elaboration and dissemination of local transformation processes41	
5.1.2	Responsible tourism	42
5.1.3	Relamping	43
5.1.4	Renewable Energy Communities (REC)	43
5.1.5	Healthy and sustainable agri-food system	45
5.1.6	MONITORING SYSTEM FOR ACTIVITIES' IMPLEMENTATION.....	45
6	CONCLUSIONS	45
7	ANNEXES.....	45

1 INTRODUCTION

Exceptionally warm winters, out-of-control fires, water shortages... these are all phenomena we talk about almost daily, due to climate change.

These changes are not easily reversible, but we can mitigate their effects and adapt to their consequences by taking concrete actions. This may mean, for example, using scarce water resources more efficiently, adapting agricultural and forestry practices, reducing CO2 emissions, ensuring that buildings and infrastructure are able to withstand future climate conditions and extreme weather events.

Drastic changes are therefore needed in key sectors such as transport, energy, industry, housing, waste management and agriculture.

For an isolated territory with respect to large urban centres, the implementation of an articulated transition programme is certainly a complex process, requiring strong connections with external partners in order to have access to the appropriate skills and technologies, the ability to elaborate and adapt them to the local context, economic resources to implement the solutions and administrative-managerial capacities to guarantee their operation in the long term. For these aspects to combine and take effect, careful planning is needed, which must involve the entire community, activating all local actors (citizens, associations, enterprises, etc.), with a special focus on social economy actors, in order to ensure that the transition is not only ENVIRONMENTAL, but also SOCIAL, i.e. that it aims to eliminate inequalities and guarantee the involvement of the most fragile population groups.

The Municipality of Mirabella Imbaccari, in collaboration with the MeSSInA Foundation, deepened these aspects by participating in the European project GRAPE, co-funded by the European Commission within the SMP-COSME-2021-RESILIENCE-SEM Programme. The project intends to foster the exchange and knowledge between small communities located in different isolated areas of Europe, in order to allow the sharing of common problems and possible solutions. In addition to Mirabella Imbaccari, the project partnership is composed of the communities of Malegno (Lombardy), Bonares (Spain) and the island of Sifnos (Greece): all peripheral territories with respect to development centres (inland rural areas, or mountain areas, or islands), which present similar criticalities and challenges, and which will therefore become a laboratory for the implementation of transition strategies at the local level, with the intention of showing how ecological transition processes can represent an opportunity for social and economic development for isolated communities.

The initiative also intends to promote forms of participatory construction (involving local administration, organised civil society, citizenship, the economic fabric, etc.) of Local Action Plans for the social and ecological resilience of territories, which activate transition processes towards sustainability.

This document is therefore the result of that action. Starting from a number of priority areas of intervention shared by the various communities, a number of specific interventions have been proposed, analysed and shared with the territory to favour the path of environmental and social transition.

Obviously this is not an exhaustive strategic planning, but an initial operational starting point on which to channel energy and attention, also to stimulate greater awareness on the part of the various local actors and thus catalyse greater energy to implement a broader and more complex, long-term strategy that envisages an articulated combination of actions aimed at the environmental and social transition of the community, to guarantee it greater resilience.

2 CONTEXT ANALYSIS

2.1 The context of Mirabella Imbaccari

2.1.1 *Geographical context*

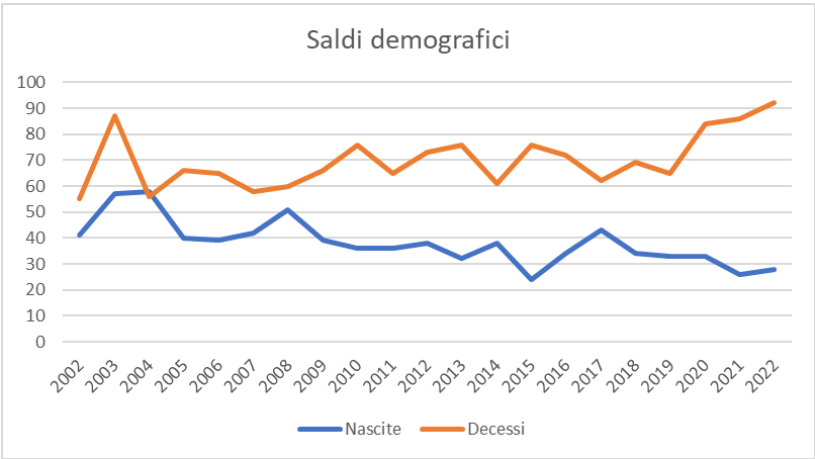
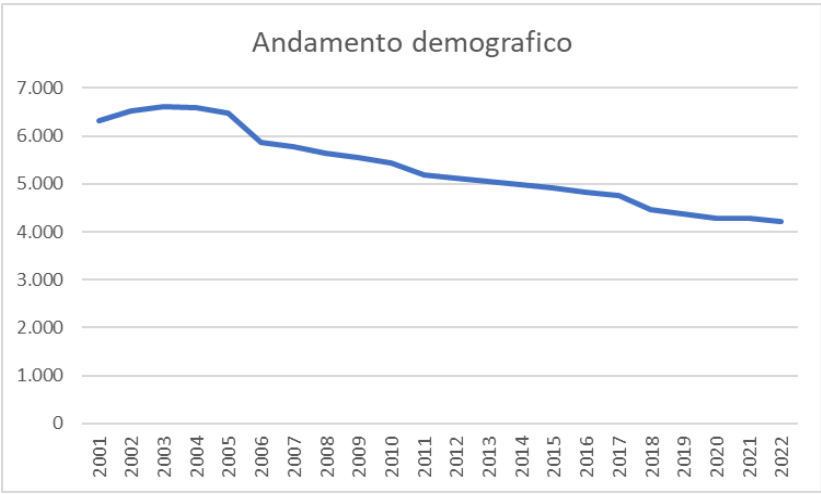
The town of Mirabella Imbaccari is located on the extreme southern foothills of the Erei mountains on the border of the provinces of Catania and Enna, lying on a hill with a north-eastern orientation. Although it is part of the metropolitan city of Catania (former Province of Catania) from which it is about 73 Km away, it is much closer to the capital of the Libero Consorzio Comunale of Enna from which it is about 45 Km away. To give a better idea, the territory of the Municipality of Piazza Armerina penetrates as far as the municipal territory of Mirabella Imbaccari, which is close to two important city centres rich in art and history, Caltagirone 18 km away and Piazza Armerina 10 km away. The surface area of the territory is 15.30 square kilometres, so the density, not considering citizens registered with AIRE, is 274.25 inhabitants per square kilometre.

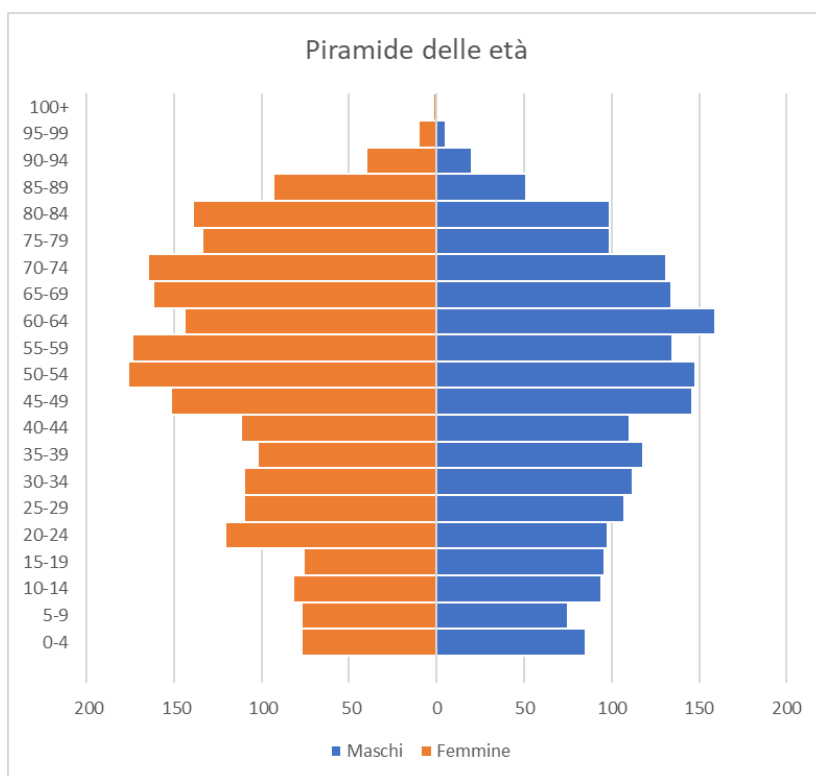
The municipality is part of the Area Interna del Calatino, made up of a district of municipalities in central-eastern Sicily comprising eight municipalities within the metropolitan city of Catania, and a total population of 76,001 inhabitants, 1.5% of the Sicilian population (ISTAT, 2018).

2.1.2 *Demography*

As shown in the following tables on demographic trends and balance, Mirabella's population has declined by about 2,000 over the last 20 years, from 6,000 in 2001 to about 4,000 in 2022. The natural balance is constantly negative, and by 2022 it was about 60 units, with a number of deaths of about 90 and a number of births of less than 30. Mirabella therefore shares the demographic situation of many of Italy's inland areas and, in particular, of southern Italy, where the demographic decline, the emigration of the youngest

segments of the reproductive age and the low influx of immigrants represent risk factors for the demographic health of the territories.





Foreigners resident in Mirabella Imbaccari as of 1 January 2022 number 118 and represent 2.8% of the resident population, while the Sicilian regional average is around 4%; the largest foreign community is from Romania with 39.0% of all foreigners present in the territory, followed by the Ivory Coast (9.3%). The percentage of immigrants who choose to live in Mirabella, therefore, does not seem sufficient to compensate for the ageing of the population. As the figure shows, the youngest segment of the population (0-19 years) represents the top of the pyramid, while the oldest (59-74) represents its base, with a significant demographic weight and worrying social implications.

Mirabella Imbaccari has 6,587 registered with AIRE (Register of Italians resident abroad), is the 21st municipality in Italy for the absolute number of foreign residents and the sixth for incidence (157% of the resident population).

2.1.3 Economy

The local economy is mainly developed around the agricultural sector (with the cultivation of wheat, olive and almond trees, and oil production) and the catering and hospitality sector. Mirabella Imbaccari has always stood out in the district for the offer of wedding catering services. There are numerous restaurants and pizzerias in the town that have made it possible and still make it possible to partially alleviate the employment problem, especially among young people. To support these activities, the administration, as it did before the pandemic, intends to re-establish and create ad hoc events (festivals, Mirabellese August, carnival, patron

saint festivals). In the past, local handicrafts represented a particularly flourishing sector of Mirabella's economy: today, bobbin lace is a tradition to be protected and recounted (also thanks to the Museum of the Permanent Exhibition of Bobbin Lace) and a product to be relaunched within the handicraft textile market.

Mirabella Imbaccari is part, together with San Michele di Ganzaria, of the Caltagirone Local Labour System.

2.1.4 *Climate change*

The second Ipcc (Intergovernmental Panel on Climate Change) report on impacts, adaptation and vulnerability shows how the Mediterranean area has warmed more than the global average compared to the pre-industrial period (about 1.5°C compared to 1.1°C). This in combination with the corresponding increase in heatwaves has produced effects on the composition of harvested species, the timing of the ripening of some crops, mass mortality in the marine environment, and the thermal discomfort of populations.

Prolonged droughts, increasingly numerous fires and extreme weather phenomena are the tangible signs of a change in the island's climate from Mediterranean to tropical. In recent years, in fact, summer seasons characterised by excessive temperatures that have caused fires affecting vast territories (over 250 municipalities in 2021) have been followed by autumns characterised by torrential rains and, for the first time for these latitudes, cyclones and tornadoes.

Added to this is the delicate issue of soil quality: the entire Sicilian territory, and especially the most inland areas, are at risk of desertification. In May 2009, the Cartography Laboratory of the Botany Department of the University of Catania published a study on desertification risk in Sicily. It used the MEDALUS model (MEditerranean Desertification And Land USE) to estimate the sensitivity of the territory to the desertification risk on a risk scale from 'non-affected' to 'critical': the areas in a critical situation represent 56.7% of the entire territory, which can be divided between the least critical areas, estimated at around 17.7% of the entire territory, the critical areas at around 35.0%, and the most critical areas, which amount to 4.0%. The rural area of Catanese is among the most critical areas. In this sense, and as stated in the study on the Regional Strategy for Combating Desertification, prolonged droughts and extreme phenomena risk becoming a 'normal' condition, with a strongly negative impact on the resilience of the entire ecosystem and on soil quality. An impact, the latter, that involves the island's entire agri-food sector, with very serious economic repercussions: according to the first official estimates for the island's main crops (viticulture, olive growing, horticulture and citrus growing), production losses average between 10-30%, an average that takes into account the distribution of damage in a leopard's spot pattern.

2.1.5 *Social economy*

The collaboration between the Mirabella Municipality and social economy actors has been consolidated for some time, contributing to 'territorial resilience' through the experimentation of proposals centred on solidarity, involving local stakeholders in cooperative processes, encouraging them to draw on their own capacities and resources to better respond to contemporary and future challenges. This cooperation is even more important within the ecological and social transition process.

There are in fact several associations in the area that operate in the social sphere, engaging in many areas, from organising cultural and recreational activities, to promoting local knowledge, to assisting those in need. By way of example, some civil society and third sector realities are described below.

Mirabella has two associations dedicated to the protection of knowledge related to the production of bobbin lace and manual arts and to their promotion, known as 'I ricami e le leggiadre trine mirabellesi' and 'Opera del tombolo e delle arti manuali'.

Another particularly active association is the local Pro Loco, which contributes to the organisation of events such as Mirabellart, a summer festival for the promotion of art and culture in which concerts, poetry competitions and poetry and fiction readings in both local dialect and Italian are organised. In the same sphere, there is also the Siculo-German Cultural Centre, which has as its mission not only the promotion of local culture (especially the mirabellese musical and ritual tradition), but also its transmission to the new generations, as the best way to protect it. In fact, there is a strong collaboration between the Cultural Centre and local schools through the organisation of workshops during the school year.

Another very important player in the area is the diocesan Caritas; with its role within the Mirabella parish and its closeness to young people and their families, it represents one of the pivots in the social cohesion of the area. The association is particularly active in combating food poverty and in supporting families in severe distress with regular food donations. Palazzo Biscari has made a room available to the association to facilitate these activities; specifically, a room to store goods donated to Caritas for redistribution.

Many of the activities promoted by the associations in the Mirabellese territory can also count on the support of the newly founded Mirabella Civil Protection Association, whose members, 6 young people between 25 and 30 years of age, and adherents work as volunteers in the organisation and execution of many cultural and social activities.

Another important stakeholder in the social economy is the MeSSInA Foundation, which is involved in activities for the development of the Mirabella area and the care and redevelopment of the municipality's artistic and architectural heritage.

The Foundation is the owner of the historic Palazzo dei Principi Biscari Paternò, donated to it by the Dorothee nuns in 2014 with the desire to make the Palazzo a 'common good' propeller of sustainable human development in the area. Over the years, this mission has been realised in various ways, for example by hosting and supporting the activities of the other organisations described above. In fact, Palazzo Biscari houses the Tombolo Museum and during guided tours of the palace, part of the visits is devoted to the description of this activity, its origin and importance, and the role it played, from an economic, social and human point of view, in an early process of emancipation of the Mirabellese craftswomen.

2.2 SWOT Analysis

There are several crises to which the Mirabella municipality and territory is exposed. Like many inland rural areas in Italy and Southern Italy, Mirabella is facing a serious demographic crisis: the employment crisis that has developed since 2003 has in fact forced many young people to emigrate to other Italian regions or abroad; the lack of adequate job opportunities reinforces this trend. This trend emerges clearly from the demographic graphs presented in the previous chapter.

Added to this crisis are the current energy crisis, with a constant increase in energy prices (and raw materials in general), and the climate crisis, which is particularly serious for a sector as important as agriculture. The entire Sicilian territory, but especially the most inland areas, are at risk of desertification. Following the MEDALUS (Mediterranean desertification and land use) model used at European level and by the University of Catania to identify areas at risk of desertification, the risk in the Catanese rural area is classified as 'critical'. In this sense, prolonged droughts and extreme phenomena risk becoming a 'normal' condition, with a strongly negative impact on soil quality and the resilience of the entire ecosystem.

These changes are not easily reversible, but we can mitigate their effects and adapt to their consequences by implementing concrete actions that allow for a metamorphosis and further development of the territory. In this perspective, the process of ecological and social transition towards more sustainable territorial development models must be seen as an opportunity to guarantee greater resilience to Mirabella's economic and social fabric. To be successful, this transition will have to be developed through inclusive processes, integrating different sectors and needs. An ecological transition aimed at autonomous energy production from renewable sources, for example, would guarantee greater resilience to the catering and hospitality sector, allowing a strong reduction in energy costs and opening Mirabella's realities to the growing market of sustainable and respectful tourism. In addition, greater energy autonomy, achieved for example through the energy and solidarity community model, is an effective strategy to address the current energy crisis for the entire community, thus making energy efficiency a vehicle for a fair redistribution of energy, promoting environmental and social justice.

In order to put such processes in place, it is first necessary to start with a careful SWOT analysis of the local community, i.e. an analysis of the community's internal strengths and weaknesses, as well as the opportunities and threats that may arise from the external context.

2.2.1 *Strengths*

- social cohesion: the area is characterised by residents' strong ties with their traditions and origins; this bond is well expressed by the area's associations engaged in the protection and dissemination of local culture (for example, through traditional music performances, poetry competitions in dialect and the preservation of craft activities such as bobbin lace). There is also still a very strong link with the communities of emigrants abroad (particularly in Germany), which can be seen in the Siculo-German Cultural Centre in Mirabella. ;
- well-established economic activities: some economic sectors have a stable presence in the area, in particular agricultural production, catering and hospitality (especially related to the organisation of events, especially weddings, for which Mirabella is renowned throughout Sicily). A historical local production, bobbin lace, is being revitalised thanks to the efforts of local organisations;
- Tourist attractiveness: the municipality is characterised by its geographical proximity to centres of great cultural and tourist interest, known internationally (Caltagirone, Piazza Armerina, Aidone, etc.), and within a natural setting of great scenic value within which the Saint James Walk winds its way, a 111-kilometre route travelled by numerous pilgrims.

2.2.2 *Weaknesses*

- lack of adequate job opportunities for the younger generations: the local economic fabric fails to adequately absorb the area's young people;
- demographic decline: also motivated by the lack of adequate job opportunities, young people tend to emigrate to Catania, the nearest capital city, or to Northern Italy, so that the birth-death balance has been negative for a decade, thus leading to a strong demographic decline;
- remoteness from the motorway junction and inadequacy of many road structures; these two aspects represent disadvantages for commuting between Mirabella and the provincial capital (which represents, especially for younger people, a basin of greater job opportunities) and also for the use of the area by visitors and possible customers of the reception services that Mirabella also offers
- reduced capacity of the technical/administrative structure of the municipality, also in view of its limited size, in guaranteeing services and interventions that can fully meet the needs of the area and in intercepting and managing public funds that could bring in new resources.

2.2.3 Opportunities

- There has recently been an increase in the availability of economic resources at national (PNRR) and European (PR Fesr Sicilia 2021-2027) level for small municipalities and inland areas, which can be tapped to support local development;
- development of new international relations with other communities that face similar problems to those of Mirabella, thanks for example to the European GRAPE project, allowing access to other experiences and exploring potential synergies for collaboration. Added to this is the strong international twinning relationship with the German municipality of Schonaich, the migratory destination of many Mirabella residents who have maintained strong ties with their home territory;
- strong potential for energy efficiency and production from renewable sources. In particular, a 1kW system (equivalent to 8 square metres of photovoltaic panels) can produce an average of 1,500 kWh in our area, 36% more than in northern Italy;
- increasing attention and sensitivity of institutions and citizens to environmental and social sustainability issues, which favour the development of projects in this sense, as well as the purchase of goods and products on the market that are attentive to these values.

2.2.4 Threats

- climate change: the risk of desertification with prolonged drought phenomena and soil impoverishment, as well as extreme weather phenomena are likely to hit the economic fabric hard and cause social problems at the same time;
- the rising costs of energy and many products pose a risk to the economic stability of businesses and households;
- the collapse of generational turnover and an ageing population entails a risk to the sustainability of the local economic fabric in the medium term;
- the demographic decline also entails a risk of loss of traditional knowledge, arts and crafts, an intangible heritage fundamental to community stability. There is also a risk of loss of real estate: many homes of emigrated families are no longer inhabited and lie in a state of abandonment.

2.3 Previous programmes and actions

Following the EU guidelines, the municipality of Mirabella Imbaccari adopted in 2020, as a signatory of the Covenant of Mayors (an initiative whereby countries, cities and regions voluntarily commit to reduce their CO2 emissions), its own Sustainable Energy and Climate Action Plan (P.A.E.S.C.). The Plan promotes the vision of decarbonised and resilient cities with universal access to safe, sustainable and affordable energy,

identifying a number of actions to achieve by 2030 a reduction in CO2 emissions of at least 40 % compared to the reference year represented by the year 2011, as well as an increase in the use of renewable energy of no less than 27 %, an increase in energy efficiency of at least 27 %, and a more general increase in the resilience of municipal areas to resist the effects of climate change.

The Mirabella Municipality intends to start from projects based on energy and environmental sustainability to ensure a new direction for the development of the territory, making it capable of responding effectively and non-traumatically to the challenges and possible crises of the future. In particular, within the P.A.E.S.C. explicit reference is made to policies and programmes for energy efficiency in the municipality. The most significant projects concern the energy redevelopment of the public lighting system (relamping), the creation of a photovoltaic park in the area of the disused landfill and energy efficiency operations in public buildings (the municipality, schools, etc.) and the promotion of a solidarity purchasing and distribution platform with a network for the promotion and distribution of local economy products, which represents a job and development opportunity for the younger generations.

Within this pre-existing framework, the Mirabella Municipality took part in the GRAPE European project. The GRAPE project, thus starting from the priorities that emerged in the P.A.E.S.C., has allowed Mirabella's administration to confront itself with other territorial communities that present similar problems, in order to share challenges and possible solutions, so as to gather useful stimuli and indications for the realisation of concrete actions in its own context. The new international connections will also allow Mirabella to expand its network of reference: having the possibility to confront itself when necessary with other realities is essential to design and adapt adequate responses to the challenges that the community is facing, learning from what others have achieved.

2.4 Action Plan vision

The challenges facing our community are numerous and complex, and the solutions are not always easy to identify and pursue. In this difficult context, there is a risk of becoming paralysed, failing to seize the right opportunities for change. It is important for the community to equip itself with a 'vision' of its future: an ideal image of what it wants to become, no matter how 'realistic' it may seem in today's context. This is a fundamental ideal to guide choices in transition processes, an aspiration that can support all the actors in the area in planning and implementing the actions necessary to achieve it.

Mirabella wants to be:

A community that adapts its economy and services to the social and environmental challenges, on the basis of participatory development plans that gather and integrate the contributions of the various local stakeholders and enhance the environmental, historical-cultural and social heritage.

A community that has achieved full environmental and social sustainability: thanks to interventions in the fields of energy efficiency, production from renewable sources, sustainable mobility, preservation of natural resources and biodiversity, and development of the circular economy, it is able to absorb more Co2 than it produces, guaranteeing an improvement in the well-being of all its citizens.

A community capable of supporting local entrepreneurship by integrating social and environmental sustainability issues with economic sustainability, ensuring the resilience of its enterprises.

A community capable of supporting the local entrepreneurial spirit by integrating social and environmental sustainability issues with economic sustainability, ensuring the resilience of its enterprises.

A community capable of stimulating the associative vitality, civil society and in general the active participation of citizens, involved through processes of consultation, co-development and co-creation of responses to local needs.

A community whose schools and training centres raise young people's awareness of the challenges of sustainable development and the spirit of cooperation needed to address them, where there are centres for the collection, analysis, elaboration and dissemination of solutions and good practices of policies and technologies for social and environmental transition, adapting them to the local context.

A community that stimulates a collaborative spirit among the various actors and stakeholders in the area, which has enabled the creation of a social and environmental innovation cluster that generates new local development initiatives, born out of the confrontation and integration of different but complementary expectations, approaches and needs. A context in which for-profit companies, social economy and civil society organisations, and research centres work together, exploiting synergies that allow for benefits for the entire community.

A community that experiences an increase in population and a better intergenerational balance, thanks to its economic, social and cultural attractiveness for young people and its ability to welcome and integrate people who move there, including those returning from countries of emigration, generating job opportunities. But also, a community in which the quality of work and life are social glues to convince young migrants to stay in Mirabella and successfully include them in community life.

A community integrated in its own territory, the inland area of Calatino, with which it works to make it sustainable and attractive at all levels, but at the same time projected at international level, thanks to strong

connections with other resilient and inclusive European territories, giving rise to transnational cooperation actions and exchange of good practices.

2.5 Priorities of action

On the basis of what has already been planned within the P.A.E.S.C. and the experience gained during the international missions of the GRAPE project, the following priority areas, shared by all GRAPE partner communities, have been identified for this Plan

- protection and promotion of local culture: how to enhance local cultural heritage to foster greater social cohesion and support sustainable community development.
- efficient and sustainable consumption of resources: how to preserve and sustainably manage resources for community development (water, soil, energy, production waste, etc.);
- healthy and sustainable agri-food system from an economic, social and environmental perspective: how to develop a sustainable and resilient agri-food production sector.

Some of the experiences presented by the project partners were particularly important in order to more clearly identify and understand the need for some of the above-mentioned activities, to the point of making them shared priorities. The work carried out in Sifnos for the preservation of traditional methods of water collection through common wells and soil conservation through the maintenance of dry stone walls, and the study on how to incentivise and modernise these solutions is an example of this, as are the reflections that arose from the testimony of Sifnos on the effects of non-sustainable tourism that risks upsetting the natural as well as the social and cultural balances of a territory. Furthermore, the testimonies of the Bonares partners on the development of an agri-food system that is fair and sustainable, both in terms of production and work organisation, have given a new impetus to thinking about new systems of organising the production and distribution of agri-food products that further enhance the value of Miraculous products, also thanks to economies of scale and more developed forms of cooperation between local producers and consumers.

In particular, a number of particular initiatives have been identified to focus on, which have been explored in depth during the GRAPE project, enabling action to be taken on these priorities:

- protection and promotion of local culture:
 - development of a centre capable of combining artistic, scientific and technological research for the elaboration of local processes to combat climate change and social inequalities
 - slow and responsible tourism initiatives, with the creation of a widespread reception system
- efficient and sustainable consumption of resources:
 - relamping

- renewable and solidarity-based energy communities
- healthy and sustainable agri-food system from an economic, social and environmental point of view
- activating initiatives that favour the development of a framework to support and strengthen collaboration between local entrepreneurs in order to exploit economies of scale.

2.5.1 Development of a hub for the elaboration and dissemination of local transition processes

In order to guarantee the design and implementation of paths for the environmental and social transition of the Mirabella community, it is necessary to think about the creation of a pole where these arguments can be developed, where the experiences of other territories can be presented and analysed, and where solutions adapted to the local context can be found. It must be a pole where the community can be involved, can recognise it as its own point of reference and thus act as a centre for the dissemination of initiatives, technologies, processes and ideas for sustainability.

Objectives should therefore be

- complete the educational and training offer of the territory, favouring the development of educating communities;
- support the area's metamorphosis processes, through the experimentation of economic, social, cultural, energy, technological, environmental, transformative models and practices capable of generating new knowledge in the area
- constitute a pole of attraction at international level.

2.5.2 Initiatives fostering sustainable tourism

This need stems from the fact that our municipality is located in a strategic position that sees it at the centre of an area that offers multiple possibilities for hiking, cultural and artisan activities, food and wine discovery thanks to its agriculture and the possibility of easily reaching nearby places rich in history.

The aim of the initiative is to create a virtuous circle based on a constant tourist presence centred on responsible tourism, attentive to environmental sustainability and the enhancement of the territory and its history, thus offering the accommodation facilities located within the municipal territory the possibility of being active for most of the year.

In particular, the intention is to focus on the development of the [St. James Walk](#), a route of about 130 km that can be travelled on foot or by bicycle, which touches eight neighbouring municipalities in stages that are always quite short, allowing pilgrims to immerse themselves in an extraordinary variety of landscapes that change completely according to the seasons. At present, pilgrims are accommodated in Mirabella's

accommodation facilities and in a municipal structure where they can stay free of charge. Last year, the number of pilgrims reached 1,500, but a sharp increase is expected for 2024 and 2025 on the occasion of the anniversary of the death of St James and the Jubilee.

Also because of these forecasts, there is a clear need to activate forms of widespread hospitality, which can guarantee hospitality to as many visitors as possible, ensuring them a well 'integrated' and respectful stay.

The beneficiaries of such an initiative, through the diffuse hospitality model, would be all the citizens of the municipality who own vacant houses and pre-existing accommodation facilities. This initiative would in fact be integrated with the 'Paese Albergo' initiative that the municipality of Mirabella Imbaccari launched at the beginning of 2022 through the FoodArTur (Food, Art Tourism) project.

2.5.3 *Relamping*

According to the Italian Public Accounts Observatory, per capita electricity consumption for public lighting in our country is twice the European average and can weigh up to 30 per cent of a municipality's electricity bill.

Relamping is one of the key interventions when it comes to energy efficiency. It consists of replacing traditional luminaires, such as halogen, incandescent or fluorescent lamps, with modern LED (Light Emitting Diode) lamps, thus achieving a decrease in energy consumption of up to 60-80%. In addition, the switch to LEDs is able to ensure a strong reduction in operating and maintenance costs, given the low power consumption and long life, which is significantly higher than traditional lamp types.

Relamping stems from the need to:

- Reduce costs related to energy consumption and maintenance of public lighting structures;
- Reduce CO2 emissions;
- Improve street lighting characteristics.

The initiative is at the planning idea stage, foreseen in the PAESC and in the programme forecast of the municipal administration, but its realisation, given the modest economic resources available to the municipality, is conditional on finding sources of funding. Although it is not an initiative that can properly lend itself to processes of co-participation and co-construction, relamping is, however, an initiative that the Municipality intends to carry out together with the process of building an energy community, contributing overall to an improvement in consumption efficiency.

2.5.4 *Renewable energy community (REC)*

The initiative envisages the establishment of a Renewable Energy Community (REC) which, as required by law, consists of an association of citizens, businesses, local public administrations and small/medium-sized enterprises that decide to join forces with the aim of producing, exchanging and consuming energy from renewable sources on a local scale.

Once created, the community can apply to the “Gestore dei Servizi Energetici” (GSE) to obtain the incentives provided by law for shared energy. Incentives are not granted to all the energy produced, but only to that shared within the community, i.e. that consumed by members in the same production time slot. If production exceeds consumption, only the economic value of the energy is recognised to the community for the excess energy, with no further benefits. This energy can also be stored in storage systems (typically batteries) to be used when renewable sources are not available (e.g. at night in the case of solar panels) or when the need arises (e.g. to meet peak demand).

From a practical point of view, each member of the community continues to pay his or her electricity bill in full to his or her electricity supplier, but periodically receives an amount from the community for sharing the benefits provided to the community. Since this fee is not taxed, it is effectively equivalent to a reduction in the bill.

How the revenues from the energy produced are shared among the members is a matter of the rules of operation of the energy community, which each community freely establishes through a private law contract.




In this context, in order to combine environmental and social aspects, the model to be adopted is that of the Solidarity CER developed by the MeSSInA Foundation and tested in the Fondo Saccà neighbourhood in Messina, which allows energy and community benefits to be redistributed while also taking into account the socio-economic criticalities of the members.

2.5.5 *Sustainable agri-food system*

As already analysed, one of the most developed economic sectors in Mirabella Imbaccari is the production and processing of agricultural products, the quality of which is recognised on the market. The realities operating in this sector are numerous and in the current context they face common challenges (lack of water resources, logistical difficulties, etc.). The initiative envisages studying and implementing the framework conditions that facilitate the launch of forms of cooperation between producers, with the aim of generating economies of scale that will strengthen local production.

2.5.6 Synergies among initiatives

The initiatives chosen by the Mirabella municipality are in line with some of the SDGs (Sustainable Development Goals). The SDGs are a set of 17 goals and 169 sub-goals that the United Nations considers necessary for building a more just and sustainable future for all. The 17 goals refer to actions related to economic development (e.g. poverty eradication; inclusive and sustainable economic growth; sustainable production and consumption patterns, etc.), social justice (social and gender equality; peace; right to health and education; access to water and energy, etc.) and the preservation of natural ecosystems (life on land, underwater; combating climate change) recognising a close link between human well-being and the health of natural systems.

<p>The initiative on the DEVELOPMENT OF A POLICY FOR THE ELABORATION AND DIFFUSION OF LOCAL TRANSITION PROCESSES is in line with SDGs:</p> <p>4 "ensure quality, equitable and inclusive education and promote opportunities for lifelong learning" and in particular for sub-objective 4.7 "by 2023, ensure that all learners acquire the knowledge and skills necessary to promote sustainable development through, inter alia, education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and valuing cultural diversity and the contribution of culture to sustainable development".</p> <p>10 "Reduce inequalities within and between nations" and in particular for sub-objective 10.2 "by 2030, strengthen and promote the social, economic and political inclusion of all, regardless of age, gender, disability, race, ethnicity, origin, religion, economic or other status".</p>	 
<p>The RESPONSIBLE TOURISM initiative is in line with SDGs:</p> <p>8 "Fostering durable, inclusive and sustainable economic growth, full and productive employment and decent work for all", in particular sub-objective 8.9 "by 2030, develop and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products"</p> <p>11 "Make cities and human settlements inclusive, safe, secure, durable and sustainable", and in particular sub-objective 11.4 "strengthen commitments to protect and safeguard the world's cultural and natural heritage";</p> <p>12 'ensure sustainable patterns of production and consumption', and in particular sub-objective 12.b 'develop and apply tools to monitor sustainable development</p>	 

impacts for sustainable tourism that creates jobs and promotes local culture and products'.	
The RELAMPING initiative is in line with SDG 7 'Ensure access to affordable, reliable, sustainable and modern energy systems for all', in particular with regard to sub-goal 7.3 'by 2030, double the global rate of improvement in energy efficiency'.	
The RENEWABLE AND SOLID ENERGY COMMUNITIES initiative is in line with SDGs: 7 "Ensure access to affordable, reliable, sustainable and modern energy systems for all", and in particular sub-goal 7.1 "by 2030 ensure universal access to affordable, reliable and modern energy services"; 11 'make cities and human settlements inclusive, safe, durable and sustainable', and in particular sub-target 11.3 'by 2030, increase inclusive and sustainable urbanisation and the capacity for participatory and integrated planning and management of human settlement in all countries'; and	 
The initiative on a HEALTHY AND SUSTAINABLE FARMING SYSTEM FROM AN ECONOMIC, SOCIAL AND ENVIRONMENTAL POINT OF VIEW is in line with the SDGs: 2 "end hunger, achieve food security, improve nutrition and promote sustainable agriculture", and in particular sub-goal 2.4 'by 2030, ensure sustainable food production systems and apply resilient agricultural practices that increase productivity and production, help conserve ecosystems, strengthen resilience to climate change, extreme weather, drought, floods and other disasters, and progressively improve soil and soil quality' and sub-goal 2.5.c 'take measures to ensure the proper functioning of markets for food commodities and their derivatives and facilitate timely access to market information, including on food stocks, to help limit food price volatility'; 15 'protect, restore and promote sustainable use of the earth's ecosystem, combat desertification, reverse and reverse land degradation, and halt the loss of biological diversity'.	 

The initiatives are strongly interconnected and should be developed in an integrated manner.

Interventions in the energy field (relamping and CER) allow for an overall efficiency improvement in the production and use of energy, which can directly benefit the diffused hosting activities, for example by involving them in the CER. The pole for the elaboration and dissemination of local transition processes is important to study practices, initiatives and technologies already adopted in other territorial contexts facing similar challenges, adapting them to the local context and sharing them with the community.

3 GOOD PRACTICES

3.1.1 Development of a hub for the elaboration and dissemination of local transition processes

The Mirabella pole will be able to fit into the network of Parks of Beauty and Science developed by the MeSSInA Foundation by involving the various sites where its activities to promote sustainable development policies for local communities are concentrated.

In this context, we can cite as good practices those promoted by the two Parks of Beauty and Science operating at the [Horcynus Orca Park](#) and the [Forte Petrazza Social Park](#), in Messina, both of which were implemented as part of the social economy cluster coordinated by the MeSSInA Foundation. Both of these clusters are committed to promoting a path in which human and social development perspectives (also through the study and elaboration of new economic and welfare paradigms) meet paths of [scientific](#) and [artistic knowledge](#) and [technological innovation](#).

3.1.2 Fostering sustainable tourism

Interesting practices from which to draw inspiration can be found through the [Associazione Nazionale Alberghi Diffusi \(Adi\)](#), which has developed a specific model of diffused hospitality in Italy, compatible with regional and national legislation on hotel and hospitality activities, and which promotes tourism that is sustainable both for the environment and for the communities involved. There are several examples in Sicily, and many tell of the process of developing a pole of widespread hospitality in rural areas at risk of depopulation. At the European level, on the other hand, the activity carried out by the French cooperative ['Les Oiseaux de Passage'](#), which has created a network of reception and sustainable tourism in various communities, not only on French territory, seems interesting. For our initiative, they seem particularly interesting for the construction of reception 'networks', ranging from the offer of accommodation to the offer of experiences of getting to know the territory from different points of view (cultural, environmental, landscape, traditions and crafts) while taking care of its care and protection.

For a harmonious and full development of slow forms of tourism, it is interesting to consider how the presence of the Way of St. James can be valorised in the most effective way. Some good practices to be

inspired by for a tourist development of the Walk that remains respectful of the place and can harmonise with it, can be drawn from the experience of the '[Cammini d'Italia](#)' association. It is committed to promoting a profound culture on the world of walking, trekking and hiking also through the development of a series of platforms for the exchange of information between users and the offer of consultancy and promotion services to both private and public bodies. Another initiative of possible interest is that of the '[Italia dei Cammini](#)' association, which promotes forms of slow tourism and seeks to build forms of collaboration with local realities (reception and refreshment facilities, local hiking guides) to set up reception networks in the area.

The theme of responsible tourism also emerged during the GRAPE project's transnational missions. In Bonares, it was interesting to discover how even in the Andalusian project partner country, in the face of a strong tradition with great attraction potential, [las Cruces de Mayo de Bonares](#), the area does not have adequate accommodation facilities, and how even in this case the need to work on reception is the first step towards activating sustainable forms of tourism.

3.1.3 *Relamping*

A good practice of possible interest in the relamping of Mirabella's public lighting is represented by the lighting plan inaugurated by the Veneto municipality of Bassano del Grappa within the European territorial cooperation [project PLUS](#), Public Lighting for Sustainable Urban Spaces. The project promotes the development and dissemination at community level of innovative and sustainable public lighting planning. Since 2012, the Veneto municipality has had a Picil, Lighting Plan for the Containment of Light Pollution. The document promotes certain key principles, such as the reduction of light and optical pollution, the safety of people and vehicles, energy savings and the visibility of the starry sky.

Another interesting initiative is that of the municipality of Bonares, GRAPE project partner. As illustrated during the Spanish mission, Bonares engaged in a process of relamping public lighting, during which traditional sodium and mercury vapour lamps were replaced with around 1,200 LED bulbs. This, and the installation of panels to control energy consumption, generated a 70% saving in consumption compared to the previous technology. The funds required for the intervention came partly from the municipality's own resources and partly from the European Agricultural Funds for Rural Development (EAFRD).

3.1.4 *Renewable energy community (REC)*

Examples of particular interest both for geographical proximity and social and economic affinity are the small territories of the municipality of Ferla and the municipality of Sortino, both in the province of Syracuse. In both, in fact, the administration has managed to establish a renewable and solidarity-based energy

community with the help of a few stakeholders and a (unfortunately) not very large [community](#). One possible network to join is the '[Renewable and Solidarity Energy Community Network](#)': initially promoted by Legambiente and the East Naples Energy and Solidarity Community in 2021 and which now has more than 50 members throughout Italy. Moreover, during the transnational missions that took place during the first phase of the GRAPE project, the Municipality's representatives had the opportunity to get to know and study other cases in which project partners were engaged in building an energy community. In particular, it will be interesting to delve into the case of the Bonares Municipality partners and their experience on the territory, as well as FAECTA's experience in a wider territorial context. FAECTA has followed the experience of some Andalusian municipalities wishing to reduce their energy dependence through energy saving and generation measures through a cooperative; currently, this project is being developed in the Huelva municipality of Arroyomolinos de León. The project starts from the recognition that citizens are no longer mere users of the energy system, but can organise themselves and collaborate to produce energy, or to react to what they consider to be unfair costs of energy tariffs, through electric cooperatives. Therefore, the project aims to show how it is possible to implement at municipal level an energy audit methodology similar to that applied in industry, and also to satisfy a large part of the energy demand of that locality with the valorisation of its own resources and to make the inhabitants of the municipality protagonists, both through the different implementation formulas and corporate structures, and in the decision-making process and development of initiatives of relevant social and economic importance.

A model that can be adopted is the one developed by the MeSSInA Foundation, in collaboration with the National Research Council. This model envisages the use of an algorithm that takes into account the socio-economic fragilities of the members of the Energy Community, automatically redistributing energy and economic contributions from state subsidies giving priority to those most in need. It is therefore a model that aims to tackle both poverty and energy inequality.

3.1.5 Healthy and sustainable agri-food system

Once again, the experience gained during the trans-national missions proved to be of great importance; a good practice to be inspired by for a healthy and sustainable agri-food system also from an economic point of view is the structure and success of the [cooperatives in Bonares](#). The organisation into [cooperatives of agricultural producers](#) and the mutualistic collaboration between producers and hauliers allows the activation of economies of scale that make the agri-food sector stronger and more resilient and capable of greater autonomy in the market. In the 1970s and 1980s, a major economic crisis hit the local economy, which until then had been based on irrigated agriculture, industry, ceramics and freight transport, leading to the search for solutions for socio-economic recovery. In 1983, an initial group of farmers formed the

Cooperativa Hortofrutícola de Bonares, Bonafru, the driving force behind the socioeconomic development of the municipality. The commitment was to promote the agricultural sector and to ensure that it acted as a locomotive for the other productive sectors. Over the years, Bonafru grew and diversified with the aim of improving the quality and services offered to customers. After being established as a cooperative, the members began to incorporate, little by little, hectares of strawberry cultivation until, around 1987, they made a great qualitative and quantitative leap that transformed them into a strawberry cooperative that still survives today, overcoming the many fluctuations that this crop has experienced in the last two decades. From 1983 to the present day, with constant collaboration between cooperative members, freelancers and the municipality, the cooperative system has continued to grow, and in 2000 the Bonares Second Degree Cooperative for Cooperation and Development, COOPINTE, was founded, which currently brings together 3 cooperatives from the insurance sectors (Insurance Mediation and Cooperazione Solidale, S. Coop And.), which manages the policies of all partner organisations and private individuals who wish to do so, transport (Industrial Cooperative of San Cristóbal) and agriculture (Fruit and Vegetable Cooperative of Bonares, Bonafru). To quote some figures, to date the San Cristóbal cooperative, which brings together the area's self-employed hauliers, has a turnover of around 2,200,000 euros per year, a workforce of 8 workers and 60 members with around 75 trucks.

4 CONSOLIDATED VISION

4.1 Stakeholders' mapping

Stakeholder involvement is of critical importance for the success of any local development initiative, both in the active involvement of individual citizens as well as civil society organisations and the business community.

In the following, a mapping of the main stakeholders of the local community has been carried out, hypothesising their level of interest and potential involvement in local environmental and social transition initiatives. For each specific initiative this can then be deepened by verifying in detail the stakeholders involved in time.

Stakeholder	Level of action	To what extent can he/she be influenced by the project? (A lot/ moderately/ to a little extent)	To what extent can he/she influence the project? (A lot/ moderately/ to a little extent)	Perceived risks that may have an impact on stakeholder's engagement	How to reach the stakeholder and manage the relation
Technical Office from	local	Moderately	A lot: its experience and his ability to	Risk of overload and	Municipality

Mirabella Municipality			collaborate with entities outside the municipality can determine the success of certain activities	slowdown in practices	
Citizens	local	A lot: all the initiatives, in their essence, aim to improve the living conditions of people living in Mirabella Imbaccari	It may depend on the initiatives. Concerning the REC, for instance, their engagement is crucial.	Long times for initiatives' implementation can demoralize citizens; low engagement can reduce their interest.	-direct contact through interviews - seminars and workshops open to the public
local agrifood entrepreneurs	local	Very: most companies complain of serious difficulties related to high energy costs, managing product distribution and entering the international market	Very: farms represent a strong economic reality in the area	The long lead times and the costs they would eventually incur	-direct contacts with company owners; -seminars and workshops open to the public
Companies in the hospitality and catering sector	local	Very: most companies complain of serious difficulties related to high energy prices and a flow of tourists/guests concentrated in specific periods, not allowing a constant revenue flow throughout the year	Very: companies in the hospitality and catering sector are directly involved in paths related to sustainable tourism	The long lead times and the costs they would eventually incur	-direct contacts with company owners; -seminars and workshops open to the public
ICT companies	local/ regional	Moderately: currently planned initiatives marginally involve the ICT sector	Moderately: in some areas they can play a role. Their role, however, is essential for a broader programme of also digital transition of the territory		-direct contacts with company owners; -seminars and workshops open to the public
local associations	local	Very: associations in the Mirabellese area are very active in the promotion of local culture and, above all, in its	Very: they have a strong capacity to activate the inhabitants and know the needs of the area very well	Risk of loss of interest if they are not adequately involved	-direct contacts with the heads of the individual associations; -organisation

		preservation and development in the future			of seminars open to the public
ESCo (Energy Service Company)	local/ regional	Marginally	Very: their experience in the field can be of crucial importance for the implementation of energy initiatives	Lack of cooperation and timely responses from the administration for necessary paperwork	Direct contact (email; mobile) with those responsible

4.2 Stakeholders' engagement

For the realisation of the Plan, in addition to the experiences gathered during the GRAPE project missions, an attempt was made to involve the local community in various ways.

