



REGENERATIVE AGRICULTURE. AN INNOVATIVE APPROACH TOWARDS
MITIGATION OF CLIMATE CHANGE THROUGH MULTI-TIER LEARNING

NATIONAL REPORT

GREECE



EURACADEMY ASSOCIATION

FEBRUARY 2023

Contents

Chapter 1. Overview of RA uptake and prospects in Greece.....	3
1.1 The agricultural sector in Greece.....	3
1.2 Alternative farming methods.....	4
1.3 Interviews with stakeholder organisations.....	7
1.4 Conclusions	13
Chapter 2. The farmers' online survey.....	15
2.1 Introduction	15
2.2 Report of results	16
2.3 Conclusions	24
Chapter 3. The case studies	25
3.1 Introduction.....	25
3.2 Presentation of case studies	26
3.3 Conclusions	41
Chapter 4. Overall conclusions	43
ANNEX.....	45
Interviews with the stakeholder organisations	45

Chapter 1. Overview of RA uptake and prospects in Greece

1.1 The agricultural sector in Greece

Greece is typified by a strong primary sector. Although In the past, and up to the 1980s, employment in the primary sector was very high, this has been declined dramatically in the 21st century: in 1981, 27% of the labour force was employed in the primary sector, while this percentage declined to 15,2% in 2000, 10,6% in 2017 and 11,1 in 2019^{1, 2}. Despite the shrinkage in employment, still 40% of Greek land is used for agricultural production (same as the EU average), while the extent of predominantly rural areas constitutes 63% of the Greek territory (44.6% EU average). Within the productive agricultural land, 43% consists of pastures (31% EU average), about 24,5% is devoted to permanent crops (8% EU average), while 32,5% corresponds to arable crops (61% EU average).

Table 1. Basic agricultural statistics for Greece

Agriculture statistics	Greece	EU average
Productive agricultural land	40%	40%
Predominantly rural areas	63%	44,6%
Pastures as % of productive land	43%	31%
Permanent crops as % of productive land	24,5%	8%
Arable crops as % of productive land	32,5	61%

In 2021 the agricultural sector, together with the forestry and fisheries sectors, produced a gross value added of €7.13 billion euro (3.9% of GDP) well above the EU-27 countries' average (1.6%) and contributed to 8.2% of total exports. Total agricultural production value is shared between plant production (69%) and animal production (21%). Individual agricultural income in 2019 reached 94% of the average wage in the entire economy (46% in EU-27) from 72% in 2008³. This is due, of course, partly to the fall of wages in the fiscal crisis years, as well as due to the reduction of number of farmers.

In sharp contrast with the majority of EU countries, agricultural holdings in Greece are small: eight out of ten are very small i.e. up to 5 hectares (67% in the EU), while two out of three have a small financial size, i.e. less than €8,000 per year (68% in the EU). Notably, more than half of the Greek

¹ Center of Planning and Economic Research, 2010, Kaditi E. & Nitsi E., The Agricultural Sector in Greece, and

² Foundation for Economic and Industrial Research, 2020, Η συνεισφορά των εισροών στην αγροτική παραγωγή και το μέλλον του αγροτικού τομέα στην Ελλάδα (The contribution of inputs in agricultural production and the future of the agricultural sector in Greece)

³ DIANEOSIS, 2022, Skilakaki M. & Benos Th. Prospects and opportunities for the primary sector in Greece https://www.dianeosis.org/wp-content/uploads/2022/07/PP_Protogenis_tomeas_final.pdf

agricultural production (excluding ancillary activities) originates from three categories related to healthy eating, namely fruits, vegetables and olive oil. Overall, Greek agricultural production is renowned for its high quality level, as evidenced by the number of products registered with the EU agricultural product quality systems, such as Products with Designation of Origin (PDO), Geographical Indication Products (PGI) and Guaranteed Traditional Unique Products (GTUP).

At present, there are 1114 agricultural cooperatives in Greece and 425 recognized producer organizations (2020). However in the two sectors that generate the greatest value of Greek agricultural production, i.e. fruits and vegetables, the proportion of production traded through producer organizations is only 8% in sharp contrast with Spain (72%) and the EU-27 (46%).

Employment in the primary sector represents 11,1% (2019) of the total employment, but there is an “age” and “educational deficit” that represent a crucial endemic obstacle for the development prospects of the sector. Regarding education, less than 7% of farmers have received education and training, when in the EU the average is 55% and in model countries for agricultural development, such as the Netherlands, this percentage exceeds 85%. Regarding young farmers (< 35 years old), they represent only 3, 7% of the total, whilst 51% are over 55 years old. In addition, there is a marked gap between research and practice. Agricultural research and innovation in Greece is characterized by a high concentration in universities but there is little interest for the needs of farmers, while there is little interest from the private sector. At the same time, the Greek agricultural knowledge and innovation system is highly fragmented.

Regarding the quality of the soil, of the agricultural land, Greece lags significantly behind the EU. The percentage of agricultural land at risk of soil erosion is 10.2%, well above the EU average of 6.6%. As for the quality of water, while nitrogen and phosphorus surpluses decrease over time, estimates indicate that the average nitrogen surplus was 59 kg/ha in 2017 well above the EU level of 46,5 kg/ha in the EU.

1.2 Alternative farming methods

Organic farming

Alternative farming methods with an environmental hallmark have been slow to be promoted by official policies in Greece. The most popular of these methods is organic farming, which emerged in the 1980s as an important alternative agricultural practice, which was going beyond an environmentally sound and healthier-food production method, to become an ideology among selected dedicated farmers. Moreover, organic agriculture has its roots in the ecological movement of the 1980's that fostered experimentation with “clean” farming methods. The first certification of a Greek organic products was initiated in 1984, by a Dutch certification organization, concerning raisins grown in Aigio to be exported to the Netherlands, whilst since 1986 a German company has supported the production of organic olives and olive oil in Greece.

Today, organic farming is the most widespread among sustainable agriculture methods. The total area dedicated to organic farming, either already certified or under conversion is 535.000 hectares of which 32% arable crops, 13% permanent crops and 55% pasture. Organic farming covers 10,15% (2019) of used agricultural land; in 2015 Greece occupied the 8th place among the 28 countries of

the EU, exceeding the EU average (9.1%), but falling significantly short behind some countries, such as Austria (19%), Sweden (16%) or Estonia (14%) and also lagging well behind the target of the Green Deal which stipulates that organic farming should reach 25% of the agricultural land by 2030⁴. The trends, however, are upward: in 2016 the agricultural land that was dedicated to organic production was smaller by 35% of the current area, whilst the number of producers of organic products now exceeds 30,000, having grown by 28.5% in the last decade.

In Europe, the first unified legislative framework for organic farming was established in 1991 with EU Regulation 2092/91 which sets rules for the processing, standardization and marketing of organic products, defines penalties for violators and establishes a control and certification system for all organic products. In Greece, organic product certifications began with the establishment of the first organic product certification organization in 1992. At present there are 11 certification organizations operating in Greece.

Organic agriculture also features strongly in the new Strategic Plan for CAP referring to Greece⁵. The Plan foresees a budget of 1.5 billion euros for environmental and climate purposes, such as organic agriculture, alternative plant protection methods that aim to reduce the use of pesticides, strengthen protected areas, as well as contribute to water conservation and infrastructure improvement. 1.4 billion euros are allocated to organic agriculture with the intension of doubling the total agricultural land used for it, whilst €425 million per year have been allocated to support ecological schemes such as the use of resistant species and varieties, improving green cover practices and enhancing biodiversity, circular economy and environmentally friendly practices.

Regenerative agriculture

Official policies for regenerative agriculture and related forms, such as conservation agriculture, do not exist in Greece. The limited- uptake of regenerative agriculture methods has been entirely due to private interest and effort, while there is some interest on the topic developing in universities and training establishments. Interest in regenerative or conservation agriculture can be classified under three categories:

1. Individual farmers, who have come into contact with advocates of regenerative agriculture methods, originating most frequently from other countries, have adopted regenerative agriculture, usually complementing their practice of organic farming. One of the oldest examples of this category is a vineyard in the north of Greece, which has adopted regenerative viticulture and organic farming over an area of 475 Ha, maintaining a successful presence in the wine market with several certified products⁶ ⁷. Smaller farmers have also taken up regenerative farming over the past three years mostly, either due to advice provided through projects run privately or funded by Greek Foundations or EU programmes.
2. Privately established networks of farmers, with an ecological orientation, which try both to direct their members to more environment-friendly farming methods and to promote their products more widely. Such networks have started making their mark in the alternative farming

⁴ European Commission, 2013, Facts and figures on organic agriculture in the European Union

https://agriculture.ec.europa.eu/system/files/2019-10/report-organic-agriculture-eu-2013_en_0.pdf

⁵ European Commission, 2022, Commission Implementing Decision of 21.11.2022, C(2022) 8270 final,

https://agriculture.ec.europa.eu/system/files/2022-11/csp-implementing-decision-greece_en.pdf

⁶ www.Oinologia.gr , 2022

⁷ <https://www.portocarras.com/>

scene, because they have adopted regenerative agriculture as one of their main promotable practices. Examples (not exhaustive) include:

- The openfarm network⁸ and the related agroecology networkⁱ which cover over 300 farmers, most of which are organic producers, while a good number of them practice regenerative agriculture.
 - The women in olive oil network⁹, which was started by an olive grower in Greece but has spread its membership internationally, numbers over 150 Greek women, devoted to producing quality olive oil, respecting environmental concerns and contributing to the mitigation of the climate crisis.
3. Projects devoted to regenerative or conservation agriculture, involving farmers who are invited to undertake the transformation of their farms either permanently or as a pilot. Examples of such projects include:
- Regenerative farming Greece, <http://regenerativefarminggreece.org/> is a project funded by a Greek Foundation, which aims to set up a Regenerative Farms Incubator to support farmers working on lands located close to the Mediterranean Sea, to transition to regenerative agricultural practices. Six farms have taken active part in this project, which started since 2021 their transition to regenerative farming and still continue this effort successfully.
 - CAMA project “Research-based participatory approaches for adopting Conservation Agriculture in the Mediterranean Area”, <http://www.camamed.eu/en/> funded by the PRIMA programme of HORIZON 2020, focuses on the obstacles that prevent the adoption of conservation agriculture by Mediterranean countries, encouraging participatory research through a number of pilot applications of conservation agriculture in farms and the comparison of the results achieved with conventional agriculture methods. In Greece the project is run by the state-run training institution ELGO—Demetra of the ministry of Agriculture.
 - Regagri4europe <https://regagri4europe.eu/> is an Erasmus+ project aiming to promote regenerative agriculture by delivering a web-based Course to apprentices, farmers and other interested persons with an agricultural background. In Greece the project is run by the Agricultural University of Athens.
 - A pilot project of cotton cultivation by regenerative methods is jointly run by the Geography and Regional Planning lab of the University of Thessaly and the Agricultural Cooperative of the region of Farsala “Enipeas”. The former provides knowhow and technical support to the latter, which has dedicated 60 Ha for the pilot implementation of regenerative agriculture practices. The project is supported by a textiles factory in France, which is committed to buy all the cotton that will be produced by regenerative methods.

The media also have started over the past 3 years to promote regenerative practices, especially certain online journals that are popular among farmers. For example, the following online journals have repeatedly published articles about regenerative agriculture and its benefits, and have posted examples of successful farms that practice organic and/or regenerative agriculture, including regenerative viticulture and regenerative olive culture:

<https://www.ypaithros.gr>, www.natureang.gr, www.oinologia.gr, <https://iqcrops.com/>,
<https://agropublic.gr/agrotika-nea/>

⁸ <https://openfarm.gr/>

⁹ www.womeninoliveoil.org

To the above, the Wikipedia version for farmers <https://wikifarmer.com/el> should be added as a promoter of regenerative agriculture.

1.3 Interviews with stakeholder organisations

In the framework of the REGINA project, the Euracademy team conducted interviews with representatives of 6 key stakeholder organisations in Greece. The interviews aimed at gathering the stakeholder organisations' views on Regenerative Agriculture and its current uptake, benefits of a transition to RA, obstacles of this transition and necessary conditions, as well as potential for training in RA in Greece. The structured interviews were conducted online or face-to-face, and were based on an interview schedule; follow-up questions were made where necessary.

The stakeholder organisations which participated in the interviews through a representative are shortly presented below:

GREEK AGRICULTURAL ORGANISATION DIMITRA (ELGO-DIMITRA) - *Panagiotis Papavassiliou, Director of Training*

The main objectives of ELGO-DIMITRA, a public organisation under the Greek Ministry of Rural Development and Food, is the development and support of actions aiming at the modernisation and development of the country's agricultural sector, the improvement of production processes, the enhancement of competitiveness, the certification of quality agricultural products & food, the establishment and certification of good agricultural practices, and controls in the production and distribution chain of milk and meat in the country.

ELGO DIMITRA is active in the provision of agricultural vocational education and training, and the implementation of good practices in agriculture.

In the field of training there are 25 "DIMITRA" Centres, covering almost all of the regional areas of the country. Sixteen of these Centres have already been certified by the National Organisation for Certification and Vocational Guidance (EOPPEP). The "DIMITRA" Centres (Vocational Training and Lifelong Learning Centres) promote the improvement of the professional skills of farmers, in order to produce competitive products while respecting the consumers and the environment.

Greek Association of Young Farmers (PENA) - *Nikos Pavlonassios, President*

The Greek Association of Young Farmers (PENA) was founded in 2006 and today has about 4,000 members throughout Greece, young farmers up to 40 years old. The Association aims to develop and upgrade agriculture and rural areas through knowledge, innovation, professionalism and the commitment of its members. It brings together all young farmers in local associations and coordinates their actions and initiatives nationwide, promoting the farming profession and striving for a prosperous future. The Association aims to promote new perceptions and network young people in rural areas, to discuss the issues that concern them and to formulate proposals for the development and modernisation of all sectors of the rural economy. PENA cooperates with the public and local authorities, Cooperatives and Trade Unions, as well as with organisations of young farmers and youth in rural areas in the EU Member States, to formulate proposals for tackling farmers' problems.

OPEN FARM NETWORK - *Panagiotis Papadopoulos, Founding Member*

The Open Farm Network (www.openfarm.gr) was created in order to bring the public in the cities, interested in the origin of their food, in contact with selected farms and food processing units, which produce quality products and provide education and tour services. Its activities include events, seminars, workshops, food tastings, gastronomic experiences and the sale of products by small Greek producers of the network, as well as thematic workshops for pupils/school classes on the importance of the Mediterranean diet, fruits and vegetables, the origin of food, seasonality and locality of agricultural products, and the supply chain of agricultural products. Also, Open Farm implements in collaboration with schools the experiential education program 'farm 2 school', where students participate in educational activities related to agricultural production, the origin of food, the environment, health and nutrition — students engage in gardening through practical and empirical learning, applying agroecological, biological and regenerative practices in the soil and micro-ecosystem of the school garden. At the same time, the Network promotes the transition to a new sustainable food production and consumption system in cities, recognising the important role of the global agri-food system for the sustainability of the planet and the need to change our attitudes towards the way we select our food. The role of healthy soil, biodiversity, and waste and water management is highlighted in tackling the climate crisis. The Network currently has 330 members throughout Greece — farms that combine the production of quality products with agritourism and/or the processing of agricultural products.

DEVELOPMENT AGENCY OF KARDITSA (ANKA) - *Vassilis Bellis, experienced executive of the Agency, has served as Director of the Agency for many years.*

A key element of the identity of ANKA is the implementation of programs and projects aiming at the development of both rural and urban areas of the Prefecture of Karditsa (and other areas of Greece) through utilising all forms of resources (natural, human, cultural) and promoting local initiative and entrepreneurship as the driving force. The development concept of ANKA focuses on the “capacity building” and “empowerment” of the local population, especially the disadvantaged groups, and tackling social exclusion. Programmes and projects are designed and implemented to serve a coherent and integrated vision for local development. The main areas of activity of ANKA are:

- Providing technical support of Local Government Organisations, the Decentralised Administration and the cooperatives of the Prefecture of Karditsa;
- Undertaking research, studies, training and other programmes, coordinating the development programmes of the programming bodies and providing technical support for the implementation of national and Community programmes;
- Designing and implementing rural development programmes, projects for the protection and promotion of the man-made and the natural environments, and
- Implementing co-funded projects, social actions, services and procurement.

WOMEN IN OLIVE OIL GREECE - *Christina Stribakou, Founding Member, EVP for Public Relations at Women in Olive Oil International, olive oil producer, taster and olive oil critic.*

WOMEN IN OLIVE OIL is a global support network for women active in various aspects of the olive oil industry, aiming to bring about positive changes in health and nutrition, education, environmental

and agricultural practices, fair trade and gender equality. The network today has around 2.000 members worldwide and is committed to creating a platform where women can exchange knowledge, know-how and experiences and where they have access to the tools and support they need to promote common goals in their local communities, but with an international outreach. WOMEN IN OLIVE OIL GREECE is the Greek branch of the network and currently has around 130 members — women active in the olive oil sector from various positions (producers, scientists, tasters, entrepreneurs, etc.) — and aims at networking Greek women active in olive oil, mapping their needs and promoting Greek olive oil.

