

# EMAS and the agricultural sector

## *case study*

### RELEVANCE OF THE AGRICULTURAL SECTOR IN THE EUROPEAN UNION

Agriculture is a strategic sector in the EU. It is not only responsible for satisfying the basic need for the long-term availability of safe and high-quality nutrition, it is also linked to the cultures and traditions of Europeans and it contributes to the EU's economy.

According to Eurostat, there were **10.3** million agricultural holdings in the EU in 2016 and the sector employed in 2018 about **9.2** million people (which is about **4.4 %** of total employment), providing **EUR 341 098** million of goods output (2019), of which **EUR 196 082** million was from crop production. Other economic activities, such as food processing, retailing and tourism, also depend on this sector.

The agricultural sector is characterised by a majority of small businesses. Farming remains a predominantly family activity and two thirds of farms in 2016 were

less than 5 hectares in size. Farm numbers have been in sharp decline for many years and rural communities face existential threats due to the rural exodus and an increasing concentration of population in urban areas. In 2015, Lithuania was the only EU Member State where more than 50 % of the total number of inhabitants lived in rural areas. However, agriculture can play a key role in relation to the development of rural areas and their preservation as viable and attractive places in which people live, work and visit.

**Sustainability is a key issue for the agricultural sector from different perspectives.**

On the one hand, sustainability has an important impact on the environment and a linked financial impact on the sector's enterprises from the use of energy, fertilisers, soil improvers and plant protection products. In 2019, the sector spent EUR 24 767 million on energy, EUR 14 070 million on fertilisers and soil improvers and EUR 10 149 million on plant protection products <sup>(1)</sup>. At the same time, the sector can exploit opportunities related to the circular economy and new business models, such as the reuse and transformation of organic waste, and the use of certain agricultural residues as raw materials for other sectors, for example, cosmetics, health, energy and bioplastics.



On the other hand, the sector must face the current environmental challenges, such as climate change and the loss of biodiversity, which increasingly affect its activity. In addition, society is increasingly concerned about the quality of food, as this is a key element to ensure good health.

For these reasons, the future of EU farming will require innovative, circular and resilient farms.

Agriculture is a soil-intensive activity. According to Eurostat <sup>(2)</sup>, EU farms used **156.7** million hectares of land for agricultural production in 2016, which is about **38 %** of the EU's total land area.

Moreover, agriculture can have an impact both on the quantitative and qualitative characteristics of groundwater and surface waters. On average, 44 % of total water abstraction in EU is used for agriculture. In southern Member States the percentage is more than 66 %, while in northern Member States it is lower but still accounts for more than 30 % in some areas. In terms of quality, water can be affected due to the presence of pesticide residues, nutrients from fertilisers or sediments from soil erosion.

Agriculture also has an impact on landscapes and biodiversity. This impact can be positive where, for instance, sustainably managed traditional irrigation systems create diverse landscapes, which support biodiversity and have important cultural and historic value.

Biodiversity is also a relevant factor for farming activities as it provides all the biological components that constitute the agroecosystem and the output of the agribusiness. Protecting biodiversity also means to conserve local or threatened livestock breeds or plant varieties, rediscover the nutritional value of forgotten

varieties and therefore allow new horizons to be explored in the agribusiness.

The balance between agriculture and biodiversity has been negatively affected in the past by the excessive use of chemicals and heavy machinery due to the intensification of certain production methods that have marginalised traditional land management methods. However, and we see this nowadays, environmentally friendly agricultural management practices can have a substantial positive impact on the conservation of the wild flora and fauna and their habitats.

With regard to climate change, there is a dual influence. Agriculture contributes to it through the release of greenhouse gases (GHGs) and is, at the same time, highly exposed to climate change, as farming activities directly depend on climatic conditions. According to GHG inventories of the EU-28 Member States, agriculture represented about 10 % of total EU-28 GHG emissions in 2015 <sup>(3)</sup>. However, agriculture GHG emissions declined by 20 % between 1990 and 2015, demonstrating that the sector can also contribute to climate change mitigation. In addition to this, agriculture can have an active role in terms of carbon storage and sequestration.