4.2.1 TSR questionnaire

To collect citizens' opinions, a questionnaire (annex) was designed and administered to citizens based on the TSR® methodology, a methodology for planning at the local level that integrates social, economic, cultural and environmental dimensions.

The study analysed and classified the system of principles and values that guide people, the priorities perceived as most relevant for the development of local policies, with a specific focus on energy and climate change. Precisely because different opinions and principles must be able to emerge and dialogue, these different elements were analysed taking into account the differences existing in social subgroups in terms of gender, age, education, occupation.

All opinions were investigated by means of individual interviews, using a paper or online questionnaire, in which scoring scales with a range of five points (maximum value 5) were used to allow respondents to position themselves more freely without having to make simplifying judgements. In addition, open comments were collected by the interviewers and transcribed.

A total of 193 questionnaires, of which only 173 were valid and useful for analysis, were received from a sample of citizens aged between 11 and 86, 55.5% of whom were female.

The sample was identified using the 'snowball' technique, starting with the first contacts, and by organising meetings for small groups. For various reasons, this sample is not representative of the resident population.

The areas of intervention perceived as priorities by the interviewees are in order:

- Countering depopulation and an ageing population (Mean 4.3)
- Citizens' health and the availability of social and health services (Mean 4.3)
- Business development (agriculture, industry, tourism, services, etc.) (Mean 4.2)

The prospect of realising a solidarity ERC in Mirabella Imbaccari is considered very attractive by the young-adult subgroup and by the elderly (Mean value 4.6 - 4.4).

The principles and values on which people express a very high level of agreement (mean index scores) are those concerning the sphere of freedom of opinion and a propensity for openness in one's own community and for confrontation; this is followed by the importance given to culture and knowledge and environmental sustainability. Principles related to environmental sustainability are more present in the 15-64 age group (mean value 4.2). Sensitivity to energy consumption is in conclusion shared and very high.

In addition to the TSR questionnaire, a short questionnaire was also drawn up for the associations in the area. In this case, the questionnaire was designed as a tool for mapping the associations in the area, bringing them closer to the project activities and making them allies in the campaign to raise awareness and involve their members. Mirabella is rich in associations, and for the moment only a few of the most active ones, which tend to involve a large part of Mirabella's population, have been directly interviewed. The main fields of intervention of the associations involved are the protection and dissemination among the younger generations of the local cultural and artistic heritage, the organisation of cultural events (music, theatre, poetry) and voluntary work, also aimed at the development of social and environmental protection activities. Interviews were conducted with eight associations: the Sicilian-German Cultural Centre; the Opera del Tombolo e delle Arti Manuali; Avis Mirabella Imbaccari; International Civil Service; AGESCI; Ammirabella; Gruppo Volontari Italia; I ricami e le leggiadre trine mirabellesi.

In the face of a more or less strong sensitivity (and more or less justified by the mission of each one) to issues such as the protection and promotion of local culture, social inclusion, clean energy and energy saving, new forms of poverty, and the protection of biodiversity and ecosystems, all the associations seem to agree in affirming the need for greater involvement of themselves and the civil fabric in the area's development strategies and policies, and upstream, they affirm the need to raise the population's awareness of the importance of participation and issues of common interest.

4.2.2 Questionnaire for entrepreneurs

A further questionnaire was administered to a sample of local companies in order to investigate the needs and priorities of the Mirabellese entrepreneurial fabric. In particular, the questionnaire focused on the

investigation of some aspects that were considered important to start a social and environmental transition process. Among these, the following were chosen: the propensity towards digital innovation and energy sustainability; the choice of technologies adopted to date and the needs to which digital innovation must respond; and, lastly, the propensity of Mirabellese entrepreneurs to develop networked strategies and solutions, territorial marketing, the development of economies of scale (especially for companies in the agricultural production and processing sector) and circular economy models. This analysis is fundamental to better plan actions to ensure the resilience of the local economic system.

Seven local companies were interviewed, operating in the following sectors: agrifood (Frantoi Berretta and Consorzio Asparago Sovrano), hospitality (Affittacamere Imakara), catering (Birreria La Pinta, Parco degli Ulivi, Ristorante Belvedere), software development and cyber security (LT Mediterranea srl).

The choice of interviewing companies from different sectors was strategic in order to obtain a complex picture of the needs and priorities of different companies. Nevertheless, some issues and problems are recognised across the board by all interviewees. For example, energy consumption is perceived as a problem by 85.7% of the respondents, especially energy costs. Of these, 57.1% have implemented energy self-production initiatives by installing photovoltaic panels. At the same time, 85.7% expressed interest in becoming a member of an ERC.

Another problem that seems to be shared by companies in different sectors (e.g. the catering and hospitality sectors) is related to water shortages due to supply interruptions, especially in summer; at the same time, companies in the agri-food sector report prolonged droughts (and related water shortages) as a problem. This aspect is being optimised with the installation of cisterns and the construction of reservoirs to recover rainwater.

Some specific aspects and criticalities emerged for the different sectors. For example, companies in the agro-food sector perceive waste management and recycling as a major problem. For companies in the catering sector, a significant problem is the poor quality of the road network and the difficulty encountered by potential customers (especially from the Catanese area) in reaching Mirabella. This makes it increasingly difficult for local businesses to withstand the competition represented by other accommodation facilities located between the Calatino and Catanese areas. A critical aspect highlighted is also the poor digital infrastructure due to the unwillingness of companies installing fibre optics to invest sufficiently in an inland village like Mirabella.

As far as the development of collaborations with networks of companies or research institutes is concerned, it is only the larger companies or those already established in a research context that have established forms

of collaboration. In particular, agricultural companies have relationships with research institutes in the agro-food sector.

71.4% of the interviewees say they are interested in territorial marketing solutions that promote local companies and the development of synergies; most of the companies interviewed also have supply/purchase relationships for goods and services with local companies according to the needs of their sector. At the same time, companies in the catering sector complain that Mirabella's farms are not large enough to supply their needs, while some of the local agricultural producers complain that the quality of their products is not adequately recognised by local catering companies.

Finally, the answers to the question of what role the municipality can play in the realisation of initiatives that favour the development of Mirabella businesses: guaranteeing greater administrative support and offering greater technical-administrative expertise to provide better services; promoting an innovative image of Mirabella, as a 2.0 village whose economy is not only represented by agricultural and catering activities but is also capable of hosting activities aimed at innovation and digital development; involving citizens more and more actively in strategic choices for the territory; supporting territorial marketing at a regional and national level.

4.2.3 *Events*

A further form of citizen involvement centred on the organisation and promotion of events open to the entire population, which are necessary moments for the involvement of citizens and all potential stakeholders in the development of the Local Action Plan's activities.

In particular, the events promoted focused on the pathway for the activation of a renewable and solidarity-based energy community, forms and paths of sustainable tourism and strategies for the efficiency of local agricultural practices (such as, for example, the reuse of waste from agro-food chains). During the events, the chosen topics will be presented by experts and then discussed collectively: they are conceived, in fact, not only as moments of information but also of sharing and debate, thus representing valuable opportunities to gather further opinions and proposals from participants and to understand specific needs and requirements. This aspect is of fundamental importance: by bringing out unexpected criticalities or needs, it ensures that, once accepted or resolved, these allow the activities envisaged by the Local Action Plan to truly represent real and concrete development opportunities for those living in the area.

The first event took place on 11 April 2023, on the occasion of the workshop for the definition of the sustainable local development strategy of the Metropolitan City of Messina within the PON Metro PLUS programme. On this occasion, a first public seminar entitled 'Environmental and social transition in Mirabella'

was held in Mirabella. The seminar presented various strategies for the activation of an ecological transition in the energy field. In particular, the main aspects related to energy communities were discussed, with the intervention of experts from the CNR; the production of bioplastics from agro-food waste, with the intervention of the University of Messina and Crossing srl, a spin-off of the Ca' Foscari University; biomass gasification plants for the production of energy, heat and biochar, by RESET srl. Also participating in the seminar were Giacomo Pinaffo secretary general of the Messina Foundation, Giovanni Ferro mayor of Mirabella Imbaccari, and Luigi Martignetti secretary general of REVES.

A second event was organised on the occasion of the regional food and wine fair 'Sicula Gourmet', financed by the Region of Sicily and hosted at Palazzo Biscari between 10 and 11 June. On 10 June, a seminar open to all on 'Sustainability within the agri-food chain' was organised, with a focus on the issue of reusing agricultural production waste. The seminar provided an opportunity to raise awareness of strategies for valorising, rather than dumping, agricultural waste and, with a view to circularity, proposed strategies and possible solutions for transforming a cost for companies with a negative impact on the environment (e.g. the cost of dumping waste) into a value for companies and the territory (e.g. making waste suitable for new sustainable production). The case study was provided by the 'Restart' project developed by the Messina Foundation within the European LIFE programme for the production of bioplastics from the waste of brass production.

A further event was held on 12 July 2023 to return the interviews with citizens, businesses and associations and to present the first initiatives to be focused on.

4.3 Gathered results

In general, the topics of efficient use of resources (water, energy, etc.) and the promotion of local culture also emerged transversally from the various community involvement activities. The agri-food system has also specifically shown interest in exploring avenues for pursuing greater sustainability and forms of collaboration to this end.

It is clear, however, that the initiatives proposed at the moment are only the first steps in the direction of environmental and social transition and will have to be progressively integrated within a broader planning on various fronts, so as to guarantee a truly structural change in the local system.

With this in mind, the first community involvement activities implemented will also have to be expanded, to stimulate the development of a greater collective awareness of sustainability issues and greater activation of the various stakeholders at all levels.

4.4 Legal framework

In order to ensure the effective implementation of the listed initiatives, an analysis of the regulatory environment was also carried out to check for any limitations or constraints.

4.4.1 *Development of a hub for the elaboration and dissemination of local transformation processes*

As far as the development of a pole for the elaboration and dissemination of local transformation processes is concerned, there are no particular regulatory references or constraints, neither at a national nor at a regional level, since it is an initiative left to the free collaboration between the municipality and private entities.

4.4.2 *Sustainable tourism*

The Region of Sicily has produced a norm for the recognition of the albergo diffuso in Sicily in Law no. 2 of 2 August 2013. With a view to promoting sustainable tourism, the Region recognises and regulates the albergo diffuso as a complementary form of support for tourism development for the realisation of the following objectives:

- deseasonalising and enriching the tourist offer
- recover the building heritage of historic centres and villages and reduce land consumption;
- stimulating the economy of historic centres and villages;
- give a new productive impetus to ancient craftsmen;
- prevent the depopulation of small municipalities far from traditional tourist circuits and offer new employment opportunities.

Some requirements for the recognition of the albergo diffuso:

- cannot arise in abandoned and uninhabited municipalities and villages;
- it involves at least 7 residential units;
- it envisages an internal space to be used for the sale of typical local products or, alternatively, an agreement can be stipulated with a neighbourhood shop.

The two elements identified that characterise the eligibility of the location:

- historical-environmental value: the diffused accommodation is located in an urban aggregate with characteristics of historical-environmental value;
- vitality and liveability: the areas must be inhabited, alive and lived in by residents and provided with services.

This standard is followed by decree no. 7 of 2 February 2015 in which further specifications are established. With these regulations, the albergo diffuso achieves full legal recognition also at the Sicilian regional level.

4.4.3 *Relamping*

As relamping for public lighting is one of the most virtuous energy efficiency measures, the GSE S.p.A. has set up a particularly advantageous incentive mechanism, which allows administrations to pay back their investment in a short time.

This mechanism is called White Certificates or Energy Efficiency Certificates (TEE) and rewards primary energy savings achieved through energy efficiency measures.

For each Tonne of Oil Barrel (TEP) saved to produce energy, a White Certificate is awarded, which can then be resold on the Gestore Mercati Energetici (GME) stock exchange, which is why they are also called Energy Efficiency Certificates.

The application for an incentive must be submitted to GSE S.p.A. and must meet precise standards.

Technologies for retrofitting public lighting are now well established, but to make the right investment choices a municipality must:

- equip itself with an adequate consumption management and monitoring system;
- internalise the necessary skills by appointing an Energy Management Expert (EGE) certified according to UNI CEI 11339 or activate a continuous technical assistance service.

In addition, it may be useful to use platforms such as the PELL (PUBLIC ENERGY LIVING LAB) or simulators such as the one provided by the GSE, which guide the collection, organisation, management, processing and evaluation of technical data of installations through forms for the census of consumption, functionality and infrastructure.

A municipality can access white certificates if it makes the investment directly and has appointed a certified EGE. Or it can delegate a private partner to which it has entrusted the implementation and management of the intervention if it is an ESCo (Energy Service Company) certified according to UNI CEI 11352, using an Energy Performance Contract (EPC). The Energy Performance Contract, widely diffused in Europe, has the purpose of involving private subjects (the ESCo) in the financing and realisation (including design and maintenance) of public works, with the advantage of gaining from the savings generated thanks to the efficiency improvement, while the company that carries out the energy efficiency interventions assumes all business risks, freeing the beneficiary from all organisational and investment burdens.

4.4.4 Renewable Energy Community (REC)

Between December 2018 and June 2019, two European directives were enacted that lay the groundwork for the introduction of the configurations of Renewable Energy Self-Consumers Acting Collectively and Renewable Energy Community:

- Renewable Energy Directive 2018/2001 (RED II),
- Directive on Common Rules For the Internal Market for Electricity 2019/944 (IEM Directive)

The Italian government started the transposition with the so called Milleproroghe Decree-Law 162/2019 (converted by Law no. 8 of 28 February 2020), by which the definitions of 'Renewable Energy Self-Consuming Group acting collectively' and 'Renewable Energy Community' were introduced for the first time in the Italian legislation.

Specifically, CERs are defined as a coalition of public and private users in the same area who voluntarily join together to produce, consume, share, sell and store energy through one or more renewable electricity generation plants. CERs are created with the aim of providing environmental, economic and social benefits to the area and its participants, contributing to the country's sustainable growth, the decarbonisation of the energy system and the pursuit of national energy resilience.

The transposition process then continued with the publication of ARERA Resolution 318/2020/R/eel (August 2020) and the MISE Decree of 15 September 2020, which gave concrete implementation to the provisions contained in the Milleproroghe.

The ministerial decree of the MISE of 15 September 2020 identified the economic contributions per kWh of shared energy, granted by the GSE for a period of 20 years, within the two configurations admitted to the valorisation and incentive service: the group of self-consumers of renewable energy acting collectively and the Renewable Energy Community.

Currently, these are the main characteristics/constraints describing RECs:

- Maximum total plant capacity of 200 kWp
- REC perimeter limited to the secondary cabin

With Legislative Decree No. 199 of 8 November 2021, the RED II directive was transposed into Italian law. The innovations introduced would represent important developments that would allow CERs to find concrete and widespread implementation in Italy. Above all, the increase in the maximum overall capacity of plants from 200 kWp to 1MWp and the extension of the perimeter of the CER from secondary to primary cabin.

However, in order to concretely implement the new regulations, the issuance of two implementing regulatory acts by MITE and ARERA is awaited.

Among the relevant regulatory sources that have been taken into consideration is the GSE document on the Technical Rules for access to the shared electricity valorisation and incentive service. The Technical Rules set out the requirements and technical and procedural aspects for accessing the economic contributions, indicating:

- The type of configurations allowed (group of self-consumers of renewable energy acting collectively and renewable energy communities)
- Financial contributions per kWh of shared electricity
- Production plants and eligible interventions
- Scheme for storage systems and electric charging infrastructure
- Essential elements of the Memorandum or Articles of Association
- Procedure for requesting service activation (document management and procedural requirements)
- Specific criteria for calculating economic contributions and electricity metering methods

Members of an energy community get a total benefit of about 179 €/MWh, with an estimated return on investment in a few years. This figure is obtained from the sum:

- Of the premium tariff of 110 €/MWh on the energy shared in the community, fixed for 20 years.
- The return of about 9 €/MWh on the energy shared to enhance the benefits brought to the system, fixed for 20 years.
- Of the return of about 60 €/MWh (average value estimated over 20 years) on the renewable energy fed into the grid, variable according to the trend of the Single National Price (PUN).

There is no limit for the municipality to participate directly in the establishment of a REC in its territory.

4.4.5 *Healthy and sustainable agri-food system*

With regard to the initiative to develop the conditions for greater collaboration between actors in the sector, there is no possibility to make any legal insights, as it will depend on the specific forms of collaboration that will be explored.

4.5 Financial resources

In order to ensure a concrete implementation of the initiatives, some current external funding opportunities that could support the implementation of the Plan were analysed.

4.5.1 PNRR / Promotion of renewables for energy communities and self-consumption

M2C2 of the PNRR includes investment 1.2 on the promotion of renewables for energy communities and self-consumption, with a budget of EUR 2.2 billion.

The intervention is aimed at public administrations, households, and micro-enterprises located in municipalities with less than 5,000 inhabitants and aims to install about 2 GW of new electricity generation capacity to support energy communities and collective self-production facilities.

The support will presumably be based on interest-free loans of up to 100 per cent of eligible costs for the construction of renewable energy plants coupled with energy storage systems.

Assuming an average annual production in Italy of 1,250 kWh/kW, the implementation of the measures would produce about 2,500 GWh per year, helping to reduce greenhouse gas emissions by about 1.5 million tonnes of CO₂ per year.

Following the entry into force of Legislative Decree No. 199 of 8 November 2021, transposing Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources (RED II), a round table has been set up with the regions, which should be given operational responsibility, through the adoption of a decree allocating resources among the regions, according to a criterion of the number of municipalities with fewer than 5,000 inhabitants. For the publication of the notices, the adoption of two decrees implementing Legislative Decree 199/2021 by ARERA and MITE is awaited.

<https://www.italiadomani.gov.it/it/Interventi/investimenti/promozione-rinnovabili-per-le-comunita-energetiche-e-l-auto-consumo.html>

4.5.2 Regione di Sicilia/ Public Notice for the establishment of Renewable and Solidarity Energy Communities

On 15 June 2022, the Sicilian Region published a Public Notice for the establishment of Renewable and Solidarity Energy Communities.

The objective of the Notice is to promote the establishment of "Renewable and Solidarity Energy Communities", as non-profit entities, set up to promote the process of decarbonisation of the economic and territorial system, to facilitate the production, "virtual" sharing and consumption of electricity generated mainly from renewable sources, as well as forms of energy efficiency improvement and reduction of energy consumption, also in favour of the reduction of energy and social poverty.

The Call for Proposals is aimed at Sicilian municipalities that undertake to set up one or more Renewable Energy Communities by taking on the role of Promoter. Solidarity-based RECs with the following characteristics are eligible for funding:

- Meet the requirements set forth in the GSE Technical Rules for access to the shared electricity valorisation and incentive service
- Indicate the Mayor as President of the REC to be established
- Include people affected by energy poverty (EPOV data) for at least 10% of the total number of participants
- Apply for access to the GSE shared electricity valorisation and incentive service
- The total budget is 5 million euro non-repayable, covering the following eligible expenses
- Technical-economic feasibility project, to which a maximum contribution of €7,500 is allocated
- Administrative and legal expenses incurred in setting up the legal entity and in applying for access to the shared electricity valorisation and incentive service at the GSE, with a maximum overall contribution of €2,500.

<https://www.regione.sicilia.it/la-regione-informa/avviso-pubblico-costituzione-comunita-energie-rinnovabili-solidali>

4.5.3 FESR 21-27

On 8/12/2022 the European Commission approved the ERDF Regional Programme Sicily 2021-2027. The total budget is EUR 5.86 billion, of which EUR 4.10 billion from EU funds and EUR 1.76 billion co-financed by Italy with national and regional resources.

The ERDF PR 2021 - 2027 includes the municipality of Mirabella Imbaccari in the Area Interna del Calatino.

The Specific Objective 5. 2 "Promote integrated and inclusive social, economic and environmental development, culture, natural heritage, sustainable tourism and security in areas other than urban" of Priority 6 "Towards Territorial Development Strategies in Sicily" of the FESR PR 2021 - 2027 intervenes in the 11 Sicilian Inner Areas with interventions aimed at strengthening essential services (education, health, accessibility, digitalisation) and to promote the creation and consolidation of enterprises that enhance the local productive fabric with particular regard to the agrifood sector and nature and cultural tourism, the latter integrated with investments for the enhancement of nature and cultural attractions. The importance of tourism development for the revitalisation of the Inland Areas also presupposes targeted interventions for the regeneration of historic centres.

Below are the types of interventions in response to the challenges.

- Essential Services through interventions for: i) the increase of safety standards and functionality of the road network and the digitalisation of services through a process of implementation of Intelligent Transport Systems (ITS); ii) the strengthening and improvement of school and training environments and support for didactic innovation; iii) favouring the reorganisation and qualification of territorial health services; iv) digitalisation of the local PA; v) work-life balance.

- Local development through interventions that, for both residents and travellers, in addition to the factors of attractiveness already supported in the 2014-2020 period, for a long-term strategic recovery will give increasing weight to criteria such as inclusiveness, sustainability and innovation in the services and content offered to (i) supporting investments for the local productive fabric including interventions for the redevelopment and enhancement of public spaces or facilities serving the local productive fabric; (ii) the qualification, enhancement and regeneration of the identity heritage for the overall development of territorial systems, including in villages and historic centres, through interventions for the redevelopment of open spaces (e.g: squares, public and sporting spaces, creation of public areas and collective equipment); iii)

the strengthening of tourist reception systems (e.g.: enhancement of public contexts and spaces to favour tourist and residential attractiveness); iv) the enhancement of the accessibility and usability, both physical and cognitive, of tourist attractors and itineraries, thematic routes, roads, paths able to connect hamlets, villages and inhabited centres within the borders of each IA according to sustainability and innovation logics; v) the safeguard, valorisation and revitalisation of the historical, artistic and cultural heritage and of public buildings/spaces, also in an inclusive key and where cultural vitality is scarce, favouring the participation of resident communities (in synergy and complementarity with SO 4. 6 of the PN Culture and in territorial demarcation with OS 4.6 of the PR); vi) integrated interventions oriented towards the protection, valorisation and fruition of naturalistic areas (excluding Natura 2000 sites) also for ecotouristic purposes; vii) the development of alternative, soft and sustainable forms of mobility.

- Ecosystem services through interventions for: (i) the protection of areas falling within Natura 2000 sites; (ii) preserving biodiversity and marine and terrestrial areas of naturalistic value; (iii) combating hydrogeological instability and coastal erosion; (iv) promoting adaptation to climate change; (v) seismic risk mitigation; (vi) emergency management; (vii) improving the Integrated Water Service in all segments of the supply chain in compliance with the relevant enabling condition; (viii) supporting integrated strategies for reducing waste production and encouraging reuse and composting, in compliance with the relevant enabling condition; (ix) building and upgrading infrastructures, equipment and means for the management, collection, reuse and recycling of waste and processing scraps, in compliance with the relevant enabling condition; (x) encouraging the creation of Energy Communities; (xi) installing plants for the energy valorisation of biomasses; (xii) reducing primary energy consumption in buildings and public facilities and public lighting networks.

The territories will have to draw up their own Territorial Strategy with a medium- to long-term time profile (10 to 15 years), the minimum content of which includes the following elements

- a) the geographical area covered by the strategy;
- b) the analysis of the area's development needs and potential, including economic, social and environmental interconnections
- c) a description of the integrated approach to respond to the development needs identified and to realise the area's potential;
- d) a description of the involvement of partners in the preparation and implementation of the strategy.

This Plan may thus provide useful ideas to be integrated into the Calatino Territorial Strategy in order to obtain dedicated funding.

<https://www.euroinfosicilia.it/programmazione-2021-2027/>

4.5.4 *Support Fund for Marginal Municipalities 2021-2023*

The fund is an initiative of the Agenzia per la Coesione Territoriale (Agency for Territorial Cohesion) set up to foster social cohesion and economic development in municipalities particularly affected by depopulation and for which there is a significant lack of attractiveness due to the reduced offer of tangible and intangible services to people and economic activities, in compliance with the complementarity with the national strategy for internal areas. The fund is endowed with 180 million euro assigned to 1,187 municipalities (including Mirabella Imbaccari), selected for their particularly disadvantaged conditions, with a negative population growth rate both in the long and short term, a higher than average Social and Material

Vulnerability Index (IVSM) and a lower than average income level of the resident population. The Decree identifies 1,101 municipalities in the South, to which more than EUR 171 million will go.

The resources may be used for three categories of intervention in areas subject to depopulation:

- adaptation of municipal properties to be granted on free loan for the opening of commercial, craft or professional activities;
- granting of subsidies for the start-up of commercial, craft and agricultural activities
- granting subsidies for those who move their residence and habitual abode to municipalities in inland areas, as a contribution towards the cost of purchasing and renovating property.

These municipalities will also be able to grant their property free of charge to be used as a main residence or to carry out agile work.

4.5.5 *PROSPECT+*

At the beginning of 2024, the fourth and final edition of the European Commission-funded PROSPECT + call for local and regional authorities will open, offering the opportunity to participate in an in-depth programme on innovative sources of financing for energy efficiency projects, with a specific course in Italian for Italian authorities.

In PROSPECT+, municipalities, supra-municipal entities, and their energy agencies can access in-depth workshops on innovative financial schemes to implement energy efficiency measures included in their PAESC (or other planning instruments). The programme, which is based on peer learning, includes modules on different schemes, such as energy performance contracting, third-party financing, revolving and intracting funds (or even internal performance contracting) or energy cooperatives and/or communities. The programme covers five thematic areas: public buildings, private buildings, public lighting, transport and intersectoral.

Participation is free of charge and all local and regional public authorities and their energy agencies in Europe can apply.

<https://www.h2020prospect.eu/get-involved>

4.5.6 *INVITALIA CULTURA CREA 2.0*

Cultura Crea 2.0 is aimed at micro, small and medium-sized enterprises in the cultural and creative industries, including teams of people who want to set up a company, and at third sector actors who want to realise their investment projects in Basilicata, Campania, Apulia, Calabria and Sicily.

In particular:

a) the Title II incentive for the 'Creation of new enterprises in the cultural industry' finances:

- teams of natural persons wishing to set up a business, provided that the establishment takes place within 30 days of the notice of admission to the incentives
- companies established in corporate form for no more than 36 months, including cooperatives

b) the Title III incentive for the "Development of cultural industry enterprises" finances enterprises established in corporate form for not less than 36 months, including cooperatives

c) the Title IV incentive for the "Support to third sector actors in the cultural industry" finances non-profit organisations, social enterprises, voluntary organisations, associations for social promotion (APS)

Cultura Crea 2.0 is also aimed at enterprise networks for integrated projects. Each enterprise forming part of the network must submit an application for a grant related to a single investment programme.

The instrument provides for subsidised zero-interest financing and a non-repayable contribution on eligible expenditure, with an additional bonus for young people, women and companies with a legality rating. The incentives, granted under the de minimis regulation, can cover up to 80 per cent of total expenses, which can be raised to 90 per cent in the case of a bonus. Tutoring is also envisaged for all businesses that request it, up to a maximum value of EUR 10,000.

Applications can only be submitted online. Invitalia evaluates business plans, disburses funding and monitors the implementation of business projects.

<https://www.invitalia.it/cosa-facciamo/creiamo-nuove-aziende/cultura-crea-2-0>

4.5.7 INVITALIA- ITALIA ECONOMIA SOCIALE

Italia Economia sociale is an incentive from the Ministry of Economic Development aimed at companies carrying out activities of social utility and general interest. It is managed by Invitalia.

The measure is active throughout Italy and supports investments that have one of the following objectives:

- employment increase of disadvantaged workers
- social inclusion of vulnerable people
- enhancement and protection of the environment, urban regeneration and sustainable tourism, and environmental sustainability of business activity
- preservation and enhancement of historical and cultural assets or the pursuit of cultural and creative purposes or social benefits of significant public interest within a community or territory.

Investments of between EUR 100,000 and EUR 10 million are eligible for financing, involving:

- realisation of productive investments
- increased employment of disabled workers

Eligible expenses include:

- company land and related facilities, up to 10% of the total eligible productive investment

buildings, building/construction work, including renovations

- machinery, plant and various equipment, brand new

- computer software, patents, licences, know-how and technical knowledge.

Within the limit of 20% of the investment expenditure, the following expenses are also eligible, insofar as they are functional to the implementation of the investment programme

- operating expenses relating to raw materials, consumables and goods, ordinary services
- expenditure on specialist training for the company's partners and employees
- expenses for specialist consultancy (e.g. economic and financial feasibility studies, design and work supervision, environmental impact assessment studies, services provided by technology transfer centres, experimental stations, digital innovation hubs and business incubators)
- charges for building permits and statutory inspections
- expenses for obtaining environmental or quality certifications.

The subsidies consist of

- subsidised financing at a rate of 0.5% per annum and with a maximum duration of 15 years, granted by the Ministry of Economic Development from Cassa Depositi e Prestiti resources, which must necessarily be combined with a bank loan granted by a lending bank. The combination of the above-mentioned financing guarantees overall coverage of up to 80% of eligible expenditure, of which 70% is represented by the subsidised loan and the remaining 30% by the bank loan
- a non-repayable grant of between 5% and 20% of total eligible expenditure. For productive investments, the amount of the contribution varies depending on the size of the company and the location of the subsidised programme; for projects that provide for increasing the employment of disabled workers, the non-repayable contribution is ALWAYS 20%.

<https://www.invitalia.it/cosa-facciamo/rafforziamo-le-imprese/italia-economia-sociale>

4.5.8 Fund for small municipalities with a tourist vocation

The Fund is aimed at enhancing municipalities with a population of less than 5,000 inhabitants, classified by the National Institute of Statistics as municipalities with a vocation for tourism, so as to encourage innovative interventions in the areas of accessibility, mobility, urban regeneration and environmental sustainability.

The eligible interventions are aimed at:

- increase the accessibility and enjoyment of the tourist offer by people with disabilities
- support the creation and development of new tourist itineraries and destinations that enhance the territorial identity and cultural vitality of small municipalities
- upgrading urban environments and areas affected by hydrogeological instability by means of infrastructures for the tourist enjoyment of the area
- developing forms of sustainable mobility (e.g. bicycle shelters and/or depots; camping sites; open-air tourism; tourism on water, sea, lake and river routes and marinas)

- creating, producing and disseminating live performances and festivals;
- promote and develop local tourism in the primary sector and traditional craft activities
- reduce the environmental impact of tourism;
- increase the environmental sustainability of tourist destinations.

<https://www.ministeroturismo.gov.it/fondo-per-i-piccoli-comuni-a-vocazione-turistica/>

5 FUTURE ACTIONS

5.1 Action program for each priority

This section is dedicated to compiling for each initiative the specific activities already undertaken, in progress or planned, in order to define the path for their full implementation.

5.1.1 *Development of a pole for the elaboration and dissemination of local transformation processes*

As part of the programming activities of the territory's economic, social and urban policies, the Mirabella Municipality has approved a framework agreement with the MeSSInA Foundation called 'Palazzo Biscari, Bene Comune' (Biscari Palace, Common Good), the purpose of which is to promote a 'Park of Knowledge' in the monumental complex of Biscari Palace, owned by the Foundation, as a further hub within the network of the Parks of Beauty and Science already active in other Sicilian municipalities. Some of the objectives to be pursued:

- Bringing together social and productive organisations by promoting socio-economic systems capable of generating alternatives in the main areas of human functioning, linked to the ecological transition in the areas of energy, sustainable mobility, social-green housing, greenhouse gas emissions, agrifood and the circular economy and sustainable urban metabolism
- To complete and characterise the educational offer on the territory, promoting educating communities capable of combating social inequalities and educational poverty.
- Supporting processes of change to counter inequalities and climate change.

The Park of Knowledge is divided into three large areas: memory and knowledge; the knowledge of doing and the knowledge of relationships. The former stables will house state archives, the Foundation's archives and collections, and the Municipal Library. Interdependent with the conservation space will be the residential training campus, which will host, among other things, national and international seminars also aimed at the transfer of technology and knowledge to support the ecological transition, the summer school in conservation and restoration of contemporary art (with the scientific responsibility of the curator of the Guggenheim Museum), the training services of the Agenzia di Sviluppo dell'Economia Sociale e Solidale and the residences and workshops aimed at connecting traditional bobbin lace work with the most advanced research in contemporary design. The rooms on the first floor will host, together with the social workshop for bobbin lace production, an artistic-museum-educational itinerary on the philosophy of science and

knowledge. The former school will house the ICT technological innovation centre. The theatres, the multi-purpose sports facility and the outdoor spaces will be used for socialisation paths open to the entire community. Therefore, these spaces and the cloisters, i.e. the inner courtyard, the access point to these services will be for public use.

As a whole, the Park of Knowledge will be a resource centre for all the schools in the territory and the wider area.

Also on the basis of this agreement, the Municipality and the MeSSInA Foundation subsequently participated in the drafting of the REP (Priority Educational Network) Agreement, which involves 22 schools, the University of Catania, 14 municipalities and 14 Social Economy Organisations in the wider Calatino territory. This collaboration is aimed at improving the vision and mission of the educating community of the individual territories, with shared actions for the education, education and lifelong training of the area's students with a view to preventing school drop-out. The project envisages actions to support students in situations of socio-economic-cultural hardship and aims, specifically, at implementing the right to study, promoting the culture of legality and pro-social skills. In this context, the "Parco dei Saperi" of Mirabella Imbaccari will therefore be able to pursue its aims by making its services and facilities available to a very wide territorial basin.

Furthermore, the Mirabella Municipality is currently engaged in the elaboration of a twinning project with the German municipality of Schoenaich within the European CERV (Citizens, Equality, Rights and Values) programme. One of the objectives of the twinning will be to continue the process of social and ecological transition undertaken with GRAPE through awareness-raising activities and exchange with other experiences within the European context.

5.1.2 *Responsible tourism*

The actions and skills needed to start the project so far considered are:

- Definition and mapping of available beds, through the establishment of an evaluation nucleus to certify the quality of the offer;
- Definition of the costs for the creation of an IT platform to promote the project itself with the related annual running costs for keeping it in the top-ten of search engines.

Networking for this initiative involves:

- The municipality of Mirabella Imbaccari, as project proponent;
- The owners of accommodation facilities that are only active for part of the year;
- The owners of the numerous vacant houses within our municipality;
- Establishments dedicated to catering;
- The farms that will be able to offer tasting and then sale of their fresh or processed products, with the possibility of setting up internships and information trails linked to local crops, e.g. olive, almond, saffron, asparagus, oregano, prickly pears. This possibility fits perfectly into the framework of sustainable and respectful tourism; most of our local crops follow traditional methods of cultivation and processing that respect the environment;

- The Messina foundation which, through guided tours of Palazzo Biscari, will introduce visitors to our history and craftsmanship with lace-making, which then finds its visual expression in the "Municipal Museum of Lace-making";
- Local tourist agencies that will propose excursions to nearby areas to discover archaeological parks and Baroque and mediaeval architecture.

5.1.3 *Relamping*

The following skills and actions will need to be defined for the start of the project:

- Definition and mapping of the project area;
- Definition of costs during project start-up and development;
- Definition of running costs;
- Specific engineering and technical skills for the installation of the systems.

Networking is essential for the success of the project, which requires specific skills and an excellent knowledge of the bureaucratic processes necessary for start-up and, in particular, financing. Most of the skills needed to implement the project are not internal to the municipality, and therefore it will be essential to actively involve the citizens and local stakeholders in order to establish a common vision, define guidelines and identify the necessary human and financial resources.

5.1.4 *Renewable Energy Communities (REC)*

For the creation of the REC, at the initiative of the municipality, it will be necessary to proceed with the planning and implementation of the following activities:

- Complete mapping and analysis of the energy consumption and needs of public buildings, as well as the production potential through the installation of photovoltaic panels;
- Mapping and complete analysis of the energy consumption and needs of private buildings interested in joining, as well as production potential through the installation of photovoltaic panels
- Creation of an appropriate economic model for the REC;
- Defining the investments and financial resources necessary for the construction and maintenance of the systems
- Identifying specific sources of financing and realisation of any investments;
- Formal establishment of the REC and its activation.

Networking is essential in the development of such a project. These are the main actors to be involved

- Mirabella Imbaccari Municipality, as the main actor involved;
- The Messina Community Foundation

- The citizens of Mirabella, who, if involved within an energy community, will have to transform themselves from energy consumers to active subjects within an energy system in which they will have the possibility of being both producers and consumers of electricity (prosumers).
- An Energy Service Company, for the specific technical skills needed to carry out the activities listed above.

The actions of mapping the energy consumption and needs of public buildings have already been carried out. In particular, within the municipality of Mirabella Imbaccari, 8 public utilities have been identified (highlighted in the table below), which could become the fulcrum of the Renewable Energy Community to be created.

To these are added a further 20 public users that could be involved as prosumer members, should suitable areas be identified for the construction of further plants.

The data was collected on a documentary basis with the support and direct involvement of the municipality's technical staff.

The data collected include:

- master data such as facility address, reference POD and power in kWh committed;
- current usage;
- electricity consumption, deducible from the bills collected.

The data was catalogued and systematised in a database that allows the recorded energy consumption of each building to be viewed.

In addition, the municipality published a public notice on 17/04/2023 to acquire expressions of interest, from public and private entities, in setting up a Solidarity REC. Participation in the initiative will take place in two stages.

Stage 1:

- Submission by interested parties of an application for expression of interest with simultaneous communication of the POD/counter code (found on the bill) of the utility in the applicant's name;
- For natural persons, presentation of ISEE;
- For legal persons, presentation of the last deposited financial statements;

Step 2:

- As it is the Administration's intention to favour people living in energy poverty, in order to assess the compliance of applicants with the parameters defined by the Italian Observatory on Energy Poverty (OIPE), phase 2 will proceed through a "participatory survey" aimed at identifying the needs of participants on the basis of which a ranking list will be drawn up. Citizens will be involved, through the application of a participatory methodology, not merely quantitative, to avoid on the one hand the emergence of self-exclusion mechanisms and on the other hand to ensure that the expectations of the candidates are as

adherent as possible to the goals of the initiative, to ensure the achievement of greater efficiency (energy-economic) and greater social and environmental impact.

Once the collection and examination of applications is completed, the realisation of the ERC economic model can proceed to ensure its sustainability.

5.1.5 Healthy and sustainable agri-food system

One of the most important steps for the activation of conditions that can lead to an economy of scale for Mirabellese production is to initiate an initial consultation with the area's agricultural producers and define how and to what extent the advantages of a consortium system can effectively meet the needs of the companies.

As a second step, a space will have to be made available for the creation of a pole within which companies can come together as a consortium and can use it for common services. To this end, the Mirabella municipality intends to participate in the 'Comuni Marginali' call for tenders for the funding line dedicated to the renovation of municipally owned buildings and make them available on a free loan basis for the opening of commercial, craft or professional activities that are of use to the local production system.

5.1.6 MONITORING SYSTEM FOR ACTIVITIES' IMPLEMENTATION

The monitoring system of the implementation of the activities envisaged by the Local Action Plan envisages the drafting of an update report that the Mirabella Municipality will produce every 6 months. This report will indicate the progress achieved or the criticalities (from a legal, financial or other possible constraints point of view) encountered in the different stages of implementation of the activities and will be made available to citizens through the Municipality's website and its social channels. Furthermore, the Mirabella Municipality will organise meetings open to all interested citizens to discuss and disseminate the results obtained.

6 CONCLUSIONS

The document, starting from the analysis of the territorial context and its strengths and weaknesses, as well as from the sharing with the other foreign communities involved in the GRAPE project, identifies some priority areas of intervention to pursue the environmental and social transition of the Mirabella Imbaccari territory. A number of specific operational initiatives that go in this direction are then presented and analysed in detail. The initiatives are not exhaustive to complete the broader transition process, but they lay the foundations on which further actions can be developed.

. In fact, the feedback from the area shows that there is an interest in the issue and a willingness to get involved: the current plan must act as a catalyst for local energies and resources to consolidate community awareness and develop a broader, long-term strategy leading to full sustainability.

7 ANNEXES

- questionnaire administered to citizens

- questionnaire administered to businesses
- questionnaire administered to associations

Local Social Green Resilience Action Plan

Community: Bonares (España)

TABLE OF CONTENTS

1 INTRODUCTION.....3

1.1 ANALYSIS OF CONTEXT.....4

2 DEFINITION OF THE CONSOLIDATED VISION14

2.1 PARTICIPATION PROCESSES.15

3 DEFINITION OF ACTIONS TO PURSE THE DIFFERENT OBJECTIVES19

4 ACCOUNTABILITY26

5 CONCLUSIONS.....26

1 INTRODUCTION

The Grape project, led in the Huelva municipality of Bonares by the town council, and the Coopinte cooperative, has the mission of promoting a local action plan that makes possible a green and digital socio-ecological transition through the social economy.

A green and digital socio-ecological transition refers to a process of change in which a society seeks to transform its economic and social development model towards a more sustainable approach, both from an environmental and social point of view. This transition implies the adoption of practices and technologies that promote environmental protection, energy efficiency, reduction of greenhouse gas emissions and the preservation of natural resources.

Bonares, as expressed in this report, has many of the characteristics that make it an ideal space to promote a socio-ecological transition within the framework of the 2030 Agenda and in favor of a more sustainable development. It can be highlighted: its location in an environment of high ecological value such as the Doñana natural space; its productive model, especially dependent on the agri-food sector; and its tradition in favor of the social economy as the economic engine of the territory. As well as the prevailing need to address challenges that range from the global, such as the effects of climate change, to the local, such as business diversification and the generation of alternatives for the younger population.

The proposal that is presented below is part of a participatory, collaborative and co-creation process that combines the work that has been done, especially promoted by the local City Council, to generate plans that favor sustainability in issues such as employment or mobility, together with occasional meetings with different groups, as well as participation in a futures design workshop, and, of course, the knowledge and exchange of experiences shared by the project partners.

The project and its development have taken into consideration three key strategic axes, which, in turn, have conditioned the phases of the plan development process.

These are:

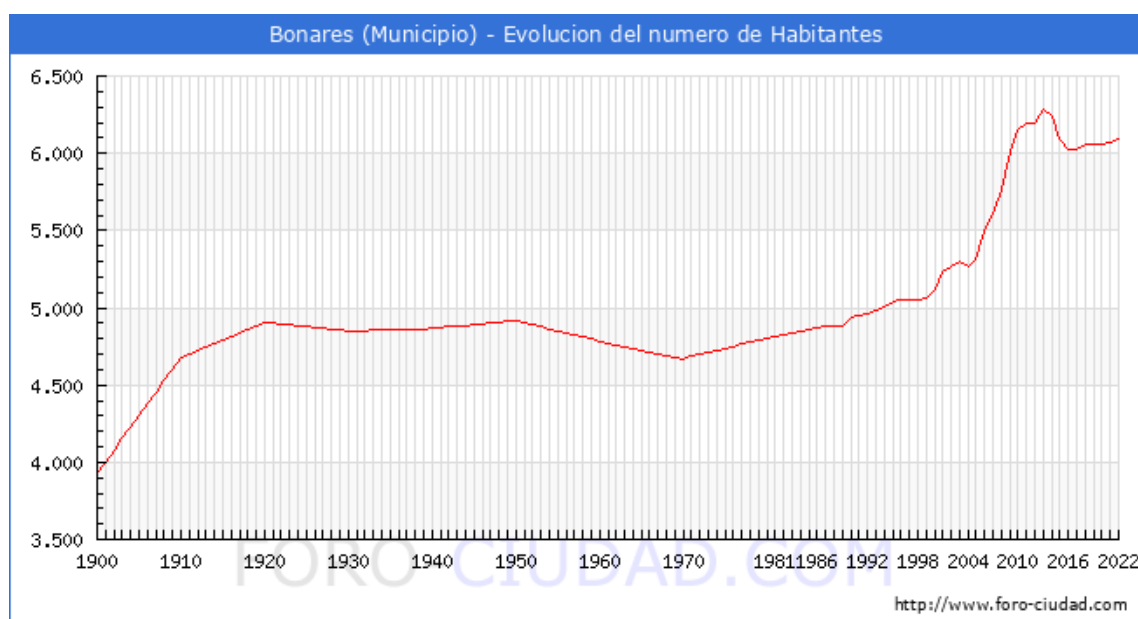
- Risk and vulnerability assessment: The City Council performs a SWOT assessment of the risks and vulnerabilities related to the economy, energy and climate in Bonares. This has helped to identify critical areas and prioritize the necessary actions.
- Promotion of citizen participation: Involving citizens, local communities, companies and organizations in decision-making and the implementation of solutions is a determining factor. Active participation and inclusive dialogue has generated innovative ideas and increased local commitment.
- Promotion of the sustainable local economy: Demonstrate and accompany a key sector in the development of the territory, which also has a high level of consolidation in Bonares.