AGRICULTURAL ASSOCIATION OF THE PROVINCE OF FARSALA “ENIPEAS” - *Haroula Karatosidou, Agronomist of the Cooperative*

The Agricultural Association of Farsala has 80-100 members who mainly produce cotton, but also cereals and legumes, while there is also a team of farmers producing cow's milk. The Agricultural Cooperative of Cotton Farmers ENIPEAS “Cotton-Farsala” was founded in May 2017 and was recognised as the first cotton producer organisation in Greece. Its statutory purpose is to manage the product of its members (cotton), in terms of promoting its quality and competitiveness, for the benefit of the producers and the region's rural economy. A group of 10 producers of the Cooperative (400 stremmas) have joined a program of transition to Regenerative Agriculture, in collaboration with the University of Thessaly.

The overall findings of the interviews are presented below. For more information on the feedback by each stakeholder organisation representative interviewed, please see in the Annex.

On the term “Regenerative Agriculture”

The term is not yet widespread in Greece; although the term is starting to spread and people hear or read it, usually they do not know what it means and the farming practices it corresponds to in practice. Moreover, there is often confusion between the different terms used to describe different or overlapping sustainable farming approaches; although the term “organic farming” is now widely spread and understood, terms like “integrated management”, “permaculture”, “agroforestry”, “conservation farming”, “biodynamic farming”, “agroecology” and “regenerative agriculture” often create confusion as to whether they constitute different or overlapping approaches or methods. In some cases, like the olive grove of Christina Stribakou (representative of Women In Olive Oil Greece), regenerative agriculture practices are already implemented through empirical knowledge (e.g. green fertilisation by planting plants to improve the quality of the soil (beans, peas), no-till, the use of animals to improve organic matter in the soil, planting other tree species next to the olive trees in order to increase biodiversity, preserving landforms that can provide shelter to local wild fauna) without the farmers knowing they have made the transition to RA.

On the current uptake of RA

Currently in Greece there are very few farmers who have consciously made the transition to RA. After the “organic farming” movement started to fade because it evolved to mainly focus on the certification process rather than the impact on the environment and its sustainability potential,

some environmentally conscious farmers turned to other alternative and sustainable farming methods; an additional factor has been the crisis in the agricultural sector in Greece that has led some farmers to turn to other practices. The farmers who have decided to implement the transition to RA are either conscious and/or educated individuals in related fields (e.g. with agronomy studies), or progressive-thinking farmers participating in a research project instigated by a University or research institute.

Obstacles to a more widespread transition to RA

The obstacles highlighted refer to:

- The current model of farming in Greece, characterised by small-sized lots of farmland and a usual practice of monoculture by producers. Today the transition to RA can mainly be attempted either by very large farms or by farming cooperatives that would facilitate a smoother transition to RA, however there is a longstanding negative mentality regarding the creation of cooperatives in Greece.
- The prevailing mentality of Greek farmers who put the emphasis on increasing their production on the short term rather than reduce production costs. The focus is on increasing the production quickly in order to be able to supply large supermarket chains, using chemical fertilisers and pesticides to achieve this and also produce much earlier (e.g. produce watermelons in May).
- The ageing population of farmers in Greece. Older farmers are less likely to try out something different and change their production methods, or invest in time to make the transition to RA.
- The challenges that the farmers face today both in terms of their reduced income and the impacts of climate change. Farmers are caught up in an effort to make ends meet and save their productions and incomes, therefore they are less likely to make middle or long-term plans and lack the time and positive mentality to listen about new alternative farming methods or invest time in the transition to RA.
- Significant gaps in education and knowledge/knowhow on RA, both with regard to experts with a consultative role (e.g. agronomists) and to the farmers themselves. Currently RA is absent from the curricula of relevant University courses (e.g. Agronomy courses) and there is no official training on RA for farmers. It should be stressed that RA is not a resource-intensive model but a knowledge-intensive model; in a sense, for a more widespread transition to RA it is necessary to change the producer model rather than the production model. In this direction, the role of education and training is key, and should focus on changing the mindset of farmers so that, instead of permanently relying on pesticides and other products to support their production, they are in a position to support their production using alternative methods and through knowledge, experimentation and monitoring. The change in attitudes and mindsets is also necessary, instilling to the farmers a culture of initiative, encouraging them to explore, try out and monitor the results of alternative methods. Education and training would also help to respond to farmers' questions and misgivings, like for example whether RA can be applied in different climate conditions and crops. Moreover, although there may be empirical knowledge on RA in Greece, this knowledge is not recorded or organised so that it can be used as training material.

- Lack of incentives for farmers to make the transition to RA, as at the moment there is no financial support that would encourage and facilitate the transition.
- Social issues that the farmers who adopt alternative methods may experience in their local communities. In some cases, these farmers are seen as different or bizarre by their local community, and may feel marginalised.

Benefits from a transition to RA

The benefits highlighted through the interviews refer to:

- The economic benefits for the farmers, which are key in order to convince more farmers to make the transition to RA. Although it is recognised that the transition to RA requires a time investment of 4-5 years, the results of studies are overwhelmingly in favour of the regenerative model on the long term as the farms become productive with much lower inputs and thus the production costs are reduced, resulting in a higher income for the farmers. Additionally, at European level there is an increasing demand for RA products, particularly products related to the clothing industry (e.g. cotton, hemp) and this could serve as a strong incentive for the transition. Moreover, a shift towards more sustainable agricultural production models is expected in the Common Agricultural Policy (CAP), directing funding in this field; therefore the producers who have made the transition will be in a favourable position to apply for funds.
- The benefits for the farmers' health. The uncontrolled use of pesticides in past decades has been connected with serious health problems and deaths of farmers from cancer. It is also necessary to battle the mentality that wants Greek farmers willing to risk the health of immigrant farm labour (e.g. Pakistanis) who come into contact with pesticides, rather than their own. Moreover, it is often reported that farmers who make the transition to RA claim to have improved their wellbeing as a result of reduced stress and pleasure from working in a natural environment rich in biodiversity.
- The benefits regarding the farmers' social profile. Through implementing sustainable farming practices, the farmers often feel they actively contribute more to society. When this effort is recognised by the local community, the farmers' social profile is enhanced.
- Broader social and environmental benefits. The transition to RA, besides enhancing the quality of the water and food we consume and minimizing the impact of the agricultural activity on the environment, increases biodiversity and helps tackle climate change through sequestering greater amounts of CO₂ from the atmosphere. Moreover, it could also contribute to sustaining a younger population in rural areas, not just as producers of our food, but also as guardians of biodiversity with a sustainable income.

Education and training as a key prerequisite for a wider uptake of RA

The education of farmers is widely recognised by all participants as the main prerequisite for more farmers to try the transition to Regenerative Agriculture. Today the training of young farmers in Greece, offered mainly by the organisation "ELGO Dimitra", does not include topics and practices related to agroecology, regenerative agriculture and alternative methods, and therefore it is necessary to revise the training programmes regarding both the training content and the training methodology. Currently, the official training of young farmers offered by ELGO Dimitra is compulsory

and free of charge to new farmers, is held face-to-face, has a duration of 150 hours (25 days), is provided by local Agricultural Education Centres (KEGE Dimitra), and covers technical knowledge such as plant protection, crop management, etc. In addition, ELGO operates 6 Public Institutes of Vocational Education in the country where two-year training courses are provided in specific agricultural disciplines (not including training in alternative farming methods). The current practice of training young farmers for 6 hours every day in a classroom should be revised, by incorporating alternative methods such as educational visits to farms applying such methods in Greece and abroad (e.g. Italy), so that training is more effective both in terms of knowledge retention and development of positive attitudes and mentality. Incorporating “field schools”, i.e. learning activities held exclusively through field visits in farms that have made the transition or are currently in the process, to share good examples, problems and possible solutions, and encouraging learning by doing, would be most effective with the target group of farmers who are not used to sitting in front of a screen or in a classroom. In addition, instead of bringing the farmer to the information, it is more effective to bring the information to the farmer: approaching farmers in places where they gather (e.g. the local coffee shop) would be much more effective than providing information on the internet.

The education and training of experts (e.g. agronomists, adult trainers, consultants) on RA is seen as a crucial step in this direction, so they can act as multipliers of knowledge and skills. Experts (e.g. agronomists) possess the necessary background and work closely with farmers, therefore their education on RA is key to supporting more farmers to make the transition. This may also help in enhancing their profile and role as consultants. Today farmers usually see agronomists as pharmacists who provide a “prescription” on the pesticides and other products to support production rather than consultants they can trust. Educating agronomists on RA can help them take up that role and actively contribute to the transition and change. An enhanced connection between knowledge stakeholders (e.g. Universities, research institutes etc.) and the farmers’ associations would definitely help in transferring knowledge and innovation to the farmers.

All stakeholder organisations who participated in the interviews expressed their willingness to support education and training on RA, as organisers, trainers, participants and promoters, depending on their profile. ELGO Dimitra, the official organisation responsible for the training of farmers in Greece, is willing to provide education and training on Regenerative Agriculture, following the approval of a relevant pilot training programme by the Greek Ministry for Agriculture. As a first step in this direction, the Organisation could carry out a train-the-trainers course on RA, based on the learning methodology and material that will be developed in the REGINA project. The trainers can then provide training to farmers using the available training material of the project. Moreover, there is a potential for cooperation between the Organisation, EURACADEMY ASSOCIATION and the REGINA partnership in the framework of organising information events, workshops and train-the-trainers programmes on Regenerative Agriculture.

Economic support for the transition to RA

The transition to RA does not require an important economic investment to start up, however it requires an investment in training and a time investment of 3-5 years until the transition is complete and the farmers can benefit from lower inputs and a sustainable productivity. An economic support in the form of subsidies may help farmers move towards RA, but only as long as this is connected with measurable indicators assessing the impacts in terms of increasing biodiversity (e.g. the FBI — Farm Bird Index) and soil regeneration (e.g. increase of organic matter in soil). In Greece there are

no such assessment indicators even for organic farming, while the subsidy programmes are assessed solely based on the absorptency of the EU funds, rather than the impact. As Regenerative Agriculture focuses specifically on the regeneration of the soil and ecosystem on the farm, any subsidies for farm transition to RA should be connected to the assessment of the impacts on these targets.

EU and national policies on RA

Policies at European level should in principle be promoted through the Common Agricultural Policy of the European Union, but with clear focus, targets and measures at national level for the allocation of the European funds.

Overall, it is difficult to spread RA among farmers in the country in the short term. However, it is possible to create a critical mass of farmers (about 1,000 farmers) who will implement RA over the next 10 years and set an example for others to follow. This is very important because, as the example of the development of organic farming has taught us, change is slow and must be based on concrete examples in the country that other farmers can relate to.

1.4 Conclusions

Greece has a strong primary sector, which produces a high added value, well above the EU average, while employing a high percentage of labour force, above the EU average, which however is aged and lacking sufficient education, lagging in skills and competences that would allow the primary sector to turn to new and alternative farming methods, despite their advantages, and become more competitive. Although organic farming follows an evolving route, increasing its cultivation area and volume of certified produce, other alternative, environment-friendly methods of farming such as regenerative agriculture, have not been introduced at a reasonable scale. The lack of official policy should be counted as an obstacle to the development of regenerative agriculture, accounting for lack of relevant training and supporting research on the topic. This is reflected also on the key issues that have been raised by the European Commission in its consultations on the New Greek Strategic Plan for Agriculture:

- Training: transition to a more sustainable agriculture requires the training of farmers and the systematic provision of advice to them through a well-organized and coordinated advisory system to be implemented as early as 2023.
- Utilization of human capital and especially scientific potential: Greece is not lagging behind in the production of research and innovation, but in the transfer of these to the production process; therefore, policies are needed that will help the field of science and production people to work together.

The interviews with stakeholders have confirmed the above and also shed light to other critical factors that have not allowed the wide spreading of regenerative agriculture practices. The main conclusions for these interviews can be summarized as follows:

- The term “Regenerative Agriculture” and its meaning is not yet widespread in Greece, and the presence of many terms that describe different approaches or methods for sustainable farming creates confusion.

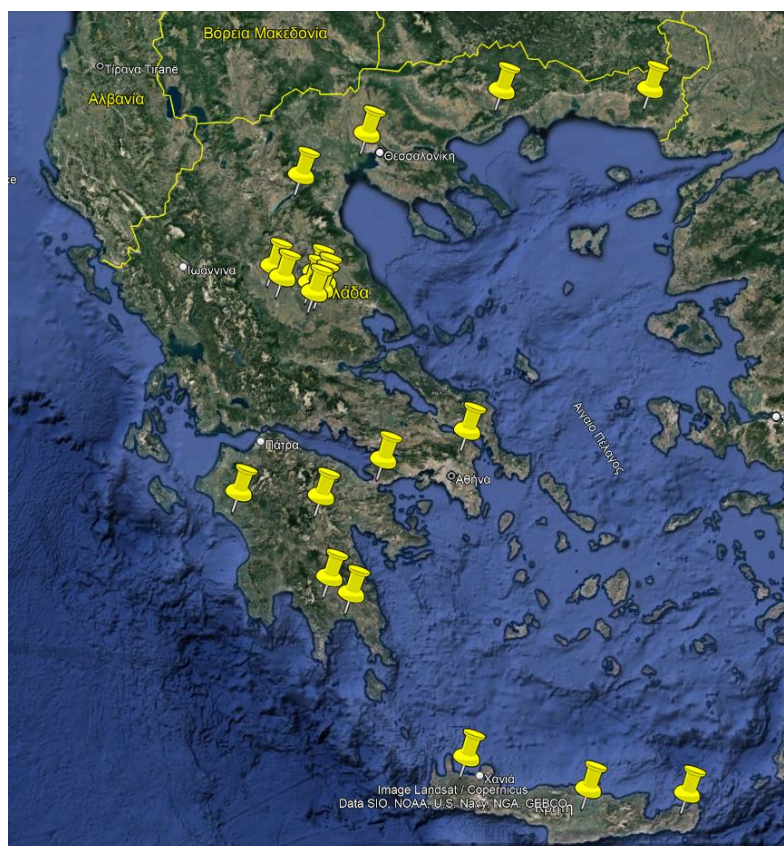
- Today there are very few farmers in Greece who attempt the transition to RA, in their majority conscious educated and/or progressively thinking individuals who have taken the initiative themselves to explore RA or participate in a research project on RA.
- The obstacles to a more widespread uptake of RA in Greece is related to factors like the small-sized lots of farmland and the established practice of monoculture, the mentality of Greek farmers who put the emphasis on increasing their production on the short term rather than reduce production costs, the ageing population of farmers in Greece, the challenges that the farmers face today both in terms of their reduced income and the impacts of climate change on farming, the significant gaps in education and knowledge/knowhow on RA with regard to experts and to the farmers themselves, the lack of a culture of initiative among farmers and the fact that those who try something different are often seen as strange or bizarre by their local communities, and the lack of incentives for farmers to make the transition to RA.
- The benefits from a transition to RA relate to economic benefits for the farmers due to a reduction of input to production in connection to an increasing European demand for RA products, benefits for the health and wellbeing of farmers resulting from a “cleaner” production and a pleasant working environment, an enhanced social profile for farmers who will be recognized as actively contributing to the overall wellbeing, as well as broader social and environmental benefits relating to the potential for sustaining a younger population in rural areas and contributing to the fight against climate change and minimizing the impacts of farming to the environment.
- The education and training of farmers is recognized as the main prerequisite for a broader transition to RA, taking into account that RA is a knowledge-intensive rather than a resource-intensive model, and therefore it requires a new model of producer with the necessary knowledge and skills, as well as the necessary attitude and mentality to support it. The education/training of farmers on RA should not limit to typical learning practices (i.e. lectures and lessons of many hours a day in a classroom or in front of a screen) and adapt to the farmers’ learning needs, adopting “field schools” and visits that will encourage learning by doing and seeing good practice examples, exploring common problems and solutions in the farm.
- The education and training of experts (e.g. agronomists) as consultants on RA who can gain the farmers’ trust and support them in the transition process is also key in this direction, and will greatly enhance the experts’ professional profile. Enhancing the networks and collaboration between knowledge/research stakeholders like Universities and farmers’ associations or networks will facilitate the transfer of knowledge and innovation to the farmers themselves and support them in the transition process (experimenting, monitoring).
- A financial support for the transition to RA (e.g. subsidies) would encourage more farmers to attempt the transition, however it should necessarily connect to measurable sustainability indicators in order to ensure effectiveness.
- The CAP should include concrete policies towards promoting RA. The EU policies and funds should then be further elaborated in the national framework through specific targets and measurable outcomes. The objective should be the creation of a “critical mass” of farmers who will make the transition to RA in the next 10 years and set the example for other farmers to follow.

Chapter 2. The farmers' online survey

2.1 Introduction

An online survey was conducted through the REGINA online questionnaire for farmers translated into Greek. The online questionnaire was widely disseminated to stakeholder organisations in Greece, including farmers associations, networks, as well as the stakeholders interviewed – the Greek Association of Young Farmers (PENA) with 4,000 members, the Open Farm Network with 330 members, the Development Agency of Karditsa, the Women in Olive Oil Greece with 130 members, and the Agricultural Association of Farsala with 80-100 members. The online questionnaire was disseminated from October 2022 until February 2023, however despite the continuous efforts and follow-up, there were 20 responses. The poor response rate may be attributed to the low level of digital skills, no access to necessary equipment or the internet, or lack of experience by the majority of the farmers in Greece in filling in an online form, although for some of the responses the Euracademy team offered telephone support and walkthrough. Finally, it is also possible that farmers who do not know of or implement alternative farming methods like RA did not complete the questionnaire or did not submit it as they considered it irrelevant and therefore their views were not registered – this is strongly indicated by the results of the registered responses that reflect the participation of farmers who are aware or have already implemented alternative farming methods.