In the last decades, organic farming has significantly increased in the EU, and it has been identified as a business and employment opportunity in order to tackle the abandonment of rural areas. In **2016**, organic retail sales in the EU were valued at **EUR 30.7** billion and the EU's organic market recorded a one-year growth rate of **12 %**, an enviable double-digit growth rate that not many sectors have been able to show since the financial crisis <sup>(4)</sup>.



Considering the challenges and changing circumstances, building resilience through improved access to risk management tools will allow companies in the agricultural sector to maintain their businesses and young entrepreneurs to set up and develop new business models with an increased economic and environmental added value.

On average, organic farming in the EU in 2017 made up 7 % of total utilised agricultural area <sup>(5)</sup>. The organic area increased by 25 % between 2012 and 2017 and is still expected to grow in the coming years. In terms of producers, there was a 58 % increase in the European Union between 2007 and 2016.

In this regard, the EU's eco-management and audit scheme (EMAS), as a risk management tool, offers the opportunity to better design resilient processes and practices and to optimise the use of resources in order to obtain more efficient outputs. Implementing organic farming can be easier with EMAS as many synergies can be exploited. For example, EMAS provides the farmer with a legal compliance tool (essential in a highly regulated sector in terms of environment but also hygiene and quality related issues), monitoring, availability and traceability of data and indicators, and efficient operational controls among others.

Organisations operating in the agricultural sector can also benefit from the valuable information included in the EMAS sectoral reference document for the agricultural sector, adopted on 14 May 2018 by the European Commission <sup>(6)</sup>. This document provides

specific guidance for the agricultural sector based on actions and techniques that have been implemented by front runner organisations and proven successful (the **best environmental management practices** <sup>(7)</sup>). EMAS-registered organisations must take into account this sectoral reference document, but any organisation can use it **to identify the most relevant areas for action, find detailed information on best practices to address their environmental impacts, as well as environmental performance indicators and related benchmarks of excellence** to track sustainability improvements.

The agricultural sector has a relevant role within the [2030 agenda for sustainable development and the UN's sustainable development goals](#), for example, in terms of ending poverty and hunger, responding to climate change or addressing water scarcity and sustaining natural resources <sup>(8)</sup>. For those organisations willing to be a driver in the 2030 agenda, EMAS can be an excellent tool as it helps them to identify their significant impacts and it guides them to act, taking into account their context and stakeholders and thus carry out relevant actions and generate impact, both at the local and global level. EMAS ensures that these actions are not isolated, but framed within a broader vision of the company's management<sup>(9)</sup>.

From ending poverty and hunger to responding to climate change and sustaining our natural resources, food and agriculture lies at the heart of the 2030 agenda.





The EU register of EMAS-registered organisations <sup>(10)</sup> includes only **27 European organisations (94 sites)** operating in the agricultural sector and these employ more than **2 200 employees** <sup>(11)</sup>.

The majority of these organisations are located in **Germany (52 %)** and **Italy (22 %)**.

Despite its strategic character in the European Union, the agricultural sector has not been very active in implementing environmental management systems and many Member States with a large agricultural culture and tradition in the European Union still do not have a significant representation in EMAS.

Two organisations from different EU Member States provided us with their view on how EMAS contributes to their business. The **Pahren Agrar Kooperation** is a German association of 12 modern market fruit and processing enterprises, as well as energy producers in the district of Greiz, East Thuringia. **Donnafugata** is an Italian family-founded company with more than 405 hectares of vineyards located in Sicily and Pantelleria.

Mr René Kolbe explains that the [Pahren Agrar Kooperation](#) was already implementing good environmental practices, but the company wanted external proof of its sustainability, rather than having to repeatedly explain and justify their practices. The company found it motivating that EMAS, as a voluntary scheme, gave it the feeling of going the extra mile. As René Kolbe declares 'going this extra mile pays off: EMAS is constantly asking you to question your work processes, the external perspective really helps to find creative solutions or to question practices more fundamentally'.

## EXPERIENCES OF AGRICULTURAL SECTOR COMPANIES

Although the company regrets that EMAS is not more widely known – 'only experts know that we are working on a higher level' says Mr Kolbe – and believes its visibility should increase within the sector, the public authorities and the general public, the organisation has still benefited from EMAS as regards its consumption of resources and related impacts. Especially in resource-intensive activities, such as the use of mineral fertilisers, the company has experienced a significant decrease of nearly 90 % in the past 8 years. Similarly, the consumption of pesticides has decreased by over 90 % in just 8 years thanks to the monitoring activities implemented.