1.1 ANALYSIS OF CONTEXT

Bonares is a Spanish municipality in the province of Huelva, in the northern area of Doñana (National Park). A space of special protection, and internationally recognized as a World Heritage Site by Unesco and a Biosphere Reserve; It belongs to the autonomous community of Andalusia. The town is located on the banks of the Río Tinto, giving it, therefore, a very direct connection with singular environmental elements, as well as with limitations for its conservation, and which also provide identity elements (both economic, social and cultural), and possibilities branding for your products and services for local, regional, national and international markets.

The superficial extension of the municipal term is 66 km². According to data from the National Institute of Statistics (INE) published as of January 1, 2022, the number of inhabitants in Bonares is 6,093, and a density of 91.82 inhab/km². Therefore, it is considered a medium-sized municipality.

Figura 2: Figure 2: Graph of demographic evolution of Bonares between 1999 and 2022:



In the case of Bonares, a change is taking place in relation to the depopulation trend that is taking place in the municipalities of the province of Huelva. According to data from the Commissioner for the Demographic Challenge of the Diputación de Huelva, a total of 60 municipalities have fewer than 5,000 inhabitants (75%). 55% of the towns of Huelva have been losing population since the year 2000. Bonares has slightly increased its population, although it faces some challenges common to the towns of the so-called emptied Spain.

- Young people especially tend to leave rural areas in search of higher education and employment in more dynamic sectors.
- Aging of the population.

- The lack of job opportunities and the dependence on traditional economic sectors, such as agriculture, which can be seasonal and precarious in terms of employment, are factors that can lead to depopulation. The lack of economic diversification and the difficulty in attracting new industries and companies limit employment opportunities.

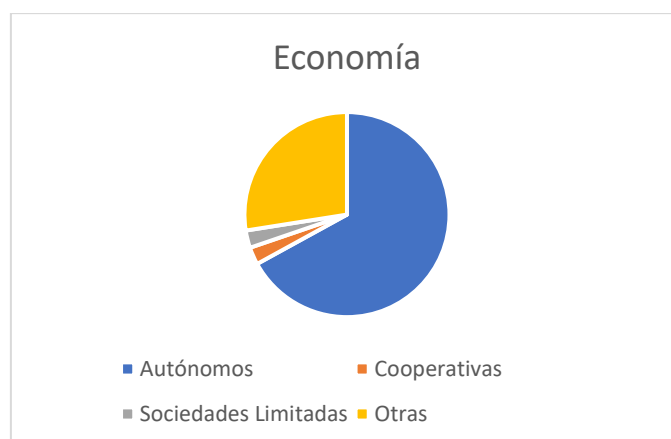
According to the data made public by the Ministry of Finance, the average gross income per taxpayer in the municipality of Bonares in 2019 was €18,282, €438 more than in 2018. Once the personal income tax settlement and the contribution to the Social Security the average disposable income per taxpayer stood at €15,596, €412 more than in 2018.

The basis of the economy is agriculture and specifically irrigated agriculture (red fruits: strawberries, raspberries and blueberries) which drives other tertiary productive sectors (transport and services). Being a priority and capital activity for the municipality. There is a high dependence on this productive sector. Agriculture in Bonares, as in much of the province of Huelva, is based on an intensive production system. This implies the use of modern techniques, greenhouses and efficient irrigation systems to maximize crop productivity.

The other factor to take into account is the traditional and determined bet, with the leadership of the City Council, for the promotion of the social economy in the municipality, and especially betting on the cooperative regime for its business sector. It also highlights its commitment to models that promote transformative economies as alternatives to generate fairer, more inclusive and sustainable development. This position, backed by the local administration, and with an important business fabric of the social economy means that, in general terms, there is a better disposition to address economic development taking into account aspects such as:

- The sustainability.
- Equity and social justice.
- Democratic participation.
- Cultural diversity.
- Quality of life.

Figure 3. Representation of the Economy in the municipality of Bonares



COMPANIES	NUMBER
Self-employed (butchers, carpenters, greengrocers, grocers, hairdressers, clothes shops, plumbers, consultants, etc.)	195
Cooperatives (agricultural, transport, mechanical workshop, school, 2nd degree services),	8
Labour Limited Companies	8
Companies of other legal forms (S.L., S.L.U., S.A. , C.B)	80

Bonares is a town that has always been characterized by cooperativism. Its first cooperative (rainfed agricultural cooperative) was established in 1957. Its activity was the transformation and sale of wine, oil, cereals, nuts and the sale of phytosanitary products and fuel. In 1976, the San Cristóbal Industrial Cooperative was founded. This cooperative is dedicated to the repair, maintenance, sale of diesel, tires, oil and spare parts in general, as well as the provision of management services to its members, most of them small self-employed. Currently, this cooperative member of the Coopinte cooperative has had a turnover of around 2,200,000 euros. San Cristóbal has 8 workers on its staff, about 60 partners who have about 75 trucks.

In the 1970s and 1980s, after a strong economic crisis that hit the local economy, until then based on the dry farming, industry, ceramics and goods transport sectors, led to the search for solutions for socioeconomic recovery. The City Council promotes the creation of a group of farmers interested in developing irrigated agriculture, with hardly any experience on this crop, nor enough water, and after many meetings in 1983 the group of farmers is constituted as Cooperativa Hortofrutícola de Bonares, Bonafru , motor of the socioeconomic development of the municipality. A firm commitment was made to the promotion of the agricultural sector and for it to serve as a locomotive pulling the other productive sectors. At present, Bonafru has a turnover that amounts to €20,014,948.55 in the last year, the number of partners is currently 410, of which 47 are active members; the volume of product sold for export: strawberry: 1,670,452.87, raspberry: 1,231,331.48, blueberry: 895,528.32.

During all these years, with fluid communication between the cooperative members, the self-employed and the City Council, the constitution was decided in the year 2000 of the second degree Cooperative Cooperation and Development of Bonares, COOPINTE, which currently brings together 3 Cooperatives from the insurance sectors (Mediadores de Seguros y Cooperación Solidaria, S. Coop And.), which is in charge of managing the policies of all member entities as well as individuals who wish to do so, transportation (Cooperativa Industrial San Cristóbal), which we have previously mentioned, and agriculture (Cooperativa Hortofrutícola de Bonares, Bonafru) of which we have also spoken, as well as the Local Administration. In addition, the mayor is also appointed as president of the same. The greatest contribution of this cooperative is to develop an innovative process of intercooperation that reduced costs and increased the economic and social benefits of associated entities and individuals (economy of scale). With regard to the provision of services by Coopinte, the entity has signed various agreements with entities and professionals in sectors such as financial services, insurance, telephony, occupational risk prevention, surveillance of health, etc., in order to facilitate access to such services, under preferential conditions, for members of the cooperative. The connection between Coopinte's inter-cooperation activities and Corporate Social Responsibility occurs to the extent that the cooperative's activities are mainly aimed at empowering the social sectors of the rural world.

It is important to highlight the value that is given to training. The training represents an important contribution to the endogenous development of this rural world, to the maintenance and improvement of employment, and to the diffusion of the social economy in the area, since they are aimed at professional sectors with a low and medium level of qualification, as well as to unemployed people who are looking for a professional outlet with it.

The business fabric of the town is reflected as follows:

195 self-employed workers from different branches of activity (butchers, carpentry, greengrocers, grocery stores, hairdressers, clothing stores, plumbing, consultancies, etc.) 8 Cooperatives (agricultural, transport, mechanical workshop, school, 2nd grade service), 8 Labor Limited Companies, 56 associations, Sports Clubs... ; In addition, it would be necessary to add some 80 companies of another type of legal form (S.L., S.L.U., S.A., C.B... construction,

It could be highlighted, according to official data, that in 2019 Bonares ranks as the 33rd municipality with the highest average gross income in the province of Huelva, and in position 271 in the community of Andalusia, 4070 at the National level.

According to data published by SEPE in April 2023, the number of unemployed has dropped by 30 people in the town. Of the 30 people who left the unemployment list in Bonares, 18 men and 12 women fell. The total number of unemployed is 174, of which 71 are men and 103 women. People over 45 years of age with 89 unemployed are the age group most affected by unemployment, followed by those between 25 and 44 years of age with 69 unemployed, the least numerous group are those under 25 years of age with 16 unemployed. By sectors we see that the services sector is where the largest number of unemployed exists in the

municipality with 97 people, followed by agriculture with 41 unemployed, construction with 17 unemployed, industry with 10 unemployed and finally people without previous employment with 9 unemployed.

Finally, it is important to point out the participation of the City Council in spaces for inter-cooperation and alliances, for example, with: the Social and Alternative Economy Network (REAS), FEANSAL, FAECTA etc...

On the other hand, it is very relevant to highlight the role of the Bonares City Council as a dynamic actor and leader of many of the socio-economic transformation initiatives of the municipality.

Figure 4: Analysis of impacts. Prepared by the City Council of Bonares.

NEGATIVE IMPACTS	POSITIVE IMPACTS
<p>Unemployment: it is the most relevant impact we have suffered, as well as the transfer of workers from the construction sector to the agriculture sector, a sector that has better endured the crisis, although now it seems weaker.</p> <p>Drought: we are suffering from longer periods of drought, so the lack of water in irrigation is more pronounced, fully affecting the agricultural production of red fruits, the most important in our municipality.</p> <p>Lack of entrepreneurship: the economic crisis has created a negative environment for opening new businesses.</p> <p>The deterioration of Public Health: we have realized that our health system has not supported the impact of the epidemic, so it should be strengthened, and above all, the Health Centers in small municipalities.</p>	<p>The social economy has resisted other forms of business. The collaboration of companies and the union has made the crisis lessen a bit.</p> <p>The promotion of the Local Administration in local investment: with the collaboration of other administrations, there has been the opening of new investments that, due to the fiscal rules that were being applied, prevented the use of liquid remnants from other years.</p> <p>Promoting the use of new technologies: teleworking, the use of social networks, ... has undergone a great advance in the population due to the strong confinement that we have suffered</p>

It is also necessary to highlight the institutional weight (especially reflected in the Diputación de Huelva, the Commonwealth of the County, etc...) and in key decision-making for the Doñana Region, and for the province of Huelva.


In relation to global contexts, Bonares suffers the effects of climate change. The data provided by the Ibero-American Observatory for Sustainable Development and Climate Change of the Diputación de Huelva show a clear rise in temperatures, which are having consequences such as an increase in forest fires, or storms on the coast, as well as a increase in mosquitoes in the summer periods. Significant flooding is expected in the Doñana Natural Area. The wine sector in Huelva is also a field that is undergoing changes due to the weather. The harvests at the end of August and September that justified festivals such as those in La Palma del Condado are beginning to take place in July. In the last 20 years, since 2000, the grape harvest in Huelva has been brought forward 20 days, at a rate of one day per year. In the case of the strawberry sector, work is being done on experimentation with new varieties that may need less water and are more resistant to these rises in temperatures. Likewise, the municipality, as well as the region of which it is a part, the province and the country the consequences of the effects of the Covid 19 pandemic, and, lately, those of the war in Ukraine (which has led to a clear increase in in issues related to energy, food costs, and therefore, in the repercussion of the 'pocket' of the citizenry).




These realities show scenarios with high levels of uncertainty. At the same time, they demonstrate the importance of remaining committed to sustainability to guarantee equity, justice, inclusion and sustainability in the territories. Hence, to understand the present, and especially, to move towards a future of well-being, it is essential to promote models of development and coexistence based on social justice and environmental security.

The analysis of the context and, especially, of the impacts established by the Bonares City Council in alignment with the 2030 Agenda offers an interpretation based on prioritizing the Person axis, and the Planet axis.





Figure 5: SDG Commitment

PEOPLE

1. Just transition (leave no one behind)	5 Considering that everyone, whatever their social and economic condition, should have the same opportunities	
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2. Health and happiness	5. Health is a fundamental pillar in every society, without which happiness cannot be achieved	
3. Culture and Community (Heritage, Social Capital)	5 Democratic governance of transition processes	
4. Democratic governance of transition processes	5. The Local Administration must always have the opinion of its citizens.	

PLANET

1. Building and renovating in an energy and resource efficient manner.	5 Caring for the environment and limiting resources.		
2. Accelerate the shift towards sustainable and intelligent mobility	5 Caring for the environment and resource constraints		

It is relevant to highlight the participatory and governance culture of the municipality. The City Council has promoted participation spaces for plans, for example, mobility, or has an online Open Government space, in which co-responsibility and participation of neighbours is encouraged.

The City Council carried out the following SWOT. The results of the SWOT that are collected below serve to have an approximate image of the challenges and opportunities of the municipality of Bonares.

STRENGTHS (what the local community currently excels at, supporting the transition. Eg: strong cohesion, heterogeneity of actors, strong financial resources, etc.):

- Great associative context.
- Zero indebtedness of the Local Administration.
- Strong cohesion between the associative fabric and the City Council.
- Cooperatives.
- Agriculture pulls other productive sectors.

WEAKNESSES (where the local community needs to improve to achieve the transition. Ex: lack of social cohesion, lack of financial resources, lack of infrastructure, etc.)

- Lack of entrepreneurial culture.
- Youth unemployment and their emigration abroad.
- Small farmers with few hectares.

OPPORTUNITIES (favorable external factors that could give the community an additional boost to achieve the transition. Ex: available national/international funding, new willingness of young people to return, etc.):

- European financing plans and those of other administrations that help this change.
- Access to new procedures associated with technological evolution.

THREATS (negative external factors that have the potential to jeopardize the community's achievement of the transition. Ex: increasing effects of climate change, national regulation affecting local development, etc.):

- Lack of water resources for agriculture.
- Increase in temperature affecting Agriculture
- Impoverishment of the culture of Social Economy and Cooperatives.
- Lack of generational relief in agriculture.
- Youth unemployment and their emigration abroad.
- Lack of tourist offer.

The analysis of the 'threats' has answered the question: how will the environmental/social/economic crisis affect the local community in the medium-long term if measures are not taken?

As reflected in the context, there are global situations that already have effects in the municipality:

- In terms of the PLANET, there is a rise in temperatures, which are changing the traditional seasonality of the territory.

Some of these consequences:

- According to data from the Andalusian Environmental Information Network (Rediam) , between 2008 and 2018, 10% of fires and outbreaks of fire in Andalusia were directly related to the Doñana Region. The most affected municipality has been Almonte. A municipality that is 20km away from Bonares.
- As well as an increase in dry periods.

This climatic situation conditions the present and future of the socioeconomic engine of the municipality.

➤ In terms of PROSPERITY, the lack of generational replacement, or emigration of the young population in the municipality is a risk for the continuity of socioeconomic activities, the promotion of an entrepreneurial culture, economic diversity. This situation could affect the demography of the municipality and its levels of socioeconomic development.

On the other hand, despite the location of Bonares in the Doñana region, it has not benefited from the development of tourist activities. The pull of Doñana as a tourist destination has not been reflected in Bonares where there are no companies that offer products or services, or accommodation. Cultural elements have not been taken advantage of either, for example, its proximity to the town of Niebla (6.5 km) or Moguer (21 km) or enhanced its hallmark related to the festivity of the Cruces de Mayo (which take place, Usually, the third week of May, and in which there are 12 crosses in different parts of the town).

In relation to the IDENTIFICATION OF PRIORITY PILLARS, a legislative framework conducive to the promotion of measures and strategies that favor the socio-ecological transition in the municipality must be based on. In this sense, the commitment of the Government of Spain to promote public policies aimed at the socio-ecological transition are endorsed by the European Next Generation EU funds approved in July 2020 by the European Council as an exceptional temporary recovery instrument endowed with 750,000 million euros for all Member States. Spain will receive a total of approximately 140,000 million euros, through the Facility for Recovery and Resilience (MRR) and the REACT-EU Fund. These funds are being articulated, through requests from local administrations, through the Spanish Urban Agenda. A local action roadmap articulated around the following objectives:

This framework is reinforced with national and regional laws, as well as local regulations that provide a legal framework for the actions included in this local plan. These regulations are:

➤ Related to Climate Change:

* Law 7/2021, of May 20, on climate change and state energy transition.

* Law 8/2018, of October 8, on measures against climate change and for the transition towards a new energy model in Andalusia, of a regional nature.

We must also highlight the role that energy communities are acquiring. A proposal that joins, in many cases, the public and private sectors, to favor new energy supply proposals. In addition, the Government of Andalusia, through its Andalusian Energy Agency, promotes the development and promotion of energy communities as a priority, as stated in the Andalusian Energy Strategy 2030 approved by the Governing Council on June 7, 2022. It includes a specific program for the development of energy communities in Andalusia (SC2), within the strategic line LE9 Promote a quality supply through a sustainable energy model.

➤ Related to the Economy and entrepreneurship:

For the municipality of Bonares, strongly committed to promoting the Social Economy, Law 5/2011, of March 29, on the Social Economy is relevant.

At the local level, we consider the following plans promoted by the local council to be of special importance:

- * Municipal employment plan. An exceptional initiative, since employability competencies belong to the Government of Andalusia, which is allowing the City Council to generate jobs in administrative tasks, services, maintenance, cleaning and works. Currently, the plan as an active employment policy has generated the hiring of 99 people as of June 1 of this year.

➤ Relating to people and territories:

- * Strategic mobility plan. This plan, drawn up in a participatory manner with the public, has allowed the design of more sustainable proposals, as well as the purchase of an electric vehicle, or the agreement with CECSA for the location of various electric charging points.

- * Implementation and localization of the 2030 Agenda. Through collaboration with the Andalusian Fund of Municipalities for International Solidarity (FAMSI), work is being done to align the municipal budget and its different actions with the SDGs.

Hence, based on the SWOT, as well as participatory activities, and taking the principles and values of the 2030 Agenda as a guide, the following priority pillars are established:

➤ PEOPLE. Deepen the relationship with the neighbors as priority actors of the actions. Promoting new models of governance and participation. Attending to generational needs.

➤ PLANET. Betting on a more sustainable municipality, with more green spaces, and working to mitigate the effects of climate change through new energy uses (of special interest to energy communities) as well as favoring more sustainable mobility models.

➤ PROSPERITY. Contribute to sustainable development models, especially in the agri-food sector, and articulate proposals in the field of sustainable tourism, both environmental and cultural. Continue promoting entrepreneurship and the business sector, betting on models of transformative economies such as: the social economy, the circular economy, etc.

In relation to the IDENTIFICATION OF PRIORITY PRACTICES, the promoters and participants of the GRAPE project, that is, the Bonares City Council and the Coopinte cooperative, consider the role of the local as a priority and its commitment to sustainability as an instrument to guarantee well-being and development. of the town and its neighbors. They also recognize the importance and value of articulating networks and alliances, such as those that have been generated during the development of this project with the participating actors from Italy and Greece, to enhance the role of small nuclei as agents of change and transformation. social. For Bonares, the shared experiences, for example, in the tourism field such as that of

Sifnos (Greece) in which endogenous resources have been valued as a tourist source, are of special importance. Since for the City Council it is decisive to value all the cultural heritage associated with its traditional May Crosses. A religious festivity that is part of the identity of the municipality and that it has high rates of citizen participation. This unique activity must be valued to enhance its potential as a tourist attraction. To which would be added others of an environmental nature such as the Doñana framework, or specific to the municipality such as the Villar arboretum (a unique place that collects different varieties of eucalyptus). On the other hand, the agri-food sector must also look at the possibilities of combining it with tourist offers, as is the case of the experience of Mirabella (Italy), whose oil cooperatives have incorporated museum and restaurant offers. This initiative is relevant for Bonares since it also has oil and red fruit cooperatives that could offer products to learn about their activities and complement it with tastings or other attractions for visitors and tourists. Bonares' commitment to tourism must go in the direction of a clearly sustainable model. This will require a public-private relationship that allows the creation of an attractive tourism offer for the general public.

On the other hand, the experiences show the role of the social economy as a motor of development in rural localities with a not very high population level, and its capacity to be leading agents to achieve the objectives of the 2030 Agenda. The exchange of experiences shows that this economic model gives priority to people and the planet. Fundamental elements in rural areas. Likewise, the visits to the different locations evidenced the capacity of the social economy to provide everything from basic services to job creation, or to favor social inclusion, while promoting practices that favor the green and digital transition. In short, the exchange has been enriching, and offers, in the future, to keep in touch to share knowledge and experiences.

2 DEFINITION OF THE CONSOLIDATED VISION

The GRAPE project implies a change of vision towards models that allow a socio-ecological transition of the territory. Therefore, it is relevant to understand this transition as a step towards more ecological productive and social models. Which leads to social and political changes of some importance, and not to routine or trivial modifications. These are substantial changes that affect the territory and its inhabitants. Therefore, the socio-ecological transition could be defined as:

A process of changes in the production and consumption systems, as well as in the social and political institutions and in the ways of life and the values of the population, which would lead to the current situation, which is too environmentally costly and, consequently, full of excessive risks, to a future environmentally sustainable situation, compatible with the planet's capacity to sustain human activities; and all this without substantially altering the organization of economic activities.

To achieve this transition towards new ways of generating well-being, of producing and consuming, a substantial change in attitude is needed, a greater sustainable awareness of life in general. In addition to addressing the challenges in the construction of city models, as well as key issues such as, for example, energy and mobility.

2.1 PARTICIPATION PROCESSES.

The GRAPE project incorporates in its development communication actions to raise awareness and socialization of an initiative that seeks the participation and involvement of neighbors.

The Bonares City Council and the Coopinte cooperative have been carrying out various information and dissemination actions through social media channels, web spaces, and meetings with citizens to explain participation in this European project. Likewise, a work plan was articulated that sought the co-responsibility of local actors for the design of this local action plan. For this, a first phase of information was contemplated.

Phase led by the City Council and Coopinte in which the project has been reported, for example, to:

- Municipal corporation.
- Technical team of the City Council.
- Local leaders.
- Governing Council of the Coopinte cooperative.

Likewise, as has been mentioned, the different actions associated with the development of the project have been reported through the different information channels so that it is known by the general population of the municipality.

In relation to the participation process, a hybrid methodology was chosen between participatory action research and future studies. The participatory action research (IAP) method allows knowing and acting involving the population whose reality is the object of study. It is a strategy that better analyzes and understands the reality of the population and helps to promote awareness among the population that participates. On the other hand, we have been aware that the socio-ecological transition implicitly evokes a concern for the future and for the scenarios of the emerging relationships between nature and society. Local innovations can be seen as "seeds" of possible futures. In other words, in line with Future Studies, these are early or weak signals. In this sense, within the framework of futures literacy theories, methods, and tools (Miller, 2018), in their applicability in collective co-creation processes, it has been understood that if anticipating the future today is particularly difficult, preparing for it is also particularly important and urgent. As Albert Einstein said, "we will have the future that we have deserved".

The actions that have been carried out are:

Participatory video. This is an instrument that accompanies the IAP methodology, helps to identify some needs, challenges, dreams of the community and serves to make participatory action visible. White defines

them "as a powerful tool to" put the individual in relationship with his community, so that he is aware of his needs and those of the group, generates critical awareness [...] and has the potential to provoke personal, social changes, political and cultural". (White, 2003:64).

Link to the video: <https://www.youtube.com/watch?v=34bh6hlzdXA>.

In the video, neighbors were asked about the challenges of Bonares and if it is possible to make the municipality more sustainable.

How do you rate the quality of life in Bonares?

What do you miss (work, leisure etc..)?

Speech by the Councilor for the Interior, Employment and Public Works, Eusebio Jesús Avilés Coronel.

He talked about why Bonares joins the GRAPE project, and what actions are key to incorporate into a local action plan.

Futures Workshop. The Bonares City Council and the Coopinte cooperative held a meeting with some twenty stakeholders from the municipality to analyze the existing challenges and project the future of the town in terms of sustainability. The meeting, held at the Antonio Machado Municipal Library, has been organized within the framework of the Grape project, with the aim of designing and applying a participatory local action plan for the green and digital transition. During it, the doctor in Economics from the University of Huelva and director of the Ibero-American Innovation Laboratory for the socio-ecological transition, Blanca Miedes, dynamized a workshop on 'future horizons'. The participants included businessmen, retirees, representatives of collectives social, educational and local development centers, as well as the City Council expressed the issues that most concern them such as:

- Bad eating habits, irresponsible consumption, neglect to learn, forest management and, consequently, forest fires, water scarcity, the submerged economy, the productive model, entrepreneurship and the lack of incentives, the loss of values, inequality or generational change in the agricultural sector.

During the dynamic, the participants also dreamed of actions for their municipality, among which the following stand out:

- A greater leisure offer for all ages, a participatory, collaborative society, with ethical and entrepreneurial values, sustainable agriculture for the new generations, safety, health, freedom, less dependence on water, a reasonable use of technologies, new opportunities for the youngest, people educated in values and, lastly, quality of life for the elderly and dependent people.

Finally, the attendees have admitted the steps and actions that are already laying the foundation to achieve their goals. Between these:

- business adaptation to new technologies, the adaptation of the people to new vehicles, the implementation of new agricultural models, the increase in local and industrial consumption. In addition to pointing out the null tourist offer of the municipality even with natural or cultural resources, such as its May crosses, exclusive to Bonares.

Futures workshop attendees include, among others:

I: Economic Sector + Social Economy

- Sebastián Pérez, cooperativa San Cristóbal
- Juan Manuel Domínguez, cooperativa agrícola Santa María Salomé
- José Javier Martín, empresario
- Francisca Martín, Coopinte.

II. Public Sector: Administration, ICT, Education.

- María Vidala Pulido, dinamizadora de Guadalinfo
- Lara Domínguez, técnica de desarrollo local
- Encarnación Moreno, Andalucía Emprende
- Cristóbal Rodríguez, Asociación de Padres y Madres Futuro Horizonte
- Cristo Ramos, Mancomunidad de Desarrollo Condado de Huelva
- Eusebio Avilés, concejal Gobernación, Empleo y Obras Públicas del Ayuntamiento de Bonares.
- Juan Antonio García, alcalde.

III. social entities

- Manuela Pérez, Asociación Española contra el Cáncer
- Antonia Coronel, Asociación de Fibromialgia
- Rosendo Pérez, AFA
- María José Pérez, Federación de Cruces de Mayo Bonares

Informative/sectoral meetings:

I. Home of the Pensioner. Older people insist on adapting the municipality to the group. They show an aging population. They consider it relevant to continue working on issues of education in values, and intergenerational relations.

They view with concern the situation that the business fabric is going through, especially that of agriculture. Work together to meet the needs and demands of the elderly group.

Attend:

- Rocío Amador
- Fernando Trigueros
- Juan Roque Martín
- José Fernández
- José Francisco Martín
- Diego Coronel (president)

II. Food industry. Within the framework of a training action promoted by Coopinte, a meeting with the agri-food sector was held. After exposing the development of the GRAPE project and transferring the contributions collected in the participation actions, the

- The concern of the agri-food sector regarding the risks of climate change, problems with water and the rise in energy prices is evident. Likewise, the importance of this sector for the municipality as an engine of the socioeconomic development of the town, and even of the province, is manifested. The effort that the sector has been making to adapt to more sustainable models in its production was also highlighted. Likewise, a greater involvement of the administrations was demanded to solve the water problem representatives of the sector stated:

Regarding the commitments, they stated:

- The participating actors expressed their commitment to training and education to guarantee their adaptation and preparation to continue advancing in a sustainable agriculture model. Likewise, they positioned themselves as key players in the economic development of the region, and they want to continue having a relevant weight.

Among the attendees are:

- Gaspar Pavón
- Juan Luciano Rodríguez
- Antonio Martín
- Manuel Jesús Martín
- Idelfonso Coronel
- Francisco José Carrasco
- José Fernández Vega
- Pedro Manuel Rodríguez
- Ayunb Bouchamma
- Leovigildo García
- Antonio Marín
- José Francisco Martín
- Sergio Prietos
- Jon Nogales
- José Antonio Nogales
- Jesús Alfaro
- Ángel Márquez
- José María García

III. Digital skills. Within the framework of a training action aimed at unemployed women, the Grape project was presented, and the issue of the need to equip themselves with instruments to function in the digital

environment was addressed. It must be remembered that the 2030 Agenda speaks of education and gender equality as two essential challenges to generate inclusive societies. It also pays significant attention to digital skills, especially to reduce the digital divide. The data shows that unemployed people, with less qualifications, as well as women in these vulnerable situations, are more likely to be left out of the labor market, training spaces and socialization due to the lack of digital knowledge.

The participants claimed training adapted to their profiles, especially oriented towards job search.

The participants have been:

- Adela Garrido.
- María Isabel Barriga.
- Araceli Rodríguez.
- Francisca Pérez.
- Antonia Salomé Domínguez.
- Francisca Coronel.
- María del Mar Infante.

3 DEFINITION OF ACTIONS TO PURSE THE DIFFERENT OBJECTIVES

The Local Plan has been articulated following the general framework of the 2030 Agenda. In this sense, the actions have been grouped based on the axes: PEOPLE, PROSPERITY and PLANET.

In the Person axis, those actions that are going to affect citizens have been located, and in which a part of involvement and appropriation is also required on their part. The plan proposal has focused on two areas, one related to mobility, aimed at promoting more sustainable practices, such as walking, and the use of bicycles (one of the planned actions being to provide a bicycle lane that go from Avenida de El Rocío to the leisure space El Corchito. The proposal is to contribute a practice of healthy, sustainable mobility that facilitates leisure for the population). It is also planned to provide new parking spaces that will contribute to better urban circulation. And in that of training and education for the adaptation of citizens to an increasingly technological scenario. The proposal, taking advantage of municipal resources such as the Guadalinfo Center (these are centers, promoted by the Government of Andalusia, located in rural areas and whose objective is to promote digital skills, promote open innovation and facilitate Internet access) is to train both in the improvement of technological skills, facilitate empowerment that allows citizens to have a better understanding of the technological environment, and therefore take advantage of the opportunities offered by technology; and work towards combating the digital divide. In summary, training and education in technology are essential for citizens to adapt and take advantage of the opportunities of the current technological environment. These skills not only improve the employability of people, but also promote digital inclusion, empowerment and the ability to adapt to change.

These two actions, transversally, aim to influence intergenerational work. Generating spaces and opportunities for all citizens is essential to guarantee the continuity of life in the municipalities, as well as promoting the relationship between them is a key factor that helps transfer knowledge and promote more empathetic relationships.

Those related to the Prosperity axis, focus on those that have incidences on issues related to the socioeconomic development of the locality. The SWOT and the meetings show problems of an economic nature, hence the actions are aimed at diversifying the business sectors, focusing on the potential of tourism, the modernization of the agri-food sector, so that both are tractors for entrepreneurship and establish the population in the territory, especially young people. Likewise, the purpose of expanding the cultural offer of the municipality is highlighted. This is intended to increase the number of visitors and tourists, reactivate this sector. Generate and support the entrepreneurial sector in the field of culture, and its auxiliary companies. It is also understood that culture strengthens the identity and sense of belonging of local residents, creating greater social cohesion. Cultural events and community activities encourage citizen participation, promote intercultural dialogue and enrich people's daily lives. In this sense, the aim is, on the one hand, to support and consolidate.

the cultural offer offered by the Cruces de Mayo, including expanding the interpretation center or processing the declaration of Asset of Cultural Interest (it is a figure of protection of cultural assets in Spain, established by the Ministry of Culture in Law 16/1985, of June 25, of the Spanish Historical Heritage) as well as expanding the offer related to musical activities.

In short, the proposal goes through the social and sustainable innovation of key productive sectors in the territory such as agri-food. Encourage, articulate and accompany initiatives that promote the tourist destination of Bonares. A destination that will enhance its natural resources, and especially the cultural ones (even expanding its offer to make it a town of cultural interest for visitors and tourists). On the other hand, the City Council will continue working to support the social economy, since it is understood that it is a model that favors inclusive, egalitarian, sustainable and more stable economic development.

While those of the Planet axis refer to environmental sustainability actions. Mitigating the effects of climate change, and opting for new energy routes is the objective of these actions. In addition, the promotion of energy communities emerge as public/private relationship alternatives of special interest, as well as new governance models with citizens.

Energy communities are legal entities of voluntary and open participation aimed at delivering energy benefits to the community by promoting environmental, economic and social objectives related to the European energy transition strategy. Energy communities can carry out multiple activities: produce, consume, store, share or sell energy. An example of this type of activity on which they can be based is self-consumption or distributed generation, which are an important factor for the economic savings of many families. In the case of the participation of the local administration, this can be an active subject of the community. To the same

extent that it can establish favorable policies and regulations to encourage the creation and operation of energy communities. This may include simplifying authorization and licensing procedures, as well as removing legal and administrative barriers that make it difficult for citizens to participate in community energy projects. They also have competence in urban and planning issues. So the role of the City Council will be the identification or provision of land or buildings for the development of the community. In addition, in the case of Bonares, the City Council is being the interlocutor to be able to resort to financing via a subsidy from the Government of Spain.

It is also relevant to highlight that all of them could be transversal actions since what is sought is co-responsibility in the collective construction of a more sustainable municipality.

For this reason, the local plan is also grouped into the following missions:

- Development of renewable energies: Promote and optimize the investment and installation of solar panels in municipal buildings. In addition to promoting community energy projects and working to promote energy efficiency.
- Sustainable urban planning: Integrates sustainability into urban planning and infrastructure development. It promotes efficient transport, sustainable mobility, the design of green spaces and proper waste management.
- Education and awareness: Carry out awareness and education campaigns to educate citizens about the importance of sustainability, climate change mitigation and the transition towards a green and digital economy. This can include workshops, talks and educational programs in schools and local communities.
- Collaboration and alliances: Establish alliances with other cities, institutions, organizations and relevant actors to exchange knowledge, good practices and resources. Collaboration can speed up the transition process and share the burden of implementing resilient strategies.

**TABLE OF ACTIONS**

ACTION	RESPONSABLE	RESOURCES	EVALUATION	TIME SCHEDULE	COMUNICATION AND PARTICIPATION
PEOPLE AXIS - MOBILITY					
1. Bike lane from Avda de El Rocío to El Corchito area	Municipality	Subsidy requested from the Ministry of Transport, Mobility and Urban Agenda of the Government of Spain. Planned investment of: 469,038 euros. Subsidy requested: 422,134E	Sustainability Indications Social Impact Assessment	2 YEARS	Transversal communication strategy whose mission is to raise awareness, awareness and information. The tools for communication are: local media, Social Networks of the participating entities. Specific campaigns-
2.Creation of new car parks	Municipality			4 YEARS	
PEOPLE AXIS - ICT AND DIGITAL COMPETENCES					
	Municipality Coopinte Centro Guadalinfo	Centro Guadalinfo Coopinte	Sustainability Indications Social Impact Assessment	2 YEARS	Transversal communication strategy whose mission is to raise awareness, awareness and information. The tools for communication are: local media,



	Comunidad Educativa				Social Networks of the participating entities. Specific campaigns-
PROSPERITY AXIS					
CULTURE, TOURISM, ENTREPRENEURSHIP CULTURE					
1. Expand and improve the cultural offer of the municipality	- Ayuntamiento - Andalucía - Mancomunidad de Municipios del Condado - Diputación de Huelva	Municipality	Sustainability Indications Social Impact Assessment	4 YEARS	Transversal communication strategy whose mission is to raise awareness, awareness and information. The tools for communication are: local media, Social Networks of the participating entities. Specific campaigns-
2. Promote Summer Nights	- Tejido empresarial - Consejerías de	Municipality			
3. Declare BIC las Cruces and provide an interpretation center	Turismo y Cultura de la Junta de Andalucía	Planned investment: 30,000 euros. Subsidy requested from the Ministry of Culture of the			



		Government of Spain of 27,000 e.			
4.Creation of the Jazz and Blue Festival		Grant from the Ministry of Culture and Sports of the Government of Spain			
PLANET AXIS ENERGY AND MITIGATE THE EFFECTS OF CLIMATE CHANGE					
1. Energy communities.	Municipality Coopinte FAECTA Escuela de Economía Social Sector empresarial	Municipality + state subsidies at 50%	Sustainability Indications Social Impact Assessment	4 YEARS	Transversal communication strategy whose mission is to raise awareness, awareness and information. The tools for communication are: local media, Social Networks of the participating entities. Specific campaigns- Transversal communication strategy whose mission is to raise awareness, awareness and information. The tools for communication are: local media,
2. Expand the provision of trees in public areas (schools, sports facilities, etc.).	Municipality Centros Educativos Asociaciones Ecologistas	Municipality			



3. Promote the environmental and educational use of the Villar arboretum.	Espacio Natural Doñana				Social Networks of the participating entities. Specific campaigns-
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4 ACCOUNTABILITY

Methodology for the evaluation of the Plan and its repercussions

A methodology for evaluating the plan is proposed based on:

- **Sustainability indicators:** Sustainability indicators are tools that allow measuring and monitoring progress towards the objectives established in a sustainability plan. Relevant indicators are selected in key areas, such as the use of natural resources, air and water quality, social equity and health. These indicators can be based on quantitative or qualitative data and are used to assess the impact and effectiveness of the plan.

For the development of these, the criteria and tools with which the Diputación de Huelva has aligned its budgets with the SDGs of the 2030 Agenda could be used.

- **Social Impact Assessment:** This assessment focuses on the social and community aspects of a sustainability plan. It analyzes how the plan affects local communities, including social equity, citizen participation, social cohesion and quality of life. Qualitative and quantitative methods are used to assess social impact and address stakeholder concerns.

It is understood that the aspect of attention to people is decisive for the development and evaluation of the results of a plan that seeks social transformation towards more sustainable practices.

Communication actions would also form part of accountability. Communication is understood as part of the process and an appropriate instrument to sensitize, raise awareness, inform, and encourage community participation.

The development of these instruments is subject to the actual execution of the Plan. In any case, the purpose of the sustainability and social impact indicators in an evaluation of a plan will be to provide valuable information on the performance and results of the plan in terms of environmental, economic and social sustainability. These indicators are critical tools for measuring progress, making informed decisions, communicating results.

5 CONCLUSIONS

Conclusions are established in global terms, such as:

1. The ecological transition will take place, in one way or another, since in essence it is what necessarily happens to any system that exceeds the limits of its development, that is, that is temporarily located above what the ecosystem of which depends can sustain (and industrial societies have already exceeded those limits or are about to do so). Whether or not the ecological transition takes place does not depend on political will; politics can only partially modulate the trajectories and comprehensive and effective evaluation of a plan.

control some of the effects. This transition is everyone's task, which provides opportunities and ensures the necessary social justice and environmental security.

2. The ecological transition of current societies implies leaving the energy matrix based on fossil fuels that has characterized industrial civilization. It therefore implies finding and developing new processes that transform (at the necessary scale) existing energy in nature into controlled and economically usable energy.
3. Governing the ecological transition must be an exciting proposal that is based on co-responsibility, alliances and that favor new models of governance from the vision of being a global citizen.

Local conclusions are:

1. From the local with a global vision, the necessary changes can be made to achieve more just, supportive, sustainable and inclusive societies. Societies that guarantee well-being by recognizing environmental limits.
2. Sustainability is an ally. It is the necessary roadmap to guarantee quality and the well-being of the territories and their inhabitants.
4. Take care of people. People are the center of municipal action. Their involvement is essential to change habits and favor others that promote responsible consumption, sustainable mobility, energy efficiency, entrepreneurship and economic activity based on social and environmental value.
5. Respect the environment. As a source of life and as a resource. As part of our identity and as a legacy for future generations. Optimize the environment as a hallmark associated with our products and services. Preserve our natural capital.
6. Promote transformative and sustainable economies. As models that guarantee the well-being of present and future generations.

Local Social Green Resilience Action Plan

Community: Sifnos (Greece)

TABLE OF CONTENTS

1	INTRODUCTION	4
2	CONTEXT ANALYSIS	6
2.1	The present social-economic-environmental-public health situation in Sifnos.....	9
2.2	Demographic evolution	10
2.3	About the COSME - GRAPE programme	11
2.3.1	Three phases of the programme	11
3	SWOT ANALYSIS.....	12
3.1	The strengths of Sifnos	13
3.2	Weaknesses of Sifnos	15
3.3	Threats for Sifnos.....	16
3.4	Opportunities for Sifnos	17
4	Public Participation – The road map of a participatory process	19
5	GREEN SOCIAL ACTION PLAN FOR SIFNOS	22
5.1	Developing an active Climate Strategy for mitigation and adaptation / Climate neutral economy. Energy Transition.....	22
5.2	Impact of climate change on different sectors	23
5.3	Legal framework for climate mitigation and adaptation	25
5.4	Climate mitigation and adaptation strategy for Sifnos	26
5.4.1	Differentiation of the economy.....	27
5.4.2	Creation of an open climate – ecological lab in collaboration with the scientific community	27
5.4.3	The topics of a climate mitigation and adaptation policy	28
5.4.4	Shift from energy production and consumption based on fossil fuel to renewable energy and energy efficiency for all sectors (housing, tourism, mobility, shipping).....	28
5.4.5	The potential for Green jobs on climate protection and adaptation, environmental monitoring and green transition in small islands	30
5.4.6	Good examples	30
5.4.7	Financial tools for backing climate mitigation and adaptation as well as energy transition: .	35
5.4.8	Protection of environment and NATURA 2000 area as a basis for sustainable prosperity for the future and for all	36
5.4.9	Integrated Water management:.....	45
5.4.10	Food - Agriculture Strategy: Food security, sustainability, circular economy, local seeds and species, gastronomy, synergies and cooperation networks	47
5.4.11	Culture / cultural heritage	55
5.4.12	Landscape / Dry stone walls / built environment and local architecture	57

5.4.13 Reform of the Tourism model / Develop a more resilient sustainable tourism and other local non seasonal activities..... 63

5.4.14 The role of Social Economy in Green Social Transition 65

5.5 Ongoing projects 72

6 Previous initiatives of Sifnos and Wind of Renewal of Green Social Transition..... 74

6.1 SMILO LABELLING PROCESS..... 74

7 Instead of an epilogue 77

1 INTRODUCTION

To consciously and participatory shape the future of Sifnos

Our islands are changing rapidly. Especially since the pandemic, developments have been staggering, not only in Sifnos, but in all islands. Just a few decades ago, many were thinking and discussing the changes that could be made in the future. Today, changes are rapid, they happen and often residents are unable to shape them. There are many exogenous factors that influence: the model of tourism, markets, the economy, the climate and ecological crisis, government or behavior changes. Many people feel that what happens around them, next to them, on the small island surpasses them, they observe them but feel unable to shape changes and developments.

More than ever, it is necessary for residents and those who love Sifnos to participate actively and dynamically in order to consciously shape a sustainable future for the island. The first important thing is to understand that changes do not automatically lead to a one-way development. There are alternative proposals that although external factors play an important role, the local community has many possibilities to use tools and good practices to direct changes to where they want. There are, of course, some conditions:

- **Meaningful dialogue to choose the future sought by the local community.** This dialogue is not limited to a workshop or even to some events or decisions of the Municipal Council or other bodies. It requires a participatory planning methodology and different dialogue tools, utilizing for example face-to-face discussions, dialogue workshops, participatory planning exercises, workshops, online consultation.
- **Overcoming the perception that our future depends only on others,** eg central government, market, economy. Already some citizens feel powerless to influence developments and in fact become frustrated and resign or outsource their own "representation". Perhaps for the first time this feeling is so intense, we see it in debates and events expressed clearly, with despair. However, hope lies in the many people, residents, friends or "lovers" of Sifnos who are interested, discuss, participate, are active in co-shaping the future of Sifnos.
- **Transfer of good practices, collaborations, networking** with universities, social and environmental organizations, island networks, participation in programs, events and activities that give valuable experience, knowledge, ideas, possibilities and tools.
- **Utilization of human capital, knowledge and capabilities that exist** not only among permanent residents or Sifnians living outside the island but also among friends, new residents with different origins who have loved Sifnos or occasional visitors who feel lovers of the island, want to remain with its natural and cultural wealth intact.

[Wind of Renewal](#) / **Anemos Ananeosis** - a social cooperative enterprise for the promotion of social and green economy, innovation, sustainable tourism, empowerment and social inclusion, (inter)culture dialogue,

environmental and climate action seeks to contribute to the dialogue for a sustainable future of Sifnos. It is not only because of the participation of people who come from and love Sifnos but also because Sifnos could be an example of participatory planning for a model of ecological and social sustainability for other islands of the Cyclades and beyond.