Although the response rate was poor, the spread of the respondents throughout Greece was satisfactory, with responses from farmers throughout mainland Greece and Crete as demonstrated on the map below.



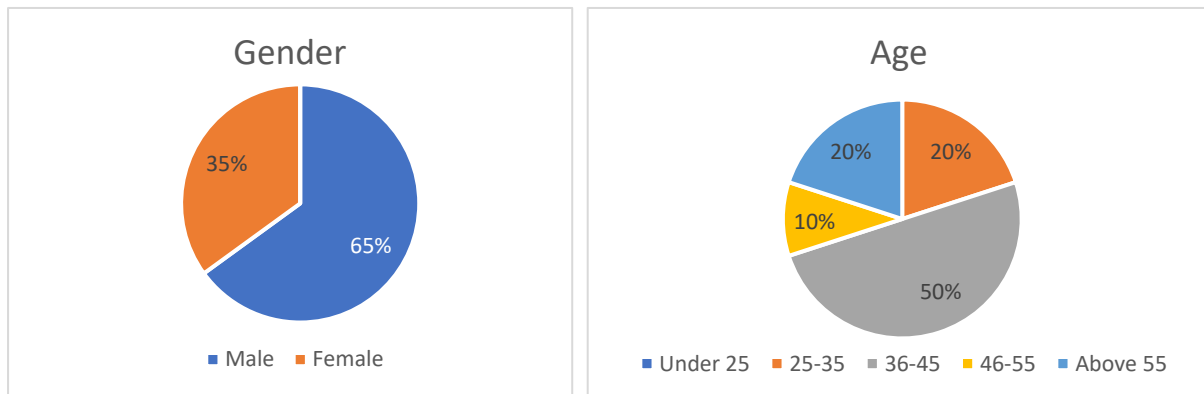
Location of the farms based on the questionnaire responses

2.2 Report of results

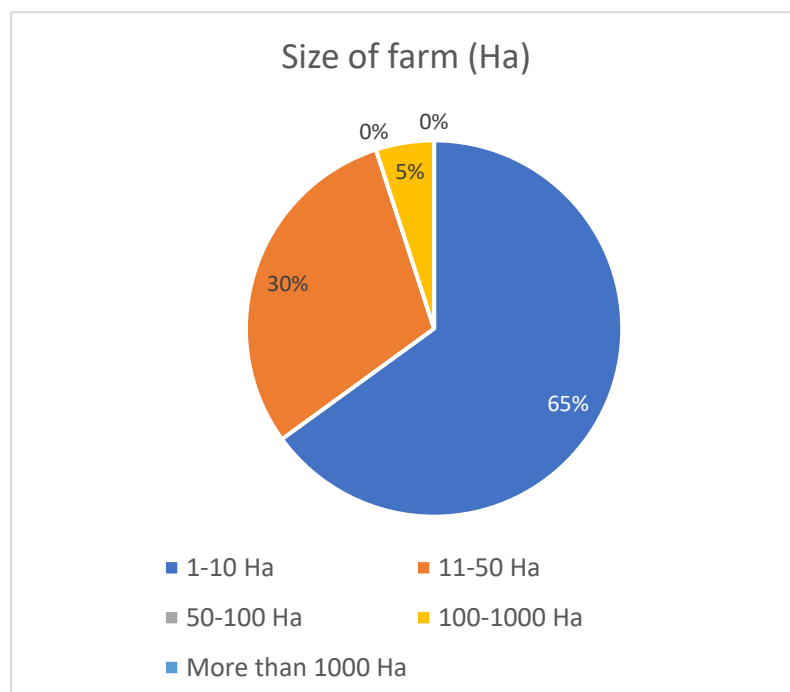
The results of the farmers' online survey with regard to the Profile of the respondents, their Knowledge/Awareness on alternative farming methods and practices, and their Attitudes and Learning Needs towards taking up Regenerative Agriculture, are presented below.

Profile

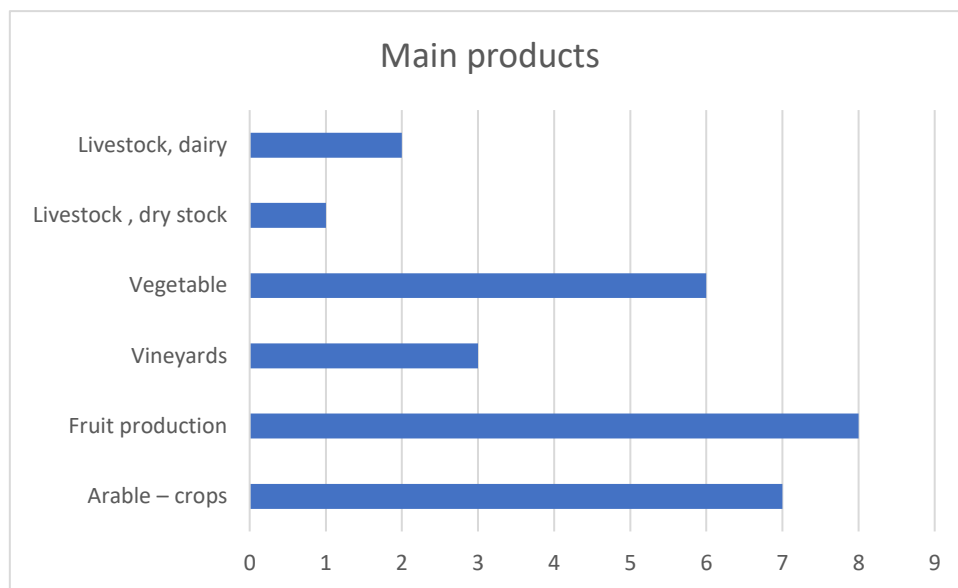
The majority of the respondents were male, while the age group 36-45 years old is the most represented with half the respondents.



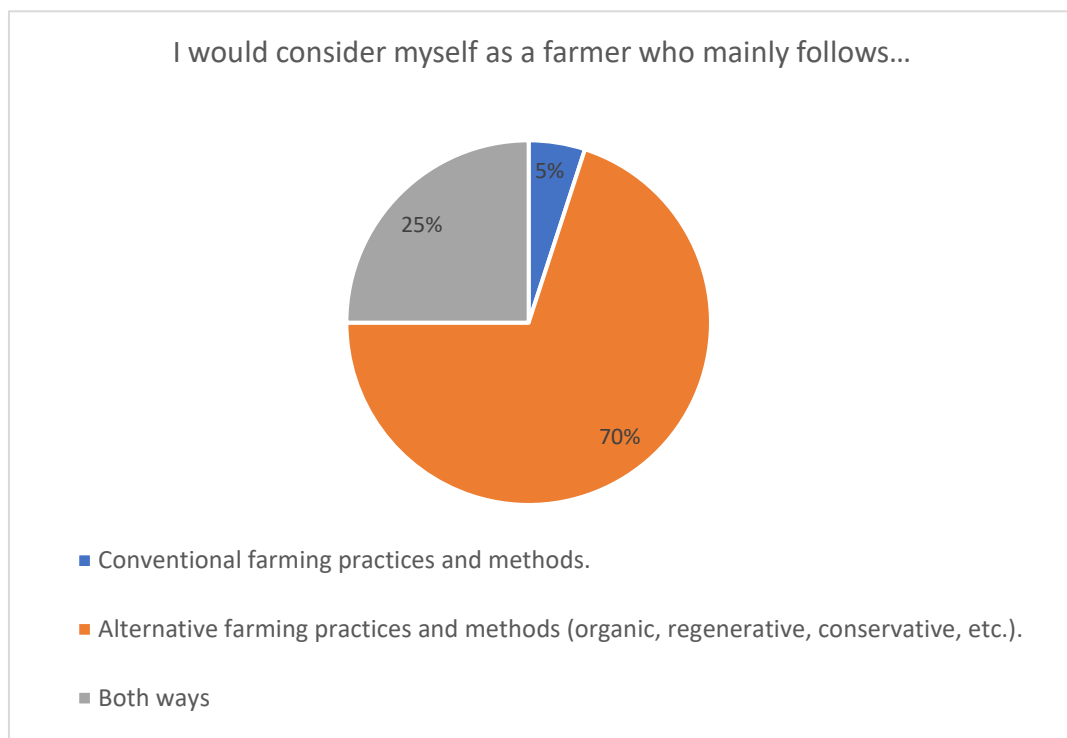
The majority of the respondents stated that their farm is small (size under 10 Ha), while a smaller percentage stated they own middle-sized farms (11-50 Ha) and one respondent owns a large-sized farm of more than 100 Ha.



With regard to the main products/cultivations of the farms represented in the survey, most produce fruits and arable crops as well as vegetables, while fewer include vineyards and livestock.

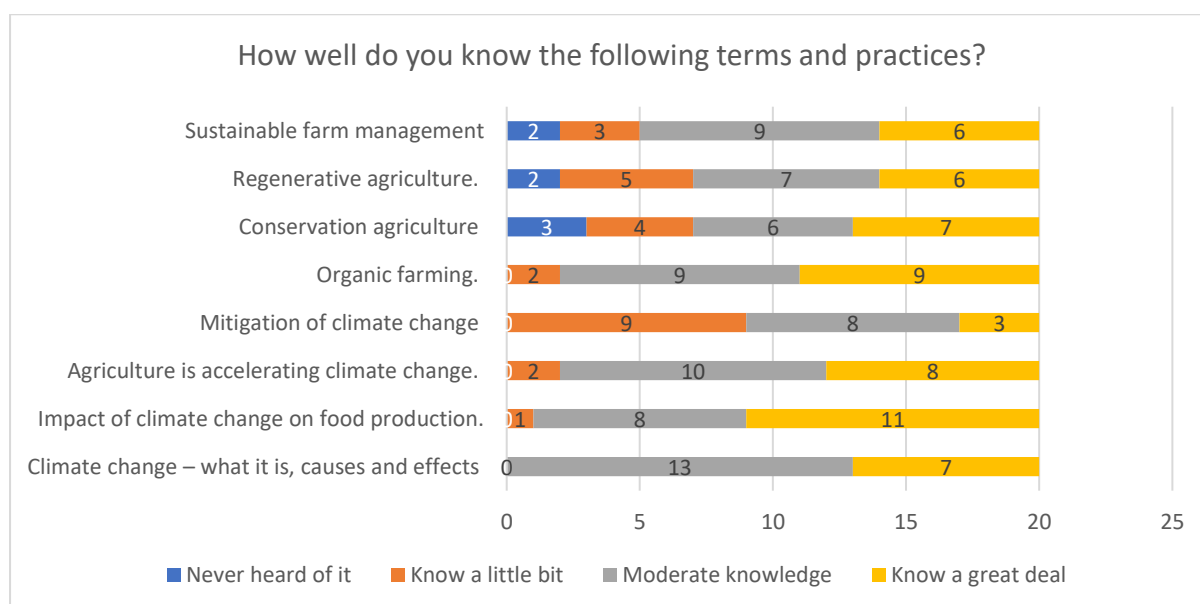


The vast majority of the farmers stated they regard themselves as following only alternative farming methods (like organic farming, conservation farming, regenerative agriculture, etc.). A smaller percent (1 in 4 farmers) stated they implement both alternative and conventional methods, and only one farmer stated he mainly follows conventional farming methods.

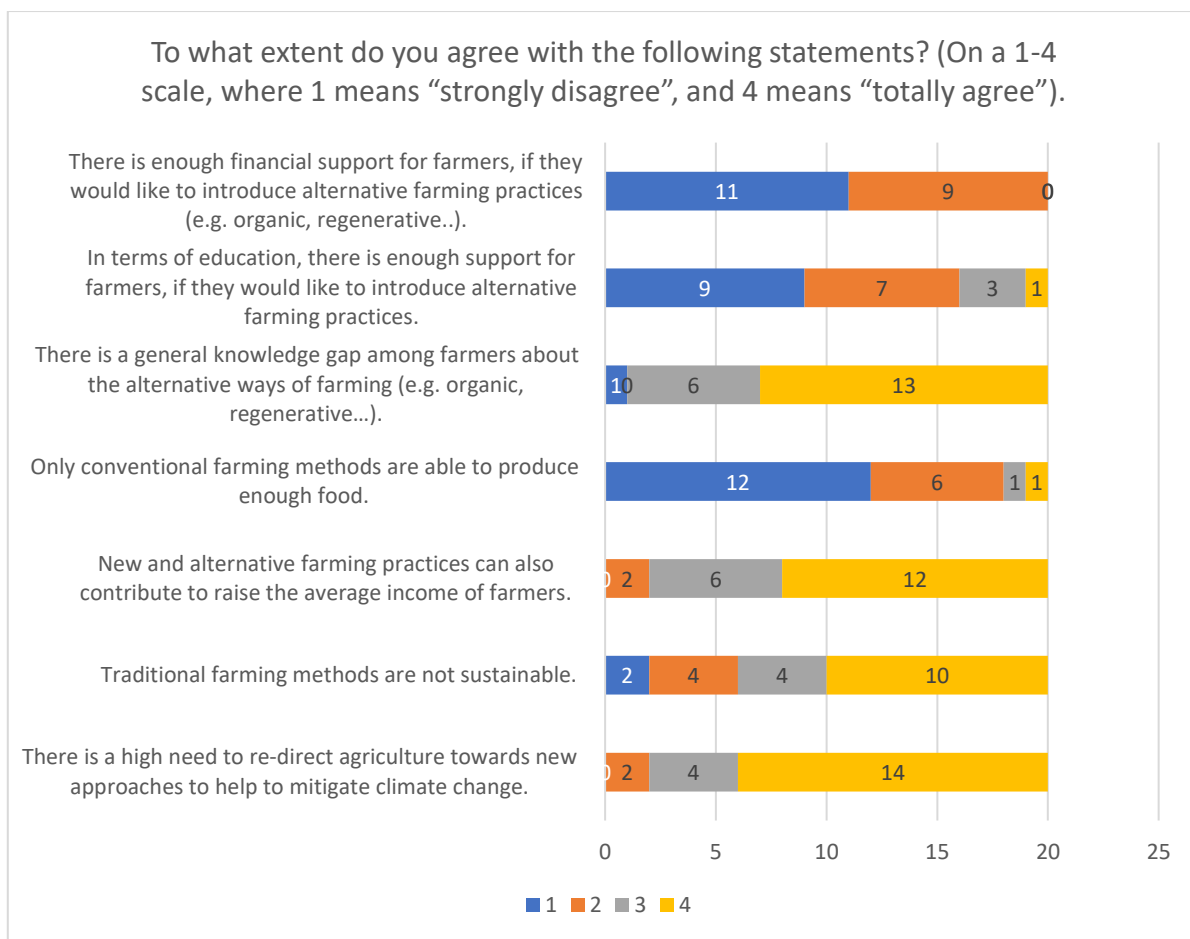


Knowledge/Awareness on alternative farming methods and practices

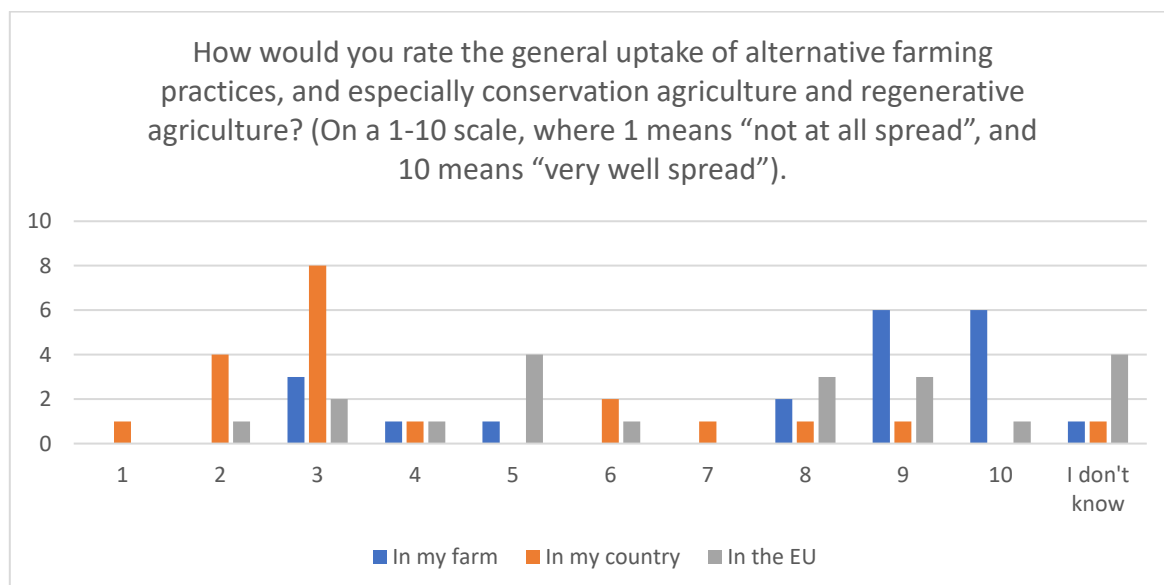
The participating farmers were asked to assess their knowledge regarding a series of proposed topics in relation to climate change, its impacts on farming and alternative farming methods. Overall, the vast majority of the participating farmers stated they have moderate or great knowledge about topics like climate change, its impact on food production, agriculture contributing to climate change, and organic farming. Also, most of the participating farmers stated they have moderate or great knowledge about more specialized topics like sustainable farm management, conservation agriculture and RA. Lower knowledge levels were reported on the topic of mitigation of climate change. The results in this question, in connection to the farmers' profile, indicate that the majority of the farmers who participated in the survey are aware regarding climate change and its impact on farming, as well as agriculture's role in contributing to the climate change, and have knowledge and experience in alternative farming methods and practices.