As previously explained, climate change, especially global warming is one of the main challenges that the agricultural sector is facing. Mr Kolbe considers that EMAS helps the organisation to identify the related risks and to prepare for these, as EMAS constantly pushes the organisation to consider changes, for example, using

less water and less nitrogen, which might become an advantage in fighting climate change.

One of the Pahren Agrar Kooperation's 12 farms has already implemented organic farming and within this process it has taken advantage of the synergies with EMAS, such as common objectives (reduction of resources consumption, elimination of pesticides, etc.), the availability of a robust data monitoring system and the improvement of core indicators.

Overall, EMAS has helped to maintain and improve the company's good practices thanks to the benchmarking of its performance in relation to other organisations, the requested transparency and the regular audits on its performance by an external auditor. This brought about a continual improvement of not only the company's environmental performance, but also its financial performance, which consequently enhanced its capacity to compete with others.





Finally, the Pahren Agrar Kooperation benefits from a specific regulatory relief measure: upon submission of its validated environmental statement, it gets a 30 % reduction of the administrative fees implemented in Thuringia and related to the federal immission control act.

EMAS arrived in the vineyards of [Donnafugata](#) in 2006. The company considered the protection of the environment and the enhancement of the territory as essential guidelines for its activities, composing the core of its enterprise–nature–culture approach. Indeed, at Donnafugata the quality of the environment is considered a productive factor on a par with others, such as soil, climate, grape variety and cultivation choices.

Back in 1998, Donnafugata experimented with nocturnal harvests, so that the Chardonnay grapes were harvested at a temperature of **16–18 °C**. By harvesting well below the daytime temperature of about **35 °C**, not only were all the aromas better preserved, but the energy consumption required for the refrigeration of grapes at about **10 °C** (the ideal pressing temperature for the Chardonnay grapes) was also reduced by **70 %**.

Donnafugata experienced a phase of continuous growth and development in terms of structures, sites and consequently of human resources, reaching its current 110 employees. During this enlargement phase, the company wanted to optimise processes and the participation of employees and be able to manage production processes in an eco-compatible manner, thereby improving the company's environmental performance, ensuring constant legal compliance and a trusted relationship with institutions and the public. These objectives have been successfully achieved through EMAS. As Mrs Rosalba Ruggirello (Head of

purchasing, environment and quality management) highlights 'EMAS, with its obligation to provide validated environmental information, the involvement of independent national competent bodies and the registration of the company in an official list, allowed us to reach a level of transparency that the previously achieved ISO 14001 standard alone did not provide us'.

As a member of the Slow Food Foundation for Biodiversity <sup>(12)</sup>, Donnafugata supports biodiversity through the implementation of different agricultural practices. In the vineyard, Donnafugata does not use herbicides and chemical fertilisers. It minimises the use of phytopharmaceuticals thanks to integrated control techniques, such as monitoring climate parameters (rainfall, temperature, humidity, etc.) and controlling insects (moths) through the use of pheromone traps. It also uses green manure, organic fertilisation, emergency irrigation and cluster thinning.

In collaboration with the Sicilian region the company has planted an experimental field with 19 different autochthonous grape varieties, for a total of 30 biotypes of wide-ranging vineyards in Sicily (including Nero d'Avola, Catarratto, Ansonica) and also a variety of 'relics' (Alzano, Nocera, Vitrarolo and others), almost completely scattered. The initiative involves a group of companies in different areas of Sicily and aims at identifying and selecting – through microvinifications – the vitellums that can give the best oenological results for each territory.

The obligation to publish an environmental statement including environmental data led the company to carry out a more careful analysis of data and indicators. This has had advantages when calculating the wine's carbon footprint, which has been already reduced by 10 % thanks to the good practices implemented in the vineyard (good agricultural practices) and the continual innovation process.

Because of its EMAS registration, Donnafugata was awarded extra points in a call for admission to public funding, which enabled it to generate its own clean energy through two photovoltaic systems installed at Contessa Entellina (50 kW) and Marsala (50 kW).