This dialogue is more relevant today than ever and the relevant discussions have gained a greater mass in other islands, while thanks also to the interest of some investigative journalists and the media they are now taking place at a central, not just local, level. With the **GRAPE - COSME** program, under which this action plan is being formulated, drawing on the experience of other small regions, but also with the **SMILO MED** program - methodological tools of which are used both for participatory planning and for the transfer of good practices from other islands - Wind of Renewal seeks to contribute to the relevant dialogue by submitting proposals and an Action Plan, in which the results of dialogue so far at local level have been included and which can be enriched and utilized appropriately by the local community and the municipal council to formulate a final **Action Plan for the Green Social Sustainability of Sifnos 2030**.

What “Wind of Renewal” does for Sustainability in Sifnos

This Action Plan is the product of the program exploring the role of the social economy in the green transition of small areas and islands. Wind of Renewal, the Municipality of Sifnos and a group of small areas and European social economy networks participate in the European project "GRAPE: Local Social Green Action Plans for small and peripheral places" [with the aim of transferring know-how and support for the development of social economy in Sifnos and other areas on issues of sustainable management of natural and cultural resources.](#)

It includes 4 small European municipalities from rural, mountainous and island areas: **Malegno** (Italy), **Mirabella Imbaccari** (Italy), **Bonares** (Spain), **Sifnos** (Greece). Each municipality is supported by a local social and solidarity economy (SSE) actor: **Sol.Co Camunia** (Malegno), **Fondazione di Comunità di Messina** (Mirabella Imbaccari), **COOPINTE** (Bonares), **Wind of Renewal / Anemos Ananeosis** (Sifnos). These local partnerships are further supported by a European network, **REVES** – European Network of Cities and Regions for the Social Economy and **FAECTA**, the Andalusian network of cooperatives. This consortium is led by the **Community Foundation of Messina / Fondazione di Comunità di Messina** (Sicily, Italy).

The GRAPE programme is complementary to another programme, SMILO. MED focusing on "Sustainable Management of Natural Resources of Sifnos": **Wind of Renewal** and the [international network of small islands](#) SMILO in **collaboration with the Municipality of Sifnos** participate in it. Within the framework of this program, a dialogue has been initiated on the **sustainable management of the island's natural resources as well as** an awareness, education and restoration program of the extensive network of **dry-stone walls** (terraces) in Sifnos. The activity is developed in parallel with similar actions in three other small islands of the Mediterranean, in order to exchange experiences and good practices, in the framework of the two-year

SMILO-MED project. Some good practices of SMILO, such as the Sustainable Management Committee of Natural Resources of Sifnos and the methodology for obtaining the SMILO sustainability label, have contributed, along with other experience of Wind of Renewal executives, to participatory planning, to the development of dialogue through structured workshops on a range of topics.

Also, Wind of Renewal utilizes the experience of **exchanging good practices between small islands on circular economy issues through an Erasmus program coordinated by the SMILO network of small islands**. The aim of the project is to exchange experiences and good practices but also to strengthen cooperation between small islands on sustainability issues. Four islands are at the centre of interest of this programme: Frioul in Marseille (France), Sifnos in the Cyclades (Greece), Gozo (Malta) and Pakleni (Croatia). The last meeting of the project will take place in Sifnos in spring 2024.

It is our belief that the great challenges of our time require new approaches that are rooted in local communities, collaborations between different actors (municipalities, social economy, universities, civil society, professional and research bodies, networks) as well as organized and systematic exchange of experiences and continuous improvement of efforts to address problems and shape a more sustainable future.

2 CONTEXT ANALYSIS

Sifnos lies in the Aegean Sea and is a part of the south western Cyclades, around 75.6 nautical miles from the Port of Piraeus. It is considered as a small to medium-sized island since its surface is 73,942 sq km, and its coastline is about 705 km long. The island can be reached by ferry boat throughout the year. The permanent residents are 2.777 according to the census in 2021 of whom 49.6% are women and 50.4% men. There is a stable increase of the population in the last decades. The economically active population of Sifnos is 38.21% of the total population, with 35.10% (902 citizens) employed and 3.11% (80 citizens) unemployed.

Sifnos is famous for its traditional villages, like Kastro, Artemonas and Apollonia, with Cycladic and more or less (local) bio climatic architecture. The new capital of Sifnos is Apollonia, in the center of the island. The town's name is thought to come from an ancient temple of Apollo located on the site of the church of Panayia Yeraniofora. The second-main town on the island is Artemonas, which is thought to be named after an ancient temple of Artemis, which is located at the site of the church Panayia Kokhi. The old capital of Sifnos, Castro, is very famous for its architecture and archaeological ruins.

Older signs of residential installation that have been noted in Cylades date from the late 5th millennium B.C. Archaeological findings indicate that the island flourished and became a center of the Cycladic civilization in the 3rd millennium BC.

During ancient times, the island was very wealthy, which has left much archaeological evidence. Most of the historians mention that Sifnos was first inhabited by Pelasgians, then by Phoenicians, Kares and Leleges. The

Neolithic and the following early copper era left many interesting elements of a particular civilisation in Cyclades.

The 6th century B.C. was the era of prosperity. Herodotus mentions that the residents of Sifnos were the richest islanders. Gold, silver, and lead were all mined as early as the 3rd millennium BC. Evidence of this is the treasury that Sifnos built at Delphi in the 6th century BC, which housed their offerings. The mines were destroyed by floods in ancient times. There are left behind many - not all – abandoned mining places.

Till today, in Sifnos, 55 towers and observation posts have been counted dating from the 6th to the 3rd century B.C.

Sifnos is an important commercial centre of Cyclades, from the early 12th century. The main occupations of the residents of the island were agriculture, cattle-breeding, ceramics, and mainly metallurgy.

Culture / civilization: From antiquity and the royal doctor Diphilo the Sifnian (personal physician to the king of Thrace, Lysimachus, who wrote the work "On the presentations of the diseased and the healthy") or the Sifnian poet and pioneering musician and composer known as Theoxenidi, who introduced the musicological term "Sifniazein" '(to define certain complex melodies with a variety of tone and expressiveness). After the Middle Ages, Sifnos saw considerable cultural advancement, The rich tradition in music, poetry, sciences, literature and arts of the island is present today (Annex II)

Research: The archaeologist Christos Tsountas in 1898 and 1899 brought to light graves and foundations of settlements of the Protocycladic civilization at the location Akrotiri in Platis Gialos, Vathi and Kalamitsi. These graves, dated from the second half of the 3rd millennium, offered important information of that time. Until today there is archaeological research with interesting discovering. The 'Sifnian Research Society' has organised on the island (1998, 2002, 2006, 2010) four International Symposia in Sifnos, with hundreds of speakers and delegates from around the world, and with interesting scientific papers and presentations relating to Sifnos (in antiquity, Byzantine times, Frankish occupation, and Ottoman rule, and in more recent times, also focusing on the architecture of the island, geology, ethnology and literature).

The minutes of the Symposia conferences have been circulated in print and electronic format and are an important source of information on the history of our island.

The National Centre for Scientific Research "Demokritos" has launched the project "*METAL PLACES: Culture crossroads in eastern Mediterranean*". The project focuses on the Cycladic islands of Sifnos, Serifos, Kythnos in Greece and the Community of Asgata in Cyprus, areas of outstanding cultural and technological heritage which possess ancient mining and metallurgical remains covering the last 5000 years, which have not received the recognition they deserve. The main goal is to promote this pan-European heritage based on the triptych "Culture-Tourism-Development". The consortium consists of NCSR "Demokritos" (Lead Partner), the Ephorate of Antiquities of Cyclades (Hellenic Ministry of Culture and Sports), the Municipality of Sifnos, the Archaeological Research Unit of the University of Cyprus and the Community of Asgata.

Education: The first known school of the island was established in Kastro in the early 16th century. Since that time, elementary schools, Greek language schools, ‘Gymnasium’, secondary, higher-education schools, schools for girls, schools of iconography and schools for teachers among others, are part of the rich tradition of the island on education. The most famous was the ‘School of the Holy Sepulchre’ (Panagia Tafou (from the mid-16th century)), known as the ‘Paideftirion of the Archipelagos’, the first educational institution offering free higher education in Greece and outside the Greek region. Its reputation was well-known for centuries. Students came from all over Greece, Istanbul, Minor Asia and the Black Sea to study at the school in Sifnos. Many graduates of the school became teachers, scholars, clergy, missionaries, church patriarchs. More than fifty Sifnian graduates of the school became church patriarchs and metropolitan bishops. The tutor Nikolaos Chrysogelos (1780-1857) of the School became the 1st Minister of Education, founder of the Public Primary Education system in Greece, legislator and Peer Method Teaching in Greece.

In Greece is known the ‘wave of Sifnian teachers’, the people who in the 19th and 20th century involved themselves in the cultural and educational development of the country and the promotion of all aspects of “arts and letters”: journalists, artists, poets, historians, painters, lawyers, publishers and printers, folklorists, lyricists, and legislators (one Member of the European Parliament, Nikos P. Chrysogelos, 10 Members of the Greek Parliament and 2 Ministers).

Trails: The so called Sifnos Trails, is a 200 km long paths. Some of these 19 routes date to 3000 B.C. After a long period of conflicts about their role in a modern society, since 2000 started an effort for their maintenance and restoring. Today, travelers can follow the routes of the farmers, miners and animal breeders who built up one of the world’s oldest trail networks. New trail signals direct travelers to thousand or hundred years-old mines, natural, agricultural and archaeological sites and churches.

Local mass media: Today there are two local newspapers in circulation on the island, “The Sifnian News” and the “Sifnos”, which is the oldest newspaper in Greece (in continuous publication since 1880). There are also local on-line news sites. There is also a local radio station. In the past there was also a TV station. Many people are active in social media.

Economy: The general structure of the local economy is based on the traces of the past (cultural, archaeological, natural heritage, knowledge, human creativity and buildings) as well as on a knowledge basis and practices of sustainability which could be a basis for a greener future.

Today the number of farmers, sheep and goat breeders as well as beekeepers is small although the majority of the population in the beginning of 20th century used to be farmers, producers of ceramics mainly for food and drink. The main jobs were related to a chain of value “from the farm to the table” (farmers, traders, ship-owners for transporting the local products to different places of East Mediterranean, chef and personnel of restaurants etc).

The main local economy sectors nowadays are tourism (rooms to rent, small hotels, car/motor and bicycle

to rent, many pottery workshops, restaurants and real estate activities), constructions (builders, engineers, architects), although there still exists agricultural and animal feed, fishing and a number of services (teachers/educators in schools, providers of private education services, technical services, construction and recycling companies, taxi and buses drivers, organising events).

As an island, its economy in the past was very close connected with other islands and coastal - but not only - cities like Chania, Rhodes, Chios, Paros, Alexandria, Istanbul, Paris, London, Odyssey. There is a need for a new regional economy and common activities with the neighborhood islands not only on tourism, but also on developing common social and green infrastructure.

Although there is a traditional culture of collaboration, the only organised structures of collaborative economy existing today are the Agricultural and BeeKeepers Union of Sifnos and the Sifnos Energy Cooperative / Community.

Today in Sifnos there are opportunities for a differentiated sustainable economy and social - green innovation, especially in environmental management and awareness, culture, cuisine culture, trails and bicycle tourism, renewable energy, circular economy, ecosystems services and training in green transition, reuse of mining areas for new activities (open industrial museum, storage of renewable energy, open ecological laboratory, climate observatory etc. This will help the island to be resilient and tackle the impact of climate crisis on the environment, the economy and especially the mainstream tourism model (sun and sea) and develop a more sustainable economy with sustainable prosperity for all based on a more green and social model.

2.1 The present social-economic-environmental-public health situation in Sifnos

- Sifnos is known to have been inhabited from 5000 BC.
- There has been an increase of the local population in the last decades. The young persons return back to Sifnos after their studies and a number of 300-500 migrants (mostly from Albania) are working in construction, care giving and tourism.
- There is stable increase of tourists every year, reaching the 100.000 arrivals in 2022.
- Sifnos is famous for its local gastronomy. Every year, in September, the local Cultural Union organises a gastronomy festival “N. Tselementes” with the participation of representatives of many other islands.
- Although Sifnos is a touristic and not a remote island, an efficient and well organised social infrastructure is missing. For example: elder and disable care giving structures, social services, community health systems, environmental protection services are very weak or not existed at all. Therefore there is space for innovation and development of social economy for promoting social infrastructure and green transition.

- There is an increase of extreme weather events affecting local agriculture, water resources, soil, the touristic infrastructures, the well being of the local population etc
- The local society is more or less environmental aware and participates in different kinds of environmental awareness activities, like clean up, but this is not enough during an era of climate emergency. More and more people are sounding the alarm over out-of-limits tourist/residential development, pointing to issues that are interconnected like water management, pressure on agri-land and Natura 2000 area. It seems that the local community itself is ready to demand a development that will safeguard the present and the future of its children.
- Although all the people talk about climate change and the municipality is part of different environmental and climate networks (eg Memorandum of Cooperation in the framework of the European Mission for the 100 Climate Neutral and Smart Cities by 2030 - under no. 1/2023 decision of the Municipal Council of Sifnos AD: 66TOO1T-3ΠΠ), climate mitigation and adaptation are hardly included in the planning and at the moment there is no real climate strategy for a climate neutrality of the island and preparation for a climate adaptation of all the sectors influenced by the climate crisis, such as tourism, water resources, nature, agriculture, soil, food security, energy, social resilience, protection of coastal zone etc.
- *There is a lack of proper financing and the local authorities are highly dependent on funding made available by regional or national authorities. The green transition needs more, flexible and efficient financial tools for the quick and just green social transition leaving no-one alone, back.*
- *Very often it takes many years until a plan can find financing for its implementation and that means some projects are already old fashioned when realised, although new approaches or technologies exist.*
- *Small islands like Sifnos suffer from lack of expertise, enough and well trained personnel even for the basics and at the same time they have to follow a very bureaucratic framework. Therefore, very often, are obliged to outsource services and the operation of infrastructure. As an impact, Sifnos is not able to prepare long term and coherent plans, follow the new scientific, green and social tendencies and update its policies and technical planning.*

2.2 Demographic evolution

Since ancient times Sifnos was a society with many young people, connected with other coastal areas and big cities. In early 20th century the inhabitants may approached the 7000 persons. After the WW II there was an immigration movement and a reduction of the population. The last decades the population is stable and slightly increased. According to the **last** (2021) official census the population seems to be 2777 persons, but

something like 3000 the year-round including migrants and foreigners they live in Sifnos some months of the year.

Year	Population
1951	2,773
1981	2,856
2001	2,574
2011	2,625
2021	2,777

2.3 About the COSME - GRAPE programme

The GRAPE project, "Local Social Green Action Plans for small and regional places" aims to collaborate on social and green resilience strategies to promote local solutions to local problems. It is co-funded by the European Commission under the Single Market Programme (SMP-COSME). It started in May 2022 and will be completed in October 2023.

It includes 4 small European municipalities from rural, mountainous and island areas: Malegno (Italy), Mirabella Imbaccari (**Italy**), Bonares (Spain), **Sifnos (Greece)**. Each municipality is supported by a local social and solidarity economy (SSE) actor: **Sol.Co Camunia** (Malegno), **Fondazione di Comunità di Messina** (Mirabella Imbaccari), **COOPINTE** (Bonares), **Wind of Renewal** (Sifnos). These local partnerships are further supported by a European network, **REVES – European Network of Cities and Regions for the Social Economy and FAECTA**, the Andalusian network of cooperatives. This consortium is led by the **Community Foundation of Messina / Fondazione di Comunità di Messina** (Sicily, Italy).

The project aims to identify and promote resilient strategies to address economic, energy and climate crises at local level and to chart pathways for a sustainable and just green and digital transition, developing local solutions for local needs. In this context, Social and Solidarity Economy contribute to "territorial resilience" through the experimentation of innovative solutions based on solidarity, mobilizing local stakeholders to collaborate and use their resources to adapt to the challenges they face.

2.3.1 Three phases of the programme

GRAPE is developed in three phases:

- **In the first, partners participated in three Social Economy Missions (SEM)**, the first in **Mirabella (July 2022)**, then in Sifnos (**September 2022**) and Bonares (**November 2022**). Peer learning activities and analysis of case studies/experiences at local level provide the necessary conditions for a fruitful cooperation between partners. Each mission has sessions dedicated to the presentation of techniques for drawing up a local Action Plan and the exchange of good practices in the regions involved, so as to develop possible synergies between partners and the possibility of replicating a specific good practice in different regions
- **In the second phase, partners are involved in the drafting of local Action Plans for social and environmental resilience for each partner region.** The content of the action plans comes from proposals

prepared during the missions, they use participatory methodologies in their drafting in order to involve local actors, including Social and Solidarity Economy actors and society organisations of citizens.

The third and final phase consists of the co-creation of a digital toolkit based on the experience gathered during the project and will act as a guide for small municipalities interested in replicating the process followed by the partners when jointly formulating the Local Action Plan for the green and social transition and promoting the resilience of the areas.

3 SWOT ANALYSIS

For some weeks there has been an online collaboration to shape this analysis as participatory as possible. The first processing of the **SWOT Analysis**, was based on elements that emerged from the organization of two conferences, in June and September 2022, workshops and thematic meetings held under the responsibility of the “Committee for Sustainable Management of Natural Resources of Sifnos” (SMILO MED project), interventions and experiences from previous activities in Sifnos, data from surveys as well as the recent recording of local varieties and seeds (February 2023) as well as observations and suggestions of people from the island.

The strengths and weaknesses of the SWOT Analysis mainly concern the internal environment of Sifnos and its society (e.g. nature, man-made stock, culture, human capital, social organization, staff and executive skills, qualities and characteristics of the local community, financial potential, cohesion, tradition, contact with developments and innovation, etc.). On the contrary, opportunities and threats reflect factors of the wider environment - physical, social, economic, administrative and political, which Sifnos should identify, take into account, see its adaptation to the new facts and adopt goals that respond to these present and future challenges.

On the occasion of the two programs (GRAPE – COSME and SMILO MED), for almost a year, every month we met and discussed an important issue for Sifnos, we recorded existing experience, good practices, we looked for forms of organization and new proposals in order to formulate the Green Social Action Plan that will be proposed to the Municipal Council to form a long-term strategy of Sifnos society. The SWOT Analysis and the Action Plan uses between others

The results and outcomes of

- 3 conferences on sustainable management of natural resources, agriculture, synergies of added value in local products
- 3 workshops on social economy, water issues, nature and biodiversity,
- as well as of
- recording of memories on sustainable local farming,

- many discussions with persons (to discuss concrete issues like missing social infrastructure, local agriculture and its potential, local seeds, water issues, marine issues – fishing, landscape)
- a number of existed studies and reports

There was also extended consultation and comments on a first draft in google drive

More details in Chapter 5: Public Participation.

The SWOT Analysis and the Action Plan can help other islands with similar characteristics in the Aegean and other geographical areas, especially through the SMILO network.

3.1 The strengths of Sifnos

Natural environment - natural resources

- Natural environment is in a relatively good condition with the exception of the destruction of salt marshes in coastal areas. There is a need for preservation of still small wetlands in ravines, natural springs (the most but they have stopped running water).
- One of the most well-preserved NATURA 2000 area in islands with special features such as cedars juniperus – juniperus but also other important and some endemic species.
- Strong understanding, in the past, of the need to manage water wisely and share it fairly so that it is enough for all and sufficient for nature.
- In the past, a developed network of springs, cisterns, wells, troughs located mainly along the paths which with collective intelligence combined existing natural sources with complementary human constructions, forming an excellent water resources mapping.
- The springs that supplied good quality drinking water were protected from possible pollution or destruction.
- The important project of the biological treatment of the sewage water of the central settlements of Sifnos is in progress

Man-made environment

- Built environment and human architectures harmoniously connected with the natural environment, "improved" the natural environment
- In the past, Sifnos met 100% of its needs from wind, rain and sun
- All houses and buildings had cisterns and rainwater tanks, while reusing water for other uses was part of people's daily behaviour.
- Besides the windmills, there were, a few decades ago, 4-5 watermills, maybe more.
- 2-3000 km long network of drystones/terraces that play an important role in agriculture, maintaining soil fertility, and creating small biotopes/ecosystems is still in relatively good condition.

- In the fight for the climate, the conservation of drystones is a useful tool that can contribute to the strategy and practices of adaptation
- Maintained mostly in good condition, about 100 km marked trails and also about 100 km unmarked trails
- Large number of visitors / walkers in spring and autumn

Agricultural activity - landscape

- Interesting landscape that has various features of wise human intervention / creation
- A first registration of 1200 agricultural buildings near paths and roads with particular value
- The interest of many Sifnians - not only farmers by profession - is increasing in the preservation and cultivation of local varieties – seeds.
- Interviews and seed collection from crops that existed in the past, that are quite adapted to dry conditions and the new climatic data of limited rainfall.
- Very few animals today that may belong to older animal races, something that needs to be investigated in depth.
- There is a strong "culture of local cuisine", but in the past they were based on the developed agricultural activity and indeed of local varieties.
- New initiatives that combine agricultural production with educational and informational services for tourists.
- The Agricultural and Beekeeping Cooperative considers that there are significant prospects for the agricultural sector of the region if they are based on a new "model" .
- The promotion of organic farming has been identified as key priority for the Agriculture and Beekeeping Cooperative of Sifnos.

Social characteristics - social cohesion - cooperative spirit - economy

- Social consciousness and sensitivity among a significant number of residents and strong memories of cooperative organization of the local community through informal structures.
- Low rate of unemployment, especially structural unemployment
- Low average age of residents, young men and women stay on the island or return
- Interest in renewable energy sources, mainly solar. Organization of many events and discussions in the past about how to make Sifnos a green island
- Many programs of voluntary work and environmental action.
- Some programs are implemented with the participation of Sifnos (STARS4Water, GRAPE, SMILO, Erasmus, Horizon etc.)
- A rich cultural heritage

- Sifnos is an entire archaeological monument, by a complex geological structure
- Sifnos is included in the European initiative "Clean Islands of the European Union".

3.2 Weaknesses of Sifnos

Pressures on the natural environment and biodiversity

- No overall plan to record and protect water sources, the emphasis is mainly on technical works and desalination, which are useful but cannot be expanded continuously. Limited intervention in demand management issues
- Many wells are contaminated and there is generally sewage entering the groundwater.
- A Special Environmental Study plan for the NATURA area of Sifnos was made public and is still under consultation but allows the construction within the area of tourist units of up to 150 beds and restaurants of up to 100 square meters.

Pressures on the anthropogenic environment

- To date there is no spatial and residential organization plan. The lack of land uses is today the greatest risk due to the rapid demand for land for tourism, hotels, airbnb and holiday houses, especially after the pandemic and the changes it caused.
- Although the construction of the sewage network in the villages is progressing, the location and the wastewater treatment model have not been finalized.
- Lately, a lot of building activity has been recorded, which significantly modifies the rural landscape and the scale that characterized the island.
- A progressive abandonment and collapse of dry-stone walls is observed, resulting in an increasing risk of soil erosion and a lack of defense against extreme weather phenomena.
- Few people now know how dry stone walls are built and restored

Big problems for farmers/breeders - limited agricultural activity today - some local varieties are lost forever

- Tourism and construction tend to monopolize the economic life of Sifnos at the expense of other activities that existed or may exist
- Today in the primary sector there is no intense activity
- The largest proportion of products for food and feed are imported species.
- Many of the local seeds and varieties are likely to have now disappeared and cannot be cultivated.
- The services of the relatively small Municipality are not able to face today's challenges and contribute to long-term planning for the sustainability, resilience, green and digital transition of Sifnos.
- There are no developed local social economy structures

- Implementation of the energy proposal has not yet begun due to legislative and bureaucratic hurdles to be overcome as well as objections to the plan itself.

3.3 Threats for Sifnos

The climate and ecological crisis

- The climate crisis is the biggest threat to the islands given that our region is now considered a zone where the intensity of the climate crisis is increased by 20% compared to the general average global temperature rise. Already recorded: increase in average temperature, prolonged heat waves, intense and more frequent extreme weather events, decrease but within a short time more intense rainfall, sea level rise, tsunamis due to changes in temperature. Species from completely different marine ecosystems are already appearing in the sea of Sifnos, and may completely change species that exist today.
- The abandonment and collapse of dry stone (terraces) poses a threat to soil fertility and biodiversity and increases exposure to risks from extreme weather events.
- Drystones / terraces as a natural - anthropogenic system against extreme phenomena are not currently part of the European proposals that exist to strengthen the defense mechanisms - climate adaptation
- There are observed rapid changes in marine diversity as new invasive species are now present in the marine ecosystems around the island and the fishermen face many problems.
- The lack of an integrated water management plan is worsening the water problem

Economic Risks

- The high dependence of local economy on tourism (products and services) and the import of almost all the goods (food, appliances, furniture) pose a risk for economy and society (collapse of local economy, food insecurity, loss of jobs and income for many people, rising of the prices) in a case of a new financial and resource crisis, the continuation of war in Ukraine, a new health crisis and mainly in front of a possible climate emergency / crisis.

Risks to the special man-made and natural environment of Sifnos from external factors

- The pressure on the natural resources and the character of the island is increasing from a wave of land acquisitions, settlements, tourism expansion
- They have been launched but not been completed the Special Environmental Plan, the plan for spatial and residential organization, land uses and the Special Environmental Study for the NATURA area, the redefinition of the boundaries of the settlements and the overall planning - characterization and the sanctioning of the municipal network. But until they are completed and implemented there

will be a gap of at least 3-5 years, and in between there is a danger for a deep change of the balances and the special characteristics of Sifnos

Organizational - administrative barriers - education - social cohesion / cohesiveness

- The utilization of existing or future tools that will help the transition to a new sustainable, green and climate-neutral economic model requires both appropriate supporting policies and a human resources that are not present in Sifnos
- The model of formal education and training that exists today fails to transfer to the new generations the wealth and wisdom of previous Sifne societies, and does not allow the exchange of good practices and experiences.
- The greed of some businessmen and the ignorance of a significant number of citizens may delay or even abort some necessary projects
- The social economy in Greece is faced with significant obstacles and a lack of clearly supporting mechanisms.
- Lack of organized actions and initiatives by local bodies in matters of raising the awareness of the citizens of the local community regarding the cultural heritage, the understanding of its importance and its interconnection with the conservation of the island's landscape and biodiversity

3.4 Opportunities for Sifnos

The opportunities arising from the green shift to address the climate, ecological and food crisis

- The climate crisis is leading to changes in the economy, a shift to greener and nature-based solutions.
- Citizens are looking for quality and healthy food, local items, taste experiences, special foods based on natural/vegetable items.
- The wisdom of the past can be combined with modern knowledge to shape a sustainable, resilient future.
- The new CAP and the European Green Deal have environmental /digital transformation as their main objectives. There are also many more programmes like LIFE, Erasmus, HORIZON, EUKI that can help the green and digital transition of Sifnos if a supportive structure is created.
- Pro-environmental investments are favoured as pillar II of the CAP with the integration of the "Green Deal" providing that 35% of the total resources should be directed in such directions.
- The local community can choose consciously and organized to attract more sustainable models of tourism. Creation of a "**Sifnos Geopark**" to highlight - on a global level - the geological, natural and cultural wealth of the island, will enrich the tourist product. Actions and projects for the exploitation, protection and promotion of the cultural / natural heritage, will contribute at the same time to the controlled and limited tourist development of the island

- The upgrading and protection of geo-archaeological and archaeo-metallurgical sites, as well as the promotion of this special cultural heritage to the wider public, offers opportunities to create new jobs, especially through cooperative forms of organization mainly in the field of promotion and guided tours.

From the wisdom of the past towards to a modern, green, sustainable future

- Sifnos can learn from other islands but also from its own past
- A series of programs and activities supported with European funds can contribute to the utilization of Sifnos as an open ecological laboratory
- The damages that have been done to the residential and natural environment of Sifnos from arbitrary interventions are currently relatively small if one compares them to what has happened in other areas.
- There are many European agencies and cooperation networks, research centers and friends of Sifnos who can help Sifnos with their experience and knowledge to achieve its goals for a sustainable prosperity

From the spirit of collaboration towards modern social economy structures

- The strong presence in the past of the spirit of cooperation and mutual help can form the basis for modern models of strengthening social cohesion, mutual help and solving the problems that exist in social infrastructure issues
- Although the concept of formal social economy is not known in Sifnos, as in other similar areas, cooperation with other European networks (e.g. through European programs such as SMILO and GRAPE) can help to transfer experiences and good practices
- European policy places great emphasis on supporting the social economy, with the European Action Plan for the Social Economy
- In Greece, the formulation of an action plan for the social economy, based on European obligations, has begun at the ministry level.
- The **European Action Plan for the Social Economy** also emphasizes the social economy's access to financial tools, which will help support the social economy at the local level as well, thus also in Sifnos.
- European networks of social economy (REScoop.eu, REVES, Social Economy Europe, DIESIS Network) and small islands (SMILO), networks where Wind of Renewal is an active member could play a role in developing common projects where Sifnos can participate to cover its needs for pushing the green, social and digital transitions needed for the society. The new CAP and the European Green Deal have environmental /digital transformation as their main objectives. There are also many more programmes like LIFE, Erasmus, HORIZON, EUKI that can help the green and digital transition of Sifnos if a supportive (social economy) structure is created.

4 Public Participation – The road map of a participatory process

In order to make the Action Plan as participatory as possible we developed a strategy based on the following activities:

1. In order to ensure the dissemination of the activities carried out locally and the related results, we used the two webpages of Wind of Renewal www.anemosananeosis.gr and bestpractices.anemosananeosis.gr as well as social media accounts (of the cooperative as well as personals) with the presentation of the project and the opportunities for Sifnos. We have also sent a number of e-newsletters, in Greek language, to a number of local people and to a total of more than 3500 subscribers, many of them from islands. We have also published a number of articles and follow-ups of meetings, conferences and workshops.
2. The most important and efficient tool for public participation in drafting an Action Plan is the **direct communication** with local people, organisations and institutions consider relevant or key actors.
3. We have also organised a lot of **on-site local events, conferences, workshops, discussions, interviews**, not only to inform the people about the project but also to give them the floor in order to express their views and proposals, feel that they are part of it.

The participation of the local people in drafting the Action Plan ensures the consistency of the project results vis-à-vis the target groups' needs and expectations.

The public events and other occurrences which we organized in collaboration with different groups and persons and in which many people and organisations participated are:

- **Two conferences on sustainable management of natural resources** (June and September 2022).
- **A workshop on the social economy** (September 2022 with the participation of representatives from European networks but also from small municipalities in Spain and Italy), partners of the GRAPE project
- **A workshop and discussions on the NATURA area of Sifnos** (December 2022). More than 30 persons contributed in the discussions.
- **A workshop on “Stories about water in Sifnos- from the part to a sustainable future”** (January 2023).
- We had also contacted **many people individually to discuss with them concrete issues** like missing social infrastructure, local agriculture and its potential, local seeds, water issues etc
- For drafting the **SWOT Analysis** there was a text uploaded in google drive where people who were invited and would like to participate, made comments and remarks. The final version was a synthesis of all the views and proposals. Then the text was published for extra comments. For some weeks there has been an online collaboration to shape this analysis as participatory as possible. The first processing of the **SWOT Analysis**, was based on elements that emerged from the organization of two conferences, in June and September 2022, workshops and thematic meetings held under the responsibility of the “Committee

for Sustainable Management of Natural Resources of Sifnos" (SMILO MED project), interventions and experiences from previous activities in Sifnos, data from surveys as well as the recent recording of local varieties and seeds (February 2023) as well as observations and suggestions of people from the island.

- From 24 to 27.2.2023 together with Roikos Thanopoulos we had a very interesting experience of **systematically recording the memory of a sustainable local farming and of local varieties / species that were cultivated in Sifnos** but also, more importantly, collecting samples of local seeds, plants and trees that are still cultivated today. It's impressive, and we're recording all that stuff and discussions. It is not only useful as a memory and cultural material but also as a basis for a dynamic renaissance of agriculture in Sifnos. This activity was planned by Wind of Renewal, the Sustainable Management Committee of Natural Resources of Sifnos and Nikos Chrysogelos within the framework of **SMILO MED** and **GRAPE project**, long ago.

- The **workshop "Synergies of added value in local products - Proposals for sustainable development"**, organised on February 26, 2023, by the Municipality of Sifnos offered some interesting proposals on agriculture, synergies and seeds of local varieties: "Synergies of added value in local products – Sustainable development proposals – Agriculture - Livestock farming - Fisheries - Beekeeping - Processing". Many Sifnian and Sifnians participated in the workshop, including farmers and livestock breeders, who took the floor and expressed their problems and proposals. The guests spoke: **Stelios Vogiatzis**, Secretary General of the [Panhellenic Union of Young Farmers](#), sheep and goat breeder, about the "problems and opportunities of sustainable livestock farming", **Yiannis Sarros**, editor-in-chief, journalist of the newspaper "[Countryside Chora](#)" about "the role of agrosynergies in the local community", **George Zakynthinos**, Professor at the University of West Attica on "Local products, proposals for promotion and added value", **Roikos Thanopoulos**, agronomist – researcher, "The role of cultivation of local varieties and seeds for agriculture on the islands", **Nikos Chrysogelos**, president of the Social Cooperative Enterprise "[Wind of Renewal](#)" "What kind of agriculture in Sifnos at the time of the climate, ecological and food crisis".

After every workshop we published a follow up. We have also contacted many individuals, especially farmers and fishermen, to discuss special issues with them. The proposals made both in the context of conferences and workshops as well as in communication with many local professional (fishermen for the marine diversity, farmers in the context of recording local seeds and varieties, entrepreneurs from tourism) are also incorporated into the Green Social Action Plan for Sifnos.

4. **The stakeholder engagement process during the dialogue - Organisations which participated in at least one meeting, workshop, conference, face to face discussions, drafting SWOT Analysis to make the process of the Action Plan as participatory as possible:**

- Local authorities: the vice mayor, the president of the municipal council, many counselors, 2 former mayors and a member of the Regional Council of South Aegean
- Wind of Renewal and other members of the Committee for the Sustainable Management of Sifnos Natural resources
- Agricultural and beekeepers cooperative, the president of the cooperative and local farmers
- Members of the Cultural Union of Sifnos
- The president and members of the Cultural Center of Sifnos
- Members of the Women Union of Sifnos SMARI
- Members of the Union of local Entrepreneurs and the Union of touristic Enterprises - Rooms to rents
- Teachers
- Students
- Inhabitants of different origin
- Sifnians living out of the island, eg in Athens
- Experts eg architects, engineers, professors who are friends of Sifnos or are connected with the local people and some researchers and environmental and cultural organizations supporting projects related to different issues of the insular life

As one young student proposed during a meeting, “we have to work systematically on attracting more young people and especially persons who have an interest to work as professionals not related directly to tourism”. There many young people discussing about the issues and possible solutions but they should take the initiative and be a driving force for the changes needed. This Action Plan will be delivered to many young persons too.

5. **Deliver of the first draft Action Plan to many local actors and individuals for recommendations and comments in August and September 2023**, asking them to evaluate, comment and contribute in finalizing the draft Action Plan before the Municipal Council take the decision.
6. Publishing Articles at local media in August, September and October
7. **Open public presentation of the 2d draft Action Plan in October** (In Greece we have local elections in October. The new Municipal Council will take the office in January 2024)
8. **Asking the new Municipal Council to take a decision on the Action Plan in February 2024**

5 GREEN SOCIAL ACTION PLAN FOR SIFNOS

Opportunities for sustainable economy based on culture, slow tourism, art, ecology, innovation, regenerating agriculture, climate protection

A key issue for the green transition of Sifnos island is the development of alternatives to the current development model that will give to the local people the income they need not from the over exploitation of the nature and the cultural heritage, but from a new paradigm, a new economy that protects natural and cultural resources long term, focus on green and social innovation as well as give emphasis on nature based solutions that bridge existed local traditional experience, values and knowledge with new ecological and social scientific, cultural and technological knowledge, benefit from good practices of other similar areas and make use of proper financial tools for the transition without leaving someone behind.

5.1 Developing an active Climate Strategy for mitigation and adaptation / Climate neutral economy. Energy Transition

Not climate protection only on the papers

The Mediterranean basin has been identified as one of the two most responsive regions to climate change globally (IPCC, UNEP / MAP). Already the IPCC Fifth Assessment Report considers the Region as “*highly vulnerable to climate change*”, also mentioning that it “*will suffer multiple stresses and systemic failures due to climate changes*”.

Even under the most ambitious mitigation scenarios, risks from adverse climate impacts remain, due to already locked-in climate change.

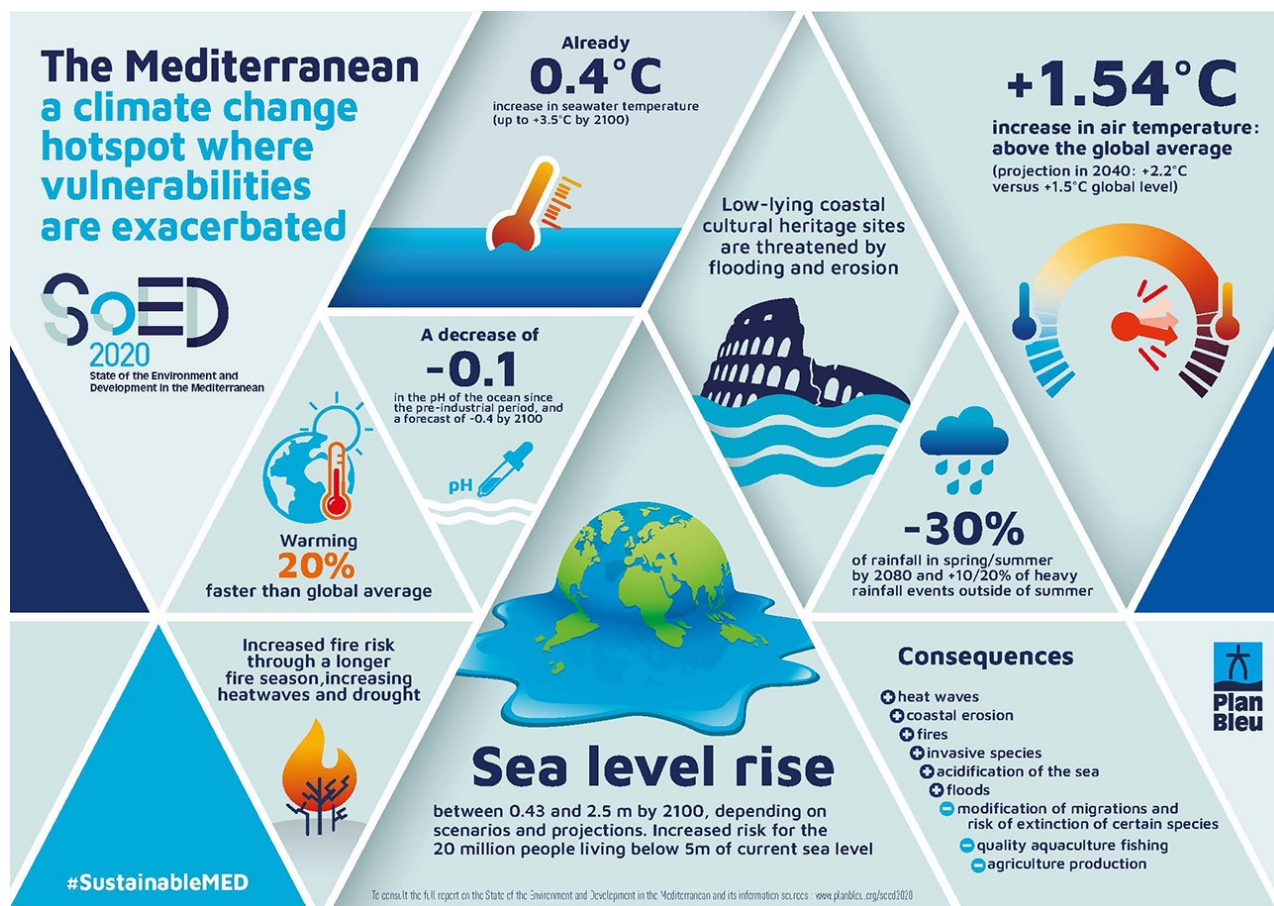
The climate crisis is the biggest threat to the islands given that our Mediterranean region is now considered a zone where the intensity of the climate crisis is increased by 20% compared to the general average global temperature rise. Among other things, more heatwave days are expected per year, more intense and more frequent extreme weather events, reduction of rainfall, increased risk of erosion in the coastal zone and of soils. Regardless of how and how much Sifnos contributes to climate change, it can be affected by extreme weather events that it has not caused. In the face of extreme events, today's environmental, technical and social infrastructures in Sifnos cannot stand. Unless the local community strengthens them and new solutions are developed that will withstand the multilevel crises of the future (environmental, economic, social and organizational resilience against crises) and there is a serious adaptation strategy.

The current situation of climate is East Mediterranean

The UNEP – MAP warns that Mediterranean is a climate change hotspot where vulnerabilities are exacerbated:

- The Mediterranean region is warming 20% faster than the global average.
- Climate crisis will influence the life of 510 million people

- More frequent and more intense heat waves pose a high risk for the nature, biodiversity, forests, the people and economy.

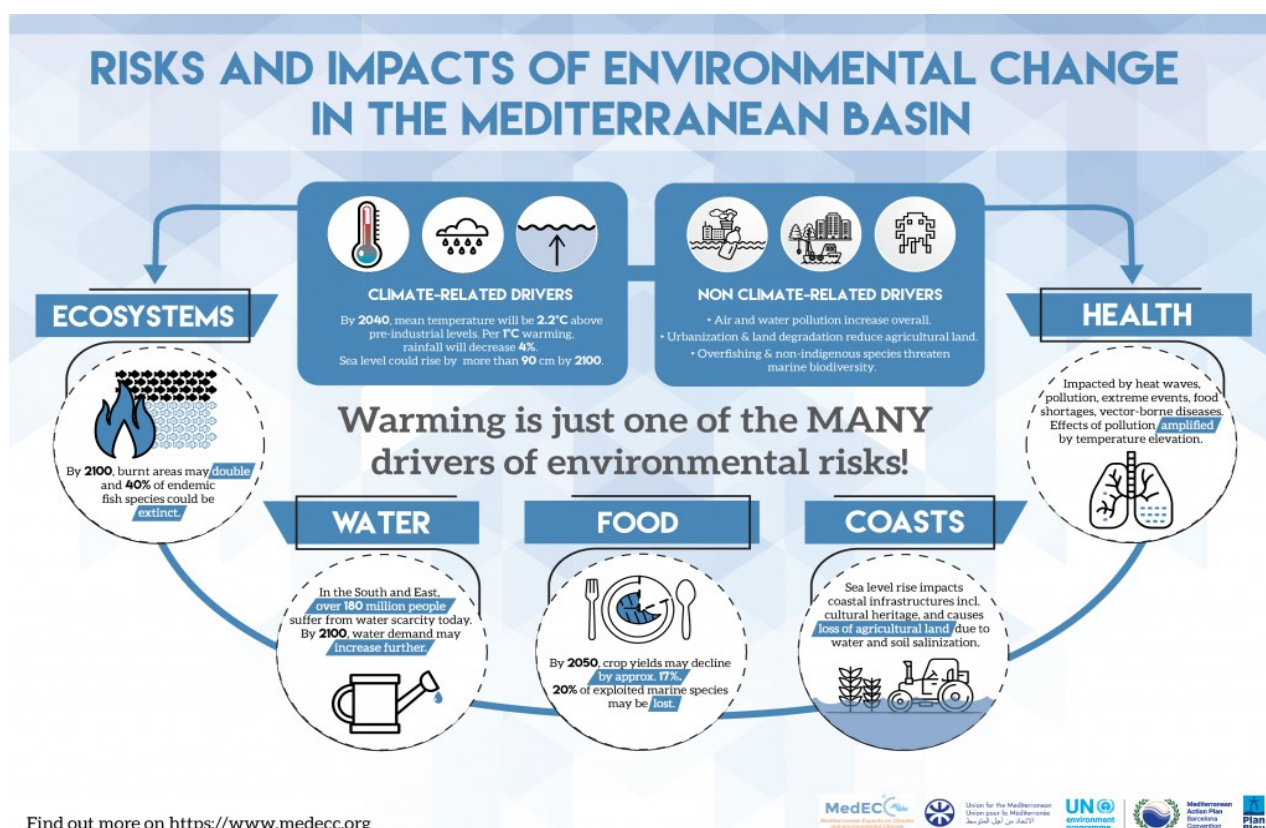


5.2 Impact of climate change on different sectors

Overheating is only one of the impact of climate crisis on our life. Impacts of climate crisis will exert additional pressure on already strained ecosystems and on vulnerable economies and societies.