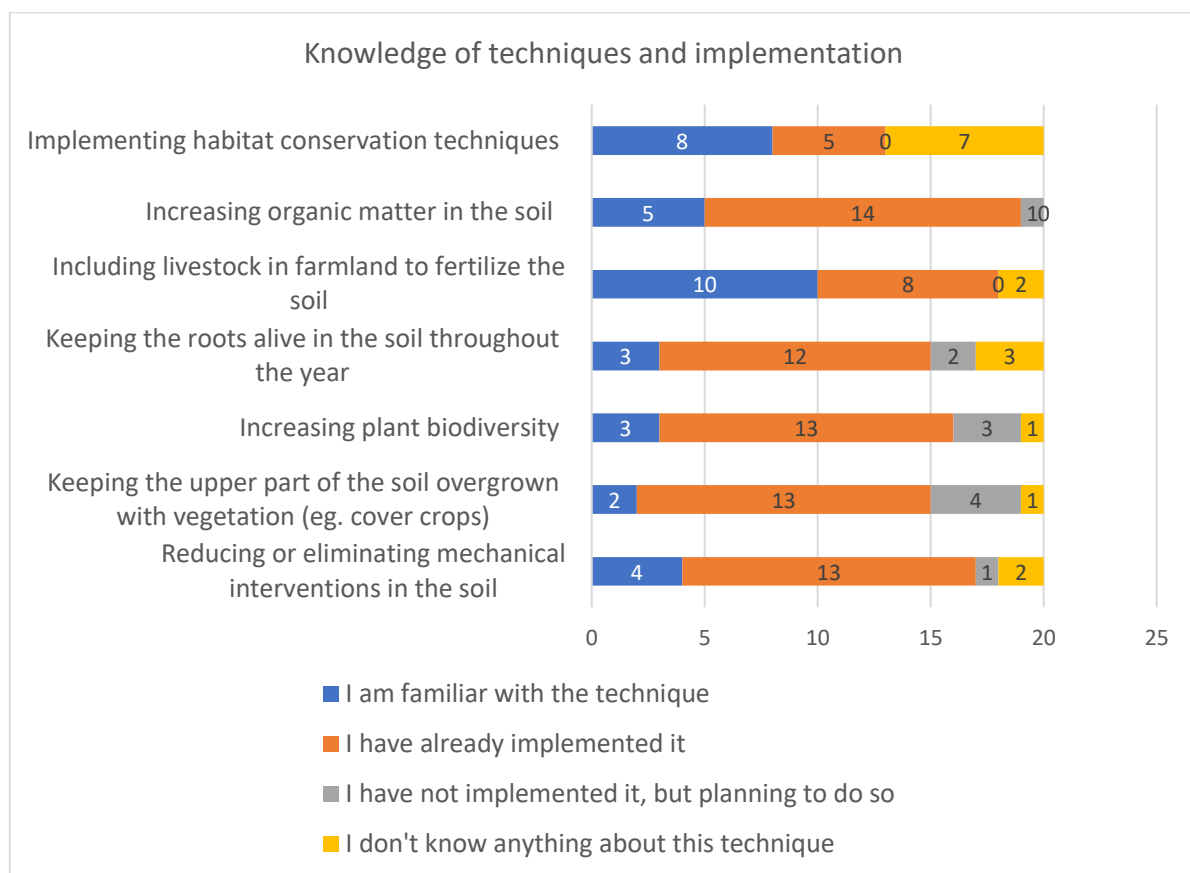
The participating farmers were also asked to state whether they agree or not with regard to a set of statements in order to register their attitudes concerning issues like the need to re-direct agriculture towards alternative approaches, the impact and effectiveness of traditional farming approaches, and the necessary support to farmers in order to make a transition to alternative farming methods. The majority of the participating farmers believe that there is a need to re-direct agriculture in order to help mitigate climate change, and that conventional farming methods are not sustainable and are not the only way to produce enough food. Also, most of the farmers strongly believe that alternative farming practices can raise the average income of farmers. Finally, the majority of the farmers believe that there is a general knowledge gap among farmers about alternative farming methods (e.g. organic, regenerative etc.) and there is not enough support for farmers in terms of education and training, while all participants believe there is no financial support for farmers to introduce alternative farming methods.



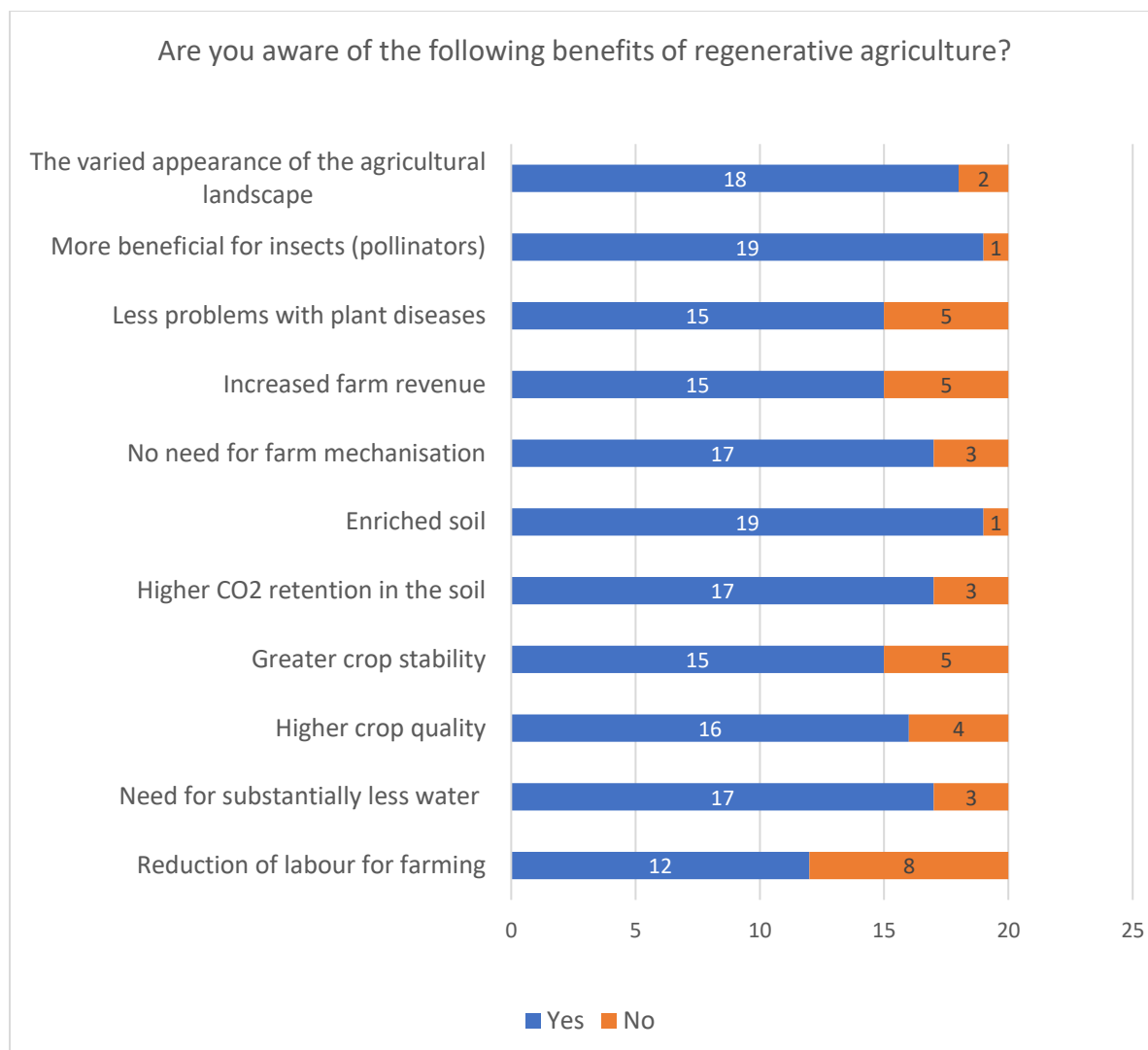
The farmers were asked to rate the general uptake of alternative farming practices, and especially conservation and regenerative farming, in their own farm, in the country and in the EU. Most of the farmers rated the uptake of alternative farming methods very high in their own farm, and low in Greece. The responses regarding the level of uptake of alternative farming methods in the EU vary greatly, indicating there are different conceptions among farmers regarding the level of uptake in the EU.



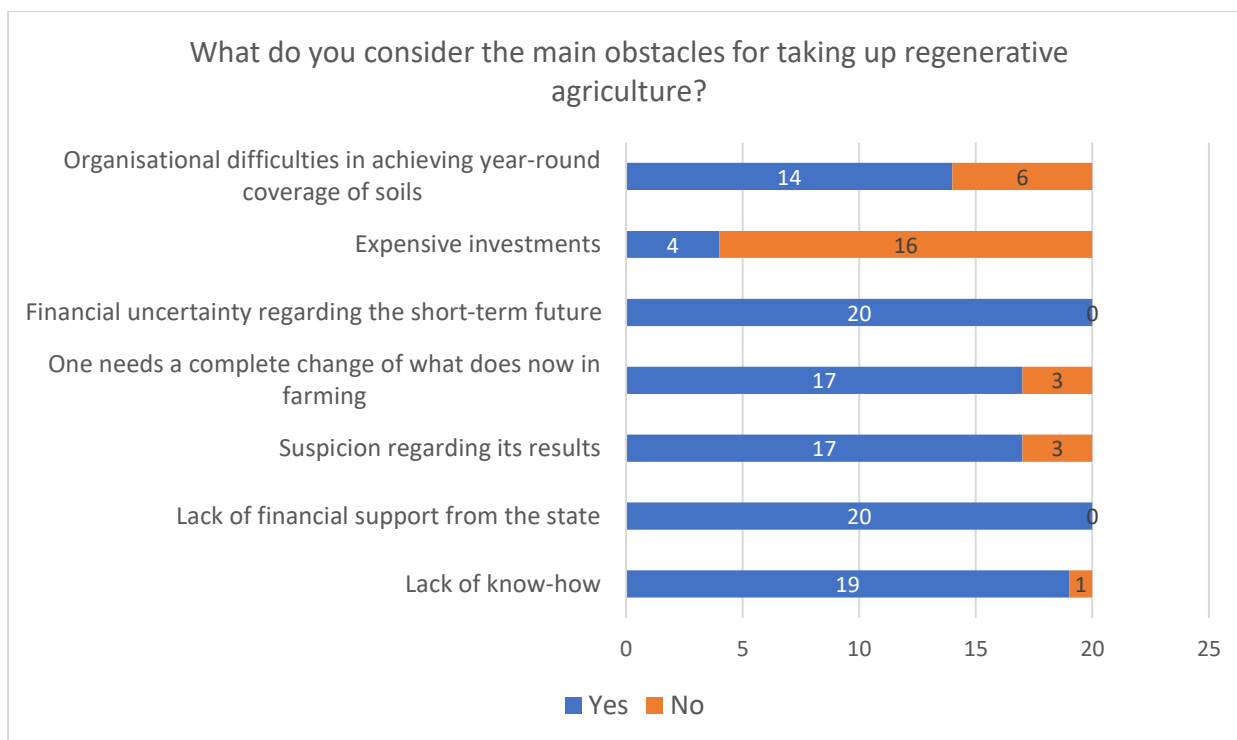
With regard to the participants' knowledge and/or experience in techniques related to regenerative agriculture, most of the farmers stated they have already implemented several techniques like reducing/eliminating mechanical interventions in the soil, keeping the upper part of the soil overgrown with vegetation, increasing plant biodiversity, keeping the roots alive in the soil all year round, and increasing the organic matter in the soil. The technique of including livestock in the farm to fertilize the soil has been already implemented by 40% of the participants and half of the participants stated they are familiar with it. The responses vary regarding implementing habitat conservation techniques; although 25% of the participants stated they have already implemented such techniques and 40% stated they are familiar with it, a remaining 35% stated they do not know anything about these techniques.



The vast majority of the participating farmers stated they are aware of most of the benefits of regenerative agriculture proposed, like the substantial reduction of water needed, the higher quality of the products, the enhanced crop stability, the higher CO₂ retention in the soil, the enriched soil, the abolition of farm mechanisation, the increased farm revenue, the reduced dangers from plant diseases, the creation of a beneficial environment for insects (pollinators), and the enhancement of the agricultural landscape. However, 40% of the farmers are not aware of the benefit concerning the reduction of farming labour.

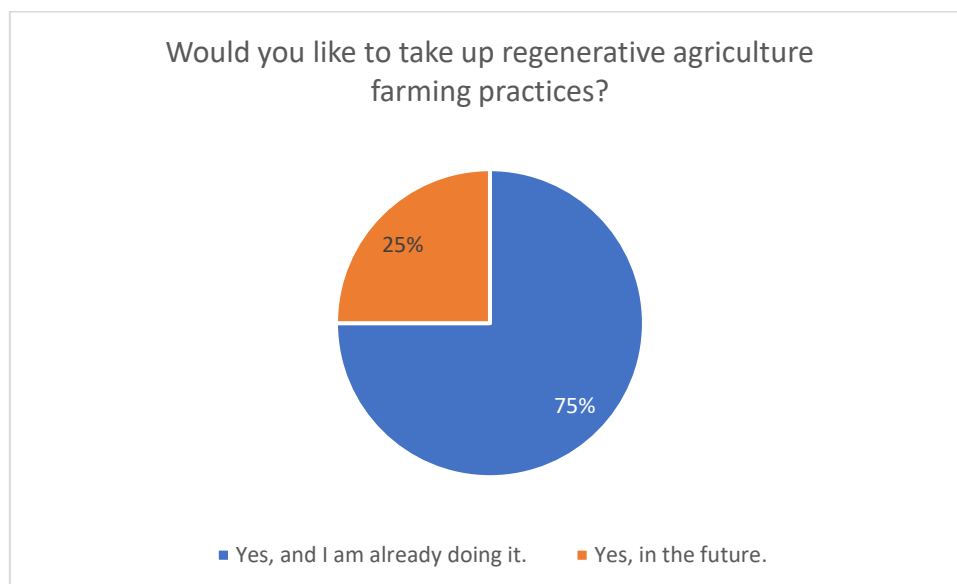


Finally, the vast majority of the participating farmers agree on the proposed main obstacles for taking up regenerative agriculture. These include the lack of know-how, the lack of financial support from the state, the suspicion regarding the results, the necessary change in farming practices, the financial uncertainty regarding the short-term future, and organizational difficulties in achieving the year-round coverage of the soil. Most farmers also agree that they do not consider expensive investments as an obstacle to making the transition to RA.

