

STUDY

Requested by the AGRI Committee



# Rural Areas - Levels of support and impact on competitiveness of farms

Final Report



**Agriculture and Rural Development**



Policy Department for Structural and Cohesion Policies  
Directorate-General for Internal Policies  
PE 747.270 - January 2024

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RESEARCH FOR AGRI COMMITTEE

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# Rural Areas - Levels of support and impact on competitiveness of farms

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Final report

## **Abstract**

This study analyses how the CAP and state aid support farm competitiveness, including the role of young farmers and women. Challenges and drivers of EU farm competitiveness are identified. Key competitiveness indicators are analysed and their limitations are considered. The level of CAP support to competitiveness is assessed, with a comparison of the 2014-2022 and 2023-2027 programming periods. The study illustrates the Member States' differentiated approaches to supporting competitiveness.

This document was requested by the European Parliament's Committee on Agriculture and Rural Development.

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## LIST OF ABBREVIATIONS

<b>AGRI Committee</b>	Committee on Agriculture and Rural Development of the European Parliament
<b>AKIS</b>	Agricultural knowledge and information systems
<b>AWU</b>	Annual Work Unit
<b>CAP</b>	Common agricultural policy
<b>CIS</b>	Coupled income support
<b>CIS-YF</b>	Complementary income support for young farmers
<b>CLLD</b>	Community-led local development
<b>CMEF</b>	Common monitoring and evaluation framework
<b>CMO</b>	Common market organisations
<b>COOP</b>	EAFRD tools supporting cooperation
<b>CSP</b>	CAP Strategic Plan
<b>DG AGRI</b>	Directorate-General for Agriculture and Rural Development
<b>EAA</b>	Economic accounts for agriculture
<b>EAFRD</b>	European Agricultural Fund for Rural Development
<b>EAGF</b>	European Agricultural Guarantee Fund
<b>EIP-AGRI</b>	The Agricultural European Innovation Partnership
<b>EU</b>	European Union
<b>EUR</b>	Euro
<b>EUROSTAT</b>	European statistics
<b>FA</b>	Focus Area
<b>FADN</b>	Farm Accountancy Data Network
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FNVA</b>	Farm Net Value Added

<b>FSS</b>	Farm structure survey
<b>INSTAL</b>	EAFRD support to the setting-up of young farmers and new farmers and rural business start-up
<b>INVEST</b>	EAFRD investment support
<b>IPCC</b>	Intergovernmental panel on climate change
<b>LAG</b>	Local action groups
<b>LEADER</b>	Links between activities for the development of rural economy
<b>LFA</b>	Less-favoured areas
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PI</b>	Pillar one of the CAP (EAGF)
<b>PII</b>	Pillar two of the CAP (EAFRD)
<b>PMEF</b>	Performance monitoring and evaluation framework
<b>RDP</b>	Rural Development Programme
<b>RISK</b>	EAFRD risk management tools
<b>RPI</b>	Real price index
<b>SECT</b>	EAGF sectorial interventions
<b>SO</b>	Specific objective
<b>TE</b>	Technical efficiency
<b>TFEU</b>	Treaty on the Functioning of the European Union
<b>TFP</b>	Total factor productivity
<b>UAA</b>	Utilised agricultural area
<b>XCO</b>	Cross-cutting objective



**Country codes:**

<b>AT</b>	Austria
<b>BE</b>	Belgium
<b>BE-FL</b>	Flanders, Belgium
<b>BE-WA</b>	Wallonia, Belgium
<b>BG</b>	Bulgaria
<b>CY</b>	Cyprus
<b>CZ</b>	Czechia
<b>DE</b>	Germany
<b>DK</b>	Denmark
<b>EE</b>	Estonia
<b>EL</b>	Greece
<b>ES</b>	Spain
<b>FI</b>	Finland
<b>FR</b>	France
<b>HR</b>	Croatia
<b>HU</b>	Hungary
<b>IE</b>	Ireland
<b>IT</b>	Italy
<b>LT</b>	Lithuania
<b>LU</b>	Luxembourg
<b>LV</b>	Latvia
<b>MT</b>	Malta
<b>NL</b>	Netherlands
<b>PL</b>	Poland