- Coastal zones face heightened disaster risks, including **erosion** and **flooding**, and the **salinization of river deltas and aquifers** that sustain food security and livelihoods.
- Water temperature is expected to **rise by between 1.8°C and 3.5°C by 2100** with hotspots in Spain and in the Eastern Mediterranean. The Eastern Mediterranean is one of the places in the world that is warming fastest due to climate change. And so the conditions that are in the Eastern Mediterranean Sea are now perfect for many species from other hot seas. The estimation was that the temperature in the Mediterranean Sea will reach $+3.5^{\circ}\text{C}$ until 2100, but this estimation seems today too optimistic. Already in 2023 there was a high temperature record of 28.4°C

- 2°C global warming will reduce precipitation by about 10 to 15%. An increase of 2°C to 4°C would reduce precipitation by up to 30% in Southern Europe.
- By 2050, water demand is projected to double or even triple. The water problem is worsening as a result of the lack of integrated and long term planning in many areas and islands.
- Biodiversity (not only forests) is already under high pressure. Fauna and flora is in danger. Some species can not move to other regions and will be under risk for extinction. There is a need for better monitoring of the changes happening.
- Marine diversity is already changing. More than 900 species fish, crustaceans and algae have invaded the Mediterranean Sea in recent years due to climate change and other environmental pressures. The influx has increased significantly since Egypt doubled the capacity of Suez Canal in 2015 with the opening of "The New Suez Canal". Some of these species can pose a major threat to local marine life and financial activities like fishing. The new species have caused "a dramatic restructuring" of the ecosystem, endangering various local species and wiping out native mussels, prawns and red mullet. Waves of toxic jellyfish damage coastal infrastructure and scare off beach-goers and tourists. As the invasive fish and crustaceans buoyed by warming water temperatures and rapidly spread toward European shores, urgent action is needed to minimize its long-term impact.



The import of almost all the goods (food, appliances, furniture) pose already a risk for economy and society (collapse of local economy, food insecurity, loss of jobs and income for many people, rising of the prices) in a case of a new financial and resource crisis, the continuation of war in Ukraine, a new health crisis. The biggest risk is related long term with the climate emergency / crisis.

Tourism and construction tend to monopolize the economic life of Sifnos at the expense of other activities that existed or may exist with proper planning. The current tourism model is the main driving force for shrinking other economic activities (agriculture, livestock) and losing opportunities in green and social sectors that are of great importance for the future. The collapse of tourism as an impact of extreme heat waves during the summer, water scarcity issues and the need for vacations to cooler places, must be taken into consideration in the plans for the future of the local economy in 10 -20 years. The local economy is very vulnerable as it is fully depended on tourism and any radical change of the conditions could have big impact on the life and economy in Sifnos.

Climate crisis is exacerbated the current problems of **water management, soil and coastal erosion**.

- In Sifnos the fishermen catch many invasive species like **Lagocephalus Sceleratus**, an extremely poisonous bony fish commonly known as the silver-cheeked toad fish, **lion fish**, the tropical **rabbitfish** which have devastated algal forests in the eastern Mediterranean Sea and pose a major threat to the entire Mediterranean basin if their distribution continues to expand as the climate warms. The toxic jellyfish is also present from period to period.

5.3 Legal framework for climate mitigation and adaptation

Following a long period of falling greenhouse gas emissions in Europe, economic recovery from the Covid-19 lockdowns has led to an increase in emissions, particularly in the transport, industry and energy supply sectors, according to data reported for the EEA report [Trends and Projections in Europe 2022](#).

Estimates suggest **energy consumption increased in 2021 in both primary and final energy consumption, of 6% and 5% respectively, compared to 2020**. Primary energy consumption measures energy demand, while final energy consumption refers to what end users actually use. This increase in energy use can be largely attributed to the economic recovery.

In coming years, **substantial emissions reductions will need to be sustained year-on-year to achieve climate neutrality** in 2040. With the **European Climate Law**, the 2030 reduction target was increased to at least **55% net greenhouse gas emission reductions by 2030**, compared to 1990 levels.

To reach the 2030 target of 55% net GHG emissions, emissions would need to decline by 134 million tonnes of carbon dioxide (MtCO₂ eq) per year on average from the 2021 estimated levels. This is more than **twice the average yearly reduction that was achieved between 1990 and 2020**. All sectors need to significantly

step up their efforts in mitigating greenhouse gas emissions. In addition, the **CO2 removal** through **land use, land use change and forestry** must be increased.

At the same time, **energy use** should substantially decrease over the next years - the newly proposed 2030 target in the context of REPower EU requires more than a **doubling of annual energy savings** in the period 2022-2030. The same applies to **renewable energies**: since 2005, the share of renewable energy in Europe's gross final energy consumption has grown by an average at least 0.8 percentage points every year. This number should increase 3X, to 2.5 percentage points per year or more towards 2030 in order to meet the increased 45% renewable energy target proposed in REPowerEU (not very sufficient if we want to keep the increase of temperature under the 1,5° C).

5.4 Climate mitigation and adaptation strategy for Sifnos

Of course Sifnos is a small island and its contribution to climate crisis is very small but as all the areas, sectors and people have to contribute in climate protection, Sifnos has to fulfill its role to **contribute in climate mitigation**.

Although many events and discussions on climate issues were organised also in the frame of GRAPE COSME and SMILO MED programmes, there is an urgent need for starting a process with the full participation of the local community and different actors, not just a project, that will drive toward a **real local strategy on climate mitigation and adaptation**, fully supported by the society and the authorities.

At the same time the local community has to develop an efficient **climate adaptation strategy and practices** as it is obvious that the Mediterranean is a climate hot spot and the impact of climate crisis in the area is already very violent and it will influence not only the environment and the ecosystems but also all the expressions of our life, economy and all the sectors (water, soil, health, tourism, food production, islands and cities etc).

Adaptation policies and measures should tackle a wide range of potential climate-related risks and are very essential. Very often, responses to climate-related pressures and hazards are limited to short-term and no coherent local emergency measures. Therefore there is a need for building environmental, social and economic resilience against climate crisis at the local level with planning and implementing strategies, policies and practices that are pro-active, longer term and integrated. A shift from unsustainable development which drives to vulnerability should turn to a more sustainable direction. Good examples. Collaboration and synergies with other similar areas and islands is very essential as the human and financial resources and know how are limited.

The **preservation of dry-stone walls is a useful and unique tool** that can contribute to the strategy and practices of defense against extreme weather events (climate adaptation), more and more frequent in the area as a result of the climate crisis

The last wild fires on Rhodes and Corfu is an alarm of what we could experience in the future and push for quick (re)action on adaptation. Climate crisis is not responsible for starting the fires but climate conditions will influence hardly the side and frequency of extreme weather phenomenon, water scarcity (one of the routes of more and wild fires, heat waves etc).

5.4.1 *Differentiation of the economy*

A differentiation of the economy should be part of a well balanced climate adaptation strategy for Sifnos. A number of deep changes are needed:

- **Transforming the current model of tourism.** It is possible that the summer tourism will be soon very unstable – maybe it is already - and a society depending on this model of tourism will be very vulnerable, will risk everything in the case of a massive collapse of it, not only for one - two years (like during pandemic) but long term. The experience of Rhodes and Corfu after the wild fires in summer 2023 must be studied in depth. It is the top of the iceberg. Heat waves and wild fires have a serious impact on the decision for a trip among many people, no matter if the possible destination is far away from the place of the fire.
- **Prepare the local community for a “cooling” tourism,** and not tourism during the hot summers. This is not an easy issue as the vacation period, the infrastructure, even the culture and the way of thinking of both the travelers and the hosting Mediterranean destinations is oriented today towards “sun and sea” and not to “cool and environmental - cultural discovering”.

The spring and autumn tourism is more safe at the moment. Sifnos have some good opportunities for such a tourism, like the existence of trails, a valuable Natura 2000 area, rich cultural heritage and still existed agricultural activity which could be combined with autumn / spring tourism, agro-tourism.

In any case, the increase of temperature in general as well as during the summer periods will also increase the **demand for energy and water**. That means we must be prepared in the framework of an adaptation strategy from today on and try to solve not only the urgent, current problems but also the ones, very serious, we would face in the next 5-20 years.

5.4.2 *Creation of an open climate – ecological lab in collaboration with the scientific community*

We are proposing the creation of an **open monitoring, informing and awareness climate – ecological lab** based in Sifnos in order to:

- follow closely **the evolution of climate crisis in Sifnos (as part of the evolution in East Mediterranean), informing the local society, updating the mitigation and especially the adaptation policy, aware the local community, taking new measures, promote the resilience of the society**
- **monitor / observe the changes in the terrestrial and marine ecosystems. The creation of an open ecological monitoring – observatory lab.**

Connect the European research community and the local fishermen through the [European Alien Species Information Network](#) and research / observation projects.

5.4.3 *The topics of a climate mitigation and adaptation policy*

A climate mitigation and adaptation strategy must include the topics:

- **Observation of climate and ecological crisis impact at the local level (eg warming, changes in perception, impact on biodiversity, marine species etc)**
- **Local, sustainable, resilient, comprehensive, circular food policy in Sifnos. The agriculture in the are of climate crisis, local seeds, varieties, corps, food security – resilient farming**
- **Soil protection / regenerating agriculture**
- **Long term maintenance of dry stone walls**
- **Water for economy, society and environment**
- **Nature and terrestrial and marine biodiversity - Protection, monitoring, new roles in protection of natural terrestrial and marine environment**
- **Prevention and fighting fires and other risks**
- **Improving civil protection against extreme weather phenomenon**
- **innovation for enhancement of the local health and resilience, development of new social infrastructure**

For the Greek reality, where from planning to implementation takes more than 20 years, there is a danger places like Sifnos to stay without a plan in front of the big problems, not prepared accordingly in time.

5.4.4 *Shift from energy production and consumption based on fossil fuel to renewable energy and energy efficiency for all sectors (housing, tourism, mobility, shipping).*

Create a new paradigm for zero emissions insular buildings combining traditional wisdom and modern ecological knowledge and techniques.

There is a need for proper and innovative solutions for renewable energy production adapted to the special insular environment (eg artistic shape of photo voltaic and hybrid systems, solar boilers, wind mills, transformation of old wind mills etc). There is a need for research about the role abandoned mining places can play in production and storage of renewable energy.

Climate crisis and Energy Transition in Sifnos

Sifnos is not interconnected to the mainland nor to other neighboring islands. Currently, the power on the island is mainly generated by a **diesel power plant** owned by the national Public Power Corporation (PPC).

Like for most islands, its electricity demand is characterised by large seasonal variation. The peak occurs during the high **tourist season in July and August**.

The annual electricity demand of Sifnos is about **17,5 GWh**.

In 2018, the total fuel demand for power generation on the island was more than **4 million litres of fossil fuel. There is an extra consumption of fossil fuel** for heating, for transport, for the different kinds of vehicles, the boats and local recreational boats.

The electricity costs on islands are higher than on the mainland. In order to keep electricity prices affordable for the islanders, the Greek government put in place a mechanism that subsidizes - directly and through increased prices paid by consumers of the rest of the country - the difference of electricity costs produced in island and the cost of it produced in the mainland.

In 2015, with oil prices around \$30/barrel (approx 27 Euros), the production cost of the power station on Sifnos was in the order of 300 Euros per MWh, but thanks to the subsidies, only 180 Euros per MWh were charged to electricity consumers on the island.

In 2019, the electricity company PPC installed two wind turbines of a total capacity of 1.26MW on the island. In addition, Sifnos counts about 335 kW of photovoltaics generators distributed over a solar part installed by PPC (50 kW), 25 residential and two small commercial installations.

Renewable energy is the only solution for climate mitigation, reduction of the energy production cost and the cost for the consumers (households and enterprises, mainly touristic).

Existed experience of Sifnos island

In the past, Sifnos covered 100% of its needs from wind and sun, and utilized renewable forms of energy available through the many windmills and 5-6 watermills, ships with sails and some mills for pumping water from wells

As a result of organising many events and discussions in the past on how to turn Sifnos to a green island, there is a high interest in renewable energy, mainly solar among the people.

In the past there was prepared a paper on “Climate and Energy Transition in Sifnos” but was never implemented, or taking into account, at least in a way which will prepare the needed changes, reorient the policies and practices in the island, and turn Sifnos to a climate neutral economy and society, resilient to the new climate era. It is not an easy task, but it is possible.

An Energy Community has been created in Sifnos in 2012 (with the participation of the Municipality of Sifnos) and submitted in 2016 a proposal to the Greek Regulatory Authority of Energy for an 8 MW wind & hydro hybrid power plant, including a sea water based energy storage system. The plan was not licensed for the 2d step (it received only the primary, first production license) and the proposal was not implemented for several reasons.

In order to support the island in developing a comprehensive decarbonisation strategy, the EU included Sifnos among the 88 islands of the Initiative and the Clean Energy for EU Islands Secretariat is working with Sifnos on elaborating an island-wide Clean Energy Transition Agenda. There is also interest of the european

federation of energy cooperatives REScoop (www.rescoop.eu) for assisting the process of energy transition in Sifnos.

In any case, learning from the positive experience as well as from the failures, the idea of a clean energy island (100% renewable energy) is alive. There are new proposals:

- **Adaptation of the previous energy plan**, prepared by the Sifnos Energy Community, to the new reality (interconnection of Sifnos to the electrical net, democratic discussing the new plan etc), combined with upgraded energy saving programs and zero emission buildings (zero energy consumption from fossil fuels).
- **Creation of an Energy Lab in Sifnos in collaboration with Universities, REScoop.eu and other cooperatives (eg Anemos Ananeosis / Wind of Renewal)** with focus on bio-climatic architecture, small scale wind mills, retrofitting the traditional sail windmills to energy producing systems, innovative smaller projects and more adapted renewable energy production systems combined with block chain and proper ICT technologies, solar and hydrogen technologies proper for islands, training and awareness projects, art and RES in islands etc. The rich tradition of local architecture that is very close to bio-climatic architecture can be exploited and this is an opportunity to make the island a demonstration and training center for bio-climatic architecture / zero emissions buildings.
- **Working on the idea of an open museum for technologies used in the past in the island** focused on wind and water sail mills, mining, sailing boats, clothes production, dry stone walls and towers, potteries workshops etc

5.4.5 The potential for Green jobs on climate protection and adaptation, environmental monitoring and green transition in small islands

There is a huge potential for the creation of differentiated jobs - others than tourism - on the island concerning climate protection, observation of the insular ecosystems health, research and realisation of green social transition in small islands .

5.4.6 Good examples

Good examples from GRAPE partnership

Municipalities, energy efficiency and renewable energy projects

The municipalities of Mirabella Imbaccari, Bonares and Malegno are developing projects with the aim of making the public sector greener and more efficient. Solar panels were installed in buildings belonging to the public authority in order to increase self-production of energy (Mirabella, Bonares). Such buildings were insulated to ensure higher energy efficiency, using sheep's wool, otherwise disposed of as waste (Malegno). LED technology was used to illuminate public spaces for greater efficiency and lower consumption (Bonares).

Messina renewable energy community

Fondazione Me.S.S.In.A / Messina Community Foundation set up a “renewable energy community”, generating economic savings for member families with a stronger impact on marginalized people thanks to the “fairer” electricity distribution and pricing system based on social criteria, thus reducing both poverty and inequality. The Foundation created the “renewable energy community” in the eco-buildings constructed by the Foundation after the dismantlement of a local slum. The community is able to produce, use and store solar energy. Given the presence of marginalized people among the beneficiaries, a specific electricity distribution and pricing algorithm has been designed to manage the community: it is based on social criteria, taking into account the social priorities of the users, tackling both energy poverty and inequalities. The Community Foundation of Messina promotes social justice and economic and human development by designing, financing, experimenting and evaluating new socio-economic paradigms, going therefore beyond the pure logic of philanthropy.

Proposal for creation of an energy community in the Solco Camunia Consortium

The idea of promoting the Energy Communities by using the widespread presence of proximity shops and the Community Centers focuses on this last feature, involving various stakeholders such as the shop itself, the parish, the municipality and the adjacent houses. It is important to consider this process as dynamic and constantly evolving. It is proposed **specific training** to the manager of the proximity store or community center in order to make him/her an active promoter of the initiative, partnership with an **Energy Service Company** (EsCo), mapping the energy consumption of public buildings, creation of a model of economic sustainability and the exploration of the possibilities of local hybridization with other energy sources such as biomass, hydroelectricity, windmills, also evaluating their economic feasibility, search for proper energy storage systems and their integration into the grid. There are six communities currently involved in the Solco Camunia Consortium, which houses local shops, divided into three in the middle valley and three in the upper valley.

The idea of Energy Communities has already been developed as a model elsewhere, but not in the Valley where it could take advantage of a well-rooted mindset, the experience of others.

Good example from SMILO members

The energy cooperative of Culatra island

In the framework of SMILO general assembly, Anemos Ananeosis visited the small island Culatra, in Portugal and have visited the **Culatra Energy Cooperative**. The energy cooperative was established as part of the Culatra 2030 Initiative, for the sustainable development of the island. This project covers all socio-economic activities on the island. The main objective of this project aims to preserve Culatra's identity as an energy-independent fishing settlement and cover its energy needs 100% from renewable sources. The local initiative to create energy cooperatives by the young men and women of the island was supported by the 3 bodies of

the island, the Culatra2030 team, including the Associação de Moradores da Ilha da Culatra (AMIC), the University of Algarve, Make it Better Association, and the Comissão de Coordenação e Desenvolvimento Regional do Algarve (CCDR).

The energy cooperative is a Collective Self-Consumption Management Body, it manages all the energy production units with Photovoltaics (eg on the terrace of the social center, on the two canopies at the island's port, etc.). It looks after the needs of the community as well as promoting pilot projects for energy storage and sharing.

A photovoltaic system has been installed on the roof of the community center. Also, the cooperative has at its disposal a boat with photovoltaics to transport the fish from the island of Culatra to the city of Faro.



The investment was made within 2.5 years and currently covers a large part of the island's energy needs with the aim of soon reaching 100%, while storage batteries have also been installed.

It is expected that the investment will be repaid within 7.5 years.

Workshops and projects focused on retrofitting traditional Greek sail windmills for producing Renewable energy

There are numerous pilot projects working on retrofitting traditional Greek sail windmills for producing Renewable energy, like

- on **Patmos island** (one of the 3 windmills is able to generate electricity from wind power after the replacement of the grindstone by a generator and the installation of a metal rolling beam with mechanical brake for the waterwheel),
- [Anemourgos](#), by professor Dim. Christakis
- Pilot project by [Dieter Schwechten](#), Professor, Konstanz University of Applied Sciences, Germany.



Anemos Ananeosis / Wind of Renewal's experience and practices on climate action and energy transition

Anemos Ananeosis is very active in climate action, climate education, energy transition, especially in tourism.

One of its flagship project is the program "SCHOOLS OPEN TO CLIMATE PROTECTION AND ENERGY SAVINGS Athens – Berlin" funded by the "European Climate Initiative". The main target of this program was, not only the energy footprint reduction of school buildings, but also to raise students/teachers/parents awareness and knowledge in the subject of energy savings and ecology. This program used the existing experience as it emerges from environmental educational programs both in Greece and Germany. It also propelled a more comprehensive approach

- Institutions with different experience and role, from the two countries, collaborated in the program, adding their own know-how: The Municipality of Athens as coordinator, the social cooperative enterprise "Wind of Renewal", the German Independent Institute for environmental issues (UFU) and the German Citizen's initiative "Respect for Greece".
- Experienced German and Greek experts on climate and education trained 20 trainers who later trained 200 teachers, of whom 197 took an active role in their school. In total 72 primary, secondary and high schools have supported their students in this program and posted the necessary "testimonies" on a digital platform called "moodle". This platform will be accessible to all members of the educational community who want to implement similar actions in the future.
- The educational community was supported for the entire school year 2018-2019, with methodological, educational information and tools. In addition, "energy suitcases/ tool boxes" have been given to them in order to apply the knowledge they gained in practice. More specifically, these "energy suitcases" included tools of measurement, observation and experimentation, thus combining different tools of environmental /climate education.

- The students were informed, sensitized and turned into active researchers, surprising all the participants for their commitment and interest. Their work was captured on both posters and rich material posted on the digital platform moodle.
- The students, teachers and school unit participated in a relevant research that evaluated the implementation and catered, with good practices and suggestions, the program's final action plan for interventions in the school.
- The project was a useful tool for intercultural education and inclusion of all the pupils, greeks and the ones with migrant and refugee background, offering different roles and tasks to all the pupils based on their interest, skills and capacities, enhance the community building approach.

The impact of the program not only in the educational but also in the wider community, constituted a legacy for future actions and programs:

- A **website** with all the necessary information and educational materials that are generally useful for the program (<http://athensecoschools.gr>).
- An **educational guide** on energy saving and climate change was a part of for students training.
- A well-organized **action plan** for the Municipality of Athens usable in all its schools.
- A **research** for the application of the program in schools.
- **15 educational suitcases** with needed equipment borrowed from schools, in order to measure energy, brightness etc.
- A **digital moodle platform** on which all participating schools posted their work. In the future, this platform will be maintained and enriched by the work of other schools (<http://athensecoschools.gr/moodle/>).

Other activities on climate and energy include:

- Installation on the roof of our Welcommon Hostel **20 solar panels for production of hot water** for use and **changed the old 2400 lamps with new LED lights**, reducing the electricity consumption up to 50% and the oil consumption up to 56%. Plan to turn the Hostel to a demonstration center for sustainable climate neutral tourism and a near zero emissions building, a training center for energy transition and climate protection in collaboration with different organizations, research centers, energy cooperative, financial institutions.
- **EUKI-YESClima project**: In collaboration with German and Spanish partners training of 11 Greek young experts on climate and energy efficiency, energy inspections and interventions (scientific – technical and economic issues, legislation and entrepreneurship).
- Collaboration of Wind of Renewal, INZEB and Heinrich Böll Stiftung in delivering a policy paper on: "Energy Poverty in Greece: **Social Green Innovation Proposals** to Address the Phenomenon"
- **Green Social Innovation for youth**, a European Solidarity Corps project supported by Erasmus+

- **Green New Deal and financing, training of local authorities, stakeholders:** many activities, seminars, training of local and regional stakeholders for the development and implementation of participatory methodologies, planning and implementation based on visioning CLLD schemes and models for developing Green, Cohesion and Inclusion strategies, policies and measures. A series of activities with the aim to strengthen the capacities of social, professional and regional stakeholders, as well as of local authorities for the implementation of plans of green and social innovation, green transition and the full utilization of national and European funding opportunities.

5.4.7 *Financial tools for backing climate mitigation and adaptation as well as energy transition:*

1. European Green Deal and REPower EU. To achieve the goals set by the European Green Deal, the Commission has pledged to mobilise at least €1 trillion in **sustainable investments** over the next decade. 30% of the EU's multiannual budget (2021-2028) and the EU's **Next Generation EU (NGEU)** instrument to recover from the COVID-19 pandemic, has been allocated for green investments. EU countries must devote at **least 37% of the financing they receive under the €672.5 billion Recovery and Resilience Facility** (about 32 billion Euro for Greece) to investments and reforms that support climate objectives. All investments and reforms to be financed in this way must do no significant harm to the EU's environmental objectives..

2. LIFE program for the Environment and Climate Action

3. European Climate Initiative (EUKI) program. It is a financial tool of the German Federal Ministry for Economic Affairs and Climate Action (BMWK) in order to improve cooperation on climate action in Europe. It supports selected projects that promote cross-border climate action in Europe. Funding of between 120.000 and 1 Million euros is awarded per project, following a Europe-wide call for project ideas.

4. EEA grants funds projects in 15 countries in Europe, among them Greece, related to energy efficiency and renewable energy, business development, innovation, research. Beneficiaries are NGOs, local authorities etc.

5. Social Climate Fund (SCF): The aim of the SCF is to help vulnerable households, micro-businesses and transport users counter the additional costs they may face when the EU Emissions Trading System (ETS) Directive is revised to cover these two sectors. The SCF should provide up to €65 billion in EU funding over the 2026-2032 period, mainly through ETS credits in the buildings and road transport sectors. It entered into force on 5 June 2023.

6. The PAMEx Local Investment Finance Facility (PLIFF): It is a financial mechanism created under the umbrella of the initiative titled "PAMEx: The Mediterranean: a model sea by 2030". PLIFF has been introduced to support the translation of PAMEx's objectives into progress in the field, in line with the objectives of the UNEP/MAP-Barcelona Convention system, and other relevant regional and global commitments undertaken by Mediterranean countries.

7. The Catalytic Finance Foundation: It is a non-profit foundation, incubator and technical assistance provider, based in Switzerland working for a type of financing that seeks to create positive social and environmental impacts in addition to generating financial returns. Its mission is to accelerate the design and deployment of finance vehicles for sustainable infrastructure at the subnational level.

8. Global Challenges Local Solutions Program. Its aim is to support community foundations and local communities throughout Europe to address Sustainable Development Goals on the local level, support local activities addressing Sustainable Development Goals and collect good practices, organize European education campaign showing that SDG-related issues and projects are in every community, and teaching on how to tackle them, facilitate the European network of community foundations engaged in establishing various activities addressing Sustainable Development Goals locally as well as donor-advised funds – projects implemented together with a local partner, mostly focusing on one main SDG-related topic, limited geographically to one or few countries.

9. Green bonds

10. Crowdfunding campaigns

5.4.8 Protection of environment and NATURA 2000 area as a basis for sustainable prosperity for the future and for all

Natural environment is in a relatively good condition (for some moderate compared to the past, for others in a very good or even excellent), with the exception of the destruction of salt marshes in coastal areas. It is needed preservation of still small wetlands in ravines, natural springs (the most have stopped running water). In Sifnos is one of the most well-preserved NATURA 2000 area in islands with special features such as cedars juniperus – juniperus but also other important and some endemic species.

We have to preserve the NATURA area long terms, to hand over the area and Sifnos to the next generations as we received it, and even better. For this purpose, it is necessary to create and support with knowledge, human and financial resources, structures and a management and protection body of the area that will be able to implement the planning in the long term, will help prevent disasters. It will also take care of resources, while cooperating with institutions, universities, research centers, the local community.

Its protection and long terms sustainable management could offer opportunities for sustainable economic activities and creation of green jobs.

Priority is the **development of a long term and integrated strategy for the natural environment of Sifnos, especially NATURA 2000 area and local biodiversity. Part of it could also be the genetic diversity, the local seeds and species and how regenerating agriculture in an era can contribute in nature restoration and protect the small ecosystems against climate crisis.**

The local/traditional “ecological” wisdom could be a basis for a modern sustainable, climate neutral economy and the well being of the population.

Based on public participation and open dialogue Wind of Renewal presented o proposal for a sustainable management of the NATURA 2000 area that will offer benefits to the entire community but also to the owners of private land in the area to support long term the protection of the area instead of pressing for the destruction of the area.

These proposals form a material basis for the well-being of the entire island, to strengthen agriculture with ecological methods, organise ecological tour of visitors, to have a special brand of the region that will give comparative advantages to the products from the region.

The importance and value of the NATURA 2000 for the environment and sustainable prosperity of Sifnos

The NATURA 2000 area of Sifnos extends to 20,919 acres, of which 9.9% of the area is a marine area. It is protected and belongs to the European network of the respective regions. It is classified in the SAC – "Special Areas of Conservation" category of species and habitat types, according to the European Directive 92/43/EEC. Code **GR4220008** and is referred to at European level as "PROPHET ELIAS UP TO WEST COASTS AND SEA AREA". In other words, it is very important not only for Sifnos but also for the whole of Europe.

The NATURA area of Sifnos hosts **39 species of birds, 19 rare, mainly endemic, species of animals and plants**. Among them is the protected cedar species **juniperus-juniperus** (“fida”, in the Sifnian language), extremely rare now especially in the island area, olive and carob forests, but also important for marine species areas with Posidonia. Recent research has even identified a species **of wild tulip Fritillaria obliqua subsp. Tuntasia**, which exists only in Sifnos and perhaps in some other Cycladic islands.

It is an area of wonderful balance, for thousands of years, between nature and people, thanks to the wisdom of previous generations, the people of Sifnos who were part of nature, not its enemies. This balanced relationship among human and nature has allowed us to have today an island with 2.000-3.000 km of dry stone walls, unique forests and trees, areas of high ecological value, small but rich habitats, a memorable tradition of agriculture with local species in harmony with nature. But also of exceptional human creations, paths, dry stone walls, churches, agricultural buildings, festivals and important archaeological creations, part of an intangible cultural heritage.

The area is also very important for the water resources of the whole of Sifnos and the protection of the island against extreme weather phenomenon

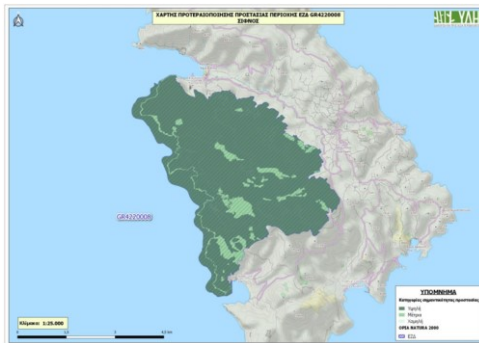
The natural and rural landscape in excellent condition, is something in which many regions (eg Tuscany, Switzerland, Tyrol etc.) are now investing.

Potential for ecological sustainability / Suggestions for the area

The Special Environmental Study currently being prepared will lead to the issuance of a Presidential Decree on land use in the area.

The legislation - article 44 of Law 4685/2020 - provides for a different land use regime in each area depending on the zone to which it belongs:

- (a) Absolute nature protection zone,
- (b) Nature Protection Zone (SPA),
- (c) Habitat and Species Management Area and



(d) Sustainable Natural Resources Management Area .The first form of the study provides for different zones. But this does not make sense for such a small area on a small island as Sifnos. Different zones mean different degrees of protection. For example, if they stay as proposed in the study, hotels of up to 150 beds, restaurants of up to 100 sqm and electricity, water and telecommunications facilities could be built in most of the area.

However, if a very small part is protected – i.e. only 200-300 acres – within this very important but limited area and throughout the rest of the area these activities and very large infrastructure are allowed, it is impossible to preserve the natural value of the area.

We can have tourist infrastructure, under conditions and rules, outside the area, mainly in villages and already built up areas. The area will be destroyed if we gradually turn it into a "tourist village" and we will see the impact on the whole island, on the whole society. Those who come today to enjoy the natural beauty of Sifnos, its culture and paths will have no reason to visit it. There is no need to install RES power plants and electricity networks within this area.

The choice of zones with different protection and land use regimes only makes sense on very large areas. In the case of NATURA of Sifnos, as shown by its initial evaluation for inclusion in the European network as well as the current Special Environmental Study, the whole area – which is however very small – has great ecological value.

Therefore, our proposal and the decision of the Municipal Council is to delimit the whole area as **(b) a Nature Protection Zone based on the evaluation criteria that already exist**. Consequently, the uses will be those that will preserve and not destroy the area. In other words, the construction of hotels, large restaurants, energy units, power transmission networks, etc. will be excluded. We must also protect the marine area of this area from activities that will degrade it.



What activities are allowed in such a zone?

It is not true that this designation does not allow human activity in this area. Instead, it will be allowed:

- controlled grazing,
- agricultural activities using ecological-traditional farming methods,
- the collection of plants and herbs,
- beekeeping,
- pedestrian trails and visitor tours,
- projects to support the soil, and
- the maintenance of existing temples,
- maintenance of dry-stone walls and agricultural structures,
- archaeological excavations and the promotion of findings,
- ecological and scientific research.

Activities, that, when properly planned and carried out responsibly (eg proper and not uncontrolled grazing, guided tours, maintenance, etc.) will **preserve the area long terms** and will **provide income both for the owners of estates in the area and for the whole of Sifnos**.

Apart from the importance of the area for nature, water and civil protection, the area is a pole of attraction for those tourists who care about trails, natural areas (eco-tourism), culture, art (photography, painting, theater in nature), exercise in nature and therapeutic hiking, etc. This is a model of Sifnos tourism for today and the future as the impact of climate crisis will change tourism in East Mediterranean and will push for autumn and spring tourism far from sun and sea summer tourism. Even this kind of tourism should take into account, of course, the island's endurance in terms of the number of visitors each season, the carrying capacity of the island and the area. **The area, therefore, will continue to be a key source of income and employment for everyone in Sifnos, maybe it can be an even more important source in the future.**

This region is also a unique defense – along with the dry-stone walls in general – against the dangers of the climate crisis, which is getting worse and will have repercussions all over the planet, of course on Sifnos and

this region. The degradation of the area and the destruction of the natural defenses created by trees, bushes, natural fences, terraces / terraces / dry stone walls and soil that can still absorb water, will leave Sifnos exposed to erosion and major natural disasters, such as those we experienced in 2003, floods, destruction of infrastructure, thousands of tons of mud.

How can a more stable, sustainable economy be developed that will benefit both the owners of estates in the area and the whole of Sifnos?

Today significant revenues are generated for the whole of Sifnos precisely because of the existence of this area. The preservation of the area in good condition as well as the cultural and architectural wealth of Sifnos attract thousands of people who stay in hotels and rentals throughout the rest of the island, where of course there must be a limit taking into account the carrying – ecological capacity. Its protection and promotion will contribute to the magnification of the economic benefit for the whole of Sifnos.

(a) A wise and ecological agriculture, which comes from the past and is in demand for the future: Products of ecological-traditional agriculture and beekeeping from the region, with local species (seeds and trees) and environmentally friendly practices, without chemicals, can have high nutritional value and better price. However, there is a need for:

- **helping with knowledge, programs and supporting tools** farmers, beekeepers, livestock breeders especially young people and the Agricultural and Beekeeping Cooperative to develop such agriculture, beekeeping and livestock farming, on agricultural land that already exists in the area, so that specific criteria are applied to their activity, compatible with the importance and protection of the area. The activities can benefit from the relevant funding.

- **create a scheme for awarding special labeling for products** produced with sustainable practices within the NATURA area and other pre-purchase schemes (similar to the ones in use for examples in Abruzzo), so that producers know what quantities they can sell directly to consumers and have the money they need for their activity.

(b) The combination of agriculture and organised visits to both natural areas and farms with local seeds and ecological practices can be a source of new occupations and complementary income. Organized visits, volunteering programs, community-supported agriculture, upgraded guided tours through the trails to the ecological, cultural and archaeological value of the area and to visitable farms, with strict rules and local, trained drivers, can create income and jobs for:

- locals who own estates
- guiding, guarding, protection, restoration and long-term management of the area, as is done in areas with relevant tradition.

(c) The whole area, as an open climate and ecological laboratory: Today the value of "nature-based solutions" is increasingly recognized. These are based on traditional practices such as those we knew in

Sifnos, and are met today with modern scientific knowledge and ecological consciousness. The whole area could be treated as an **open ecological laboratory for studying and gaining experience on the functions of nature and how it is affected by climate crisis**.

The archaeological excavations carried out in the area could provide important information about human activities there and the interaction with the environment over time as well as about the climatic conditions, attracting visitors and researchers in the future.

(d) Agricultural buildings (haystacks, threshing floors, cisterns, pens) could **offer important knowledge to an architecture for the future**, while their acquaintance and study would also have significant financial income from visitors, students, researchers, academic teams and European programs. Although In the past, 1200 agricultural buildings have been recorded, we need to update the recording and create a database with all agricultural buildings, their importance, condition, types and historical/cultural elements. The same applies to many in the area springs, troughs and good water management practices and include them in a data basis for the whole island. All this creates an economy that supports the sustainable management of natural and man-made resources.

(e) Art in nature, environmental education in nature: Increasingly, sustainability education / environmental education in nature is a key direction for all levels of education, especially in central and northern European countries. Sifnos with this unique natural area for a small island could be a centre **for meetings and interaction of students, educational, local bodies, academic and support organisations**. Many European programs (such as Erasmus) could support, to an even greater extent, such partnerships. The same applies to contemporary arts movements (painting, music, photography, theater, etc.).

There are human resources and organizations that have developed similar activities in Sifnos to form the basis for strengthening and developing similar trends.

Long-term investment for the benefit of the whole society of Sifnos

As a society we now need to aim for an **economy of nature protection, not an economy that destroys natural wealth, the material basis for the well-being of a society**. Concentrating only on short-term profit, without taking into account the environment and the climate or against the environment and climate, can result in collapse of the economy and the sustainability in the medium term.

Such an economic perspective for the region, which ultimately concerns the whole of Sifnos, is a **long-term investment** in the preservation of the local characteristics and values of Sifnos that will allow the sustainable prosperity of society, in a good coexistence of people and nature on the island. As has been the case for so many centuries and it is, together with our culture, a resource and a heritage of which we can be proud.

Financial tools

A number of European, national and local funding programs could support the implementation of an integrated protection and sustainable management plan of the NATURA 2000 area

Local resources

- Part of the **special accommodation fee paid by tourists** should go in return for activities in the area, such as restoration of paths, dry stone walls, fire protection, guarding, etc.

National programs

- Green Fund, and perhaps from the Social Climate Fund, the Just Transition Fund and other programs in the future

European resources

- A large proportion of European funds are targeted at climate and nature protection and the green transition. We therefore propose to develop and claim appropriate financial and economic tools for the protection and management of the area – something that is not done today:

- **European funds available to the central and regional administration** precisely for this purpose (Recovery and Resilient Fund, NSRF 2021-2027, Common Agricultural Policy, Regional Development Fund 2021-2027, , Greek Green Fund etcetc.)

- **European funds that Sifnos will seek directly from European programs**, with the support of various bodies, HORIZON, LIFE+, Erasmus+

- **Donations** to support various protection and management actions (paths, dry-stone walls, ecosystem care, etc.) within a general framework of green economy of the area.

Reforms in tax regime

Taxation must recognise that the area and the properties belong to nature protection and therefore should have very low taxation, at least not taxation as tourist zone plots. On the other hand, owners should be supported today to act as nature keepers, caregivers of nature, to play a role in the maintenance of biodiversity, paths, dry-stone walls, landscape and unique ecosystems.

We need to ask from a coherent tax reform, benefits and inheritances such as reduced or zero property tax (ENFIA) and reduced transfer tax for properties located throughout the area, rewarding the protection and preservation of nature, the landscape and its cultural features.

With what human-social capital can we support such a choice?

In recent years, a series of programs, actions and initiatives were undertaken in Sifnos by organizations aiming to protect and promote this unique and priceless natural and cultural wealth:

- Many ecological and voluntary actions organized by the MEDITERRANEAN SOS Network in the past – including international meetings, program for the NATURA area, information and environmental games about the ecosystem of Kamares beach as well as training in local traditional architecture and construction of the small information center for the NATURA area at the beginning of the path to Prophet Elias.
- Actions for the marking and promotion of trails by various bodies that turned Sifnos into an important destination for hiking trails

- European programs such as GRAPE and SMILO MED in which the Municipality and Wind of Renewal participate
- The STARTS4WATER project
- The Horizon Metal Trails program (and hopefully pottery or water)
- The creation of FLEA and much more

that transfer good practices and knowledge, methodologies from other islands and small areas, and create cooperation networks that will help promote and protect all this wealth we maintain even in creating a responsible and prosperous economy in Sifnos.

We can also take advantage of the support expressed by **social economy networks** (utilizing the experience of the European program **GRAPE** in which the Municipality of Sifnos and Wind of Renewal participate) as well as small islands, through the **SMILO network** and the **special label of sustainable islands awarded with a structured methodology by SMILO**.

Obstacles:

- **Pressure to limit protection, especially in favor of interventions that will break the unity of space.** The area is currently relatively unspoiled, but if the plan proposed by the EPM for hotels and restaurants within the area is accepted, which will also mean the opening of roads, electricity and water networks, the need for waste collection and a large number of movements, the character of the area will be completely altered, as is the case in other areas, for example Poulati.
- **The absence of appropriate financial and economic tools** for offsetting increases pressure from those who own estates in the region to change its character
- **The centralized management of NATURA areas, as has been done with the legislation, actually leaves similar areas without management and management tools.** In fact, the area needs management and a management system, with the participation of the local community, not just protection with legislative tools.

Experience of Sifnos in nature protection

The damages that have been done to natural environment of Sifnos are currently relatively small if one compares them to what has happened in other areas that are currently experiencing the consequences of extensive erosion, over-tourism, excessive construction, the degradation of their natural resources.

Strong understanding in the past of the need for wise management of nature, living in harmony with the environment and be part of the nature, fair sharing of water so that it reaches for all and is sufficient for nature is still alive in the society. Of course there is a need for more awareness and training, distribution of modern ecological knowledge and creating new institutions, like the open ecological and climate lab, management and monitoring body for the Natura area, developing financial tools etc.

Large number of visitors/walkers of high cultural level come to walk in spring and autumn outside the summer season and there are already local people guiding them. **These visitors come to experience an interesting natural and rural landscape and form a driving force for the protection of this area.**

In the past there was a developed network of springs, cisterns, wells located along the paths crossing also the Natura area (we could also call it a "**network of water paths**") which with collective intelligence combined existing natural springs with complementary human constructions, constituting an excellent mapping of water resources. We can restore and revitalize all this network.

Therefore we can build on an existed culture and experience. **Sifnos can learn from its own past how it can contribute today to the protection of the environment**, biodiversity, genetic diversity.

Good examples from other regions:

There is a need of replicating good practices from one island and small area to Sifnos. Exchanges between partners of GRAPE and SMILO are particularly important and offer important insight.

Abruzzo, Italy

Abruzzo is a region of Southern Italy. Almost half of the region's territory (10.763 square km and a population of 1.3 million) is protected through national parks and nature reserves. Until a few decades ago, Abruzzo was a backward region, but since the 1950s, Abruzzo has showed steady economic growth. In 1951, per capita income or GDP was 53% of that of Northern Italy. The gap has since narrowed, being 76% by 1994. The region reached the highest per capita GDP of Southern Italy through the highest growth rate of every other region of Italy. The unemployment rate stood at 9.3% in 2020. In 2011 Abruzzo's economic growth was +2.3%, the highest percentage among the regions of Southern Italy. Agriculture, based on small holdings, has modernised and produces high-quality products. The mostly small-scale producers are active in wine, cereals, sugar beet, potatoes, olives, vegetables, fruit and dairy products. Protection of environment and an economic model based on this is behind the flourish of the economy.



5.4.9 *Integrated Water management:*

For many centuries, there was a strong understanding of the need to manage water wisely and share it fairly so that it is enough for all and sufficient for nature. All houses and buildings had cisterns and rainwater tanks, while reusing water for other uses was part of people's daily behavior. The need to collect rainwater also determined the way houses and settlements were built. In the past there was a developed network of springs, cisterns, wells, troughs located mainly along the paths (we could also call it a "water path network") which with "collective intelligence" combined existing natural sources with complementary human constructions, forming an excellent water resources mapping. The springs that supplied good quality drinking water were protected from possible pollution or destruction.

But the last decades, although a lot has changed (consumption patterns, the relationship with water, increase of water consumption, skyrocket of summer tourism, pollution of wells etc), **there is no overall plan for integrated water management, starting from recording and protecting water sources and influence the consumption of water.** In principle, the emphasis is mainly on engineering works and desalination, many parts of the network were added in the system without any holistic approach, mainly as a result of different projects, which were useful but at the end resulted to a problematic management and a network with many problems. Intervention in demand management issues is limited, despite existing legislation. The decisions of the municipality follow the increased demand instead to tackle and reduce this demand.

Today there are many problems in providing good quality of water – this is the reason why all the people (locals and tourists) drink bottled water, they spend a lot of money and they produce a lot of plastic waste. During the summer the authorities are not able to provide all the day long water even for secondary use (washing, cooking).

The important project of the biological treatment of the sewage water of the central settlements of Sifnos is in progress, in order to reduce the contamination of the groundwater from sewage and cesspools but at the moment there is no plan about the method of treatment (there are proposals for business as usual methods but also for innovative methods based on nature based systems) and the site of the treatment installation.

Risks

- The water consumption, especially during the summer with the high demand, exceeds the carrying capacity of Sifnos
- The climate crisis in the region implies a decrease in rainfall and perhaps more intense rainfall within a short period of time. Under these conditions, the aquifer is less enriched. while the risk of floods and disasters like what happened in 2003 is growing
- Many wells have been contaminated and generally there is sewage entering the groundwater.

Proposals

- There is a need nowadays for a **holistic / integrated management of water**, development of coherent solutions for an integrated sustainable local water production, management and use, **not only working on “project” basis**.
- The management of water is not only a technical problem, the water strategy would have coherent ecological, cultural, economical and societal dimensions. Many realize that a behavior change is needed.
- There is a need for tackling - in the frame of a more coherent plan - the **maintenance of the problematic distribution system, the leaks of water, the mixture of drilled and desalinated water, the increasing consumption**
- There is a work in progress concerning telemeter which will help monitoring and collection of data, but there is a need of concrete goals in demand management.
- Restoring the cisterns and water tanks for each building but also for public activities must be supported by technical support and monitoring of the existed network of cisterns and rainwater consumption.
- There is also a need for reducing water import through the use of water in plastic bottles and the production of mountains of plastic waste.

Experience in Sifnos on sustainable water management

The last years there is a public discussion for a new water culture and a model of water management, focused more on reduction of the demand, instead of trying to solve the problems arising from the increasing demand, taking also into account the wise traditional use and distribution of water in Sifnos in the past.



5.4.10 Food - Agriculture Strategy: Food security, sustainability, circular economy, local seeds and species, gastronomy, synergies and cooperation networks

Islands such as Sifnos had food self-sufficiency in the early 20th century and even exported many species, such as cotton (dry), fruits, barley, sesame, grapes, etc. This agriculture was based on:

- labor intensity (mainly on a family basis),
- the cultivation of local varieties and species, adapted to the local environment and climate,
- a wise practice of maintaining soil fertility by crop rotation and crop rotation,
- synergies between agriculture and livestock farming, what we would call today circular economy,
- maintenance of the extensive dry-stone network,
- most crops were dry, only near water (ravines, wells, "rivers") there were irrigation crops,
- a fair system of protection and distribution of water,
- within the fields remained parts of small ecosystems that contributed to the preservation of natural enemies of crops.