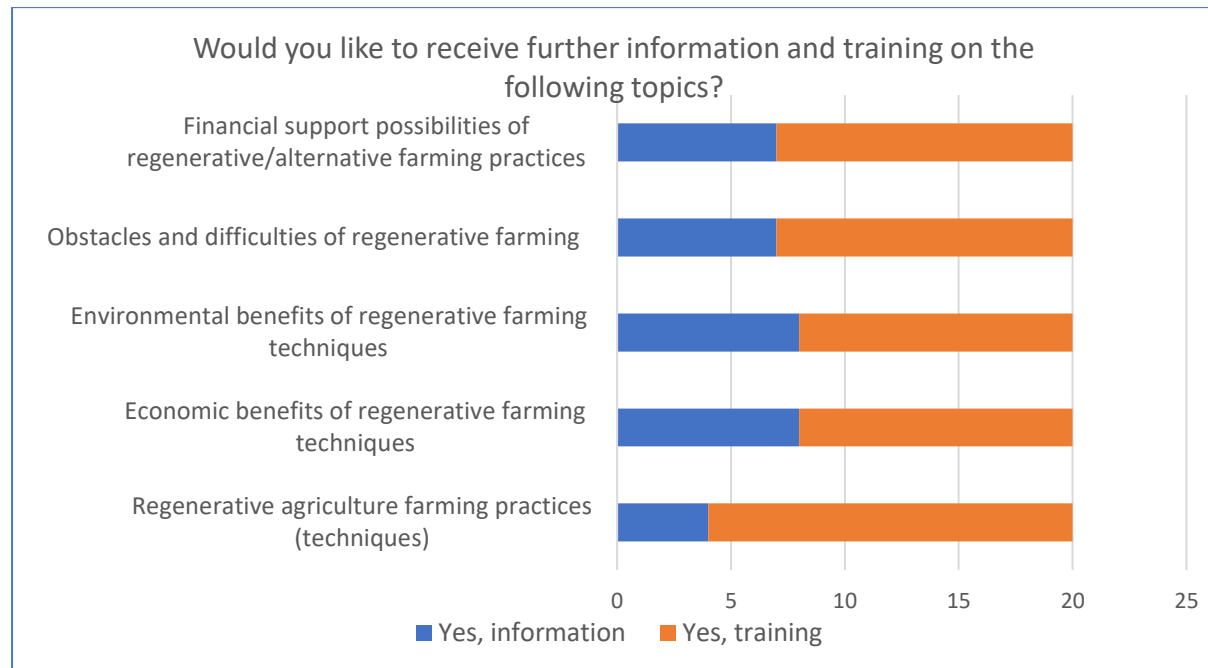


Attitudes and Learning Needs towards taking up Regenerative Agriculture

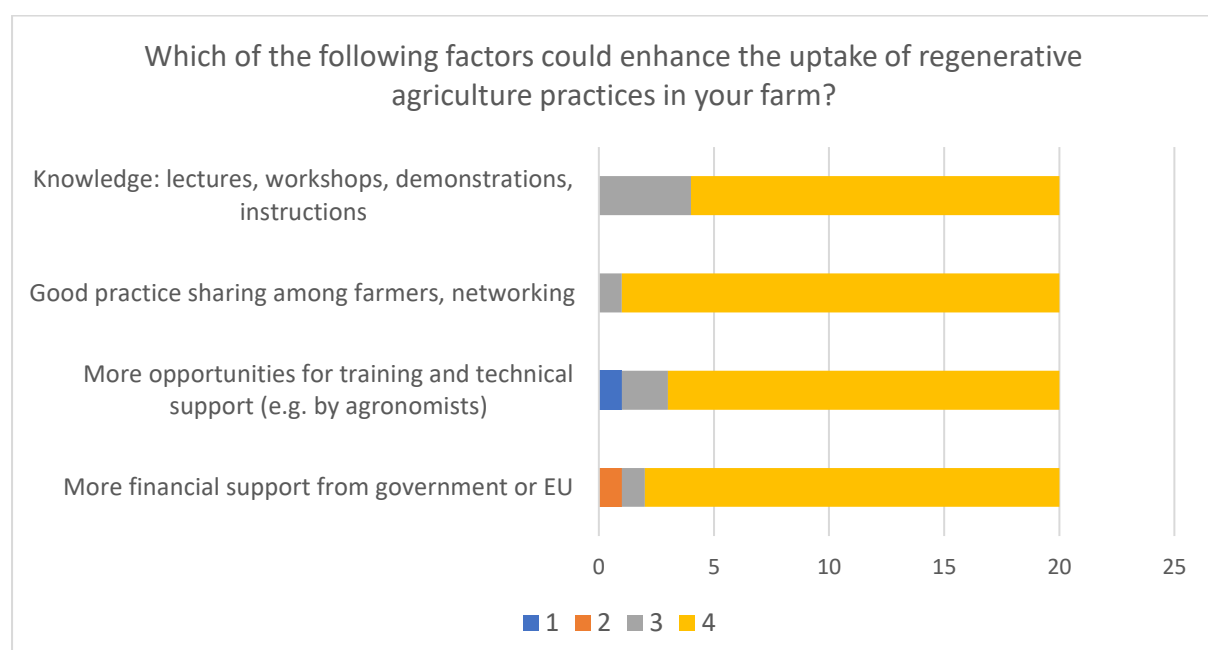
The majority of the participating farmers stated they are already implementing RA (3 in 4 respondents), while the remaining responded that they would like to take up RA in the future. There was no negative response on whether they would like to take up RA.



All the participating farmers stated they would like to receive further information or training on all different proposed aspects of implementing a transition to RA. In specific, most of the farmers stated they would prefer to receive training on techniques of RA, the economic benefits of RA, the environmental benefits of RA, obstacles and difficulties of RA, as well as potential financial support for implementing RA. The remaining responses related to receiving further information.



When asked to select which of the proposed factors would enhance the transition to RA in their own farms and to what extent, the vast majority of the participating farmers declared that all proposed factors, i.e. more financial support from the government or the EU, more opportunities for training and technical support by experts (e.g. agronomists), good practice sharing and networking among farmers, and knowledge through lectures, workshops, demonstrations etc., would enhance the transition to a great extent.



Finally, on a final open question the participants were encouraged to share any aspects of RA that they feel were not addressed in the form, or highlight certain aspects they feel are key to the transition to RA. One of the respondents mentioned the issue of peer pressure from other farmers in the region as a factor against making the transition to RA, i.e. social pressure against being different. Another issue highlighted was the problem of cross contamination from neighbouring farms that use chemical products like pesticides etc. Also, the lack of good microbial rich compost/inoculates and the lack of biological soil testing labs were also reported as problems for farmers attempting the transition to RA. Another important issue reported is the fact that there is only a very small premium price of regenerative produce over the produce by conventional farming in Greece, and this has an impact on the economic sustainability of regenerative farms and discourages farmers from attempting the transition. It was clearly stated that the introduction of financial incentives would strongly promote the transition to RA, minimizing financial risks for the farms.

2.3 Conclusions

The farmers who participated in the online survey, in their majority male, aged 36-45 years old and owning a small-sized farm, seem to already implement alternative farming methods, have knowledge and experience in alternative farming methods and practices, and are aware of issues like climate change and its impact on farming, as well as agriculture's role in contributing to the climate change. The awareness of the participating farmers is further demonstrated by their responses showing that they believe that there is a need to re-direct agriculture in order to help mitigate climate change through alternative farming practices that can also raise their income, and that conventional farming methods are not sustainable and are not the only way to produce enough food. However, they also seem to recognize that there is a general knowledge gap among farmers about alternative farming methods (e.g. organic, regenerative etc.) and there is not enough support in terms of education and training, as well as financial support.

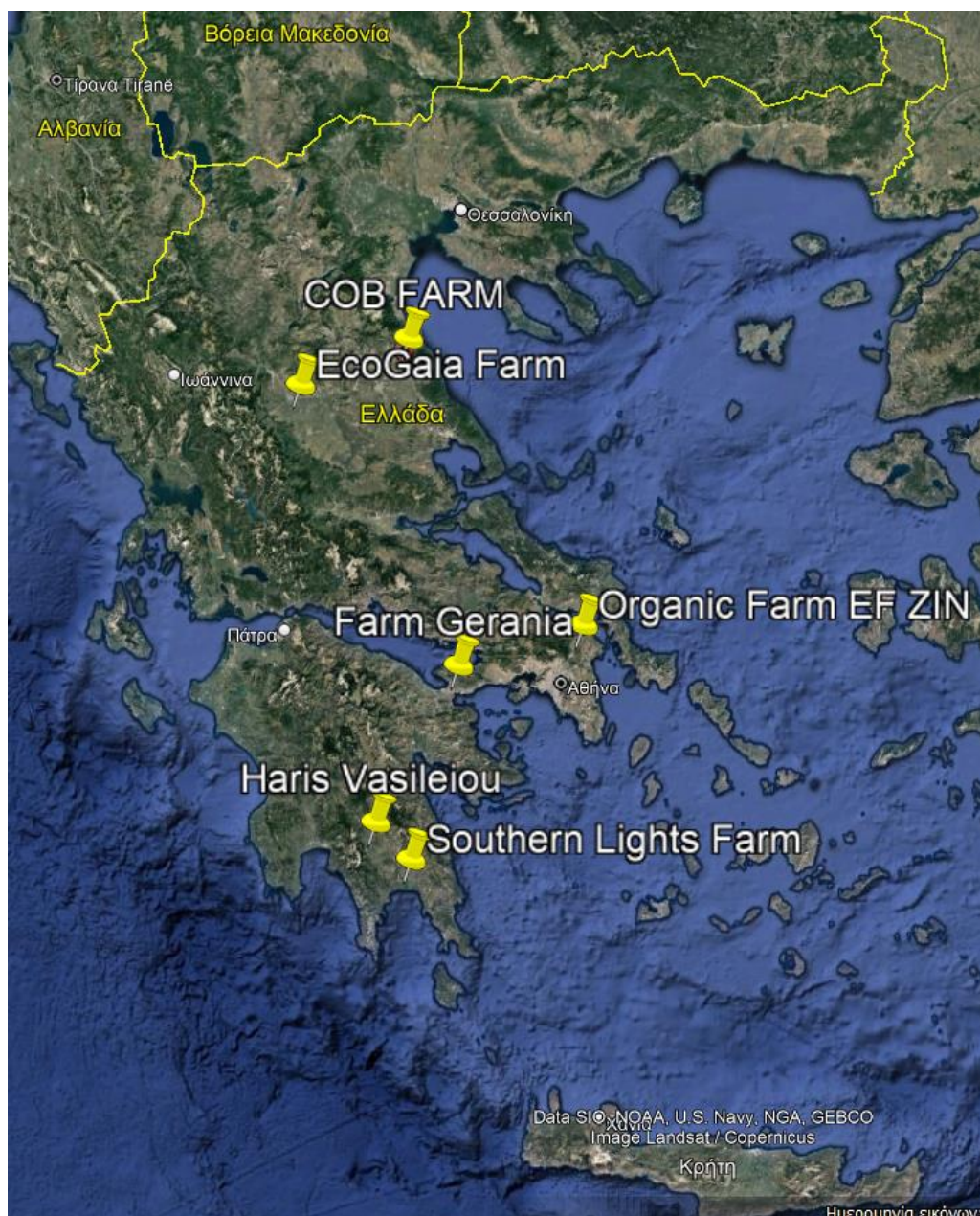
Although in their majority they seem to have already implemented the transition to RA in their own farms, having adopted specific techniques and being generally aware of the benefits of RA, they recognize that the uptake of RA in Greece is still very low, attributing this to obstacles like the lack of know-how, the lack of financial support from the state, the suspicion regarding the results, the necessary change in farming practices, and the financial uncertainty regarding the short-term future. Other important issues they reported as farmers who already implement RA relate to social peer pressure from other farmers in their area, the cross contamination from neighbouring farms, the lack of good quality compost/inoculates and biological soil testing labs, and the very small premium price of their RA produce on the Greek market comparing to the price of conventional farming products.

Finally, the farmers' responses highlight the education/training of farmers as a key element in promoting the transition to RA; although most of the farmers already implement RA techniques, they are still very keen to receive training and more information on all aspects of RA. They are strongly in favour of good practice sharing and networking among farmers on RA, as well as more opportunities for training and technical support by experts. Finally, they consider a financial support from the government or the EU as absolutely necessary to enhance the uptake of RA.

Chapter 3. The case studies

3.1 Introduction

The RA case studies presented below were collected through a survey using a good practice form that the targeted farmers were requested to fill in, as well as through online interviews to follow-up with aspects not clarified in the forms. The contribution of the project Regenerative Farming Greece (RFG - www.regenerativefarminggreece.org) implemented by a partnership including the NGO Southern Lights (implementing one of the following case studies) in terms of media resources and contacts to the regenerative agriculture pilot farms, as well as the Open Farm Network (www.openfarm.gr) in terms of providing networking opportunities with the farmers implementing the transition to RA, are hereby acknowledged. The location of the case study farms is presented on the following map.



3.2 Presentation of case studies

Haris Vasiliou

[Farm presentation video](http://regenerativefarminggreece.org/) (from the Regenerative Farming Greece website (<http://regenerativefarminggreece.org/>))

General information

Name: Vasiliou Anargyros — Charalambos (Haris)

Name and surname of the participant: Anargyros — Charalambos (Haris) Vassiliou

Location of the farm: Greece, Region of Lakonia, near Sparta

Farm Size: 4.8 ha

The main products of the farm currently are pomegranate, olive oil, wormwood, sage, mint, oregano, timber, figs, peaches, vanillas and gooseberries, and the farmer is thinking of introducing livestock in the farm (initially chickens and calves).



The farm

Source: Photos by the farm owner

The farm is one of the pilot farms of the Regenerative Farming Greece project, and RA practices are being applied a year now on part of the farm (1,5 Ha of the total 4,8 Ha). The RA practices currently applied for the production of pomegranates, olive oil, wormwood, sage, mint, oregano, and timber are pruning and using a wood shredder, green fertilization, cutting down weeds and watering.



Production of Sage

Source: Photos by the farm owner

Haris has studied Agronomy and, after graduating, took over the family farm. He was looking for a different way to produce more environmentally friendly products and at the same time more interesting than simply using fertilizers. He discovered RA through reading, observing, speaking with the right people and following good practices that he already knew as an agronomist. Haris received training and guidance on RA from the Southern Lights organisation and its partners in the framework of the Regenerative Farming Greece project (<http://regenerativefarminggreece.org/>) that also financed the purchase of the trees. Haris is the sole worker on the farm.

The benefits of RA related to the knowledge and experience in a different way of farming and sustainability – Haris imagines the farm looking like a forest, with tall trees, productive trees, each season having its own fruit or vegetable, being able to look around and pick up something to eat on the spot. He was not able to report any obstacles/difficulties so far, since the farm design adopting RA was implemented just a year ago. However, he pointed out that if as a farmer you put work in it, then whatever the difficulty, there is always a solution.

Haris is expecting to record the results of RA in the following three years. Through cooperation with the MAICH (Mediterranean Agronomic Institute of Chania) in Crete, samples are taken every year for examination and monitoring. He reports he learned a lot about this way of cultivating in the last year he has been working on this, and surely there's a lot more he doesn't know because this field of RA is huge. He intends on continuing with RA on his farm and on bringing it to his standards, his own ways of working.

COB FARM

Farm presentation video

(Photo material and videos from the Regenerative Farming Greece website
(<http://regenerativefarminggreece.org/>)

General information

Name: The COB Farm

Name and surname of the participant:
Christos Kontomanos

Location: Greece, Region of Thessaly,
Nessonas Larissa -
<https://g.page/CobAeiphoria?share>

Farm Size: 1,6 Ha (of which 1.2 Ha with
RA)

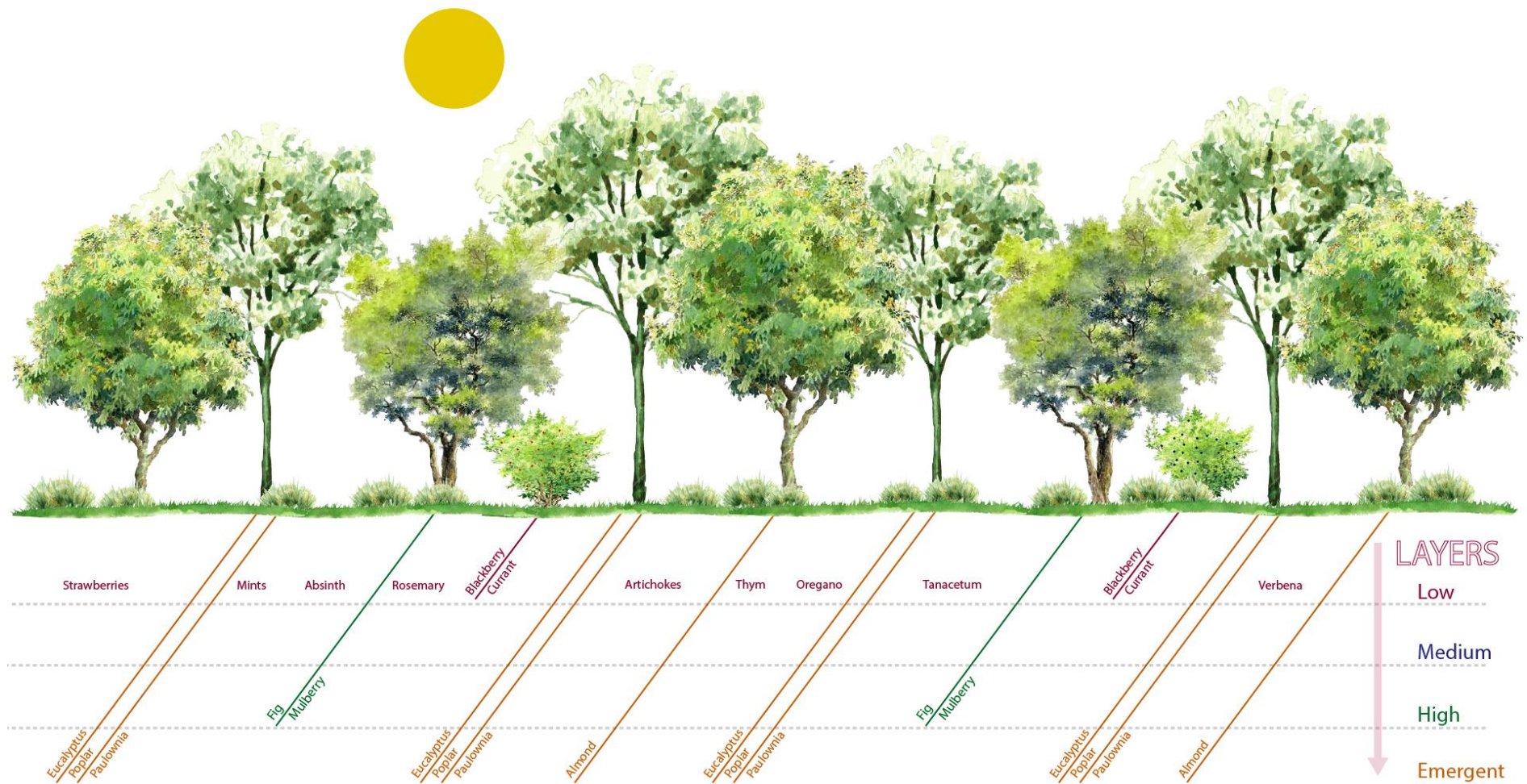
The products of the farm are mainly almonds, but also vegetables, pickles, apricots, figs, arbutus, apples, pomegranates, cherries, jams and dried fruits, timber, hazelnuts, pecan nuts, walnuts, feijoas and elderberries - muesli is also to be produced in the future. The farm also includes livestock - chickens (eggs) and 1 horse.