## BENEFITS OF EMAS FOR THE AGRICULTURAL SECTOR

As illustrated by these examples, EMAS brings about various benefits for organisations operating in the agricultural sector. It specifically:

- supports the optimisation of the use of resources (energy, water, fertilisers and other materials), and therefore reduces exploitation costs;
- facilitates compliance with the environmental requirements established by the administration and provides transparency thanks to the extra check through the activities carried out by the EMAS verifier and the EMAS competent bodies;
- is compatible with and facilitates the implementation of other sector voluntary standards such as organic farming or biodynamic farming;

- promotes innovation and can facilitate new business models adapted to stakeholders' needs and new market concerns and expectations;
- can contribute to have access to those customers in the retail and food processing sector that value environmental good practices.

Some regions and Member States have already started to adopt and implement specific regulatory relief measures for EMAS-registered organisations. As previously referred to in this case study, EMAS-registered organisations of the agricultural sector can benefit from the specific conditions included in the 'Ordinance on simplifications of monitoring requirements regarding immission control and waste management for EMAS registered organisations and sites' in Germany <sup>(13)</sup>.

For more information about other regulatory relief and incentives in EU Member States, see the study on [reinforcing added value for EMAS](#).

## OUTLOOK

The agricultural sector plays a key role in the economy of EU Member States because other business sectors, such as tourism or the food and beverage sector, depend on it. It has great potential to positively influence citizens and transfer the importance of caring for natural resources as a basic source to ensure quality food.

Regardless of the size of the organisation, agribusinesses must adapt to a changing environment. They need to increase their resilience as one of the main sectors affected by climate change and biodiversity loss.

This can be achieved through the implementation of the **best environmental management practices, as defined in the EMAS sectoral reference document for the agricultural sector** <sup>(14)</sup>.

A great way to learn about real-life examples of best practices, about possibilities for innovation and improvement of environmental performance is to participate in specific working groups. These can take place within existing EMAS clubs, workshops and other meetings organised by EMAS competent bodies, or other environmental sectoral platforms such as agricultural associations, circular economy platforms or the EU civil dialogue group on organic farming.

Finally, interacting and networking with other interested parties such as customers, non-governmental organisations or neighbours' associations can give organisations a different perspective, which may lead to future actions and improvements.

For more information on EMAS, the process to register and its benefits,

please visit the EMAS website: [emas.eu](https://emas.eu).





- (1) European Commission, [Statistical Factsheet: The European Union](#), 2020.
- (2) Eurostat, [Agriculture, Forestry and Fishery Statistics – 2020 edition](#), Publications Office of the European Union, Luxembourg.
- (3) Eurostat, [‘Agri-environmental indicator – greenhouse gas emissions’](#), [Statistics Explained](#).
- (4) FiBL and IFOAM – Organics International, [The World of Organic Agriculture – Statistics & emerging trends 2018](#).
- (5) Eurostat, [‘Organic farming statistics’](#), [Statistics Explained](#).
- (6) [Commission Decision \(EU\) 2018/813 of 14 May 2018](#) on the sectoral reference document on best environmental management practices, sector environmental performance indicators and benchmarks of excellence for the agriculture sector under Regulation (EC) No 1221/2009 of the European Parliament and of the Council on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).
- (7) Joint Research Centre, [Best environmental management practice for the agriculture sector – crop and animal production, 2015](#).
- (8) Food and Agriculture Organization of the United Nations – [‘Food and agriculture in the 2030 Agenda for Sustainable Development’](#).
- (9) Find more information in the following [link](#).
- (10) [EMAS Register](#)
- (11) Data based on the extraction of NACE codes related to crop production, animals’ raising activities and the related support activities.
- (12) The [Slow Food Foundation](#) for Biodiversity is an initiative that promotes the Italian food and wine culture and the protection of the environment.
- (13) [‘Verordnung über immissionsschutz- und abfallrechtliche Überwachungserleichterungen für nach der Verordnung \(EG\) Nr. 761/2001 registrierte Standorte und Organisationen \(EMAS-Privilegierungs-Verordnung\)’](#)
- (14) [EMAS-Privilegierungs-Verordnung](#)

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