Many of these conditions, especially social and economic have changed. How can we create new economic, social and supportive conditions for the return of modern, ecological and regenerative agriculture that will contribute to the food security of Sifnos?

Tourism contributes to incomes on the islands (and not only), but has sharply increased imports, including food and fruit, and in many cases has led to the abandonment of agricultural activity.

How can agriculture be redeveloped and farmers supported on small islands like Sifnos? What kind of agriculture can there be at a time of climate and food crisis? Synergies or competition with tourism and massive land use change on islands? What role can collaborations and synergies play at local and wider level? Why turn again to cultivation of local species and varieties? How will young farmers get into farming at a time when agriculture is shrinking locally in the EU and farmers are ageing?

The risk: COVID-19, rising of the food prices and the war in Ukraine remind us of the risks in food chain and the high dependence on import of food products. Tourism increases the import of goods - among others food products - and decreases the farming activity as the price of the land for other uses (real estate, tourism) is very high. The climate crisis poses a long term danger for a future collapse of food chains

Vision: Food security – regenerating agriculture - local varieties and seeds – new food culture

Sifnos could be a flagship island for a new sustainable agriculture and a new food culture based on traditional / Mediterranean cuisine and new tendencies on food and cuisine culture, connected to local products and local seeds and species. Find the way to make again food production (also financial /economically) sustainable and resilient. Sustain food security also in periods of crisis. The collaboration with universities, organisations, professionals and farmers can create a knowledge platform on sustainable agriculture, training, modern healthy and tasteful food culture. Sifnos could also turn to a center for non

formal education and life long training on sustainable farming and healthy, sustainable, Mediterranean cuisine. Sifnos should play a crucial role in networking and collaboration with other small - medium islands and areas through networks like SMILO, GRAPE etc on promoting sustainable and resilient agriculture and cuisine.

Proposed concrete priority activities:

- **Definition and prioritization of actions for the conservation of the agro-biodiversity of the island** while enhancing resistance to erosion risk.
- **Action plan for the maintenance and strengthening of the upgraded agricultural system of the island** that will be the basis for the revitalization of agriculture
- Enhancing knowledge at local level to **connect rural diversity, agri-food and a new food culture with new models of sustainable tourism (slow food, sustainable agriculture, slow tourism)**
- **Opportunities emerge for agriculture through the utilization of local knowledge and good practices**, the rescue, recording and expansion of the use of local seeds and varieties,
- **Strengthening synergies and collaborations** between farmers, farmers and the Municipality, farmers and consumers, farmers and the tourism sector, farmers and research and academic bodies, local stakeholders and the Municipality and other networks e.g. small islands (networking and labeling of SMILO), social economy (eg through the REVES network), slow food, green networks and businesses (eg through the Social Cooperative Wind of Renewal), alternative forms of tourism (trails, ecotourism). The existed networking and the exchange of good practices between partners and members of GRAPE and SMILO are very important for the enhance of opportunities and knowledge for the implementation of the Green Social Action Plan.

Obstacles:

- Not many farmers any more
- the rich knowledge on sustainable farming that existed is gradually being lost,
- pressures from mass tourism and massive land purchases
- dramatically change of land use,
- shrinking agriculture,
- small size of land ownership, very expensive land for hiring, lack of arable land,
- not any proper support and consultancy to the farmers, almost existed research on farming in islands
- lack of water resources,
- high cost of production and transportation of agricultural products,
- lower prices for the imported food products,
- high unbalanced import – export of food products,
- high dependence (98%) on imports of food and animals

- exposure to food crises,
- rising cost of living,
- possible disappearance of some local seeds

Is then such a “vision” and action plan realistic?

As it was discussed during the workshops, conferences and SWOT Analysis, the enhance of know-how and knowledge, improving networking and establishment of long term partnerships, synergies, use of outcomes of different projects as well as the remaining local varieties are part of the answer to boost agriculture and farmers activity at a time of climate and food crisis.

How can we create the knowledge, the skills, capacities, the social, economic and the general supportive conditions for (re)activating a modern, ecological and regenerative agriculture that will contribute to the food security of Sifnos, create new jobs ad income for the local people and at the same time will play its role for climate adaptation and nature restoration?

Economy: Today agriculture cannot survive in the touristic areas without a land use regulation (the cost of the land is very high for farming activities and the income of the agri-products cannot offer a fair income for the farmers) and a supportive framework. There are two parallel paths for revitalizing agriculture:

- **Cultivation of land but only for own, small scale consumption**, something that happens at an extension, but there is the risk of loose of valuable professional experience and knowledge existed between the traditional farmers. Such an agriculture of individuals offer a small income /avoidance of expenses for the households, in reality not something important. Most of the people doing it today, argue that the main reason for its own production, is the quality of products and food security, not any additional income. There is a need of training of these people on sustainable practices and use of local seeds, varieties, even local dry plants for their garden instead of imported seeds or water depending species (especially in gardens of residence houses),

- **Establishing a local supportive legulating and financial framework** for a sustainable agriculture with multi level aims: production of food, restoring nature, maintaining soil fertility and small ecosystems, protection against fires and floods, regeneration of abandoned lands, new products for special diets and need, products of high dietary value. The use of European tools and good experiences will be very helpful.

This means there is a need for synergies between agriculture, (agro)tourism, connect agriculture with sustainable tourism and a climate friendly food culture. life long training not only on farming but also on mitigation and adaptation climate policies and circular economy, biodiversity and nature restoration strategies. **The modern farmer would undertake new (and more, not only one) roles and responsibilities, therefore part of his/her income will arise from these tasks and roles, additional to what the CAP offers already to small farmers and selling products can contribute to it.**

Other needs: There is a need for more research, knowledge for the local conditions and solutions, a specified local management plan for the protection of the soil and its fertility from erosion and other extreme climate connected weather phenomenon. Between others in collaboration with research centres, the (re)cultivation of the local seeds and species could offer scientific knowledge on the adaptation potential of these species for the new climate conditions.

Training / Education: Between others, there is a need for a constant increasing the skills, capacities and knowledge of the farmers and other interested people not only on farming but to be able to play the other roles described. It could be helpful if this starts from the local students in schools. There are also proposals for seminars and life long training programs together with the Agricultural and Beekeepers Cooperative and the Union of Culture) for a resilient, ecological and regenerating agricultural in Sifnos. Erasmus and other programs can also support volunteering programs, exchange of good practices, preparation of education material and curriculum.

Existed experience in Sifnos:

In the past the island developed a sophisticated and “ecological” model of agriculture. There is also a strong “culture of local cuisine”, but in the past this was based on the developed agricultural activity and local varieties.

The Cycladic gastronomy festival N. Tselemendes held every year in Sifnos could be a good bridge combining the cultivation of local species and the promotion of local cuisine based on these species.

Driving force for the green social transition in agriculture:

The role of the small and week Agricultural and Beekeeping Cooperative and the synergies and cooperation with other similar cooperatives in Greece and other small islands and areas can be decisive factors for the revitalization of agriculture and food security of Sifnos. The proposals that have been formulated in this respect.

The Agricultural and Beekeeping Cooperative believes that there are significant prospects for the agricultural sector of the region if they are based on a new "model" of crops, with a shift to quality agricultural products, since this is the comparative advantage due to the small arable area available to producers, but also to the use of local varieties. Also, the livestock farming of Sifnos has several potential for development, due to the position of local cheese products in the market (high demand), while beekeeping, winemaking and fishing show significant growth potential argues the cooperative.

- **The development of greenhouse crops, the support of the cultivation of early and mid-early vegetables**, the restructuring of crops, the cultivation of fodder plants, the expansion of tree crops and aromatic plants, as well as the promotion of organic crops, have been defined as key priorities for the Agricultural and Beekeeping Cooperative of Sifnos.

- **Possibilities exist through collaborations and synergies to support farmers by creating a repository for local seeds and varieties, certifications** (eg manoura and local products), **labeling of products of particular value** (eg from the NATURA area or organic products using local seeds and varieties).
- **Important is the help through collaborations with networks** such as SLOW FOOD and the inclusion of local varieties and local flavors in the "Ark of Flavors" which currently includes more than 5500 local species and flavors.
- After the workshop on synergies in agriculture, a working meeting was held between the Mayor of Sifnos Maria Nadali, the Rector of the University of West Attica Panagiotis Kaldis and the Vice-Rector Cleo Sgouropoulou on the conclusion of a programmatic cooperation agreement with the main object of establishing and supporting **an Entrepreneurship Incubator in AGRONUTRITION**.

Social conditions: Although there are very few farmers today, many local people cultivate the land for their needs. There is increasing interest in the preservation and cultivation of local varieties - seeds that once played an important role in the agricultural and economical activity of the island.

- Promoting activities for the whole local food chain (cultivation, treatment, research, new products with high value, cuisine culture, networking, training, exchange of experience and good practices between similar areas, collaborative schemes), can contribute to local sustainable agricultural practices and food security, increase the number of people interested in agricultural activity for themselves but also as a job. There are 2-3 initiatives of farmers in Sifnos who combine agriculture with farm visits, training and agro-tourism. Combining the primary production sector with the secondary and tertiary sector, culture and local gastronomy can significantly enhance the local economy, commerce and local businesses, while enriching the tourist identity of Sifnos.

New knowledge-A recent good example in Sifnos: A pilot effort to record and collect local seeds and species has begun in the frame of SMILO MED and GRAPE – COSME projects. In February 2023, an important scientific work was organized to record and collect seeds and local varieties of Sifnos, as well as to collect testimonies and memory from agricultural activity in Sifnos.

The collected samples will be analyzed and evaluated and will be material for the **National Seed Bank of Thessaloniki**. In the future, evaluated material will be provided to interested parties to continue cultivating them in Sifnos.

The **research** conducted by the special researcher Rhoikos Thanopoulos in collaboration with Wind of Renewal and Nikos Chrysogelos focused on **interviews and seed collection, while several types of crop seeds were recorded that seem to be still cultivated** by individual farmers or for domestic use (wheat, lathouri, afkos, beans, dry watermelons, melons, sesame, etc.) as well as many local tree varieties (pomegranates, fig trees, bournelia trees, pear trees, almond trees, sour cherry trees, etc.) and plants (vines). No seeds have yet

been found from crops that existed in the past, such as 3 types of cotton (barley, etc.). Nikos Chrysogelos also recorded **oral testimonies** on the cultivation of species and agricultural practices in general in Sifnos.

New research: Of course there is a need for more research. It was increasingly imperative to scientifically investigate the existing cultivation experience as well as the local seeds and varieties that are still preserved and continue to be cultivated in Sifnos.

The aim of this research is to save the Sifnian varieties at a critical time when the agricultural sector is being tested and we are facing a series of challenges, such as food security, climate crisis and changes in the diet model.

Their recording, long-term conservation – cultivation and promotion is **an opportunity for an agriculture with a future in Sifnos** but also in the context of an **integrated strategy for a green transition of the Sifnian economy**. It is also an opportunity **for new jobs of high educated people on research**, using the offer of the Eugenides Foundation to support such research with 2 scholarships.

In the future, evaluated material from the pilot plan of collection of local seeds and varieties will be provided to interested parties to continue cultivating them in Sifnos. The first results of the survey and recording are very encouraging. After visits to **6 villages, 39 samples were collected**, including the **lathouri** from which they make the **Sifnian fava beans**, the black-eyed bean (which is brown-eyed), the **famous chickpea**, the rare **sesame** and the only one, perhaps throughout Greece, **afkos**, a fodder plant whose cultivation has recently been abandoned. Similar wealth exists in fruit trees (eg fig trees) and vines.

The letter of Roykos Thanopoulos to the Municipality of Sifnos after the visit and research in Sifnos [here](#)

There are currently very few animals that probably belong to older breeds of animals, something that needs to be investigated in depth. A few years ago, "AMALTHEA" recorded a very small number of cows that probably belong to the extinct breed of the cow of Kea. However, no scientific research has been advanced to determine if it is indeed a remnant of this local breed. The same needs to be done with goats and other animals.

Why are local seeds and species important today for agriculture and climate? Most of the crops in Sifnos were dry and only in areas with water they cultivated irrigated species. Therefore there are seeds and varieties that are quite adapted to dry conditions and the new climatic data of limited rainfall. Local seed and varieties are a better response to a pest problem or a global crop crisis eg cereal.

Due to their uniqueness in quality, their possible better resilience to upcoming climate changes and their better response to our new dietary choices, their use in family kitchens as well as in the catering and tourism sector can be significantly enhanced. But the scientific record will help farmers and anyone else who wants to cultivate (again) local seeds and varieties, which are more qualitative, durable, adapted to the local environment and enhance autonomy against hybrids, which produce large agro-industries and are not necessarily suitable for cultivation in places like Sifnos.

More coordinated work in the future

The effort will continue and proposals will be submitted to further enhance the conservation and utilization of surviving local varieties and seeds, education, cooperation between farmers, creation of a repository for local seeds and varieties.

Four main proposals arose from this action, which are coherent to the proposed action plan on agriculture and local varieties:

- **Collection of local cultivated seeds and varieties**, their preservation at the National Seed Bank as well as recording of oral knowledge from local traditional crops.
- At a later stage **studies on local cultivable species**, to enhance the knowledge of cultivation with local species and seeds and the connection with research and academic institutions.
- **Municipal seed repository**, under the responsibility of the Municipality and in cooperation with the Agricultural and Beekeeping Cooperative and **other bodies of the island, in order to keep the Sifnian varieties and their seeds to be donated** so that Sifnians and Sifnians, who wish to cultivate local varieties, can find a few seeds to start with.
- **Municipal and/or cooperative agricultural garden** where all Sifnian local fruit and vine varieties will be planted/grafted. Thus, the varieties can be saved, studied and known by Sifnians and Sifnians as well as tourists.

Training / education:

The knowledge recorded and the seeds collected could act as a basis for training and attract new young people in farming. In the next school year the secondary school will develop a project about cultivating local seeds like sesame). In parallel two young artists. Educators are interested know to use this knowledge and include it in their artistic / educational projects.

We need well planned educational and life long training programs so the local people increase their knowledge and skills (upskilling, reskilling) on a sustainable and climate friendly agriculture, and about new roles and responsibilities, opportunities.

Good examples from GRAPE partners:

Bonares: The city of Bonares, a community of about 6000 inhabitants in Andalusia, Spain, participates in the GRAPE project and hosted the 3rd Social Economy Mission. One of the aspects is the **cooperative spirit that characterizes the whole local community and which has given life to several cooperatives that are now active in many economic sectors** (agriculture, transport, education):

COOPINTE is a secondary cooperative with more than 20 years of experience: it was founded by the Municipality of Bonares together with other local bodies to support the activities of its members and therefore creates local responsible development.

The **FAECTA** network was created by the Andalusian cooperatives and shows the deep **roots of the cooperation sector in the region of Andalusia**, thus becoming one of the most developed cooperative sectors at national level.

The principles that inspire cooperative enterprises can be summarized as follows: prioritizing people over economic gain, social and environmental responsibility, participating in community development. **The collaborative spirit emerges in all areas of social life, not just in the business context.**

Malegno: Trying to devise solutions for a healthy and sustainable agri-food system, the Municipality of Malegno has started the recovery of now abandoned land once cultivated with vines, in order to protect the soil from hydrogeological instability and promote the social economy with the participation of an agricultural cooperative. that will grow olives and grapes.

KASSIOS KOINSEP

The main reason for the creation of "[KASSIOS KOINSEP](#)" was the creation of jobs through actions that contribute to the development of the small Kassos island and on the other hand the support of the Municipality in actions for which there is the will of the Municipality to implement them, but due to lack of staff or due to inability to recruit staff, it is not possible to realize them. "KASSIOS KOINSEP": aims to promote local and collective interest, promote employment, strengthen social cohesion and local or regional development.

Two of its projects are the production and delivery to restaurants local food products like “dourmaes” as well as the collection of recyclable material on the island.



5.4.11 Culture / cultural heritage

Sifnos is famous for its rich cultural life and many writers, poets, artists. special local fests etc. It is known as the 'Island of the Poets and Culture'. Every year the island holds dozens of cultural events continuing its tradition in literature, the arts and culture in general, from poetry in every day life and local religious ceremonies with music and food for all to music workshops, art lessons, exhibitions and theater. The prominent personalities in literature, history, painting, poetry have been inspired by the island and have highlighted it.

Ceramics / Pottery: The island's rich clay veins, sunny weather and creativity have made Sifnos a center of pottery in the Aegean, with unique crocks, jars and pots that are a "trademark" of the island. They are typical of the Sifnian everyday life, such as ashtrays, tsoukalia, cooking and food pots, "mastellos", "foufoudes" (kind of chimneys) etc. There was a total of 107 pottery workshops on the island. Tourism has revitalized the production of ceramics and there are some projectct that combi

Old mining heritage-Archaeological sites: From archaeological findings it is assumed that metallurgy on the island flourished during the 3rd millennium BC. Sifnos was one of the richest parts of the ancient world during the Archaic and Early Classical periods, thanks to gold mines, silver mines and the development of ceramic art. The name of "Our Lady of Chrysopigi", echoes their reputation even today. Indicatively, the Sifnians were the first to mint gold coins and the first to engrave both sides of the coins. Also a typical example of the island's heyday is the reconstruction, in 525 BC, of the well-known "Treasure of Sifnia" in the Sanctuary of Delphi. During later periods, the multitude of ancient Towers - with the leading example being the White Tower above Saures -, dating from the late classical and Hellenistic period and built near mines, were considered fortified structures, related to them.

The pan-European importance-but little known to date-archaeological/cultural heritage of Sifnos increases the carrying capacity of highlighting and promoting the island. The abandoned mining areas offer opportunities for sustainable economy, eg renewable energy storage, sustainable tourism visits, open industrial museum, training and research. The HORIZON 2000 project "metals paths" offers a starting point for research and innovation in the field of the old mining sites and a modern use of them as a center for renewable energy, industrial history and cultural activities. *Around this mining heritage, there is a huge potential for new activities.*

The island of Sifnos, apart from its rich archaeological and cultural history, is characterized by complex geological construction with the participation of ancient rocks, millions of years old, as well as sedimentary deposits that are created even today, resembling an active geological laboratory. The formations from which it is built, its characteristic geomorphological construction, the variety of minerals it contains, With silver and gold as their primary capital, exploited since ancient millennia ago, the particularly important - and occasionally rare - minerals it hosts, as well as the "living" evidence-witnesses of the modern exploitation of

mineral wealth, compose a geological-technological "mosaic", which in combination with the rich cultural heritage of the island, gathers all the specifications for its inclusion in the UNESCO Global Geoparks Network. "METAL PLACES" project (HORIZON 2020) aims at protecting, enhancing, promoting as well as valorizing a common aspect of the cultural heritage of Greece and Cyprus, while at the same time it will contribute to the development of tourism and the enrichment of the tourist product, through cross-border cooperation and the adoption of shared "good practices" initiatives. The project adopts a multi-level approach, reconciling the different priorities set by the need for tourism development on one hand, and protection of cultural heritage of an area, on the other. The project is also directed at promoting the selected areas, using modern technologies (3D visualization, Web-GIS platform), new forms of communication (social media, mobile applications), involving also the co-participation of local stakeholders.



5.4.12 *Landscape / Dry stone walls / built environment and local architecture*

Sifnos is famous and well known for its traditional villages, a typical example of well adapted to the local environment and climate. But it is also very important, although not so known, a 2-3000 km long network of dry-stone walls and about 200 km of trails, the product of the patient and amazing work of thousands of people for centuries.. A real treasure is also the local architecture of agricultural constructions, settlements, cisterns in harmony with the natural and agricultural environment. All this form the unique landscape of Sifnos.

Dry-stone walls / terraces: The 2-3000 km long network of drystones/terraces that play an important role in agriculture, is still in relatively good condition. Art of dry stone in the Representative List of the Intangible Cultural Heritage to Humanity of UNESCO. Their role is important for the fertility of the soil, the underground water, biodiversity and small ecosystems. We need more research for their role as a defense tool against extreme weather phenomenon, floods, erosion, sand and water tornadoes.

Pathways/ Trails: Maintained mostly in good condition, about 100 km marked trails and also about 100 km unmarked trails. Large number of visitors / walkers of high cultural level, in spring and autumn outside the summer season. We could enhance the eco and cultural guidance – ecotourism as many trails cross the NATURA 2000 area and many of them are “water paths”.

Local Architecture: Built environment and human architectures were harmoniously connected with the natural environment, "improved" the natural environment (e.g. dry stones, agricultural constructions, settlements, cisterns-troughs). Sifnos is known for its local traditional bio-climatic architecture. Austrian and German architecture academies are studying the traditional villages and buildings. These local architecture could be a basis for a modern shift to zero emissions and bio-climatic architecture paradigm as well as for studies, seminars, professional and life long training.

Unique landscape: A great value and a wealth as such

The landscape itself has great value, cultural, aesthetic, ecological and economic. Such a unique agricultural and natural landscape spreads in Sifnos from Poulati to Panagia tou Vounou and Platis Gialos, from Faros to Vathy and Herronissos. It was formed in perfect harmony with nature thanks to the work of thousands of people over many centuries. It was not the result of abandonment but, on the contrary, of active human intervention.

The landscape of Sifnos is rich in agricultural buildings that accompanied and served agriculture and livestock farming. Such buildings are rural residences in the countryside, stables, threshing floors, wine presses, oil presses, lime kilns, windmills, watermills, haystacks, threshing floors, trails, dry stone walls, chavouzes, cisterns, windbreaks, towers, dovecotes, wells, fountains-springs etc.).

For centuries, human intervention in space was integrated into the environment and was an integral part of it, wisely using natural resources, preserving them long-term (see watermill residues, dry-stone walls to retain the soil and preserve its fertility, crop rotation, the most "modern" in agriculture to renew the necessary nutrients of the soil). People knew how to cooperate with nature, they kept the roads open for water to pass through.

The insular landscape of Sifnos includes not only traditional settlements and untouched nature, plants and variety of trees, but also features of wise human intervention and creation of the past, remnants of a significant agricultural activity of the past as well as knowledge, culture, memories and images, all the intangible heritage they contain.

Risks for Sifnos:

- **To date, there is no plan of spatial and residential organization, resulting in - arbitrary and in any case without planning and appropriate permits** - road openings even in the NATURA 2000 area.
- Contrary to what prevails in many other countries, the country and islands such as Sifnos do not have land uses that ensure a balanced and sustainable development.
- Municipalities (believe that they) do not have appropriate tools for the protection of the local community and power to be able to determine the residential and spatial organization to ensure sustainability.
- The lack of land use regulation is currently the greatest risk due to the rapid demand for land for tourist activities and holiday homes, especially after the pandemic and the changes it caused. At best there will be some results in terms of regulating land use and urban plans in the next 3-5 years, but the risk is that such regulation will be very late.
- This landscape and space in Sifnos and many other small islands are in danger of being completely altered within the next few years, not within the next few centuries. The changes will come due to the dramatic effects of the intensifying climate crisis, but much faster, due to the absence of an implemented regulation / framework for the protection of the landscape, measures and an effective the carrying-ecological capacity of the island.
- Especially from COVID-19 on there is a wave of tourist constructions in Sifnos even in agricultural and cultural important areas (eg Poulati).
- The local population could turn almost entirely to tourism, considering all its previous occupations anachronistic or humble. Considering that life has been facilitated by tourism, it has not been given the value it deserves to landscape, earth, soil and all these buildings that have facilitated the life of the islanders all these years and helped them survive.

Proposals:

- **Draft and put in action an Emergency Local Regulation Framework on land use and carrying capacity** of Sifnos, based on the existed decisions of Court of State until there is a national legal framework. This is the only tool to slow the rapid destruction of the landscape. Of course there is a need for political will and support by the local society.
- The primary work of registration of agricultural buildings could be a **good basis for a local registry** of all the human creations on Sifnos, using also the digital technology, offering information about their status and the history of them as well as of the people they built up and maintain them.
- Such a **registry of agricultural building in Sifnos** could also be a basis for the creation of a **knowledge platform** (buildings, people, good practices, scientific work) and help the people to learn more about how we can protect these human creations long terms, connect people, stories and experiences.
- This network of buildings could be also a basis for “alternative” tourism and a source for income (offer a fee) for their owners in order to have the means to maintain, protect and keep them long terms, instead of selling them.
- Sifnos can be part of different small areas and islands networks, like SMILO and gain of good practices and experience, work together with other Greek, Mediterranean and European islands on landscape protection and sustainable management.

Obstacles:

- The abandonment of agricultural land and the activity related to it more and more in recent years with the simultaneous development of tourism has led to ignorance, devaluation and desertification of the countryside. The new comers ignore the local history and wisdom.
- Now the agricultural land along with the buildings that surround it are sold to new investors, without taking into account the long-term consequences. Agricultural land is constantly being altered with buildings that are not consistent with the scale of the landscape, not even with traditional architecture.
- New constructions are constantly "emerging" with swimming pools and gardens that do not fit into the Cycladic landscape with the Mediterranean-type ecosystem. Unfortunately, the high value of the landscape consisting of paths, agricultural buildings and dry-stone walls, which is increasingly being altered, has not been understood.



Existed experience in Sifnos

A first registration of 1200 agricultural buildings near paths and roads with particular value has been documented (agricultural warehouses - barns / themonies, threshing floors / alonia, barns, etc.). In 2009, in collaboration with the Hellenic Society for the Environment and Culture and the Prefecture of Cyclades, a recording of all these buildings located on the paths was carried out in order to identify, their recognition, promotion and exploitation.

Good examples from other regions:

In Anafi, the registration of bakery houses that took place led to the creation of a presidential decree in order to protect them, maintain them and promote them.

Dry-stone walls is one technique we now call "nature based solutions"



The ecological, economic and cultural importance of dry-stone walls is particularly important today:

- **For the cultivation of soils**, thanks to the creation of flat fields, known as "terraces",
- **As a monument to the intangible global human civilization**. This whole wonderful network is not only stones but also knowledge and mastery, in the context of what we now call "nature based solutions" or green infrastructure. In fact, it is now recognized as part of **the Representative List of the Intangible Cultural Heritage of Humanity (UNESCO)**
- **For the retention of rainwater** and the enrichment of underground reserves
- **For protection against corrosion from wind and rain**
- **As a defense against extreme weather events** caused by the intensifying climate crisis.

Dry-stone walls have a huge value that is gradually depreciated. This unique human construct on a small island would require many billions of euros to (re)build. If today the restoration of **100 meters of dry-stone walls can cost up to 10,000 euros**, even if there were this manpower for such large-scale works, it would take more than **300,000,000 euros to repair the existing dry-stone wall once, on the spot**. And yet, this work has been constantly done by farmers themselves without having similar resources.

However, the construction of these dry stone walls from the beginning would be a pharaonic project. It's one thing to repair dry stone walls where they fall, and quite another to try to (re)construct them from scratch.

If it weren't for dry-stone walls, we would have to invent them on the islands for reasons of defense against extreme weather events. However, to build this "Sifnian wall" from scratch (something analogous to the Great Wall, *mutatis mutandis*) would require huge resources and human labor of thousands of people over many years.

If this unique "monument" and defense against the effects of the climate crisis disappeared, perhaps more than **EUR 300 billion** would be needed to rebuild this dry-stone network that we have inherited today.

The dry-stone walls in the Representative List of the Intangible Cultural Heritage of Humanity

Dry-stone walls are not only stone, but also knowledge, experience, culture. This is now recognised at European and international level. This is why the dry-stone walls (terraces) and the knowledge they contain – which is also local wealth – are inscribed in the **Representative List of the Intangible Cultural Heritage of Humanity**.

The Intergovernmental Committee of UNESCO, following a proposal by Croatia, Cyprus, France, Greece, Italy, Slovenia, Spain and Switzerland, inscribes the knowledge and techniques for building dry-stone walls in the **Representative List of the Intangible Cultural Heritage of Humanity**.

The [decision](#) states: "*Such structures bear witness to the methods and practices used by people from prehistory to the present day to organize their living and working space, optimizing local natural and human resources.*"

The decision recognises the ecological role of dry-stone walls: "*They play a vital role in preventing landslides, floods and avalanches and in combating land erosion and desertification, enhancing biodiversity and creating suitable microclimate conditions for agriculture. Actors and professionals include rural communities where the element is deeply rooted, as well as professionals in the construction industry. Dry-stone constructions are always made in perfect harmony with the environment and the technique is an example of a harmonious relationship between man and nature. The practice is mainly disseminated through practical application adapted to the specific circumstances of each place.*"

*"The art of dry-stone walls combines a widespread technique with respect for local conditions and the exclusive use of local building materials. Promoting the common nature of traditional know-how, the practice stems from the need to clear the land for farming purposes and use stones to build highly functional structures. **These aspects illustrate the fundamental role of intangible cultural heritage in creating and preserving the living environment.** The wide dissemination of the practice and the high level of protection of monuments against dry-stone walls will contribute significantly to the promotion of intangible cultural heritage in general. Existing synergies between communities and affiliated organizations will be developed, highlighting the bonds and shared values of professionals."*

The art of building dry stone walls:

"The dry-stone builder dances, moves right – left in harmony, locates the right stone, catches it and puts it in the right place, does not chip, fits it" Nikos Kakakis

Proposal for action

The dry-stone walls, this nature-based solution, which offer free ecological services thanks to the work of thousands of people in the past, need long-term maintenance and in many cases, where they have fallen, restoration.

In order to sustain this entire dry-stone network in the long term – since the **agriculture and farmers who maintained all this wonderful construction** have disappeared to a significant extent, we need to find realistic ways to preserve the dry-stone walls by **integrating them into the new economic reality** and **recognizing their importance for our effective defense against erosion and the effects of the climate crisis**.

Presentation and development of nature-based solutions and enhancement of local know-how (training).

Dry-stone walls need to be recognised as a nature-based solution in the context of the climate adaptation strategy as well as a key element of the agricultural policy strategy "from field to fork".

In other areas **the main means of protection are forests, in our islands it is dry-stone walls**. If this whole network collapses, we will be exposed to great dangers, which today we do not take into account but which we see around us.

Also, the islands will be desertified since in most cases the soils are sloping and wind and rain can cause great erosion.

Existed experience:

- Wind of Renewal has started in collaboration with the Municipality of Sifnos and the SMILO island network **an awareness, education and restoration pilot program of the dry-stone network** (terraces) in Sifnos.
- **We make use of the experience of other islands and seek new collective knowledge**, exchanges of good practices, modern tools for recording, highlighting and preserving this culturally, economically, ecologically and climate-significant creation.

Planning

- **In addition to the discussions, we will organize in autumn 2023 a workshop on dry-stone construction techniques on the various islands** for the exchange of experience and knowledge on construction and restoration techniques of dry-stone walls on the various islands. We are also looking for participation from other islands as well as of representatives of SMILO network. At the same time, we will record these techniques and knowledge so that it is transferred and not lost. We aim in the participation of citizens' initiatives from other islands, in order to create a first network in the Cyclades that will be connected to other islands through the international SMILO network.

- **We are looking for financial tools** that will make the shift towards green social sustainability of Sifnos sustainable, including the long term maintenance of dry stone walls as part of the strategy for the protection of the local micro-ecosystems and the climate adaptation strategy

Obstacles:

- Today there are no longer the many farmers who created and maintained this wonderful network.
- The knowledge of their maintenance and restoration even among craftsmen is gradually lost.
- The cost of restoring the dry-stone wall is high and many people cannot afford the resources for the maintenance of their dry stone walls.

Good examples from other regions:

-**Boulouki**: is a traveling workshop on traditional building techniques in Greece. He has conducted dozens of multi-day experiential workshops in Greece (Frasta-central Tzoumerka of Epirus, Kavouropotamos of Paros Cyclades, Thirassia of Cyclades, Vovoussa-Zagori of Epirus, Plaka-Tzoumerka of Epirus, Aristi-Zagori of Epirus, Melissourgioi and Pramanta-Tzoumerka of Epirus) on materials, construction methodology, maintenance method for dry-stone walls, microdams, cobbled streets etc.

-**The Mitato of Amorgos**: has already organized with great success two dry-stone workshops on "Amorgian craftsmanship", where young students, directly or indirectly interested, apprentice next to traditional craftsmen in order to be directly involved in the process of restoring a dry stone wall. At the same time, cleaning and maintenance of the network of paths, protection and reuse of dry-stone terraces are carried out, Strengthening of local cottage industry and creation of visitable places of primary production, strengthening of local production and local products, recording of oral tradition and place names, etc.

-**Ampasada**: operates locally in Tinos, but aims to sensitize all the islands of the Cyclades with the same characteristics. It has already organized a workshop to inform and sensitize citizens about the rural buildings that adorn the rural landscape and have been built dry-stone, as well as the countless dry-stone walls that surround them. Field hikes have also been organized in order to bring people into direct contact with the landscape and restoration of dry-stone walls that have been damaged.

5.4.13 Reform of the Tourism model / Develop a more resilient sustainable tourism and other local non seasonal activities

Impact of climate crisis to tourism

The climate crisis is likely to have significant effects on tourism to the Mediterranean. Heatwaves, wildfires, water problems are likely to make tourist trips increasingly uncertain. Already in many cases cancellations of reservations by tourists are observed in 2023 or reservations are made at the last minute due to the uncertainty. After the large fires of July 2023 in Rhodes, Corfu and Magnesia, significant cancellations of visitors were observed not only in areas where the large fires broke out but also in many other areas.

Heatwaves and prolonged periods of high temperatures also influence many tourists who are not familiar with these temperatures to change destinations or cancel their trip to warm regions. Older people are more negatively affected by extreme weather conditions.

Carrying capacity and tourism

Although there was a study of carrying capacity of Sifnos drafted by the Hellenic Society for the cultural heritage and the Environment in 2014, there is no use of it.

With its decisions, the Council of State (Συμβούλιο της Επικρατείας) has defined in its jurisprudence the concept of **Carrying Capacity**, especially of small islands like Sifnos, imposing its absolute respect, given that it is a **key component of the Constitutionally enshrined principle of sustainable development**.

*"Residential development of small islands cannot violate their **carrying capacity as traditional anthropogenic systems and sensitive ecosystems**. Therefore, residential pressures to acquire first and second homes must, in principle, be absorbed **within the existing network of settlements and as long as it doesn't has exceeded the limits of its carrying capacity**. As long as the carrying capacity of the existing settlements has not been exhausted, **the establishment of new settlements of any type (first or second residence) is not permitted**. If this capacity has been exhausted, **it must be examined whether, in view of the evolution of the local demographic system and based on a specific and thorough study**, there are still scopes for the expansion of the existing settlements. In this case, the absorption of residential pressures is done with the institution of expansion, where this is permissible, excluding, in any case, the establishment of new settlements with the institution of cooperatives or private urban planning".*

The carrying capacity of Sifnos - based on the current model of "sun and sea" tourism, has been exceeded, mainly in terms of the ratio of permanent residents / visitors in the period of mass arrivals in July and August, the capacity that Sifnos can withstand in cars as well as water demand. Also, food imports have soared and the import-export balance (mainly cheeses and fish are exported) is negative, with data showing (2014) a deficit of around 800 tons, which has probably burdened in the 2023.

Move to sustainable / slow tourism in autumn and spring

The "sun and sea" tourism for different reasons is not possible to be sustainable in Sifnos any more. **The** society depending on this model of tourism will be very vulnerable, will risk everything in the case of a massive collapse of it, not only for one - two years (like during pandemic) but long term. **Prepare the local community for a "cooling" tourism**, and not tourism during the hot summers. T

The spring and autumn tourism is more safe at the moment. Sifnos have some good opportunities for such a tourism, like the existence of 200 km trails, a valuable Natura 2000 area, rich cultural heritage and still existed agricultural activity which could be combined with autumn / spring tourism, agro-tourism.

A reform of the model is urgent. It should include:

- slow food / cuisine culture events,

- ceramic seminars,
- guidance tour / ecotourism to NATURA 2000 area, open ecosystem laboratory, agro-tourism, hiking, bike tours, visit and study bio climatic architecture, zero emissions buildings.

The pan-European importance - but little known to date - archaeological / cultural and old mining heritage of Sifnos increases highlighting and promoting the island. The old mining could be *a basis for an industrial tourism and new innovative activities for renewable energy storage*. There is an increasing interest in sustainable tourism instead of mass tourism. But at the same time there is an increasing pressure on Sifnos and many other islands as an impact of many real estate projects, lack of land use regulation and planning, weak environmental regulations and intervention of the authorities. Climate crisis will differentiate the destinations and the needs of the travelers. In a warming global is possible that the most of people will look for cooling instead of sun and hot weather. An open and structured discussion about the kind and future of tourism in the Mediterranean is needed at the local level too. Giving priority to **ecotourism** in Sifnos based on the existed landscape, NATURA 2000 area and the environmental wisdom of the past (knowledge, not only materials) requires an integrated approach and participatory methods involving all the different actors, local communities, businesses, public authorities, scientists, young people, environmental groups. In the frame of the reform of the tourism strategy, there is a need for an improved sustainable management of natural and cultural heritage, biodiversity, NATURA 2000 area as well as conservation of the extended terraces-system as a tool of climate adaptation and development of new jobs and financial activities for a more resilient localized green economy.

5.4.14 The role of Social Economy in Green Social Transition

The potential and role of the social economy to strengthen social cohesion and the green transition for Europe, islands included, is high. The social economy employs around **13.6 million people**; paid employment varies between **0.6% and 9.9% in the different Member States** . This shows the [uneven development of the social economy within the EU](#), but also reveals that **there is significant untapped economic and job creation potential for the social economy in different Member States and regions**, if appropriate measures are taken. Greece is a case in point.

Every day, around **2.8 million social economy actors in Europe** [offer tangible and innovative solutions to key challenges we face](#). They create and maintain quality jobs, contribute to the social and employment integration of disadvantaged groups and equal opportunities for all, promote **sustainable economic and industrial development**, promote **active participation of citizens in our societies**, play an important role in **Europe's welfare systems** and **revitalise Europe's rural and derelict areas**.

During the COVID-19 pandemic, **many social economy actors have been at the forefront of tackling the crisis.** They produced face masks, supported digital online education, helped people in need, and provided proximity assistance to local communities.

Parts of the social economy contribute to **the green and digital transitions** by providing sustainable goods and services and bridging the digital divide. Their participatory business models, which take into account the needs of citizens, workers and other stakeholders, help ensure that just transitions are achieved.

The social economy also contributes to the **diversity of corporate forms** in Europe by increasing consumer choice and the quality of products/services. The social economy contributes significantly to the GDP of the countries in which it is most developed, e.g. [by 10 % in France](#). This is why it was included as the core of the 'Proximity and Social Economy' ecosystem, one of the **14 industrial ecosystems identified in the update of the EU industrial strategy**.

The social economy **complements Member States' action to deliver quality social services in a cost-effective way.** It also complements their efforts to integrate young people and disadvantaged groups (e.g. people with disabilities, older people, long-term unemployed, people with a migrant background or from racial or ethnic minorities (in particular Roma), single-parent families) into the labor market and society at large.

The social economy helps build **bridges linking people with disabilities and psychological problems to employment in the open labor market and provides services necessary to support their independent living.** In addition, the social economy contributes to improving **gender equality**. Many women have access to the labor market through jobs created by the social economy and, on the other hand, **the social and care services provided by the social economy enable women to access the wider labor market.**

Similarly, the social economy contributes to **achieving the Sustainable Development Goals** (SDGs) at EU and global level. This is because **the social economy actively contributes globally to poverty reduction, promoting the transition to sustainable cities and communities, responsible consumption and production, and sustainable finance.** Therefore, cooperative and non-profit organizations are [a key pillar of Europe's social and economic resilience](#).

The social economy has the potential to **reshape the economy after the COVID pandemic through sustainable and inclusive economic models leading to a fairer ecological, economic and social transformation.**

You can read the **European Action Plan for the Social Economy** in the text [here](#)

The European framework for social economy

Existed experience in Sifnos: The local experience - from informal cooperative structures to the formal expression of the social economy in Sifnos

Two elements determined the development of the society of Sifnos over the centuries:

- **The informal, not institutional, cooperation of people to solve their problems and shape the future,** discussions in cafes, the joint execution of agricultural and other work, cooperation for the maintenance of paths, churches, common areas, schools, solidarity with the most vulnerable people of the community, the organization of festivals, feasts and celebrations, even carols, literary schools at the beginning of the last century, music workshops that still survive, synergies between different professions (ceramists, mules for transporting bushes and wood for kilns, clay suppliers for ceramics, etc.)

- **The harmonious relationship with nature, through the development of a set of activities that shaped the landscape with continuous human intervention.** The environment and landscape are not the result of the absence of human activity in Sifnos, but rather of human conscious intervention but in absolute harmony with nature.

These two defining elements of Sifnian society that until recently determined its prosperity and evolution are under pressure today. The GRAPE project seeks to highlight proposals and solutions that will strengthen what existed in society but also to highlight and connect them with modern dimensions such as green and social sustainability as well as the social economy as a key tool for social cohesion and society's resilience against threats and pressures.

Potential for social economy in Sifnos

There is social consciousness and sensitivity among a significant number of residents as well as strong memories of collaborative organization of the local community through mainly informal structures, such as care of the external common space, paths, chapels, festivals, joint agricultural activities. But social economy is not representing an important source of financial activity and employment in Sifnos nowadays.

As we had the opportunity to see from both the Mirabella and Bonares missions, the cooperative, social and solidarity-based economy plays a particularly important role in some societies in promoting sustainability, common interest and solutions to important problems. The existing European strategy for the social economy-European Action Plan for the Social Economy - Building an economy that works for people: an action plan for the social economy is also very supportive.

Although there was a culture of collaboration, doing together and there are good practices all over the world and among the partners of the project, social economy in Sifnos is not developed. Therefore there is room for social economy and innovation in many sectors and especially in agriculture, energy and green transition as well as for the development of social infrastructure.

Based on existed experience, good practices and failures in Sifnos and other area, social economy could be a solution for supporting the municipality and the local society in

- enhancement of social infrastructure and supporting social policies, not existed today

- preserving local cultural heritage and developing ecotourism /sustainable hospitality, organising cultural events in collaboration with the Coultural Union and other cultural entities.
- revitalising agriculture and rebuilding the whole food production,
- supporting environmental management, research, collection of environmental data and monitoring
- looking for social financing and funding, including crowdfunding, looking for innovative financial tools,
- preparing and implementing project for the common interest, the realisation of projects for the benefit of the community, the environment and climate and
- influencing economy towards green and social sustainability
- promoting knowledge sharing, supporting in non formal education, life long training and the collaboration with formal education

European networks of social economy (REScoop.eu, REVES, Social Economy Europe, DIESIS Network) and small islands (SMILO), networks where Wind of Renewal is an active member could play a role in developing common projects where Sifnos can participate to cover its needs for pushing the green, social and digital transitions needed for the society. The new CAP and the European Green Deal have environmental /digital transformation as their main objectives. There are also many more programmes like LIFE, Erasmus, HORIZON, EUKI that can help the green and digital transition of Sifnos if a supportive (social economy) structure is created.

Risks for social economy

- Recently the EU adopted the European Action Plan for the Social Economy and has given 2 years for the formulation of the National Action Plans for the Social Economy. It is true that the gap between the growth rates of the social economy at European level is deepening. In some countries, such as Spain and Italy, the pandemic gave a greater boost, in others, such as Greece, the social economy remained marginalized or even reversed, since many of the measures taken excluded either explicitly or implicitly the criteria set for the social and collaborative economy.
- There is also a bad experience in Greece as many old cooperatives failed, turned to a centre of corruption and “clientistic” system, therefore the idea of cooperatives and social self-organisation has lost reputation. But a number of new, well organised social economy structures (coops, institutions, social enterprises, etc), with democratic governance, following the basic rules and values of cooperative movement are already existed and represent a good example for Sifnos too.

Obstacles:

- The concept of social economy [is little or not recognised at all in at least 10 EU countries](#) (European Economic and Social Committee, "Recent developments of the social economy in the European Union", by Monzon J. L. and Chaves R., 2017, pp. 35 and 36), with Greece being among the countries where its role is

partially legally recognised but in practice there is an absence of a supportive ecosystem, or obstacles, problems and exclusion dominate in practice.