The farm is one of the pilot farms of the Regenerative Farming Greece project, although RA practices are being applied 4 years now on part of the farm (1,2 Ha of the total 1,6 Ha). The RA practices currently applied for all products include green fertilization, soil cover, increase of organic matter, agroforestry, no-till practice, composting, use of microorganisms, non-use of chemical and conventional products and fertilizers, co-cultivation, multicultivation, biointensive planting, minimisation of irrigation, use of activated carbon, crop rotation and application of syntropic agroforestry principles.

There are 3 permanent workers in the farm, and volunteers or locals work in the farm on a seasonal basis.



The farm



Design of the farm in the framework of the Regenerative Farming Greece project

Christos graduated as an Agronomist, however something did not sit well with him. He found answers mainly in the world of Permaculture, and especially in a more specialised field, Regenerative Agriculture. Regenerative agriculture attracted him immediately because it is a method already applied globally by farmers and agronomists, and is based on a very specific system and concrete solutions. Initially he had to depend on independent research and study on RA, as well as experimentation on the farm, however he later received training by Sam Parker Davies and Giuseppe Sannicandro (in the framework of the RFG project). The farm received financial support for the almonds orchard from the RFG project (<http://regenerativefarminggreece.org/>), while there was no financial support for the syntropic agroforestry system.

Christos reports that the benefits of RA include the regeneration of ecosystems, the economy in natural resources, biodiversity, an increase in soil fertility and the water retention in the soil, the enhancement of microfauna in the soil, the nutritional and taste supremacy of the products, the reduced production costs, the carbon retention in the soil, and more balanced temperatures.

In his views, the difficulties in the transition to RA include the lack of certification for RA products, the increased workload (in the specific planned system), difficulties to declare the cultivation and apply for corresponding compensation in the case of agroforestry, the lack of related subsidies, the lack of knowledge and assistance from state bodies, the fact that there are not (many) mature examples and experts in Greece, and that there are not many technologies and machines used in regenerative agriculture. The difficulties can be overcome through intensive research, study and experimentation, however he reports it is a different thing to just want to try RA in your farm to see the ecosystem regenerate, from being economically sustainable with a priority to regenerating the ecosystem. It takes a lot of knowledge, thought and management to implement such systems, what you will plant, when and why.

Although in Greece Regenerative Agriculture is still lagging in terms of practice and market opening with recognition and certification, it is the future of agricultural production. The COB farm intends to continue with RA, working a lot with observation on these dynamic systems and adapting with changes, seeing what works and what does not work. Finally, he stated that in the future they intend to mechanize production more.

EcoGaia Farm

Farm presentation video

*(Photo material and videos from the Regenerative Farming Greece website
(<http://regenerativefarminggreece.org/>)*

General information

Name: EcoGaia Farm

Name and surname of the participant:
Alexandros Karatzas

Location & location: Greece, Region of Thessaly,
Trikala -



<https://www.google.com/maps/place/EcoGaia+Farm/@39.5773676,21.7734419,15z/data=!4m5!3m4!1s0x0:0x8edbc370402ad57e!8m2!3d39.5779294!4d21.7918807>

Farm Size: 0.7 Ha

The main products of the farm are chickpeas, lentils, grains, seasonal vegetables, almonds and walnuts. The farm also includes chickens. The farm currently employs 4 permanent staff and 2 temporary staff, all family members.



The farm

The farm is one of the pilot farms of the RFG project and has been making the transition to RA for the last year. All products apart from walnuts are currently produced by RA, employing the RA practices Syntropic Garden and Alley cropping.



Design of the crop in the framework of the Regenerative Farming Greece project with the technique of alley crops — productive trees and shrubs are added to the tree lines that, besides fruit production, provide significant benefits to the ecosystem, while the alleys (the dimensions of which are determined by the size of the tractor used) are planted with cereals and legumes.

The farm has been working with agroecological farming methods for many years, in an effort to bring back the lost flavours in food and make a change so that the farm could also continue to produce in the coming years. The farm took the step towards Regenerative Agriculture with the project Regenerative Farming Greece with the help of Southern Lights organisation, having seen the work of the design team and having visited farms abroad to see examples of application of regenerative agriculture. As part of the Regenerative Farming Greece project, the farmers received training from Southern Lights, Regen and Permalab. They also participated on the online seminars Jean Martin Fortier Masterclass, Jardinier Maraicher and Richard Perkins on Regenerative Agriculture. The farmers at Eco Gaia state they have read a lot but they certainly have much more to learn from those operating this model and through observation on the farm. The trees in the farm were planted as part of the Regenerative Farming Greece project.



From the visit of experts in the framework of the Regenerative Farming Greece project

The farmers at Eco Gaia expect to experience the benefits over the next three years. The aim of the RA design is to regenerate biodiversity that will result in both the production of quality products and the economic viability of the farm. The difficulties they encountered were expected as the microclimate and the local ecosystem have not yet been completed (insects, birds). Also, the watering system is another cost that should be covered. Finally, additional workload is required.

Although it is still too early to report on the results of the transition to RA as the implementation of the design has not yet been completed, the farmers at Eco Gaia plan to continue with RA and expect to also have changes in practices in the near future.

Farm “Gerania”

Farm presentation video

(Photo material and videos from the Regenerative Farming Greece website
(<http://regenerativefarminggreece.org/>)

General information

Name: “Gerania” Farm

Name and surname of the participant: Giorgos Foufas

Location: Greece, Region of Peloponnese, Loutraki

<https://goo.gl/maps/n4i3G9shunXbWrnx8>

Farm Size: 1 Ha

Staff:

- Permanent staff: 1 person (owner)
- Temporary staff: 2-8 people (in the last year alone, periodically and without constant frequency)
- Comments: The number of temporary staff depends on the number of volunteers hosted on the farm.



The primary products of the farm include olives — olive oil, vines- table sultanas, must, molasses, raisins, fresh and dried apricots and pears, seasonal vegetables and herbs. Secondary products include almonds, walnuts, pomegranates, plums, damsons, goji berries, figs, cherries, and ornamental/indigenous plants. The farm also includes domestic animals (not for economic exploitation). The farm employs one permanent member of staff (the owner), while 2-8 volunteers also work periodically on the farm per year.



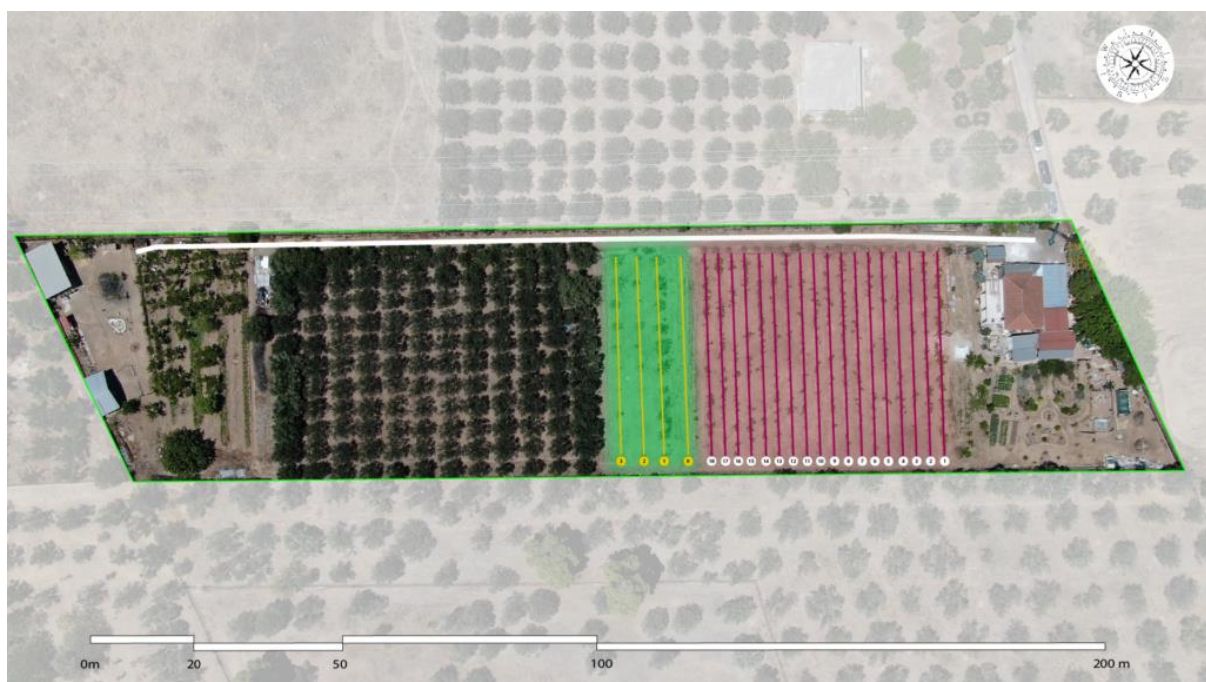
The farm employs one permanent member of staff (the owner), while 2-8 volunteers also work periodically on the farm per year.

The farm is one of the pilot farms of the RFG project, although it has been applying RA practices in the last 26 years. The RA practices applied on the farm include co-cultivation of companion plants, trees and shrubs, rotation of crops using crop rotation and fallow periods, no-till practice, use of legumes/ native vegetation islets for green fertilization, use of botanical plants as insect repellents and/or soil improvers, preparation of organic matter and use as a soil improver, soil cover

(systematic) in hot months, optimal use of irrigation (drop irrigation), near-zero inputs for plant protection and fertilisation-nutrition, harmonisation of agricultural practices through the biodynamic process (Moon Cycle), and thorough introspection of agricultural practices through the process of cultivation of the man himself, maintaining the two-way natural relationship between land and man, applying energy practices of traditional Taoist philosophy, such as harmonising yin & yang qualities, balancing the five elements, etc.

The farm owner, Giorgos, started 35 years ago when he decided to do ecological farming following Steiner's standards for organic farming, and met the philosophical view of land cultivation by Masanobu Fukuoka, the initiator of natural cultivation, mother of organic and regenerative agriculture, based on the concept that we cultivate to heal ourselves with the food that becomes our medicine, and on the other hand we heal the earth and connect with it, thus having a two-way relationship. Giorgos reports that elements of RA were in courses at the Agricultural University of Athens where he studied, however he mainly received training on RA through seminars from various organisations of ecological agriculture, such as the historical Association of Ecological Agriculture of Greece — S.O.G.E. (where he was secretary and head of the agronomist inspectors and supervisors of the organic certification body which he served professionally as an agronomist and with intensive personal involvement), and IFOAM - <https://www.ifoam.bio/>

There was no financial support to start the farm with RA. There was financial support from the Regenerative Farming Greece project with the participation of the organisation "The Southern Lights", through which a number of plants were planted.



The design of the farm for the application of RA in the framework of the Regenerative Farming Greece project

Giorgos reported that there have been mental, spiritual and material benefits in applying RA. On the other hand, the obstacles he faces relate to the soil and climate conditions — climate change, hydrological requirements, impacts from the wider urban environment — industrial area, lack of logistical infrastructure, and social factors. He intends to continue with RA, while being in constant

search for sustainable solutions in constant alignment with climate developments. He states that RA is a dynamic process where changes, big or small, are included in the cycle of ascension.

Organic farm EF ZIN

Video: <https://bioktima.gr/wp-content/uploads/2020/09/Video-2-HD-1080p-1.mov>

General information

Name: Organic farm EY ZIN

Name and surname of the participant: Spyros Tsagaratos

Location of the farm: Greece, Region of Attica, <https://goo.gl/maps/RRyTYXSgqY462paJ8>

Farm Size: 2,3 Ha

The farm produces seasonal vegetables and fruits, and employs 2 permanent staff as well as 2 seasonal staff during the summer months. The farm has been implementing biodynamic agriculture for organic production in the past 4 years.



The farm

Source: www.bioktima.gr

Spyros, one of the farm owners, drew inspiration from the Biodynamic Agriculture Movement and decided to implement it on his farm. He received training through special seminars on biodynamic agriculture. The farm has not received any financial support.

The benefits he reported relate to the better selling prices of products, the superior quality products, the sustainable resource management (nutrients, water), and the resistance of crops to diseases, entomological infestations and abiotic agents. On the contrary, the obstacles he reported relate to the lack of suitable and effective dissemination material, the increased labour costs to address challenges (herbicides), and the increased plant protection costs (more expensive plant protection products). The difficulties have been overcome through the application of soil cover, the self-production of plant protection products (compost tea, plant extracts, etc.), the continuous improvement of plant health due to an increase in soil organic matter, and the gradual installation of an ecosystem of beneficial organisms that control infestations (organic control).



Application of soil cover. Source: www.bioktima.gr

Finally, Spyros stated they intend to continue with RA on their farm, with constant research for new methods in this direction.



The owners. The source of: www.bioktima.gr

The Southern Lights Pilot Farm

General information

Name: The Southern Lights Pilot Farm

Name and surname of the participant: Sheila Damos

Location & location: Greece, Region of Peloponnese, Skala Laconias

Farm Size: 1,4 Ha



The farm produces blackberries, goji berries, oranges, lemons, lime, tangerines, peaches, plums, loquats, olives, figs, pears and apples. There is no livestock on the farm. There is no need for permanent full-time staff on the farm. Staff of 1-2 people are employed on a seasonal basis.



The farm applies Agroforestry practices:

- Succession planting, combining trees or plants that live longer with ones that have a shorter life span, while taking into consideration the needs of the plants in each phase of their life. In the forest, a young, freshly sprouted tree is usually growing underneath other trees, grasses or shrubs, but it's rarely exposed to sun and wind. When the tree grows bigger, it outlives the shrub that was protecting it while it was young. This shrub on the other side is bringing fertility to the soil through its decomposing organic matter. With increasing fertility, the complexity of the system (forest) is increasing.
- Integration of companion species, integrating plants with the role of supporting trees and plants for production. Throughout the farm you can find Mulberries, Fig trees, Acacias and many others whose function it is to support the system by providing organic matter, made available through intensive and frequent pruning, or by binding nitrogen from the atmosphere and making it available to other plants and trees. Furthermore, they can provide habitat for predators of pests and therefore contribute to a balanced ecosystem.



- Regenerating the soil. Soil plays a crucial role for the health of a farm, for the resilience of the ecosystem and for the nutrients of the food it produces. Planting trees in-between that grow, produce a lot of organic matter and don't mind intensive pruning, is a key element of the way we manage our farm. Additionally, we shred all the prunings of all our trees and leave them on the soil. Through applying these practices that build and support a healthy soil for thirty years now, we can demonstrate the outcome of these practices in the long run.



Since 1985, the farm has been implementing advanced organic farming, applying practices such as green fertilisation, fragmentation of branches and introduction into the soil, and increasing biodiversity but to a lesser extent than today. Regenerative farming practices have been systematically applied for the past 7 years.

The turn to RA started when the Southern Lights founders noticed that in their farm the forest started to grow, while in the mountains around the farm, 11 years after the wild fires had destroyed the forest, the forest was not returning. They state they were fortunate that in their 35-year-old organic farm they could observe how a forest grows and fortunately, they stumbled upon the terms “food forest”, “agroforestry” and “regenerative farming”. In essence, it was the farm itself that made the transition to agroforestry, as many of the supporting species such as fig trees and mulberries were developed without human intervention. The farmers simply observed this development and realised why it occurred and how beneficial it was. They then started to systematically support it and found ways to manage it. Sheila was trained in Seminars abroad by NGOs offering training in Regenerative Agriculture (in Spain, Italy, France, and Portugal). The Southern Lights farm has not received financial support to make the transition to RA.

With regard to benefits from making the transition to RA, Sheila reports that they work on a farm with a lot of biodiversity, and this alone has therapeutic impacts on them. The farm is more resilient, and the fact that many products can be traded over the year gives them financial security and reduces the feelings of insecurity and stress. There are also other commercial opportunities such as tourism — although the Southern Lights team have not yet moved in this direction, they believe that it holds great potential.



Also, implementing models such as Regenerative Agriculture has both personal and social benefits for the producer. These include the personal satisfaction that the conscious producer feels for contributing to the fight against climate change and the protection of the environment, and the recognition of his/her contribution, along with participating in networks of people with the same philosophy. It's like being part of a large family of people who will help you in a difficult time: "Even if our farm was destroyed by a wild fire, I know I can go anywhere else and start again".

Because of the fact that the Southern Lights farm is regarded as a pioneer and a good practice in regenerative agriculture, educational events are organised in the framework of Erasmus+ projects with the participation of youth workers from all over Europe. Additionally, during the year the farm receives visitors who may stay from one day up to months, to learn. The farm does not have any financial gains from these actions. Regarding the participation of volunteers, some reconstruction is necessary because it is not sustainable — while volunteers cannot practically contribute to the farm, their participation uses up resources (human resources, energy, etc.).