- Among other obstacles is the incorporation in practice of the criteria of the particular model of the social economy that combine both social interest and economic objectives and that will differentiate calls and programs, will utilize the funds that exist both targeted for the social economy (500,000,000 euros in the NSRF 2014-2020, but which were hardly directed to the needs of the social economy) and horizontally in actions and programs (eg green transition, investments, support for the recovery of small and medium-sized enterprises during the pandemic, access to working capital, community service, etc.).
- The negative experience from the past with the failure of many cooperatives, instead of having led to addressing the structural problems of the collaborative economy, has shaped a rejection of collaborative forms of entrepreneurship, without taking into account the modern way these enterprises are organized (to address model failures, clientelism, weak decision-making and management structures, ignorance of modern operating tools, etc.).
- Many of the potential of social entrepreneurship are not sufficiently exploited in Greece, either due to the weaknesses of the enterprises themselves or due to the non-existence of the social economy ecosystem.
- **The social economy and the role it can play in empowering society and the green transition remains unknown to many people**, who at best treat social enterprises as those that only concern socially vulnerable people and limit their role in matters of social inclusion.
- Many consumers consider that one of the most effective ways to tackle environmental problems is to "change the way we consume" and "change the way we produce and market" and say they want to buy more responsibly in terms of the sources of goods and services they buy, but do not necessarily know how to do so. But **they rarely recognize the role of the social economy in the production of environmentally responsible goods and services** (e.g. energy upgrading of buildings, installation of solar systems, production of energy from renewable sources through energy communities, etc.)
- **Investment funds, at local and national level, are not available to social economy actors. Also, it is difficult for the social economy bodies to have access to fair bank lending and programs that are announced** even if at an early stage they are not excluded as forms of entrepreneurship, since all the European Regulations of the various Programs emphasize the obligation of Member States not to exclude social economy enterprises from beneficiaries Programs.
- **Public authorities do not make use of existing possibilities / potential** to facilitate social economy enterprises' access to public procurement (not only social reference) or funding, nor the flexibility offered by current EU state aid rules, especially in times of crisis (pandemic, energy, economic, etc.)

- **As they are not sufficiently known and recognised, social economy actors face difficulties in trying to develop and grow their activities**, which mitigates their economic and social impact. These actors need more and better support to grow and flourish.
- **There are no suitable social and green bonds and funds from social investors** in Greece aimed at investments by social economy enterprises, green transition, etc. Although there are many such possibilities at European level, there are too many obstacles for Greek social economy enterprises to be able to access similar funds with a social and green sign, while some bodies that could play the role of intermediary and guarantor of such investments, such as the Cooperative Bank of Karditsa, are focused mainly on local actions.
- Even for the new programming period and for the Recovery and Resilience Fund, **only banking criteria prevailed**, which excludes many innovative investment projects that are not immediately "profitable" or have a particular social and green impact.
- Often too much emphasis is placed on education, training and talent promotion programs, but this is not linked to an integrated approach accompanied by fair access to appropriate financial tools, resulting in inefficiency in the management of resources, especially those from the Social Fund (approximately €2.5 billion in the NSRF 2014-2020).
- Very often, emphasis is also placed on mentoring and counseling, which, however, does not take into account the problem of access to working capital and social investment capital, which is a key structural deficit in our country both for social economy enterprises and for small and medium-sized enterprises in general, with the possible exception of technology enterprises and start-ups that mainly target technological applications. which do not always lead to inclusivity but may also widen the technological gap (technological illiteracy) that exists and leads to the exclusion of groups and individuals who cannot follow developments on their own.

Financial and other opportunities:

- **All Regulations for the programming period 2021-2027 provide for the access of social economy enterprises to the programs announced.** Programs such as the Green Transition or the Digital Transition are indeed open to social economy enterprises as well. Ultimately, however, the criteria applied for the evaluation may in practice exclude those companies that have been affected by the pandemic and the energy crisis. For example, by placing great emphasis on the existence of profits in the previous year, regardless of the viability of the proposed business plan or the resilience a company has shown through crises.
- **The Recovery and Resilience Facility** provides Member States with significant opportunities to implement reforms and investments through social and inclusive entrepreneurship. In addition, some Member States have identified the social economy and entrepreneurship as priorities in their national recovery and resilience plans. But this does not correspond to the priorities of the Greek plan; which in any case excludes 80-90% of small and medium-sized enterprises. Let us hope that the European Commission's

announcement and the debate taking place in the European Parliament that they will monitor and support Member States in implementing their respective plans so that they are fairer and more inclusive will have an effect.

- The social economy can play a key role in the transition towards more beautiful, sustainable and inclusive living spaces and lifestyles, as promoted by the [New European Bauhaus](#), offering new interdisciplinary approaches and solutions tailored to the needs and expectations of local communities.
- **SEED** is one of six European projects supported by the European Commission to create **national competence centres for social innovation** across the EU. Over the course of two years (May 2021-May 2023) social innovation organisations, research centres, ESF managing authorities and other partners **designed competence centres**, which can help their countries to **promote social innovation**, including through funding from the ESF+ and other EU programmes.

According to the Programme, in order to optimise the potential of the social economy in the Single Market, *“more efforts should be made to replicate successful experiences in different Member States and, where possible, to support the development of social enterprises from local to European level, including through the use of digital tools. The program proposes an action plan aimed at strengthening social innovation, supporting the social economy and increasing its social and economic transformative power. It proposes a series of actions for the period 2021-2030. It builds on the Social Business Initiative (SBI) and the Start-up and Scale-up Initiative”*.

Good examples from GRAPE partners

Valle Camonica: From abandoned lands to “Coltivare Valore” (Cultivating value)

One characteristic of the Camonica Valley is the deep-rooted presence of a widespread network of social cooperatives that have developed and actively work in synergy with each other and with the institutions, *in primis* Comunità Montana and ATS Montagna

In Vallecamonica a number of projects for the reuse of abandoned agricultural land have already been implemented (the most recent ones being briefly mentioned. Coltivare Valore; Recupero Terra Vita; Coltiviamo il Futuro.) with lofty and easily shared objectives.

- Conservation of agro-biodiversity;
- recovery of native species;
- consolidate job positions dedicated to disadvantaged people;
- raise the quality of the network's agro-ecological skills.

The projects, proposed by Solco and related cooperatives, not necessarily belonging to the consortium, have in common the objective of **creating or stabilizing jobs for subjects who cannot access the normal labor market**: these subjects are employed, for various reasons, in “B” cooperatives (The Solco Camunia Consortium has as members: 3 “A” type cooperatives, 9 “B” type cooperatives and 2 mixed type (A+B)

cooperatives). This aspect is very important especially at a social level, because it allows **disadvantaged people to make themselves useful** and to enhance both one's skills and one's self-esteem. Hence the importance of finding new and sustainable employment opportunities by combining agricultural practices and jobs that are difficult to manage.

The employment of disadvantaged workers in cooperatives "B" (type of cooperatives in Italy) represents indirect income from the PA as a whole, if one considers both the economic support to fragile people who would otherwise have to be paid, and the taxes that working subjects can pay. This value can be measured easily and precisely using "VALORIS". (It is a model based on spreadsheets that allows you to measure precisely and periodically the savings that the social enterprise guarantees to the public body).

5.5 Ongoing projects

PILLARS	PRIORITY Which of these areas do you think are priorities for your community? That is, in which areas do you think you need to act most urgently in order to guarantee the success of a transition process on your territory? (for each pillar specify a number from 1 to 5, where 1 means "not at all a priority" and 5 means "maximum priority")	EXPERTISE How much the community has already worked in this area, developing a relevant experience? (for each pillar specify a number from 1 to 5, where 1 means "no experience at all" and 5 means "very strong experience")	SOCIAL INVOLVEMENT To what extent social economy players are involved in the specific pillar? (for each pillar specify a number from 1 to 5, where 1 means "no involvement at all" and 5 means "very strong involvement")	ECONOMY
Supplying clean, affordable and secure energy	5	2	2	
Mobilising industry for a clean and circular economy	5	3	2	
Building and renovating in an energy and resource efficient way	5	2	2	
Accelerating the shift to sustainable and smart mobility	3	1	1	
From 'Farm to Fork': designing a fair, healthy and environmentally friendly food system	5	2	3	
Preserving and restoring ecosystems and biodiversity	5	3	1	
A zero-pollution ambition for a toxic-free environment	4	2	1	
Fair and just transition (leave no one behind)	5	2	1	
Health and Happiness	5	2	1	

Public actor:	<i>Municipality of Sifnos - Starts4Water</i>
Policy implemented:	<i>Art and sustainable management of water</i>
Pillar:	<i>Preserving and restoring ecosystems and biodiversity</i>
Main beneficiaries:	<i>Local economy, farmers, tourists</i>
Financing:	<i>European Commission</i>
Effectiveness:	<i>In progress</i>
Engagement of local stakeholders:	<i>In collaboration with local stakeholders and the Municipality of Sifnos</i>

“METAL PLACES”

Public actor:	<i>NCSR Demokritos with the Municipality of Sifnos, Ephorate of Antiquities of Cyclades (Ministry of Culture),The Archaeological Research Unit (ARU) of the University of Cyprus and in the Asgata Community of Cyprus</i>
Policy implemented:	<i>The project focuses on the Cycladic islands of Sifnos, Serifos, Kythnos in Greece and the Community of Asgata in Cyprus, areas of outstanding cultural and technological heritage which possess ancient mining and metallurgical remains covering the last 5000 years, which have not received the recognition they deserve. The main goal is to promote this pan-European heritage based on the triptych “Culture-Tourism-Development”.</i>
Pillar:	<i>To address common cross-border and transnational challenges, support synergies through joint partnerships and establish strong partnerships with a view to balanced economic, social and spatial development at European level.</i>
Main beneficiaries:	<i>Local economy, tourists</i>
Financing:	<i>funding by the European Territorial Cooperation Programmes “INTERREG”.</i>
Effectiveness:	<i>Promoting the selected areas, using modern technologies (3D visualization, Web-GIS platform), new forms of communication (socialmedia, mobile applications), involving also the co-participation of local stakeholders.</i>
Engagement of local stakeholders:	<i>The project adopts a multi-level approach, reconciling the different priorities set by the need for tourism development on one hand, and protection of cultural heritage of an area, on the other</i>

Culture and Community (Heritage, Social Capital)	5	4	2
Democratic governance of transition processes	5	3	1

WATER INFRASTRUCTURE

Public actor:	<i>Municipality of Sifnos</i>
Policy implemented:	<i>water management - restoration of one traditional water tank “gourna” of the island and monitoring of the 3 big water reservoirs of the island</i>
Pillar:	<i>Preserving and restoring ecosystems and biodiversity</i>
Main beneficiaries:	<i>Local economy, farmers, tourists</i>
Financing:	<i>Funding by the PA (Partnership Agreement for the Development Framework) 2014-2020 of the South Aegean Region's Managing Authority</i>
Effectiveness:	<i>the monitoring system will be ready in one year, a pilot implementation started in the frame of the starts4water project with an artistic installation inaugurated by the end of July 2022</i>
Engagement of local stakeholders:	<i>For the repair of the traditional water tanks (gournes, Poulati water management system) local and other stakeholders support the activities.</i>

SOCIAL ECONOMY INITIATIVES

Local social economy actor	<i>Ananeosis / Wind of Renewal in collaboration with the Municipality of Sifnos and the SMILO network as small islands</i>
Initiative implemented:	<i>“Sustainable management of natural resources in Sifnos- SMILO-MED” project, establishment on 19th of May 2022 of a Local Committee for the promotion of sustainability,</i>
Pillar:	<i>Preserving and restoring ecosystems and biodiversity</i>
Main beneficiaries:	<i>all the population of the island, farmers, tourists</i>
Financing:	<i>Partly financed by the SMILO-MED project and Prince Albert 2 of Monaco Foundation</i>
Effectiveness:	<i>The project started recently - agreed a road map for the next activities</i>
Engagement of local stakeholders:	<i>Collaboration with the different local stakeholders mainly through their participation in the Local Committee for the Sustainable Management of Natural Resources in Sifnos</i>

WATER POLICIES

6 Previous initiatives of Sifnos and Wind of Renewal of Green Social Transition

Sifnos island

- **Sifnos** has joined the initiative of the “Covenant of Mayors” and the “Network of 100 cities for climate”
- Sifnos is elected among the 88 islands for support by the Clean energy for EU islands secretariat. This is an initiative of the European Commission for the clean energy transition of the more than 2,200 inhabited European islands.
- Sifnos is participating in the GRAPE project (co-financed by the European Community within the framework of SMP-COSME-2021-RESILIENCE-SEM). The social economy missions and the close collaboration with the partners of the project offered useful tools for developing the Action Plan, networking and exchange of good practices and know-how.
- Sifnos is also participating in the SMILO MED project

Anemos Ananeosis / Wind of Renewal

Wind of Renewal (WoR) is a member of the networks

- REVES network
- REScoop.eu
- SMILO small islands network
- DIESIS Network

WoR has also a good collaboration with

- LE MAT Europe, a network of social economy tourist enterprises
- HOSTEL WORLD
- Hosteling International

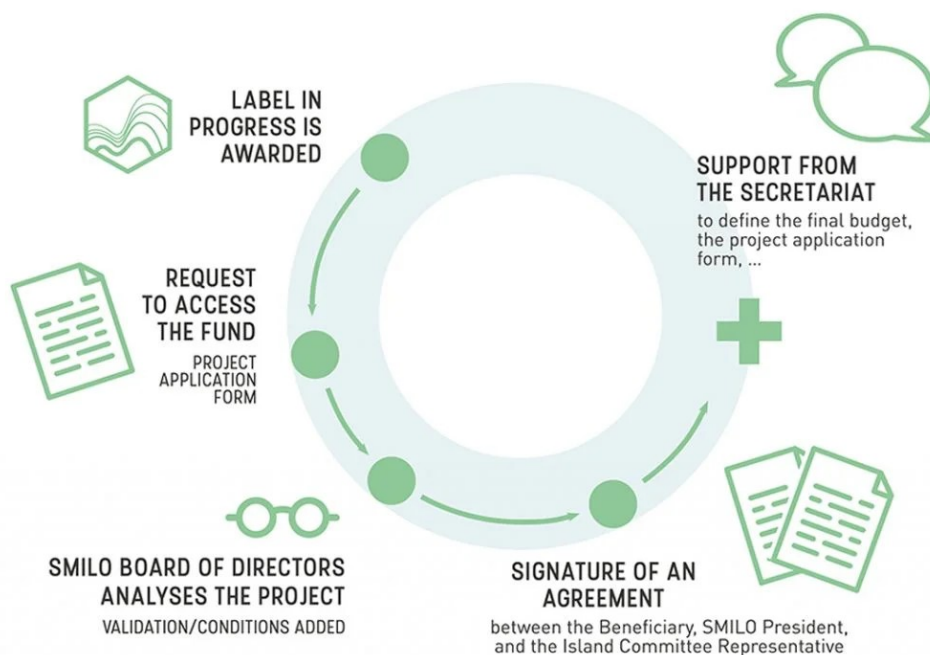
6.1 SMILO LABELLING PROCESS

The SMILO Label is a tool for pushing for change, transition of an island. It also helps recognise islands involved in a continuous improvement process which includes several steps:

- establishing an Island Committee that represents all stakeholders of the area
- adhering to the SMILO philosophy and committing to the certification process
- developing a territory diagnosis as well as defining the issues and priorities of the island
- assessing its interim condition of identifying efforts already provided by the island as well as its commitment to the process
- implementing measures that contribute to achieving the priority objectives of the island
- carrying out a final assessment to obtain the label

- maintaining efforts to improve the sustainability of the area and to keep the label

*In Sifnos it was decided for the Island Committee and in the framework of SMILO MED project a more open and participatory process, based on collaboration with different actors, organising conferences and workshops, taking a number of initiatives, in coherence with the aims and goals of GRAPE project. At the same time, **Context** and **SWOT Analysis** as well as the drafting of **Green Social Action Plan** will assist the process for SMILO label for Sifnos.*



Throughout this process, several tools are available to the islands:

- strategic and technical support is provided through the availability of experts/facilitators, good practice sheets, participation in Technical workshops, and inter-island meetings
- when eligible (criteria depending on the project), they can have access to the Islands Fund in order to finance measures to achieve priority objectives

SUSTAINABLE ISLANDS DECLARATION

The Declaration towards Sustainable Development of Small islands summarises the issues addressed by SMILO. As well as the vision and goals the association intends to share with its members and partners. By signing this Declaration, the representative of the Island Committee first adheres to the philosophy of the program and the SMILO network.

It is also a way to formalise membership in the SMILO association. The Declaration also authorises signatures by any other person or legal entity wishing to join the SMILO association.

The Declaration can be accessed via the following links:

[Declaration towards sustainable development of small islands](#)

COOPERATION AGREEMENT

The Cooperation Agreement is signed by the Island Committee representative when the island commits to the labelling process. This contract details all of the commitments made by the island, and the SMILO association, throughout this process. This step corresponds to the island's official application to obtain the "Sustainable Island" label.

The [Cooperation agreement](#)

DIAGNOSIS AND STRATEGIC PLANNING

The diagnosis and strategic planning are critical steps in the territorial process, both for setting up operations that will allow establishing sustainable practices that will lead to the certification of the island, and additionally in terms of leading to a shared assessment between the key players of the island Committee. The territorial approach must integrate the key players, human activities, and terrestrial and marine issues... Creating the island's diagnosis and the strategic plan allows to:

- make an objective and shared assessment of human practices and activities and island resource management
- measure the margins of progress to work towards a better balance between human development and island resource management.
- Set strategic objectives to achieve in order to obtain international recognition for the island – Sustainable Island Label.
- An instruction notice is available to help islands create their diagnosis and define their strategic plan.
- SMILO strategic principles have a guide structure for islands to determine their objectives.

[Explanatory note for developing the island's diagnosis and defining its strategic plan](#)

INTERMEDIARY ASSESSMENT

Once an Island Committee establishes and the Sustainable Island Declaration and Cooperation Agreement are signed, the diagnosis and the strategic plan completed, and the intermediary assessment occurs.

A rapporteur from the assessment committee oversees the completion of steps and develops the assessment.

This assessment allows to:

- Recognise the efforts already made by the island (identified in the island diagnosis) with the possibility of obtaining sectoral prizes by theme if all the guidelines succeed ("[strategic principles](#)" doc)
- Certify that the island is actively in a labelling process

More about the assessment criteria [Island assessment sheet](#)

OPERATIONS IMPLEMENTATION / ISLANDS FUND

Islands implement operations that contribute to achieving priority objectives outlined in their strategic plan to improve sustainability. Once islands are eligible, they can have access to the Islands Fund to finance operations to achieve priority objectives.

[Access rules to the island fund and Islands fund application](#)

PRIORITY OBJECTIVES ACHIEVEMENT

When islands have reached all the priority objectives set in their strategic plan, they must list them in their

[Label application](#)

FINAL ASSESSMENT

The final assessment is made on-site by one or two rapporteurs from the assessment committee, which checks that priority objectives have succeeded on the island. Later a collegial opinion by the whole assessment committee is proposed to the SMILO NGO Administration Council that officially issues the label. In case of a rejected label, recommendations allow the island to reapply.

Assessment criteria, click on the assessment sheet below: [Island assessment sheet](#)

GRANTING THE FINAL LABEL

When islands get the “Sustainable Island” label, it is valid for five years. Every year, they must write an activity report which shows the efforts made on SMILO themes. Indeed, the SMILO approach is one of continuous improvement, so after five years to keep their label, islands will have to reapply by presenting their updated steps (Island Committee if changed, diagnosis and strategic plan, implementation of operations and priority objectives).

To inform the efforts made each year, the island has to fill the [Label monitoring](#)



7 Instead of an epilogue

The climate crisis is changing everything – if we don't prepare, it will lead to a collapse of the economy and society. The predictions for the Mediterranean are that in 20-50 years the heat wave days with temperatures above 37-40°C may be maybe thirty (30) in summer, up from one (1) on average today. Norwegians seek to become the Greece of the North, to become a "cool summer destination" since the Mediterranean will be

almost unlivable, or at least very hot, with heat waves hitting the region many days, with temperatures reaching 42 and 45°C degrees and tourism will change direction, from sun and heat, to the dew.

On the other hand, drought has recently destroyed agricultural production in Spain, causing a deep political, economic and social crisis. But drought is likely not to be the exception but the new normal in our own climate zone. The temperate Mediterranean climate is being displaced further north, we are now approaching that of the African desert.

Changing the climate also changes the landscape, the vegetation, the balances that have been formed, the soils are eroded. While discussing the role of soil and plants absorbing climate-changing gases, we may find ourselves limiting the potential of soil to play such a role in the future.

- A similar transient crisis in California was the cause of the Great Depression in 1929 that led to a collapse of the world economy. We need to carefully re-read the great masterpieces that described the era, such as the "Grapes of Wrath" ([John Steinbeck](#)).
- Something similar was the trigger for the start of the civil war in Syria, but also for many of the crises on the African continent.
- The water control sparked border clashes between Iran and Afghanistan earlier this month.
- Apart from conflicts at the big level, there are also conflicts within societies, the future is also differentiated at the local level.

What truth is left of the 3 water networks, the wise management and fair sharing of water developed by previous generations in Sifnos (see the relevant discussion we organized at the Prokos Foundation, on January 22, 2023, entitled "Water stories in Sifnos, [from past to present and tomorrow](#)")?

But the future has a lot of drought and we must, inevitably, rebuild an integrated water model, taking into account the needs and constraints we will have. The wise model of water management that we had in Sifnos is demanded today all over the planet, we had it and we need to develop it further instead of letting it collapse.

The most modern and above all important thing to shape a sustainable future is to learn from this wise past not to reminisce about it but to shape, incorporating wise local practices, a modern framework with strategies, policies, tools and *ways of life that will preserve the island, its society, landscape, nature, settlements, culture, values, material resources for real prosperity. Ultimately our well-being and happiness.*

Local Social Green Resilience Action Plan

Community: Malegno and Valle Camonica (Italy)

TABLE OF CONTENTS

1	CONTEXT ANALYSIS	4
1.1	Opportunities for art and history	4
1.2	Industrial areas and critical issues	5
1.3	Turism	6
1.4	Social Cooperatives	7
1.5	AGRICULTURE - Projects in progress.	9
1.6	Demographic evolution	11
1.7	SWOT ANALYSIS.....	14
1.8	Previous initiatives: PAESC	16
2	Definition of a “consolidated view of the optimal situation”	18
2.1	The stakeholder engagement process	18
2.2	The identified stakeholders	19
3	The consolidated view of the optimal situation	22
4	Definition of the actions to be performed to achieve the various objectives.	23
4.1	From proximity stores to energy communities – a bottom-up process.....	23
4.1.1	Technical aspects	23
4.1.2	Social aspects.....	24
4.1.3	Legal framework	25
4.1.4	Financial aspects.....	26
4.2	From abandoned lands to “cultivating value”	27
4.2.1	Technical aspects.....	28
4.2.2	Social aspects.....	28
4.2.3	Legal framework	28
4.2.4	Financial aspects.....	29
5	DEFINITION OF THE ACTIONS TO BE TAKEN AT THE LOCAL LEVEL.....	31
5.1	From abandoned lands to “cultivating value”	31
5.1.1	Definition of the participatory program	31
5.1.2	Creation of an engagement map	31
5.1.3	Definition of evaluation indicators	31
5.1.4	Definition of the review process	33

5.2 Energy Communities..... 33

5.2.1 Definition of the participatory program 34

5.2.2 Creation of an engagement map..... 34

5.2.3 Definition of evaluation indicators 34

5.2.4 Definition of the review process 35

6 CONCLUSIONS 37

7 ANNEXES.....**Errore. Il segnalibro non è definito.**

1 CONTEXT ANALYSIS

Vallecamonica is a region in Lombardy, northern Italy, known for its rich historical and cultural heritage, which includes prehistoric rock art, medieval castles and religious architecture. The region has been inhabited for thousands of years and its cultural traditions are deeply rooted in the local communities.

1.1 Opportunities for art and history

Rock Art: One of Vallecamonica's most important cultural features is its prehistoric rock art, which dates back to the Neolithic period and covers over 200,000 square meters of rock surfaces. Rock art includes carvings of animals, humans and abstract forms, and is considered one of the largest and best preserved examples of prehistoric art in Europe. The rock art is also recognized as a UNESCO World Heritage Site, attracting many visitors and scholars interested in the prehistory of the region.

Religious Architecture: Vallecamonica is also known for its religious architecture, which includes numerous churches, chapels and monasteries, representing different historical periods and artistic styles. The most famous religious site in the region is the Sanctuary of the Madonna di Montisola, which is located on an island in Lake Iseo and is considered one of the most important pilgrimage destinations in Italy.

Medieval Castles: The region is also characterized by numerous medieval castles, which are scattered throughout the territory and bear witness to the historical conflicts and power struggles that have shaped Vallecamonica's past. Some of the more notable castles include Castello di Breno, Castello di Cimbergo, and Castello di Gorzone.

Contemporary Art: In recent years, Vallecamonica has also become a center for contemporary art, with numerous cultural events and exhibitions taking place throughout the region. For example, the Valle Camonica Land Art Festival presents site-specific installations and performances by international artists, while the Casa degli Artisti in Bienno offers residencies and workshops for emerging artists.

In short, Vallecamonica's art and cultural scene is rich and diverse, ranging from prehistoric rock art to contemporary installations. The region's historical and religious heritage, combined with its natural beauty and artistic vitality, make it a unique and inspiring destination for visitors interested in culture and the arts.

There are some already active projects aimed at enhancing the historical and artistic heritage in Vallecamonica, such as:

- The [Camunitas Foundation](#)
- The [Museum of Hydroelectric Energy](#) (Cedegolo)
- The Archaeological Museum (Cividate Camuno)

- The [White War Museum](#) (Temù)
- The [building regeneration project in Vione](#)

1.2 Industrial areas and critical issues

Vallecamonica has a long history of industrial activities, including mining, metallurgy, textile manufacturing and electricity generation. However, in recent decades, many industrial sites in the region have been abandoned or redeveloped, leaving a legacy of environmental and social challenges. One of the main risks facing Vallecamonica is the dependence on traditional industries, which are vulnerable to economic crises and market fluctuations. In recent years, these industries have been affected by globalization and competition from other countries, resulting in job losses and a decrease in local economic activity.

Environmental impact: Vallecamonica is facing environmental challenges related to climate change and the need for a green transition. The valley is home to several natural parks and protected areas, but also faces threats such as air pollution, deforestation and soil degradation. These challenges have a direct impact on the local ecosystem and community well-being. To address these challenges, Vallecamonica must focus on transitioning to a more sustainable and diversified economy. This includes promoting the development of new industries such as renewable energy, ecotourism and sustainable agriculture. It also includes investment in education and training to equip the local workforce with the skills needed for these new industries.

Comunità Montana promoted a study on: Abandoned former industrial sites in Vallecamonica often present significant environmental risks, such as soil contamination, water pollution and hazardous waste disposal. For example, the former asbestos mine in Forno d'Allione is considered one of the most polluted areas in Lombardy, with high levels of asbestos fibers and heavy metals in the soil and water.

Social impact: The closure of industrial sites in Vallecamonica has also had significant social consequences, such as unemployment, poverty and social exclusion. Many former industrial workers have lost their jobs and struggle to find alternative employment opportunities, leading to a sense of abandonment and disillusionment in local communities and to emigration, especially among the younger generation. The decline of the industrial sector has also affected the social fabric of the region, with many abandoned buildings and neighborhoods becoming symbols of neglect and decay.

Urban renewal: In recent years, Vallecamonica has launched several urban renewal projects aimed at revitalizing abandoned industrial areas and promoting sustainable development. The Mountain Community has promoted a "STRATEGIC INTERVENTION PLAN FOR THE CAMONICA VALLEY: "[DISCONTINUED INDUSTRIAL AREAS AND URBAN REGENERATION](#)" and the [Prossima Generazione Valle Camonica Foundation](#).

Economic development: The abandoned industrial areas of Vallecamonica also offer opportunities for economic development and innovation, especially in the renewable energy, circular economy and tourism sectors. For example, the mining town of Schilpario is developing a sustainable tourism industry based on its natural and cultural heritage, while the former textile factory of Malegno is being converted into a research and innovation center in the field of sustainable fabrics.

In summary, the abandoned industrial areas of Vallecamonica represent a complex challenge for the area, which requires innovative solutions that balance environmental, social and economic concerns. While urban renewal and sustainable development offer promising opportunities for revitalization, addressing the legacy of industrial decline and contamination remains a critical priority for the region's future. The **Prossima Generazione Foundation** conducted a research on abandoned industrial areas, you can see the results on the [Geoportal of the Mountain Community](#). Video communication on +ValliTV (journalist: Paola Cominelli).

The former OLS * Pisogne is [a good example](#) of industrial regeneration promoted by 15 entrepreneurs and the Next Generation Foundation. It involves an area of almost 200,000 square meters where a photovoltaic pole of around 20 MgW will be built (news: https://www.camunity.it/mobile/flash_page.php?id=51865).

In the former Banzato area, in Darfo Boario Terme, two different proposals were presented:

A **tourist center** connected to the structures of the [Terme di Boario and to the Luine Park](#) (Rock Art). A place to locate the center of the planned Hydrogen Hub: resolution of the Municipality of Darfo (October 20, 2021), see the news [here](#).

Selca/Ucar Forno d'Allione. The cleanup process is still ongoing.

1.3 Tourism

Vallecamonica offers a wide range of tourist attractions for visitors, including cultural, natural and recreational activities. Some of the highlights of tourism in Vallecamonica are:

Alpine skiing: the winter tourism industry includes several stations in Vallecamonica of which the most important is that of Ponte di Legno – Tonale, from 1,100 to about 3,000 meters which, unfortunately, in recent years, due to climate change, snowfall and the considerable increase in electricity costs, is suffering particularly. To date, however, it remains an important economic element especially in the upper valley.

Rock Art: The region is famous for its rock art sites, which feature thousands of petroglyphs and prehistoric inscriptions, recognized by UNESCO as World Heritage Sites.

Archaeological sites: Vallecamonica boasts numerous archaeological sites, including Roman ruins, medieval castles and ancient settlements, which testify to the region's rich history and cultural heritage.

Natural parks and reserves: The region is blessed with beautiful natural landscapes, including the Adamello Park, the Stelvio Park and the Orobic Alps, which offer opportunities for hiking, cycling and skiing.

Wellness centers and spas: Vallecamonica has a long tradition of thermal baths and wellness centres, such as Boario Terme, Angolo Terme and Darfo Boario Terme, which offer relaxation, health and beauty treatments: this in the valley is a sector in crisis, much more than that of skiing.

Gastronomy and wine tourism: Vallecamonica is also renowned for its traditional cuisine and wines, which include local specialties¹ which can be enjoyed in the local restaurants and cellars.

Giving priority to **ecotourism** in Vallecamonica requires a global approach involving different actors, including local communities, businesses and public authorities. Here are some tips:

Conduct a survey: A survey of the local community and businesses can help identify the most popular tourist destinations and activities in Vallecamonica, as well as the potential for ecotourism. This will also provide an understanding of local preferences and tourist expectations. This can be done by the [DMO Vallecamonica](#)².

Develop ecotourism products: Ecotourism products can be developed that promote sustainable tourism and highlight Vallecamonica's unique natural and cultural heritage. These products can range from hiking and cycling tours to cultural experiences that allow tourists to learn about local traditions and customs. Promoting the local food chain can contribute to both local agricultural practices and local culture for tourists.

Promote sustainable practices: To ensure that ecotourism is truly sustainable, it is essential to promote eco-friendly practices among tourists, businesses and local communities. This may include encouraging the use of public transport, promoting waste reduction and recycling, and conserving natural resources. Local community shops can help promote sustainable practices.

Partnering with local communities and businesses: Partnering with local communities and businesses is critical to the success of ecotourism initiatives. This involves building partnerships and networks that foster community involvement and participation in the tourism industry.

1.4 Social Cooperatives

¹ The Camuni main dishes are: gnoch de la cua, casoncelli, mutton sausage (salsiccia di castrato), casatta di Corteno, fatuli and silter and for wines, remind that the Valley is an IGT territory, which currently includes 9 companies. To these must be added the same number of non-consortium wineries for a total of 18 realities operating in the Camuno area..

² Unfortunately the DMO is being discontinued as CM's will is to close it soon.

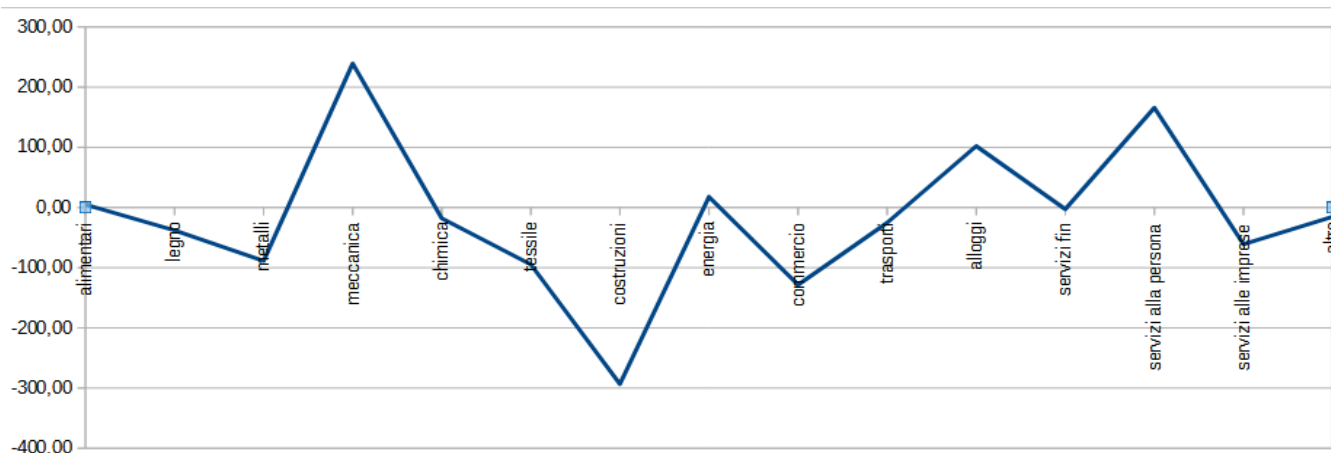
Social cooperatives as a whole represent a very important source of employment in Vallecamonica (after the health authority)³.

Social cooperatives can also benefit from the implementation of ecotourism and related activities (see chaps. 3 and 4) in several ways:

- **Job opportunities.** Ecotourism can create new job opportunities for members of social cooperatives, especially in the areas of hospitality, tourism and local food production, guided tours, nature walks and cultural experiences.
 - **Agriculture, neighborhood shops and energy communities** (see chaps. 3 and 4 in collaboration with stakeholders).
 - **Promotion of social and environmental values:** Ecotourism is often associated with social and environmental values such as sustainability, responsible tourism and community involvement. Social cooperatives that promote these values can benefit from greater visibility and recognition among ecotourists.
 - Social cooperatives can play a role in **preserving local cultural heritage and promoting it among ecotourists**. This can involve activities such as cultural events, handicrafts and traditional food production, which can create a unique and authentic tourist experience.
 - Social cooperatives can **develop new networks and partnerships with other local businesses and organisations**. This can facilitate collaboration and knowledge sharing, benefiting the entire community.
- In summary, by leveraging their strengths and expertise, social cooperatives can contribute to the development of a sustainable and responsible ecotourism industry that benefits both the local community and the environment.

³ Considering only the member cooperatives of the Solco Camunia Consortium (source Social Report of the Consortium and Segni di Futuro for Valle Camonica data), the aggregate employees are 722 (the entire Camuno sector of personal services is 2,912) with an aggregate turnover of approximately 20 million.

Weighted variation of workers per sector 2008-2016



1.5 AGRICULTURE - Projects in progress.

Terra e Vita (*Earth and Life* – by Solco and Cooperative)

The project promotes the recovery for productive use of land now in conditions of evident abandonment, through the activation of a territorial network made up of type A and type B social cooperatives and public bodies sensitive to environmental issues as well as social inclusion of fragile people, issues in relation to which they find the necessary skills and availability in cooperatives. The advantage of this project, which is a prelude to the overall achievement of the objectives, lies in the limited geographical area (the Municipality of Rogno) and in the targeted involvement of social operators: Cooperatives that have been operating in the area for years, identification of disadvantaged subjects in therapeutic communities in Vallecamonica, public administrations that for some time have undertaken the instrument of the Convention ex 381 with social cooperatives for the management of services (including the maintenance of green areas and the management of the Valle Camonica cycle path). The main objectives of the project are:

1. **Recovery of the rural landscape** and contrast of the phenomenon of instability of mountain lands, abandoned because they are difficult to cultivate and not very productive, recovering potentially more profitable areas with significant interventions;
2. **Increase the technical-agricultural skills and transversal skills** of people with addiction problems by training new professional agricultural operators, competent and interested in mountain agriculture activity also in the field of self-entrepreneurship;
3. **Increase and consolidate the job positions** of disadvantaged people;
4. **Develop a territorial network sensitive to environmental and social inclusion issues.** The intention is to create a network to encourage the employment of fragile subjects and to develop attention

to the land and its products.

Coltivare Valore (*cultivate value* - by Solco and Cooperative)

The project promotes the recovery of arable land, through the activation of a territorial network able to work in a complementary way to the pursuit of a common result, transforming this opportunity into an opportunity for work and human growth for disadvantaged people. Long-term objectives of a massive conversion of the territory and a high increase in employment are obviously a distant horizon to be hoped for. In concrete terms, however, we think that the fuse with which to trigger the change could be a good idea inspired by other Italian realities (Trentino and Valtellina in primis), but suitable for our context.

The main objectives of our project are:

1. Conservation of agro-biodiversity and recovery of native species, enhancing and privileging typical and quality products;
2. Making the action of the single recovery intervention organic and systematic with respect to the context environment in which its action fits, working jointly in several municipalities;
3. Increase and consolidate job positions dedicated to disadvantaged people;
4. Raise the quality of the agro-ecological skills of the project network;
5. Increased retail sales.

Coltiviamo il futuro (*cultivate the future* – by Biodistretto)

Objective: generate opportunities for young people, not only valley people, in regenerative and multifunctional agriculture, in excellent craftsmanship and new professionalism with adequate mobility and connectivity support for a sustainable valley.

Sustainable agriculture and regeneration of the agricultural landscape at the heart of the rebirth of the Middle Valley, from the enhancement and recovery of fertile soil to quality supply chains;

Innovation in mobility and connectivity: integrated and low-impact mobility; widespread connectivity by strengthening digital networks, also for eaves countries;

Innovation in the organizational and business fabric to promote green creativity and the permanence/settlement of young people through integrated solutions between work on a multifunctional farm in the Valley and smart-working contracts at companies also located outside Valle Camonica;

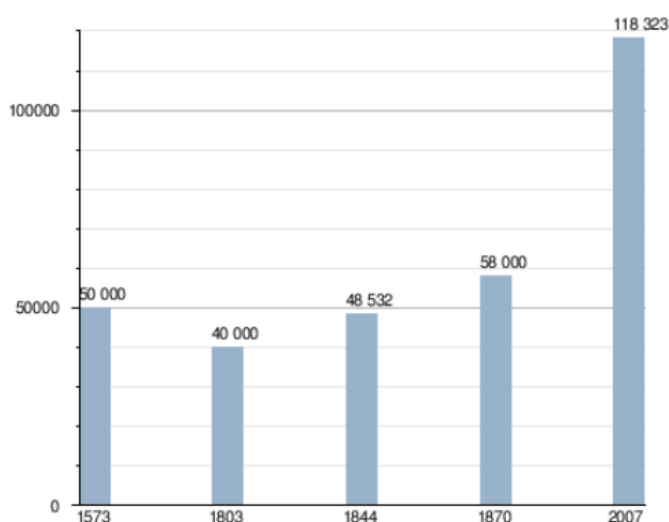
"Thematic" tourism that contemplates cultural, landscape and sports paths and trails, enhancing the potential of sustainable sports and cultural tourism, making the new rural reality known through widespread hospitality structures, even at low cost.

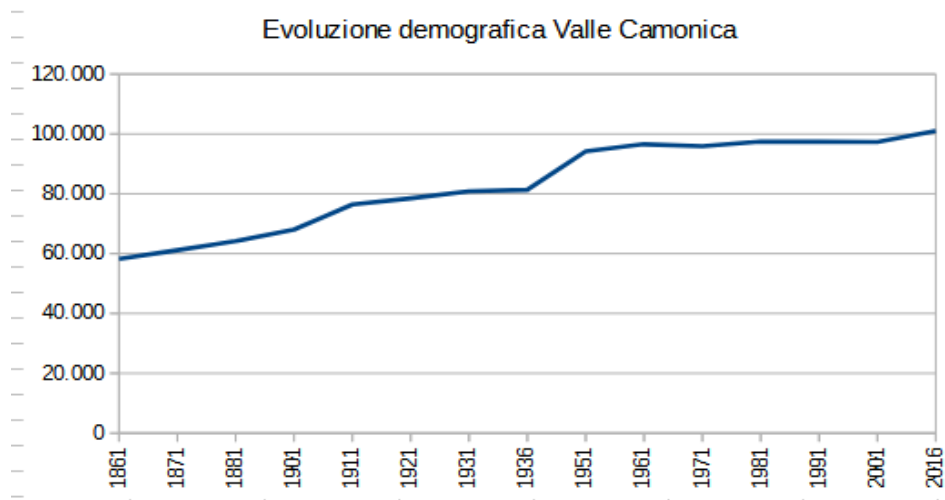
1.6 Demographic evolution

Since ancient times Vallecamosonica has been an area chosen for iron mines and its workings: it seems that the Romans, as well as for logistical reasons related to the containment of the Celts, also conquered it to use its resources.

Since the first century Dc Cividate Camuno was a Roman center of primary importance and the Valley has always maintained a certain independence from the various cities (Brescia, Bergamo, Milan, Venice) which, in succession, tried to subjugate it.

Evolution of the Camunian population from the 16th to the 21st century





The main problem in processing aggregate data for Valle Camonica is that they "do not exist", therefore one must always start from the data per municipality, which however very often do not have the same type of information contained in the aggregate data for higher information units (province and region).

A synthetic comparison with the city of Brescia is also interesting, if only to provide a local comparison.

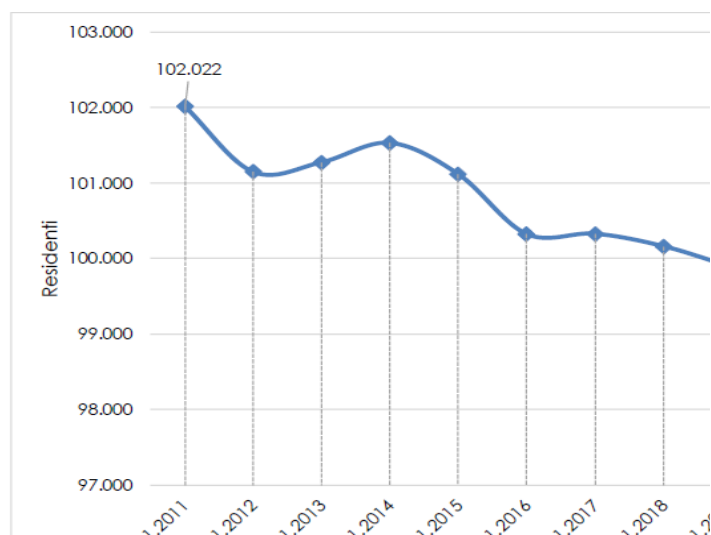
Although the population in Valle Camonica has increased since the unification of Italy, the analysis by area, and above all by Municipality, shows how in some municipalities the population has decreased in recent years compared to the data of 1861. These are above all mountain municipalities, including among these also two municipalities in the upper valley (Vezza d'Oglio and Ponte di Legno) which enjoy an efficient winter tourism industry, evidently not sufficient to avoid the phenomenon of abandonment.

Another interesting data for reading the Camunian data is the analysis of the overall Average Income, also in this case compared with that of the city of Brescia⁴.

Average income Valle Camonica: 18.329

Average income Brescia: 24.790

Demographic evolution of Valle Camonica in the last 10 years (source: Segni di Futuro)



⁴ For the sake of brevity, here are analyzed the 2015 revenue agency data which can be considered representative of the current situation (https://www1.finanze.gov.it/finanze/analisi_stat/public/index.php?opendata=yes).

1.7 SWOT ANALYSIS

STRENGTHS:

- Strong involvement of volunteers;
- Activate network of associations;
- Rich historical and cultural heritage;
- Presence of a strong artisan and manufacturing tradition, with high quality and prestigious products;
- Strong local food production, including cheeses, meats and other local specialities;
- Access to natural resources such as water and forests;
- Presence of important natural and recreational areas, such as the Adamello Regional Park and active skis areas;
- Network of social cooperatives operating in various sectors;

WEAKNESSES:

- Lack of job opportunities for young people;
- Emigration;
- Limited infrastructure and transport links, especially with large cities;
- High dependence on seasonal tourism and primary sectors such as agriculture;
- Limited diversification of economic activities, with few opportunities for value-added industries and services;
- Aging population and lack of opportunities for young people, with the risk of a brain drain, emptying of fractions;
- Limited access to finance and investment, especially for small and medium-sized enterprises;
- Exhaustion of various 'economic cycles' that have taken place in Valle Camonica which have left deep scars;
- Impact of 'land use change, accelerated land consumption due to anthropisation and reduction of the most fertile and flat agricultural land on the valley floor, with the same abandonment of agricultural land and terraces and advancement of secondary forest on the slopes.