The main difficulty is the lack of know-how and specialists (agronomists) in Greece that can help in the transition to Regenerative Agriculture. This means that information/solutions need to be sought abroad from the producers themselves. Also, there are no other producers in the region who apply RA to share concerns and experiment together to find solutions. Regarding the marketing of RA products to consumers, we should follow the example of other countries such as France, where RA producers do not sell their products to wholesalers, but directly to conscious consumers (e.g. Community Supported Agriculture).

Southern Lights participate as a partner in an important project to promote Regenerative Agriculture in Greece. The project was launched in 2021 in order to bring Regenerative Agriculture to Greece and has created 6 pilot farms in different areas of Greece and with different crops, while offering through its website www.regenerativefarminggreece.org important information and educational material for Regenerative Agriculture. The project aims to continue in the future, "until the transition to Regenerative Agriculture is made by all". The next step of the project is the promotion and diffusion of the know-how about RA through seminars and local learning groups, as well as the operation of an online platform with educational videos. In a next step, it is necessary to create a network that will also include researchers, decision makers and policy-makers in the agricultural sector, educational institutions, traders, etc. besides farmers, in order to find joint solutions for the promotion of RA in Greece, such as the issue of the distribution of products to consumers.

Finally, the Southern Lights is not in favour of the adoption of a certification model for RA products, as in their views certification processes increase costs for no reason and would create problems. On the contrary, bringing the consumer closer to the producer so that there is a direct relationship, feedback and mutual benefit, is preferable.

3.3 Conclusions

The RA case studies presented above serve as examples of how the transition to regenerative agriculture can be applied in various locations around Greece, with different cultivations and in different contexts regarding the climate conditions. In fact, 5 out of the 6 case studies presented are pilot farms included in the project Regenerative Farming Greece and were selected specifically in order to test RA in various cases and promote the results of regenerative agriculture further in Greece.

It is important to note that the farmers of the case studies above had already an increased awareness regarding climate change, the impact of conventional agriculture to the environment and the products themselves, as well as the limitations of conventional farming in terms of economic and environmental sustainability, even before they attempted the transition to RA. In many of the cases the farms had already experimented with and implemented alternative farming methods (i.e. organic farming, biodynamic farming etc.) before they turned to RA. This increased awareness can be justified by the farmers' background; most of the farmers presented above have had higher education in Agronomy and, although alternative farming methods like Conservation Agriculture or RA were not included in their studies, their education helped them develop an inquisitive mentality and a deeper philosophy on their relationship with the land, and form a positive mindset towards trying out alternative farming methods.

In addition, some of the farms included in the case studies have only recently attempted the transition to RA through the Regenerative Farming Greece project, and have reported that it is too early to draw conclusions on the benefits of the transition, since a minimum of 3-4 years are necessary to complete the process and have a sustainable production. Also, some of the farmers like Haris Vasiliou have attempted the transition to RA on part of their farm so that they can compare the results between the RA and other methods.

The wide range of RA practices implemented in the farms includes succession planting, integration of companion species, rotation of crops using crop rotation and fallow periods, no-till practice, use of legumes/native vegetation islets for green fertilization, use of botanical plants as insect repellents and/or soil improvers, preparation of organic matter and use as a soil improver, soil cover (systematic) in hot months, optimal use of irrigation (drop irrigation), near-zero inputs for plant protection and fertilisation-nutrition, harmonisation of agricultural practices through the biodynamic process (Moon Cycle), alley cropping, use of activated carbon, and application of syntropic agroforestry principles.

The benefits reported include benefits relating to the environment, the economic sustainability of the farm, as well as personal benefits for the farmers. Benefits for the environment include the increase of biodiversity, the regeneration of the soil and enhancement of fertility and CO₂ sequestration, the reduction of natural resources (water) used in farming and achieving more balanced temperatures. Benefits contributing to the economic sustainability of the farm include the nutritional and taste supremacy of products, the reduced production costs (less water used and reduced input in terms of fertilizers and pesticides), the resistance of crops to diseases, entomological infestations and abiotic agents, the farm's overall resilience and the ability to produce all year round contributing to financial security, and the opening to other commercial opportunities like agrotourism. The personal benefits for the farmers were also highlighted by the participants, who reported that the knowledge and experience in an alternative sustainable way of farming enhances the personal development of the farmers who work in a healthy and pleasant (also

therapeutic) environment; the participants also reported mental and psychological benefits, and a reduction of feelings of stress and insecurity, as well as social benefits in terms of gaining recognition for their efforts to contribute in a more sustainable future and being part of a vibrant community of like-minded farmers.

It seems that the key obstacle the farmers face in the process of the transition to RA is the lack of knowhow and support from the experts/consultants in Greece (e.g. agronomists); the farmers attempting the transition to RA often have to do their own research and seek guidance abroad, experiment and learn in practice. Moreover, farmers implementing RA are often the only ones in their region and they lack support from other farmers in order to share concerns and seek solutions together. An additional obstacle relates to bringing the products on the market, as there is no certification of the RA products and it is not easy to achieve a good premium price; the RA farmers in Greece should follow the example of other European countries and sell their products directly to the consumers (short supply chains), however this also adds to the workload of farmers. Also, there are no subsidies or other financial incentives to encourage the transition to RA, and no assistance from the state bodies.

Overall, despite the difficulties they face, all the farmers who participated in the survey for RA case studies in Greece express the belief that RA is the future of farming and, although in Greece it is still lagging behind, it is only a matter of time that more farmers will take up RA.

Chapter 4. Overall conclusions

The overall conclusions based on the overview of RA uptake and prospects in Greece – including the findings of interviews conducted with stakeholder organisations, the findings of the farmers’ online survey and the case studies of RA in Greece, are presented below:

- Although the primary sector in Greece produces added value well above the EU average and employs a high percentage of labour force, this labour force is generally ageing and lacks the mindset and competences necessary to effectively turn to new and alternative farming methods that would strongly enhance the sector’s competitiveness. Thus, the training of farmers, their support through a coordinated advisory system, and enhancing the transfer of existing innovation into the production process, are seen as key priorities in Greece.
- Regenerative Agriculture has not yet been adequately introduced into the farming practice in Greece, while at the same time the presence of many – in many cases overlapping – terms to describe different methods or aspects of sustainable farming creates confusion among farmers. Very few conscious farmers have attempted the transition to RA; these are farmers with an increased awareness and of a higher educational level compared to the profile of the average farmer in Greece.
- The established mindset of Greek farmers, focusing on monoculture and the increase of production rather than the reduction of the production costs and a more sustainable production model, in connection to the challenges they face in terms of their reduced income and the impacts of climate change on their production, as well as the general lack of a culture of initiative, prevent them from thinking long-term and being open to an alternative, sustainable farming method.
- The lack of knowhow among farmers and expert advisors (e.g. agronomists) on RA, as well as the lack of incentives and financial support for farmers to engage in the transition to RA (that would provide financial security in the 3-4 year period of the transition), are major obstacles in the way towards a wider spread of RA in Greece. Additional obstacles are the social peer pressure from other farmers, the cross-contamination of RA farms by neighbouring farms, the lack in infrastructure to support RA (quality compost/inoculates, biological soil testing labs), and the small premium price of RA products in the market.
- The benefits of RA recognized refer to:
 - Environmental sustainability: Combating climate change through the regeneration of the soil and increase in CO₂ sequestration, enhancement of biodiversity, reduction in use of natural resources (water, energy), more balanced temperatures, and minimizing the impact of farming to the environment through eliminating the pollution of the soil and water with waste.
 - Economic sustainability: Nutritional and taste supremacy of the products resulting in premium prices, reduction of the production cost through reducing input (pesticides, fertilizers, water), resilience of crops to diseases and entomological infestations, financial security by trading products all year round, increasing demand in the market for RA products, opportunities for development of complementary activities like agrotourism and training contributing income.
 - Personal benefits for the farmers: Health and wellbeing of farmers who work in a “cleaner” and more therapeutic environment, reduction of feelings of insecurity and stress, upgrading the social profile of farmers, contribution to the personal development of farmers who take on a more active role.

- The techniques of farms already implementing RA in Greece include succession planting, integration of companion species, rotation of crops using crop rotation and fallow periods, no-till practice, use of legumes/native vegetation islets for green fertilization, use of botanical plants as insect repellents and/or soil improvers, preparation of organic matter and use as a soil improver, soil cover (systematic) in hot months, optimal use of water (drop irrigation), near-zero inputs for plant protection and fertilisation-nutrition, harmonisation of agricultural practices through the biodynamic process (Moon Cycle), alley cropping, use of activated carbon, and application of syntropic agroforestry principles.
- The training of farmers on RA should not limit to typical learning practices in a classroom or in front of a screen (lectures, lessons), but respond to the farmers' learning needs and adopt experience learning practices like "field schools" and visits to good practice farms, encouraging learning by doing and problem solving. The creation of a support network of RA farmers would also help in sharing information, problems and possible solutions.
- The financial support of farmers attempting the transition to RA (through subsidies, financial incentives) is seen as a positive step in order to provide financial security for the transition period of 3-4 years and encourage more farmers to make the transition. However, this financial support should be strictly connected to RA performance indicators in terms of soil regeneration, enhanced biodiversity and minimizing pollution.
- The issue of achieving higher premium prices for RA products can be addressed through building direct supply networks with the consumers.
- The EU Common Agricultural Policy (CAP) should integrate concrete policies towards promoting RA that should then be elaborated into national measures and targets. A realistic objective for Greece would be to create a "critical mass" of RA farmers in the next 10 years, who will set the example for more farmers to follow.

ANNEX

Interviews with the stakeholder organisations

GREEK ASSOCIATION OF YOUNG FARMERS (PENA), Cooperative of cotton farmers “ENIPEAS”

Nikos Pavlonassios, President of PENA, representative of the Cooperative of Cotton Producers ENIPEAS, farmer

The Greek Association of Young Farmers (PENA) was founded in 2006 and today has about 4,000 members throughout Greece, young farmers up to 40 years old. The Association aims to develop and upgrade agriculture and rural areas through knowledge, innovation, professionalism and the commitment of its members. It brings together all young farmers in local associations and coordinates their actions and initiatives nationwide, promoting the farming profession and striving for a prosperous future. The Association aims to promote new perceptions and network young people in rural areas, to discuss the issues that concern them and to formulate proposals for the development and modernisation of all sectors of the rural economy. PENA cooperates with the public and local authorities, Cooperatives and Trade Unions, as well as with organisations of young farmers and youth in rural areas in the EU Member States, to formulate proposals for tackling farmers' problems.

The Agricultural Cooperative of Cotton Farmers ENIPEAS “Cotton-Farsala” was founded in May 2017 and was recognised as the first cotton producer organisation in Greece. Its statutory purpose is to manage the product of its members (cotton), in terms of promoting its quality and competitiveness, for the benefit of the producers and the region's rural economy. A group of 10 producers of the Cooperative (400 stremmas) have joined a program of transition to Regenerative Agriculture, in collaboration with the University of Thessaly.

Apart from the group of producers of the Cotton Cooperative “Enipeas” in Farsala who decided to make the transition to Regenerative Agriculture, I do not know any other members of the PENA who have made the transition. With regard to the possibility of more farmers making the transition to RA, although we expect the new Common Agricultural Policy to support Regenerative Agriculture and similar farming methods, in my opinion the transition may present difficulties due to the special circumstances that apply in each area in terms of conditions (e.g. soil quality, moisture, terrain, etc.) and type of cultivation. However, I believe that the transition can be implemented, taking into account these special conditions, and will benefit farmers mainly in terms of reducing production costs (reduction of inputs — fertilisers, water). We have asked the Greek Ministry of Rural Development to include RA in Greece's file for the New CAP in order to generate relative policies at national level and necessary financial support.

The main obstacle to the transition of more farmers to RA is the lack of information and knowledge. Farmers do not know what the RA is and what the benefits of the transition are. There should therefore be an information and training system. We generally believe that the education of farmers is a very important factor, especially when it comes to a new model such as RA. Through the RA transition programme that we implement in the Cooperative of Cotton Farmers, although it is still in

the first stage, this year we will be able to see how it works — we will use less fertilisers, we will use less water, and we will see the benefits it can have in terms of profit in production. There will be monitoring of the process with periodic soil analyses to be able to assess the progress of the transition, which is very positive.

The benefits of the transition, apart from the direct benefits for producers that relate to reducing their production costs and thus resulting in greater profits, include both benefits for the environment (reduction of the impact of the agricultural activity on natural recipients, carbon sequestration in soil) and social benefits for the local community as it encourages farmers to come together with common objectives, and enhances the farmer's profile.

We believe that, as long as the new CAP supports Regenerative Agriculture, Greek farmers will have the opportunity to make the transition in an effort to return or just get closer to their previous income levels. A necessary step in this direction is to disseminate reliable information about RA, about how the transition takes place and what the benefits are. We believe that farmers will soon realise that it is in their interest to seek the transition to RA.

As an Association we have not yet formulated an official policy on RA because it is still something new to us, but we are promoting the transition to RA and are in search of partnerships in order to inform our members and promote the transition through the training of farmers, also organising educational visits to farms that have already made the transition, to disseminate good practice examples.

It is necessary to support farmers through the transition to RA with knowhow by specialist consultants. Although the universities and research centers in the country may do excellent work in terms of innovation, unfortunately the results of this work do not often reach us effectively. We do not usually have a direct cooperation with these organisations, that would be to our mutual benefit. In the case of the RA transition project that we implement with the group of producers at the Cotton Cooperative, the collaboration with the University of Thessaly started through personal contacts. The University informed the producers about RA and the steps to follow for the transition, brought us in contact with potential buyers from France interested in cotton with a lower carbon footprint, carried out soil analyses, and there is on-going guidance and monitoring. Our experience can also be shared with the PENA members through dissemination events and integrating the theme of RA in our regional meetings with farmers' associations and cooperatives. It is important that the consultancy process does not evolve into a mere formality, as we have seen in the past, but that there is effective support for farmers.

As an Association, we are prepared to contribute to disseminating and raising awareness among farmers on the theme of RA, including the creation of dissemination material (e.g. an informative video presenting to farmers the RA approach, the steps for the transition and the benefits it holds).

DEVELOPMENT AGENCY OF KARDITSA (ANKA)

Vassilis Bellis, experienced executive of the Agency, has served as Director of the Agency for many years.

A key element of the identity of ANKA is the implementation of programs and projects aiming at the development of both rural and urban areas of the Prefecture of Karditsa (and other areas of Greece) through utilising all forms of resources (natural, human, cultural) and promoting local initiative and entrepreneurship as the driving force. The development concept of ANKA focuses on the “capacity building” and “empowerment” of the local population, especially the disadvantaged groups, and tackling social exclusion. Programmes and projects are designed and implemented to serve a coherent and integrated vision for local development. The main areas of activity of ANKA are, inter alia:

- Providing technical support of Local Government Organisations (OTA), the Decentralised Administration and the cooperatives of the Prefecture of Karditsa;
- Undertaking research, studies, training and other programmes, coordinating the development programmes of the programming bodies and providing technical support for the implementation of national and Community programmes;
- Designing and implementing rural development programmes, projects for the protection and promotion of the man-made and the natural environments, and
- Implementing co-funded projects, social actions, services and procurement.

Regarding the term “Regenerative Agriculture”, we believe that there is confusion between different terms that describe sustainable farming methods. Besides the term ‘organic agriculture’ which has now prevailed and is widely known, and to a lesser extent the term ‘integrated management’, farmers hear many terms such as ‘permaculture’, ‘regenerative agriculture’, ‘agroforestry’, ‘conservation farming’, ‘agroecology’, which are more confusing rather than helpful. I am currently not in a position to describe the differences between regenerative agriculture and organic farming.

In Karditsa we have been actively involved with the methods of integrated management and organic farming that we have promoted through the ecological festivals we organise every year (with the exception of the pandemic period). During the annual ecological festivals we host the main organic farmers in Greece (40-50 organic farmers) who exhibit, promote and sell their products, while modern alternative methods of farming are also presented. In this way we try to raise awareness of both consumers and local farmers who have not yet moved in the direction of organic farming. We have also organised a workshop on no-till farming, and presentations on the themes of pan-culture (Fukuoka philosophy) and permaculture have been made in the context of the festivals. There has not yet been any presentation or event dedicated to Regenerative Agriculture.

We believe that the transition to Regenerative Agriculture or other sustainable farming methods requires a culture of self-activity on the part of the farmer, and the average farmer in the area unfortunately lacks this mentality.

I am not optimistic that more farmers will make the transition to Regenerative Agriculture in Karditsa, even if there is support through relevant information and training. Young farmers today are very few in the area of Karditsa, and usually young farmers who remain in the area manage large farms in terms of both land area and equipment (e.g. agricultural machinery, etc.) that they inherit from their parents, and often also do other jobs (e.g. brokers). These young farmers will likely not

follow anything different from what they do today, that provides them with a good income. Farmers with a smaller lot of land (15-30 stremmas family farms) in 5-6 villages of Karditsa who work hard all year round and produce mainly vegetables that they sell in open markets may be more willing to make the transition, however they usually prefer their children to study and leave the farming profession. Years ago we had made an effort to offer a vocational training program to farmers on new modern farming methods, but the program failed as we did not have a single application for participation here in the plain of Karditsa, in the heart of the rural area — this is indicative of the existing mentality of farmers on education/training.