OPPORTUNITIES:

- Growing interest in sustainable tourism and ecotourism, which could help diversify the economy and create new job opportunities;
- Development of green energy and sustainable agriculture, exploiting natural resources and local experience;
- Growing demand for high-quality and short-chain food products, both nationally and internationally;

- Growing interest in cultural and educational tourism, enhancing the historical and artistic heritage of the region;
- Availability of national and EU funding programs for regional development and innovation projects;
- Great interest in Vallecagonica on issues related to our problems (→ possible cooperation?);
- Positive regulatory framework (from 2020) towards energy communities.

THREATS:

- Competition from other tourist destinations and food producers, both nationally and internationally;
- Increased environmental pressures and risks, such as climate change, water scarcity and forest fires;
- Growing inequality and social fragmentation;
- Economic and political instability, both domestically and internationally, which could affect financing and investment opportunities;
- Limited access to digital technologies and innovation, which could further limit economic and social development.

1.8 Previous initiatives: PAESC

Valle Camonica joined the PAESC through the local coordinator "Provincia di Brescia". In the autumn of 2015, the Province of Brescia joined the initiative of the Covenant of Mayors accrediting itself with the Covenant of Mayors Office (CoMO) as Coordination Structure, with the aim of becoming a technical, administrative and financial support for Local Administrations of the Province for the drafting and monitoring of Sustainable Energy Action Plans (PAES). This support is part of a broader strategy pursued by the Province which aims at energy sustainability through aggregation models ranging from the improvement of the efficiency of public lighting, to the promotion of a single library system, to the creation of a single contracting station in the area, the promotion of European design and related funding, the pursuit of synergistic paths of technological innovation on the provincial territory.

Signatory mayors commit to reducing carbon emissions by at least 40% by 2030 through improved energy efficiency and increased use of renewable energy sources, and translate these commitments into a series of concrete measures, including the development of a "Sustainable Energy and Climate Action Plan" which sets out concrete measures and outlines desired outcomes.

For details see [here](#).

Within this general framework of reference, two chapters should be highlighted:

- The involvement of local actors;
- Participation in the GRAPE project (co-financed by the European Community within the framework of SMP-COSME-2021-RESILIENCE-SEM), where Solco participates in close collaboration with the Municipality of Malegno, as well as other local institutional actors.

The GRAPE project will develop a series of Local Action Plans for the social and ecological resilience of the territories involved in the project (Mirabella Imbaccari, Sicily, Italy; Bonares, Andalusia, Spain; Sifnos, Cyclades Islands, Greece; Malegno-Vallecamonica, Italy). The territories involved have already met during three specific missions which had as their objective (i) mutual knowledge, (ii) the exchange of experiences and know-how on the subject, and (iii) the development of a common strategy for the development of Action Plans.

Very interesting was the meeting, in the Bonares area, with the Bonafru cooperative which developed a protocol for respecting the environment and end customers. This protocol consists in having experimented and implemented a series of practices for the reduction of fertilizers in the cultivation of small fruits, a suitable cultivation also present in the Valle Camonica area. The strategy consists in introducing living

organisms, insects, fungi or bacteria, useful against parasites, which are incorporated into the irrigation. Thanks to this pest control system, the production and earliness of the harvest have been increased.

Also interesting on the part of Bonafru is the approach used to reduce the use of plastics in the packaging of products through the change from plastic to cardboard for packaging.

In the energy field, the approach followed by Faecta in studying energy saving measures seemed interesting to us: starting from the saving measures implemented in the industrial field, studying their applications in the municipal field, above all as regards the analysis and efficiency measures. In the system they have also included the analysis of alternative forms of production taking into account the consumption panorama of the local community which, overall, can be studied as the departments of a single medium-large industry.

The main themes on which the Local Action Plan will focus are the following:

- Art and Culture, eco-sustainable tourism
- Eco-sustainable agriculture
- Community Aggregation Spaces, potentially with the development of solidarity energy communities.

Agriculture, culture and local shops are already present as activities in some of the cooperatives of the Solco Consortium. The development of energy communities starting from territorial aggregation centers (shops, libraries, cultural offers) must develop in a coherent and synergistic way in order to create economies of scale to the advantage of the solidarity aspect of the initiatives. A network to be inspired by, and possibly join, has already been proposed by [Legambiente](#) , an association that has an active community in Valle Camonica.

2 Definition of a “consolidated view of the optimal situation”

2.1 The stakeholder engagement process

At the beginning of the drafting of this document (February 2023) some interesting considerations emerged on the nature and typology of the main players involved, with particular reference to the project partners (Municipality of Malegno and Solco Camunia Consortium).

In detail, it must be said that the Mayor of Malegno is also a councilor at the Vallecamonica Mountain Community and, as such, deals with the whole territory of the valley; the Comunità Montana is a member of Reves with the Solco Consortium for the Vallecamonica area; among the members of the Solco Consortium there are social cooperatives active throughout the valley, from Loverè to Temù. Furthermore, some of the projects underway in the Municipality of Malegno have a wider value than the single municipality and interface, at various levels, with some cooperatives of the Consortium. Finally, the Municipality of Malegno represents well the 42 municipalities of the valley considering that half of the Camuni municipalities have less than 2,000 inhabitants (Malegno 1,993), with only one municipality with over 10,000 inhabitants (Darfo Boario Terme).

Many of the projects developed by individual small municipalities already have a wider scope than the municipal area. In Valle Camonica, in addition to the Comunità Montana, the representative territorial body par excellence of the entire territory, there are as many as seven⁵ territorial communities (Municipalities associations⁶) for the provision of common services. This implies the creation of collaborative networks that are often very effective not only in the management of common services, but also as a catalyst for common projects and initiatives. The valley is therefore a territory that, albeit quite extensive⁷ it is particularly suitable

⁵ Unioni dei comuni (Municipalities associations) in Vallecamonica: ALPI OROBIE BRESCIANE - ALTA VALLECAMONICA - BASSA VALLE CAMONICA - DELLA VALSAVIORE - UNIONE DEGLI ANTICHI BORGHI DI VALLECAMONICA - UNIONE DEI COMUNI CIMBERGO PASPARDO - UNIONE MEDIA VALLE CAMONICA CIVILTA' DELLE PIETRE

⁶ In Italy, unions of municipalities were established mainly on the basis of Law 142/1990, known as the "Framework law on the organization of local autonomies". This law regulates the organization and powers of local authorities, including municipalities, provinces, metropolitan cities and regions. Article 32 of Law 142/1990 provides specific provisions for the creation of unions of municipalities. According to this law, municipalities can decide to unite to form a union of municipalities in order to jointly manage some services or to address issues of common interest. The union of municipalities can be established with a special resolution adopted by the municipal councils of the municipalities concerned. Law 142/1990 also establishes the competences of unions of municipalities, which may include the management of local public services, territorial planning, the promotion of economic development, environmental protection, culture and other sectors of common interest.

⁷ Vallecamonica has an extension of 1,335 sq km with a population of about 115,000 (2020) inhabitants (86 inhabitants/km²).

for incorporating common initiatives⁸.

Following these considerations, it seemed appropriate to extend the Action Plan to the valley area.

2.2 The identified stakeholders

For the identification of the stakeholders, it was decided to proceed with two levels of detail. In the first phase, identify groups, associations or cooperatives strongly involved in the area on the issues, or at least on some issues touched by GRAPE. Once the first-level actors have been involved, proceed with the expansion of the base of interested parties with the collaboration of the former.

Proceeding in this way allows us to reach a potentially higher base of real stakeholders to be identified on a large but fragmented territory. If, for example, we wanted to propose a network of scattered hotels, this initiative would have a better chance of success if it were connected to a large and recognized territory, especially thinking about the promotion of the initiative. In Vallecamonica there is no such initiative: the only one actively present, is hyper-located in the [Borno area](#). Proceeding as proposed, we expect to involve the large Camunian area, while maintaining the local specificity, especially in terms of involving citizens and local administrations.

The themes on which we will focus the project activity will be agriculture and energy communities⁹. For the second theme, let's start with local shops.

Stakeholder name	Level of action (Local / Regional / National)	Stake in the priority theme	Potential influence on the project (High / Medium / Low)	What can the Stakeholder provide?	Perceived risks that may affect the effective engagement of the Stakeholder	Strategy to contact the stakeholder and manage the relation
(Solco) Cooperativa "Il Cardo"	Local (Valle Camonica)	Agriculture	Medium	Experience in the agricultural sector	Find who has the time to follow the project	Interview
(Solco) Cooperativa "Sorriso"	Local (Valle Camonica)	Proximity Stores	Medium	Experience in the proximity sector (shops already present)	Find who has the time to follow the project	Interview
(Solco) Cooperativa "Stella Alpina"	Local (Valle Camonica)	Proximity Stores	Medium	Experience in the proximity sector (shops already present)	Find who has the time to follow the project	Interview

⁸ Most of the inhabitants and Camunian associations would not be willing to subscribe to this statement, considering Vallecamonica excessively segmented into the various administrations, however we could cite many situations (both historical and current) in which the Camunian spirit has been able to distinguish itself and act commonly.

⁹ The themes arose in collaboration with the other partners during the mission phase.

				present)		
(Solco) Cooperativa "Il Piccolo Sentiero"	Local (Valle Camonica)	Agriculture	Medium	Experience in the sector	Find who has the time to follow the project	Interview
(Solco) Cooperativa "Agricola"	Local (Valle Camonica)	Agriculture	Medium	Experience in the sector	Find who has the time to follow the project	Interview
Cooperativa "K-Pax"	Local (province of Brescia)	Immiration, integration.	Medium	Experience in the sector	The project is followed directly by the President	interviews
Associazione Biodistretto	Local (province of Brescia)	Agriculture and eco-tourism	Medium	Experience in the sector	The project is followed directly by the President	interviews
Legambiente	National	Energy Community	Medium	Experience in the sector	The project is followed directly by the President	interviews
Fedabo	National	Energy Service Company (ESCO)	Medium	Experience in the sector	None	President Solco

First of all, we involved some cooperatives that are already members of the Solco Camunia Consortium and with previous experience on the subject of agriculture or proximity shops. These cooperatives are for agriculture: Cooperativa Agricola, Il Piccolo Sentiero and Il Cardo; For local shops: Sorriso and Stella Alpina. Secondly, we have involved local associations, or associations with important local references, active on the same issues. For agriculture, the **Biodistrict Association**, for energy communities, the **Legambiente Association** (national in nature, but with a strong presence in the Camuno-Sebino area).

Finally, we have identified a reliable technical partner in **Fedabo SpA**, already involved with the Consortium, some cooperatives and some local administrations.

At a political level, with the collaboration of the Mayor of Malegno and the President of Solco Camunia, we intend to involve the local administrations of the potentially interested municipalities.

The aim is to propose some good practices which, starting from experiences already in progress, can develop the themes and formalize the actions of enlargement and involvement of the social base.

The presentation of the stakeholders arises from formal documents and from one/two interviews for each stakeholder.

- **Agricola Cooperative.** The AGRICOLA social cooperative was founded in 2010 on the initiative of the Arcobaleno di Breno cooperative, a historic Camunian cooperative that has been engaged for 25 years mainly in the area of disabled people. physical and psychic

- **Il Piccolo Sentiero Cooperative.** Over twenty years of activity in the area of Lovere, in the province of

Bergamo, make the Il Piccolo Sentiero Cooperative a point of reference for the resolution, through job placement, of social exclusion phenomena.

- **Il Cardo Cooperative.** Il Cardo is a social cooperative enterprise that wants to help make its local community capable of caring for and accompanying diversity.

- **Il Sorriso Cooperative.** Its purpose is the pursuit of the general interest of the community, human promotion and the social integration of citizens.

- **Stella Alpina Cooperative.** Once, a long time ago, a lonely mountain cried in silence. Everyone looked at her in amazement: the beeches, the firs, the oaks, the rhododendrons and the periwinkles. Continues....

- **Vallecamonica Biodistrict Association.** A bio-district is a geographical area in which an alliance is established between farmers, citizens, associations, tour operators, and public administrations for the sustainable management of local resources.

- **Legambiente Association.** A distinctive trait of the association has always been scientific environmentalism, i.e. the choice to found every initiative for the defense of the environment on a solid basis of scientific data...

- **K-Pax cooperative.** It's the actions that count. Our thoughts, however good they may be, are false pearls until they are turned into actions. Be the change you want to see in the world. (cit.)

- **Fedabo S.p.A.** Fedabo, one of the leading ESCos in Italy (Energy Service Company), has managed energy well since 1999, helping companies to optimize energy costs and consumption, with an eye to sustainability.

3 The consolidated view of the optimal situation

In Vallecamonica in recent years, projects for the creation of networks have matured, at all levels and in many sectors. Starting from these experiences makes it possible to take advantage of the knowledge gained, a sort of best practice built on the Camunian territory from which to start to imagine and take root in loco.

Some of the actors in these projects are part of the stakeholders involved in GRAPE: for example the Biodistretto, Legambiente and Solco Camunia have implemented common projects co-financed by the Cariplo foundation, K-Pax is present in the area with its own projects which, in part, involve the social economy of the valley. Therefore, starting from these experiences and previous projects, we will develop the operational indications for the proposed Action Plan.

The basic idea, the optimal situation, plans to intersect the local communities thanks to and through the use of renewable resources, *latu sensu*. The reuse of abandoned land and the creation of energy communities, both go in the shared direction of requiring, in order to function, a cohesive social community on the achievement of common objectives, thus allowing to achieve at the same time an integration between the economic aspects and the local community as a social place.

Putting uncultivated land back into use and the establishment of energy communities requires the collaboration of all the main local players: the social cooperatives that coordinate the activity and deal with the reintegration into work of disadvantaged people, the public administrations that can carry out at the same time the role of prosumer and facilitator for bureaucratic duties and finally the private actors who are part of the stakeholders of the individual actions (in our case EsCo Fedabo).

4 Definition of the actions to be performed to achieve the various objectives.

The actions to be taken are summarized in the two pillars born from the collaboration of the Solco Camunia Consortium with the primary stakeholders: energy communities and recovery of abandoned land.

Each paragraph presents the basic idea and subsequently develops the feasibility analysis divided in turn into technical aspects, social aspects, legislative aspects and financial aspects.

Some details are further developed in the next chapter.

4.1 From proximity stores to energy communities – a bottom-up process

Proximity shops are an indispensable service for the local population¹⁰, especially for smaller communities. They offer the population access to a wide range of products, not just food, which are often not available elsewhere without having to face the financial and time costs associated with large-scale distribution. Furthermore, proximity shops facilitate interaction between consumers and local producers, creating a bridge that favors economic collaboration within the community.

In addition to economic benefits, convenience stores also bring important environmental benefits. Reducing transport costs for customers and using local products help reduce the environmental impact, for example through lower CO₂ production from transport.

Another significant feature of convenience stores is their social impact. They promote a sense of community, also thanks to the fact that often the staff employed come from the same small community. The shop becomes a local landmark, helping to consolidate bonds between residents and stimulating greater social cohesion.

The idea of promoting the Energy Communities by using the widespread presence of proximity shops and the Community Centers focuses on this last feature.

4.1.1 Technical aspects

- To find and involve enough stakeholders to start an **experimentation phase**, different strategies can be adopted, involving various stakeholders such as the shop itself, the parish, the municipality and the adjacent houses. It is important to consider this process as dynamic and constantly evolving.
- **Specific training** should be provided to the manager of the proximity store or community center in order to make him an active promoter of the initiative. This training can be based on a participatory

¹⁰ In 2021-22 the "Il Cardo Cooperative" set up a Community Center (Cam'On) in Sonico, a social space for community sharing. Other centers in Val di Scalve are being created along the same lines (by the "Cooperativa Azzurra") and the management of local libraries by "Il Leggio" has been present for some time, all initiatives that have the potential to serve as meeting centers for the local population even in smaller villages.

research-action approach, which integrates research, training and active intervention in a synergistic action aimed at change. This kind of approach helps build the capacity of the community itself to become a creative actor and actively participate in the knowledge creation process. If properly interpreted, this process can lead to interventions that develop into a real participatory planning of activities (source: Legambiente - "Practical guide to the development of renewable and supportive energy communities and collective self-consumption", p. 14).

- You must also partner with an **Energy Service Company**¹¹ (EsCo)• to define the minimum surface area required for the operational phase. This includes the mapping of the neighborhood store's energy consumption and needs, the identification of potentially interested individuals (starting from the shop's customers) and the mapping of the energy consumption and needs of their buildings, as well as the assessment of the production potential through the installation of photovoltaic panels on available surfaces. It is also important to consider any architectural constraints on the roofs in the historic centre. Furthermore, it is necessary to map the energy consumption of public buildings such as the municipality, the gymnasium and other areas, also evaluating the production potential. Another aspect to consider is the creation of a model of economic sustainability and the exploration of the possibilities of local hybridization with other energy sources such as biomass, hydroelectricity, windmills, also evaluating their economic feasibility. It is also important to study the operational policies of energy exchange among community members.
- **Storage technologies.** Energy storage systems and their integration into the grid are complex and require collaboration with a reference Energy Service Company (EsCo) to adequately address these aspects.

4.1.2 Social aspects

There are six communities currently involved in the Solco Camunia Consortium, which houses local shops, divided into three in the middle valley and three in the upper valley. The communities managed by the Sorriso Cooperative and the Stella Alpina Cooperative are listed below, together with the approximate number of inhabitants of each locality:

Managed by Cooperativa Sorriso:

- Malegno* (about 2.000 inhabitants)
- Ceto* (about 1.900 inhabitants)
- Braone* (about 700 inhabitants)

Managed by Cooperativa Stella Alpina:

- Pezzo (about 250 inhabitants)

¹¹ In our case identified in the stakeholder Fedabo SpA

- Canè (about 150 inhabitants)
- Incudine* (about 380 inhabitants)

Involvement of citizens is of paramount importance to gain the political support of local authorities and to create a functioning and operational community. The sense of belonging to the community around the shop, especially in smaller and peripheral villages such as Stella Alpina, favors the creation of a community even at a formal level, which represents the prelude to the formation of the Energy Community.

The management of exchanges between members is a fundamental aspect in the management of the Energy Community, in particular transforming economic savings into solidarity could be a challenge. The Municipality could be the first distributor of its savings to less well-off citizens.

4.1.3 Legal framework

In 2019, the European Union concluded the approval of the "Clean Energy for all Europeans" legislative package (CEP - Clean Energy Package), consisting of eight Directives that regulated energy issues, including: energy performance in buildings, energy efficiency, renewable energies, electricity market.

There are essentially two types of prosumer provided for by the legislation. Article 21 of the Renewable Energy Directive (2018/2001) defines the **collective self-consumption** achieved within a building, thanks to a system that supplies electricity to more than one consumer. The **energy community** occurs when collective self-consumption transcends the scope of a single building.

Summary of main documents.

- EU: Renewable Energy Directive 2018/2001 (RED II) ([Information document](#) and [Revision of the Renewable Energy Directive](#))
- EU: Directive on Common Rules For the Internal Market for Electricity 2019/944 (Direttiva IEM) (This document establishes common rules for the generation, transmission, distribution, energy storage and supply of electricity, together with consumer protection provisions, with a view to creating truly integrated competitive, consumer-centred, flexible, fair and transparent electricity markets in the Union. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0944>)
- Italy: "milleproroghe" and [L. 28 febbraio 2020, n. 8](#): Specifically see [Art 42-bis, pag 174](#).
- Italy: introduced the definitions of "Group of renewable energy self-consumers acting collectively" (Within the aforementioned law (LAW February 28, 2020, n. 8), see pp 36-37 in the Official Gazette) and "Renewable Energy Community" (The the implementation process then continued with the publication of ARERA Resolution 318/2020/R/eel (August 2020) and the MISE Decree of 15 September 2020, with which the provisions contained were concretely implemented in the "Milleproroghe".

- The ministerial decree of the MISE of 15 September 2020 identified the economic contributions for each kWh of shared energy, provided by the GSE for a period of 20 years, within the two configurations admitted to the enhancement and incentive service: the group of self-consumers energy companies acting collectively and the Renewable Energy Community.
- ◦ With the legislative decree 8 November 2021, n. 199, the RED II directive was transposed into Italian law. The innovations introduced relevant to the CERs are:
 - Maximum overall capacity of the plants from 200 kWp to 1MWp¹²
 - *Perimeter of the CER, from secondary cabin to primary cabin.*

A fundamental aspect is to study the type of **social agreement** (association, cooperative, ...) that can serve as a **model** that envisages aspects of exchange and mutuality.

4.1.4 Financial aspects

- cost-effectiveness of an energy community (see with ESCo): this is a fundamental aspect for any CE because otherwise (i) it loses interest in its members and (ii) it becomes difficult, or impossible, to support the disadvantaged
- management of the exchange between members:
 - this too is fundamental so that we can speak of Solidarity Energy Community
 - This aspect must be clarified at the beginning at the level of agreement between the members, an agreement which must include the social aspect¹³.
- overview of funding and contributions by [GSE](#).

¹² For the moment (June 2023) the legislation in force still provides for the old parameters for the maximum capacity of the plants (200 kWp) and for the perimeter of the CER (secondary substation only).

¹³ As already mentioned, a working hypothesis could be that of converting the savings of the public member into solidarity. This hypothesis is based on the evidence that the Municipality would derive economic and social (and probably also electoral) advantages from being able to indirectly support the segments of the population that cannot access electricity.

4.2 From abandoned lands to “cultivating value”

In Vallecamonica a number of projects for the reuse of abandoned agricultural land have already been implemented (the most recent ones being briefly mentioned. Coltivare Valore; Recupero Terra Vita; Coltiviamo il Futuro.) with lofty and easily shared objectives.

- Conservation of agro-biodiversity;
- recovery of native species;
- consolidate job positions dedicated to disadvantaged people;
- raise the quality of the network's agro-ecological skills.

The projects, proposed by Solco and related cooperatives, not necessarily belonging to the consortium, have in common the objective of creating or stabilizing jobs for subjects who cannot access the normal labor market: these subjects are employed, for various reasons, in “B” cooperatives (The Solco Camunia Consortium has as members: 3 “A” type cooperatives, 9 “B” type cooperatives and 2 mixed type (A+B) cooperatives). This aspect is very important especially at a social level, because it allows disadvantaged people to make themselves useful (The analysis of the social value created for disadvantaged workers was conducted through a questionnaire, elaborated by EURICSE (European Research Institute on Cooperative and Social Enterprises) in 2010.) and to enhance both one's skills and one's self-esteem. Hence the importance of finding new and sustainable employment opportunities by combining agricultural practices and jobs that are difficult to manage.

It must be said, as amply demonstrated [by various studies](#), that the employment of disadvantaged workers in cooperatives “B” represents indirect income from the PA as a whole, if one considers both the economic support to fragile people who would otherwise have to be paid, and the taxes that working subjects can pay. This value can be measured easily and precisely using “VALORIS”¹⁴. (It is a model based on spreadsheets that allows you to measure precisely and periodically the savings that the social enterprise guarantees to the public body).

If we want to abstract from the social value created, it must be considered that with the projects financed by Cariplo, the economic balance is spoiled by the contribution of the financing which, otherwise, would be uneconomical. The challenge would be to come up with self-sustaining projects.

¹⁴ VALORIS It is a model based on spreadsheets that allows you to measure precisely and periodically the savings that the social enterprise guarantees to the public body

4.2.1 *Technical aspects.*

The topics to consider are the following:

- land recovery and safety;
- possible activation of new crops or replanting of resistant varieties;
- specific training of cooperative workers;
- development of a commercial plan for the sale of products.

4.2.2 *Social aspects*

Of the social aspects we mentioned in the introduction, some other points should however be underlined which can increase the involvement of the local community or communities and which can help create a zero-km market for the cultivated products.

How to involve the local community (sharing, self-sufficiency – self-production)?

There are many possibilities: the sharing of some spaces for self-production, the creation of a sort of local GAS (Solidarity Purchase Group) based on the distribution of cultivated products. The networking of different lands with different vocations, even if managed by different subjects, could significantly expand the offer.

Furthermore, an agro-tourism experience could also be created in the valley by proposing to those who come to the valley regularly (second homes, skiing, summer mountains, lakes, eco-tourism, ...) to become members of the organization that deals with the cultivation in order to have right both to carry out a few days of work in "their own field" and to enjoy the fruit of the crops.

4.2.3 *Legal framework*

Owners of unused land are often unable to care for it either because they do something else or because they are elderly. Among the unused lands there are some that could be reconverted to production and therefore become economically usable assets. On the other hand, cooperatives, or small associations, generally do not enjoy land ownership, but would need it in order to be able to activate work placement paths, or to produce goods that are useful to themselves or to the market, or both.

The identified solution is to create a win-win agreement model between land owners and potential users.

There are several win-win settlement models between fallow land owners and prospective farmers that can benefit both parties. Here are some examples.

Rent or lease of land: The land owner can rent or lease the land to the farmer concerned. In this way, the landowner can obtain income from the lease of the land, while the farmer has access to land to cultivate without having to incur the initial investment for land purchase.

Revenue Sharing: An agreement can be established in which the landowner and the farmer share the revenue generated from cultivation. For example, the landowner may receive a percentage of the sales of

agricultural products, while the farmer assumes responsibility for the management and operating costs of the agricultural business.

Cooperatives (existing or ad hoc): Owners of uncultivated land can join existing cooperatives. In this way, landowners can collaborate with farmers in land management and cultivation, sharing resources and responsibilities.

Resource sharing agreements: In this model, the land owner and the farmer can share the use of resources such as agricultural machinery, equipment or irrigation systems. This allows you to reduce costs for both parties and improve the efficiency of the agricultural activity.

Direct Cultivation Agreements: In this type of agreement, the land owner can enter into a direct contract with the farmer to grow a particular crop. The farmer takes responsibility for the cultivation, from land preparation to harvesting, and shares the profits with the landowner according to established agreements.

Loan agreements: this can be a win-win solution for both parties. The cooperative can obtain the free use of the land without having to face the costs of the purchase or of the rent, allowing to start an agricultural activity with lower initial investments. The owner of the land, on the other hand, can benefit from the care and management of the land by the cooperative by helping to keep it in good condition.

For **distribution**, as mentioned above, also on the net through a local GAS or similar initiative, there are no legal problems as the producer can sell the fruit of his work under simplified conditions, while from the point of view of the sensitivity of potential buyers, it is an ongoing trend (About 25 million Italians have bought food from farmers, driven by a new sensitivity towards healthy foods but also by the desire to recover direct contact with those who grow the products they bring to the table. This is what emerges from an analysis by Coldiretti on Censis data.).

4.2.4 Financial aspects

- Create an economically self-sustainable financial model to apply the model and possibly replicate it with a medium-long term horizon;
- land redevelopment aspects are important, because they are more onerous;
- check whether there are external economic contributions, otherwise the project will not be feasible
- possibility of dividing costs and benefits (creation of a sort of local super-gas? Or distributed?)

In the specific case of Valle Camonica there are two potential sources of funding to start a redevelopment process:

- various tenders, often recurring, issued by the [Cariplo Foundation](#) and specific for the territory of the entire Lombardy Region and specific tenders for the [province of Brescia](#);
- The Vallecamonica internal areas project which allocates around €14 million. Along this line, also thanks to the previous experiences of previous stakeholders, a significant intervention could be hypothesized. Much will depend on the *political* deals the project is able to muster.

5 DEFINITION OF THE ACTIONS TO BE TAKEN AT THE LOCAL LEVEL

Points to develop:

1. definition of participatory program (from level 1 to level 2 of the stakeholders)
2. creation of an engagement map (actors, type of engagement, timing)
3. definition of evaluation indicators
4. definition of the review process

5.1 From abandoned lands to “cultivating value”

5.1.1 Definition of the participatory program

One of the characteristic points in the definition of the stakeholders in Vallecamonica (Chapters 1 and 2) consists in foreseeing their involvement in two steps: a first phase in which local organizations are involved (Associations, Cooperatives, Local Authorities) and a second phase in which the audience is widened starting from the organizations interested in the first.

The action on the recovery of uncultivated land is carried out with personal contacts by the interested cooperative/Consorzio Solco, directly with the landowners and the local Authority of reference. The points to be developed are the following:

- creation of the engagement map
- definition of evaluation indicators
- definition of review processes

5.1.2 Creation of an engagement map

Starting from the stakeholder map (chapter 2), create the stakeholder map. The map, obtained from personal / institutional contacts, could have the following structure.

Name, Surname, personal data and contact details	Role (owner/ usufructuary/ot her real right)	Type of involvement (Cooperation/ non cooperation in the management, how)	Sq/meters, area, type (coordinates, plains, hills, slopes/presence of water, energy)	Required work/location (stone walls/ roads /irrigation/ other)	Investment needed (total Investment needed)

5.1.3 Definition of evaluation indicators

The evaluation indicators help to measure the effectiveness of the intervention and to evaluate the

achievement of the set objectives. Here are some indicators:

Recovered Area: Measures the amount of wasteland that has been reclaimed and reused.

Recovery Percentage: Indicates the percentage of wasteland that has been reclaimed out of the total area of identified wasteland.

Biodiversity: Evaluate the richness of biodiversity in the reclaimed area. You can measure the number of plant or animal species present, the presence of rare or threatened species, or use more specific indicators such as the index and the maintenance of biodiversity after the possible inclusion of new species.

Vegetation cover: Measure the extent and density of [vegetation cover](#) in the reclaimed area. The Normalized Difference Vegetation Index (NDVI) can be used. This index for small surfaces can also be detected with a thermal camera mounted on a drone (therefore not necessarily with satellite images).

Agricultural productivity: If the objective of the recovery is agriculture, it measures the productivity of the reclaimed land in terms of crop yield or the value of agricultural productions.

Stakeholder Engagement: Evaluate stakeholder involvement and participation in the wasteland recovery process. The number of meetings or workshops held, the number of participants involved and the level of satisfaction of the interested parties can be measured.

Social and economic benefits: Evaluate the social and economic impacts of the recovery of wasteland. The increase in local employment, especially among young people, the number of disadvantaged workers introduced, the increase in the income of the surrounding communities or the benefits for the health and well-being of the people involved.

Environmental sustainability: Measures the environmental impact of the recovery of uncultivated land. This may include sustainable use of natural resources, reduction of pollution, conservation of soil and water, or increasing the carbon sink capacity of the reclaimed area.

Ability to sell production locally, and from this to infer the CO2 savings on food transport. The ratio between self-consumed and distributed quantities is a good economic indicator of the success of the initiative.

Dissemination, i.e. the ability to create intervention models, best practices and dissemination processes useful for similar / neighboring territories. It should be measured in absolute value (presence of the model, creation of a legal framework, number and quality of best practices, number of meetings organised, ...) and not as a percentage.

Presence of the **legal model** (bailment agreement/lease/other) that can be distributed;

Number and quality of **best practices** implemented (walls/new species introduced/recovery of ancient species/other);

Number of meetings organized (not only at local level/presence of a person trained for dissemination/other)

Presence of a commercial plan (see chapter 3 for details) and a multi-year budget, in addition to the technical aspects, indicates the orientation towards self-sustainability of the project once it has started.

5.1.4 *Definition of the review process*

The wasteland reclamation review process involves periodically reviewing the activities and progress made in the reclamation process. This review process is important to evaluate the effectiveness of the actions taken, identify any obstacles or problems and make any changes or improvements to the action plan. The review process should be an ongoing cycle, with periodic reviews guiding the adaptation and optimization of the wasteland recovery process over time. The parameters to be analyzed should be the following:

Data collection and analysis: Collect quantitative and qualitative data related to each evaluation indicator. This data may include the amount of land reclaimed, percentage reclaimed, number of plant or animal species present in the reclaimed area, normalized Differential Vegetation Index (NDVI), crop yield, stakeholder involvement, the social and economic impacts, the environmental impact, the local sales capacity of the production, the dissemination and the presence of a commercial plan and a multi-year budget. Compare current results with desired results and identify any discrepancies or areas for improvement.

Identifying obstacles and problems: Identify any obstacles or problems that may affect the effectiveness of the wasteland recovery process. These may include challenges related to biodiversity, plant cover, agricultural productivity, stakeholder engagement, social and economic benefits, environmental sustainability, dissemination and self-sustainability.

Changes and improvements: Based on the data analysis and identification of obstacles and problems, make any changes or improvements to the action plan. These changes may involve adjusting recovery strategies, introducing new practices or technologies, enhancing stakeholder engagement, or implementing additional measures to improve environmental sustainability and dissemination.

Continuous monitoring: Implement a continuous monitoring system to periodically evaluate the effectiveness of the actions taken and the progress in the wasteland recovery process. This monitoring should include the regular collection of data on the evaluation indicators identified and allow for constant performance analysis.

Update of the action plan: Based on the information gathered during continuous monitoring, update the action plan regularly to ensure that the wasteland recovery process is adapted and optimized over time. This review process should be cyclical, allowing for continuous improvements and progress towards set goals.

Dissemination of results: Transparently communicate the results of the evaluation and reviews carried out to all interested parties, including project team members, local communities, competent authorities and other stakeholders. This communication helps to maintain transparency, accountability and orientation towards continuous improvement of the wasteland recovery process.

5.2 Energy Communities

Action on **Energy Communities** (EC) requires the involvement of citizens through the broader engagement

process.

5.2.1 Definition of the participatory program

The engagement program includes the following points:

Specific training of a cooperative/shop employee on the topic, so that he becomes a promoter in the local community¹. The training process may be in charge of the Solco Consortium, possibly in collaboration with the first level stakeholders (K-Pax Cooperative, Biodistretto, Legambiente).

Public meeting organized by each shop in their community to present the CE. During the meeting, the form for collecting expressions of interest (which will then be evaluated individually with the supervision of the ESCo) and a questionnaire must be available (**Annex 1**). Citizens, traders, artisans, professionals and anyone potentially interested are invited to the public meeting. Since some of the communities are relatively small, we cannot expect large numbers, but these must be added up for each community, therefore, at the downstream level, the consistency of the stakeholders could be important.

Technical evaluation of expressions of interest to determine the feasibility of the project for each individual community. Evaluate the possible aggregation with other CEs already present or in progress under the same primary substation.

Constitution of the aggregating subject or union with another EC present on site.

5.2.2 Creation of an engagement map

Starting from the stakeholder map, create the stakeholder map. The map, obtained from the adhesion forms, could have the following structure.

Name, Surname, personal data and contact details	Role (Ordinary citizen, institution, association, ...)	Type of engagement (producer/ prosumer/ consumer/ ...)	Available square meters and type (roof / field / shed/ ...)	Power currently used Kw	Engagement (producer/consumer/active role in the cooperative to be set up)	Interested in other initiatives (shop/ farm camp /volunteer/ community center/ ...)
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5.2.3 Definition of evaluation indicators

Creating an energy community is a complex process involving several aspects. To evaluate the effectiveness and success of an energy community, it is possible to define a series of evaluation indicators that cover different areas. Listed below are some common indicators that could be considered in assessing an energy

community.

Environmental sustainability: Measuring the overall environmental impact of the energy community, for example through the percentage reduction of greenhouse gas emissions compared to previous levels, the percentage of energy produced from renewable sources compared to the total energy consumed and the number of energy conservation projects implemented.

Energy self-sufficiency: Assess the degree to which the energy community is able to meet its energy needs through local energy sources. Indicators could include the percentage of energy consumed that comes from local sources, the energy storage capacity for periods of low production and the reduction of dependence on traditional energy sources.

Integration of renewable energy: Monitor the percentage of renewable energy produced, traded and used within the energy community, for example through the percentage of installed solar or wind energy compared to the total energy consumed and the ability to balance production and real-time renewable energy consumption.

Energy efficiency: Evaluate the energy efficiency of the energy community through indicators such as per capita energy consumption compared to the national average, the number of homes or public buildings certified with high energy efficiency standards and the percentage of energy recovered from residual heat sources.

Energy Equity/solidarity: Examine whether the energy community ensures equitable access to energy for all its members. Indicators could include the percentage of low-income households involved in the energy community, the availability of energy access support programs, and the active participation of community members in energy decisions.

Economic impact: Evaluate the economic impact of the energy community through indicators such as total investments in sustainable energy projects, economic savings achieved through energy efficiency and renewable energy production, as well as the value of excess energy sales to the electricity grid .

Community Involvement and Participation: Evaluate the active involvement of community members in organizing and managing the energy community. Indicators could include the number of community energy meetings, participation in investment decisions, and the percentage of community members adopting responsible energy consumption practices.

5.2.4 *Definition of the review process*

The review process in the context of establishing an energy community can be divided into several stages to ensure effective governance and efficient management of community activities.

Some points to consider in the governance of the EC.

- *Definition of the organizational structure:* The first phase consists in the definition of the organizational structure of the energy community. This includes identifying the roles and

responsibilities of different stakeholders, such as community members, administrators, grid operators and energy sector experts. It is important to establish a clear governance framework that defines the relationships and responsibilities of each actor.

- *Creation of a decision-making body:* In the governance of an energy community, it is essential to establish a decision-making body that is responsible for the planning, implementation and monitoring of activities: for cooperatives, the Board. This body may consist of community representatives, energy sector experts, local authorities or other interested parties. The role of this decision-making body is to make strategic decisions, define policies and regulations, as well as coordinate the actions of actors within the energy community. In the case of a cooperative, consider joining the Consortium and the inclusion of first-level stakeholder associations.
- *Definition of policies and regulations:* The governance of an energy community requires the definition of policies and regulations that guide the activities, interaction and exchange between members. These policies may concern aspects such as access to energy, the sharing of energy resources, the promotion of energy efficiency or the integration of renewable sources. It is important to involve community members in shaping such policies to ensure inclusive and participatory governance.
- *Creating mechanisms for participation and involvement:* Good governance requires adequate mechanisms to actively involve members of the energy community in decisions and activities. This may include general assemblies, thematic working groups including with primary stakeholders, public consultations or digital platforms that foster participation and communication among members. Transparency and accessibility of information are essential to ensure effective and informed participation of members.
- *Monitoring and evaluation:* The governance of an energy community also requires a monitoring and evaluation system to measure performance, evaluate the achievement of objectives and make any improvements. This may include monitoring identified KPIs (see below), evaluating policies and regulations, as well as collecting feedback and analyzing the overall performance of the energy community.
- *Coordination with local authorities and regulatory bodies:* The governance of an energy community should be in line with local or national energy laws, regulations and plans which, over the course of 20 years, may change. Therefore, it is essential to coordinate with local authorities and regulatory bodies to ensure regulatory compliance and foster collaboration in the pursuit of common energy goals.

Identification of key performance indicators (KPIs): You need to identify the key performance indicators that will be used to evaluate the achievement of objectives. These KPIs can include metrics such as renewable energy production, plant energy efficiency, energy consumption, greenhouse gas emissions or energy savings, trading percentages, quotas collected by the GSE. Refer also to the previous paragraph.

Data Collection and Analysis: The review process will require the collection of data relevant to the identified KPIs. This data can come from smart meters, sensors, monitoring systems, or from other data sources within the energy community. Once the data has been collected, it is necessary to analyze it to evaluate the performance of the energy community with respect to the set objectives. Data analysis can be conducted using specific tools and software to extract significant information and identify any areas for improvement or critical issues.

Performance evaluation: Based on the results of the data analysis, it is possible to evaluate the performance of the energy community against the established objectives and defined KPIs. This assessment should allow you to identify areas of success and those that require corrective action or improvement.

Identifying Corrective Actions: If deficiencies or areas for improvement are identified during the review process, it is important to establish corrective actions to address them. These actions may concern energy management, plant optimization, the implementation of more efficient technologies or the updating of policies and regulations.

Continuous monitoring: The review of energy community performance should not be an isolated event, but a continuous process over time. Therefore, it is important to set up a constant monitoring system to evaluate performance over time and make any adjustments or improvements.

Involvement of stakeholders and community members: Throughout the review process, it is essential to involve relevant stakeholders, such as members of the energy community, first-level stakeholders, energy industry experts, local authorities or regulatory bodies . Stakeholder involvement fosters collaboration and the adoption of shared solutions to improve the performance of the energy community.

6 CONCLUSIONS

First of all, we must consider that in Valle Camonica, considered as a whole, there is a great deal of potential in various areas, as illustrated in the context analysis. From tourist resources, both in history and art, and in nature, with many sites that still enjoy a wild and uncontaminated environment, to "industrial" resources, thanks to the presence of many sites that could be recovered and the presence of a network of hydroelectric plants which, although thanks to today's environmental sensitivities, or would not be built or would be built with different criteria, in fact represent an asset for green energies.

In the agricultural sector there is a previous agricultural culture that is well present both in the local culture and in the resilience of some companies that have been able to develop their activities in a modern way.

Another prerogative of the Valley is the deep-rooted presence of a widespread network of social cooperatives that have developed and actively work in synergy with each other¹⁵ and with the institutions,

¹⁵ Also thanks to the coordination represented by the Consortium [Solco Camunia](#).

in primis [Comunità Montana](#) and [ATS Montagna](#)¹⁶.

An excellent starting point for the development of projects linked to respect for the environment. From this consideration arises the idea that an Action Plan should focus on the development of some of the already present supply chains such as agriculture and energy, albeit in a current context and in consideration of current sensitivities, without excluding other potential areas of intervention.

We observe in summary that the proposal to focus on the two proposed themes can represent a sort of test that can serve as a development model for future interventions.

The idea of recovering abandoned agricultural land is a challenge that could herald the birth of new forms of tourism, already tested elsewhere, but not in Vallecamonica; the idea of Energy Communities has already been developed as a model elsewhere, but not in the Valley where it could take advantage of a well-rooted mindset, the experience of others¹⁷ and the current highly incentivising legislative framework.

Finally, the recent development of the project on inland areas promoted in the Valley by the Mountain Community could represent a winning opportunity to create active synergies in the area by networking more municipalities where the necessary pre-conditions exist¹⁸.

In this context, we have decided to concentrate the development of the Action Plan on the two themes proposed and illustrated: recovery of abandoned agricultural land and Energy Communities. In the text we have extensively discussed the feasibility hypotheses: technical, legislative, social and financial. In our opinion it fails to evaluate an aspect which, as demonstrated by the recent history of Vallecamonica, is decisive with respect to the practicability of the plan. The political and cultural will to pursue it.

At the end of this work we will briefly analyze the related problems that could undermine or promote its implementation.

The preconditions for the recovery of unused agricultural land are to have the availability of the same. For this reason it is necessary to overcome a mentality rooted in the concept of land ownership by finding a model of agreement which, on the one hand guarantees ownership against the fear of losing the right to the land, and on the other guarantees the farmer in a sufficient period of time to recover the costs of plant. In this context, the credibility of the social counterpart (at an ultra-local level, the individual cooperative, at the valley level, the consortium) certainly plays a role of guarantee. At an institutional level, one could think of ad hoc incentives for owners¹⁹ which, in this way, would enjoy (I) an incentive benefit from an economic point

¹⁶ The Lombardy Region company that deals with health and prevention in the Valle Camonica and Valtellina areas.

¹⁷ We mention only one of the stakeholders present ([Legambiente](#)) and one of the GRAPE project ([Fondazione Messina](#)).

¹⁸ Extensively discussed in the text.

¹⁹ In Italy, the municipalities are delegated a part of the taxes related to land ownership which could be discounted in relation to the social use of the land.

of view and (ii) a stimulus represented by the virtuous example carried out by the Public Administration. To promote this practice, an active role could be played by the Consortium in collaboration with the identified stakeholders, for example by promoting a campaign on the use of VALORIS towards the local PAs. The overcoming of the mindset of the owners and the well-known resurgence of local PAs to give up tax revenues, even if only minimally, represent the biggest obstacle to the implementation of the Action Plan on the agricultural theme.

The preconditions for the development of Energy Communities (CE) once again involve mainly two subjects: the private and the public. At a private level, I trust that a good information campaign can be a winning element for their promotion. If one wanted the EC to become supportive, i.e. to provide for the possibility of using at least part of the savings in favor of those who are unable to pay their bills, in my opinion public intervention would be needed in this sense. For example, as already proposed, part of the savings obtained by the PA involved could be used for this purpose, depriving the Municipality of part of the income deriving from the savings.

At the public level, there are at least two elements to consider: the direct involvement of the PA at the local level, in order to set up CEs with the minimum size necessary for them to be economically sustainable, and the availability of supra-municipal agreements for the creation of CEs that exploit the maximum of the capacity foreseen by the first level cabins, essential action for smaller municipalities when the new legislation comes into force. These are not obvious actions as they represent an investment in economic terms and thinking that go far beyond the time horizon of most public administrators, notoriously linked to the next mandate²⁰. This element could be overcome with energetic action on the part of the Comunità Montana and the BIM²¹ jointly, in the terms that the shareholders' meeting wishes to propose.

As can be seen, in short, what is generally called the political will to act is needed, a will that does not depend on the goodness of the proposed actions, but on the wisdom of the local public administrators, wisdom which, in turn, is conditioned by factors that go beyond the task of this proposed **Action Plan**.

²⁰ In Italy the municipal legislative mandates are for 5 years and this represents a physiological mental limit on the part of the elected administrators, which tend to be linked to the next elections in the aforementioned terms.

²¹ BIM (Bacino Imbrifero Montano) collects on behalf of the associated Municipalities above all the income deriving from the hydroelectric exploitation of the Valley for about 10 million/year which it uses in favor of the Municipalities themselves. Clearly he would have the opportunity to put pressure on them.