There is no policy in Greece regarding the training on and implementation of farming applications — our activities in collaboration with academics and researchers from universities are implemented with our voluntary contribution. In addition, farmers do not usually trust agronomists as consultants and/or trainers: they see them as pharmacists to whom they turn only to get the “medicines” they need for their farm, and not as specialist consultants who will help them with advice. The fact that consultation from agronomists at the Prefecture level (Directorate of Agriculture) is no longer available, as in the past this department employed 50-60 agronomists and today it employs only 5-6 agronomists, contributes to this mentality towards agronomists.

The training of farmers should include field visits — what we call “field schools”. We have implemented field schools with sheep and cattle farmers, where for each lesson a farmer had to open his/her stable and host the other participants to discuss on the spot the issues that concerned them — although traditionally there is a secrecy among the farmers and they do not easily open their stables to other farmers, eventually the field schools took place and were very successful. We have also organised field schools on organic farming.

There are opportunities for the transition to RA with support and training, provided that farmers believe in it and act, manage their farms and promote their products directly on the market themselves, without intermediaries who impair the added value of the products.

It is necessary to develop policies in favour of RA at European level connected to financial support, which will be then interpreted to specific measures at national level. It would be necessary to link the funding to specific measurable objectives.

OPEN FARM NETWORK

Panagiotis Papadopoulos, Founding Member

The Open Farm Network (www.openfarm.gr) was created in order to bring the public in the cities, interested in the origin of their food, in contact with selected farms and food processing units, which produce quality products and provide education and tour services. Its activities include events, seminars, workshops, food tastings, gastronomic experiences and the sale of products by small Greek producers of the network, as well as thematic workshops for pupils/school classes on the importance of the Mediterranean diet, fruits and vegetables, the origin of food, seasonality and locality of agricultural products, and the supply chain of agricultural products. Also, Open Farm implements in collaboration with schools the experiential education program 'farm 2 school', where students participate in educational activities related to agricultural production, the origin of food, the environment, health and nutrition — students engage in gardening through practical and empirical learning, applying agroecological, biological and regenerative practices in the soil and micro-ecosystem of the school garden. At the same time, the Network promotes the transition to a new sustainable food production and consumption system in cities, recognising the important role of the global agri-food system for the sustainability of the planet and the need to change our attitudes towards the way we select our food. The role of healthy soil, biodiversity, and waste and water management is highlighted in tackling the climate crisis. The Network currently has 330 members throughout Greece — farms that combine the production of quality products with agrotourism and/or the processing of agricultural products.

Although Regenerative Agriculture in Greece is technically feasible, the small lots of farmland and the usual practice of monoculture by producers make the transition difficult, so today it is mainly feasible for very large farms or producers' associations. However, a longstanding problem is the negative culture in Greece regarding cooperation and the creation of producers' associations that would cooperate with a view to a smoother transition to RA. Furthermore, there are significant gaps in education and knowledge around RA — RA is not a resource-intensive model but a knowledge-intensive model, and it is necessary to raise awareness and educate producers before the transition can take place. In a sense, it is necessary to change the producer model rather than the production model: the average producer should change their mindset and, instead of relying on pesticides, learn how to protect their production by alternative means, with an emphasis on knowledge, experimentation and monitoring.

It is not easy for producers in Greece to understand the benefits of the transition to RA, because due to the crisis in the agricultural sector and the pressure they are under to make ends meet, they are forced to plan in the short term rather than in the long term, and the transition to RA requires an investment in time (4-5 years) in order to make the transition and become productive. The results of studies are overwhelmingly in favour of the regenerative model on the long term, as the farm becomes productive with much lower inputs and thus the producer succeeds in reducing production costs and not only increasing the price of products. In addition, at European level there is an increasing demand for RA products, particularly products related to the clothing industry (e.g. cotton, hemp) and this could serve as a strong incentive for the transition. At the level of the Common Agricultural Policy, a shift towards more sustainable agricultural production models is also expected, which will also guide subsidies in this direction — so producers who have made the transition will be in a favourable position to secure funds. We also believe that the application of such alternative farming practices also benefits the farmer on a personal level as, in addition to the

production of food, the farmer feels that he/she contributes more to society and this effort is recognised by the local community and leads to a better social profile for the producer. Regenerative Agriculture also has broader benefits for the society, ensuring the quality of the water and food we consume, while it could also contribute to supporting a younger population in rural areas, not just as producers of our food, but also as guardians of biodiversity with a sustainable income. Of course, supporting a younger population in rural areas also requires an investment in social infrastructure (education, health, welfare, etc.).

We consider the education of farmers as the main prerequisite for more farmers to try the transition to Regenerative Agriculture. Today the training of young farmers in Greece, offered mainly by the organisation “ELGO Dimitra”, does not include topics and practices related to agroecology, regenerative agriculture and alternative methods, and therefore it is necessary to revise the training programmes regarding both the training content and the training methodology. Especially with regard to the training methodology, the current practice of training young farmers for 6 hours every day in a classroom should be revised, by incorporating alternative methods such as educational visits to farms applying such methods in Greece and abroad (e.g. Italy), so that training is more effective both in terms of knowledge retention and development of positive attitudes and mentality.

An economic support in the form of subsidies may help farmers move towards RA, but only as long as this is connected with measurable indicators assessing the impacts in terms of increasing biodiversity (e.g. the FBI — Farm Bird Index) and soil regeneration (e.g. increase of organic matter in soil). In Greece there are no such assessment indicators even for organic farming, while the subsidy programmes are assessed solely on the basis of the absorbency of the EU funds, rather than the impact. As Regenerative Agriculture focuses specifically on the regeneration of the soil and ecosystem on the farm, any subsidies for farm transition to RA should be connected to the assessment of the impacts on these targets.

The educational activities of the Open Farm Network focus mainly on school education, with the implementation of experiential education programs aiming at stimulating the interest of children and educating them as aware and active consumers. In addition, the Network organises events/workshops with its members in order to provide information and networking on RA and agroecology issues, and informs all its members about developments in these fields.

Regarding the creation of policies for the development of RA in Greece, we believe that policies at European level should in principle be promoted through the Common Agricultural Policy of the European Union, but with clear focus, targets and measures at national level for the allocation of the European funds.

Overall, we estimate that it is difficult to spread RA among farmers in the country in the short term. However, we believe that it is possible to create a critical mass of farmers (about 1,000 farmers) who will implement RA over the next 10 years and set an example to others. This is very important because, as the example of the development of organic farming has taught us, change is slow and must be based on concrete examples in the country that other farmers can relate to.

GREEK AGRICULTURAL ORGANISATION DIMITRA (ELGO-DIMITRA)

Panagiotis Papavassiliou, Director of Training

The main objectives of ELGO-DIMITRA, a public organisation under the Greek Ministry of Rural Development and Food, is the development and support of actions aiming at the modernisation and development of the country's agricultural sector, the improvement of production processes, the enhancement of competitiveness, the certification of quality agricultural products & food, the establishment and certification of good agricultural practices, and controls in the production and distribution chain of milk and meat in the country.

ELGO DIMITRA is active in the provision of agricultural vocational education and training, and the implementation of good practices in agriculture.

In the field of training there are 25 "DIMITRA" Centres, covering almost all of the regional areas of the country. Sixteen of these Centres have already been certified by the National Organisation for Certification and Vocational Guidance (EOPPEP). The "DIMITRA" Centres (Vocational Training and Lifelong Learning Centres) promote the improvement of the professional skills of farmers, in order to produce competitive products while respecting the consumers and the environment.

Regarding the term 'Regenerative Agriculture', it is not yet widespread in Greece and there is often confusion between different terms concerning sustainable and environmentally friendly agricultural practices, such as 'integrated management', 'organic agriculture', 'permaculture' etc. When the organic farming movement began to fade because, as it evolved, it focused mainly on the certification of organic agriculture, several farmers that were more aware turned to other alternative methods such as RA. Moreover, the crisis of the farming sector in Greece has led some farmers to alternative practices.

There are significant obstacles to the transition of producers to RA:

- Lack of incentive for farmers, as there is no financial support that would finance the transition to RA.
- Lack of information/training for farmers, aiming at convincing them of the benefits of RA and trying out something different, and also in order to train them in the practices of RA.
- Lack of expertise at expert level, as RA is not taught in relevant university courses (e.g. Agronomy courses).
- Although there may be empirical knowledge, it is not recorded and organised so that it can be used as training material.
- In many cases, farmers who apply alternative farming methods are marginalised by their local community that sees them as different or bizarre.

However, the benefits of a transition to RA for the farmers, the environment and the local community can be significant. The main prerequisite for more farmers to make the transition to RA is the education and training of both the scientific experts (agronomists) and the farmers themselves.

ELGO DIMITRA provides both education and training. The training is compulsory and is offered free of charge to new farmers, is held face-to-face, has a duration of 150 hours (25 days), is provided by local Agricultural Education Centres (KEGE Dimitra), and covers technical knowledge such as plant protection, crop management, etc. In addition, ELGO operates 6 Public Institutes of Vocational

Education in the country where two year training courses are provided in specific agricultural disciplines (not including training in alternative farming methods). The Organisation also provides a train-the-trainers programme on the topic of the Common Agricultural Policy of the European Union.

The Organisation would be willing to provide education and training on Regenerative Agriculture, following the approval of the relevant pilot training programme by the Ministry. As a first step in this direction, the Organisation could carry out a train-the-trainers course on the subject of RA, based on the methodology and material that will be developed in the REGINA project. The trainers can then provide training to farmers using the available training material of the project.

Finally, there is a potential for cooperation between the Organisation, EURACADEMY ASSOCIATION and the REGINA partnership in the framework of organising information events, workshops and train-the-trainers programmes on Regenerative Agriculture.

WOMEN IN OLIVE OIL GREECE

Christina Stribakou, Founding Member, EVP for Public Relations at Women in Olive Oil International, olive oil producer, taster and olive oil critic.

WOMEN IN OLIVE OIL is a global support network for women active in various aspects of the olive oil industry, aiming to bring about positive changes in health and nutrition, education, environmental and agricultural practices, fair trade and gender equality. The network has around 2.000 members worldwide and is committed to creating a platform where women can exchange knowledge, know-how and experiences and where they have access to the tools and support they need to promote common goals in their local communities, but with an international outreach. WOMEN IN OLIVE OIL GREECE is the Greek branch of the network and currently has around 130 members — women active in the olive oil sector from various positions (producers, scientists, tasters, entrepreneurs, etc.) — and aims at networking Greek women active in olive oil, mapping their needs and promoting Greek olive oil.

Over the past two years we have heard the term “Regenerative Agriculture”, but it is not clear to us exactly what it means — whether it is used to describe entirely new farming practices or it is just a new term that describes practices that we already implement. Although many of our members are looking for information about RA and seem to understand that it is a new direction we should follow in agriculture, they may not know exactly what it means. In our own olive grove we already apply practices such as green fertilisation by planting plants to improve the quality of the soil (beans, peas), no-till, the use of animals to improve organic matter in the soil, planting other tree species next to the olive trees in order to increase biodiversity, preserving landforms that can provide shelter to local wild fauna. These practices are based on little knowledge we have acquired empirically, we have not received any training to gain deep knowledge. We tried to join a programme of transition to Regenerative Agriculture, but during a visit of experts in our olive grove they discovered that we are already implementing such practices and the biodiversity and soil quality in the olive grove is already at such levels that there is no need for support. While this is very positive for our olive grove, we feel that we missed out on an opportunity to gain deeper and more thorough knowledge on Regenerative Agriculture.

We believe that the transition to Regenerative Agriculture by Greek producers poses significant difficulties, mainly due to the currently prevailing mentality of Greek producers. Most farmers, at least in our region (Messinia) — an area with intensive agricultural production — place the emphasis on increasing their production on the short term in order to be able to supply large supermarket chains. They will use chemical pesticides and fertilizers to achieve this (e.g. to produce watermelons in May). There are only a few organic farmers in our area. It takes training and time to convince the farmers to return to traditional methods implemented before the mechanisation and intensification of agriculture. In the last 2 years we have experienced a change of the local climate, now characterised by long summers, a reduction of rainfall and increased humidity; this has created new challenges for farming — also olive farming. In this context, farmers are primarily trying to save their production and survive, and they lack the time or positive mood to hear about new, more sustainable farming methods. We should start with a few producers who are willing to adopt these practices and set an example for others in the future.

The benefits of Regenerative Agriculture should be highlighted, starting with the economic benefits for the farmers: there are markets in Europe that are increasingly demanding quality products that

have been produced with respect to the environment. Furthermore, the benefit of the transition to Regenerative Agriculture for the farmer's own health should not be overlooked: diseases and deaths of farmers in the region from cancer in previous years due to chemical pesticide spraying have been recorded in Theodoros Maragos' documentary "As long as they look good" (<https://www.youtube.com/watch?v=F5JkgjhoRQ>). It is also necessary to combat the mentality that wants the Greek farmers to risk the health of foreign workers (e.g. Pakistanis) who come into contact with pesticides, rather than risk their own health and wellbeing.

Informing and educating the farmers is the main prerequisite for changing attitudes and mentalities towards the transition of more producers to RA. Farmers need to understand that this is a global trend, and that the current production model is not viable, especially for small producers. Subsidies could assist the transition to RA, but in our opinion subsidies should be linked to monitoring and measurable objectives/results.

WOMEN IN OLIVE OIL promotes the adoption of more environmentally sustainable farming methods. The network is not in a position at this stage to provide training to farmers on the subject of RA; however it would support such an effort by a training organisation through promotion and participation of its members in Greece and other countries. Moreover, there is an on-going interaction between the national teams of the network and we share good practices, knowledge and inspiration (e.g. the team in Greece has benefited from and has shared experiences with the teams in Italy and Spain).

Regenerative agriculture should be promoted at national level with a local focus to bring the information to the average farmers who may not easily have access to this information either because they do not speak English or because they are not familiar with using the internet. Instead of bringing the farmer to the information, we should take the information to the farmer: approaching the farmers with information in the coffee shop they gather, rather than providing information on the internet, would prove more effective. We also believe that a multifaceted training methodology for farmers in RA, which would include both the theory around the RA and educational visits and examples of good practice (farmers like to see what other farmers are doing and how they tackle problems), would be more effective.

AGRICULTURAL ASSOCIATION OF THE PROVINCE OF FARSALA “ENIPEAS”

Haroula Karatosidou, Agronomist of the Cooperative

The Agricultural Association of Farsala has 80-100 members who mainly produce cotton, but also cereals and legumes, while there is also a team of farmers producing cow's milk.

I know the term “Regenerative Agriculture” from research I did myself, as it was not included in my studies as an agronomist. In our Association there are some farmers of the cotton-production group (10-15 farmers) who have entered a program of transition to Regenerative Agriculture for parts of their farms, with guidance from us and assistance from the University of Thessaly. We are still in the early stages of the transition, where we have taken some samples for analysis to see how we proceed with the farms' design (which species and varieties will be planted, where and when). There is still no production with RA yet. The next steps in the transition will take place this year.

The transition to Regenerative Agriculture is possible in Greece, but it is not easy for farmers to make the transition due to the lack of know-how — farmers fail to understand what the purpose of Regenerative Agriculture is and what the necessary steps for the transition are. I also believe that there is a lack regarding the necessary culture of farmers for the transition, although the situation with increased production costs (e.g. for plant protections) will inevitably force them to change and they will begin to accept it. We agronomists also need to be in a position to help them.

On the benefits of making the transition to RA, in theory, over time farmers will be able to save money as they manage to increase productivity while at the same time reducing production inputs. The Association's cotton producers participating in the RA transition programme know that they need to make a time investment in order to make the transition and reap the benefits. Most of them are young producers and older farmers with a more progressive mindset, who see that the world around us is changing and decided to make this effort.

The main incentive for farmers to proceed with the transition to RA is the economic benefit. If they are convinced that they will not lose income and, on the contrary, they could even increase it, they will be more receptive. In addition, a subsidy for farmers who would make the transition would help to mobilise them. The training of farmers would also help in this direction; however at this stage we do not know what organisation would have the necessary know-how and expertise to offer this training. I believe that institutions such as the University of Thessaly and ELGO Dimitra would be responsible for providing training to farmers in RA. Perhaps the training of agronomists should be a priority; agronomists possess the necessary background and work closely with farmers, therefore their role is key in guiding farmers and informing them effectively about the process and the benefits of the transition to RA.

The Association's agronomists cooperate with farmers as consultants, with the aim of maintaining or increasing their production at the lowest possible cost. As far as pesticide use is concerned, the aim is to protect production — while alternatives are sought, agronomists will propose the use of pesticides to protect productions from an insect or fungus. As an Association we promote the transition to RA, but the final decision always stays with the producers.

Farmers do not yet have a training culture; they are not so inclined to sit in front of a screen and watch an educational video or take part in a training program. They learn more effectively on the farm. Only in this way will they be persuaded to make the transition and learn how to work in this direction.

I believe that the shift towards RA should be promoted at European level through the Common Agricultural Policy, with parallel implementation measures and policies at national level.