<b>PT</b>	Portugal
<b>RO</b>	Romania
<b>SE</b>	Sweden
<b>SI</b>	Slovenia
<b>SK</b>	Slovakia

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## EXECUTIVE SUMMARY

Farm competitiveness is a complex, multifaceted concept that lacks a single, standardised definition or measurement method. It includes ‘the ability to sell products that meet demand requirements (price, quality, quantity) and, at the same time, ensure profits over time that enable the firm to thrive on the domestic or international market’ (Latruffe 2010). Farm competitiveness notably depends on farm size, type of farming, location, human capital, and access to technology and innovation.

### Objective and Approach

This study analyses how the Common Agricultural Policy (CAP) and state aid support farm competitiveness, also considering the support to young farmers and women. It identifies the key drivers and challenges for farm competitiveness, and the appropriateness and effectiveness of the CAP in increasing farm competitiveness for the 2014-2022 and 2023-2027 programming periods. The CAP levels of support to competitiveness and to farm income are considered separately.

The study focuses on eight types of CAP interventions that directly contribute to farm competitiveness: coupled income support, sector-specific support, productive investments, risk management tools, knowledge exchange, cooperation, and support for setting-up of young farmers and their complementary income support (CIS-YF).

The analysis is based on a literature review, the 28 CAP Strategic Plans (CSPs), financial data from the AGRIDATA portal and CAP indicators, from EUROSTAT and the FADN and internal workshops with high-level experts.

### Conclusions

Total Factor Productivity (TFP) is an indicator of agricultural competitiveness. In the EU, the TFP growth is positive although the growth rate has been slowing down since 2015. It has been mainly driven by labour productivity growth. While TFP is a key indicator of competitiveness, it has limitations, in excluding issues related to sustainability.

Farmers face numerous challenges in maintaining competitiveness. **Current** challenges include strengthening their position in the value chain, price volatility and production risks, generational renewal, adhering to the stringent requirements of the EU legislation on farming practices, addressing climate change and adopting innovations including digital technologies. **Upcoming** challenges notably include risks related to climate change and changes in consumer diets and agri-food systems.

Overall, the CAP equips Member States with tools to address – at least partially – many of the current competitiveness challenges. The CAP policy framework provides various mechanisms to improve market transparency, stabilise markets and respond to crises. However, these tools do not address the significant events that may profoundly affect production patterns in the next decades, e.g., substantial changes in bioclimatic factors and unpredictable consequences of climate change.

The CSPs’ interventions demonstrate continuity with the 2014-2022 period, allocating an average of 20% of EU-funded CAP budget to interventions supporting competitiveness. However, support to competitiveness across Member States varies both in budget allocation (ranging between 10 and 30%), type of support (risk management tools, support to productive investments, sector-specific support including support to producer organisations and cooperation) and share of targeted farms.

**Knowledge transfer, dissemination and adoption of new technologies, and cooperation have the potential to** addressing agricultural competitiveness challenges. Despite an increase in CAP

support to these interventions, budgets remain limited, with these issues being often tackled outside of the CAP.

The CAP objective of **strengthening the position of farmers in the value chain** is primarily supported by sector-specific interventions, cooperation, and productive investments in the value chain. Yet, **most CSPs have only made limited use of these tools**.

The **adoption of new and digital technologies** by farmers offers an opportunity for enhancing farm competitiveness, yet it remains a challenge. The CSPs address this challenge heterogeneously through investments, knowledge exchange and cooperation. However, little is known on the uptake of digital technologies by farmers and there is still a lack of data on the added value of the many existing and emerging digital innovations. Member States are also addressing this issue through national or regional strategies.

**Young farmers and women** are **essential to the vitality of rural areas**, notably in remote rural areas where their presence has declined. **Young farmers** play an **important role in improving the competitiveness of farms** and the dynamics of the agricultural sector also regarding the upcoming challenges. In addition to setting up support and CIS-YF, some CSPs plan specific cooperation and knowledge exchange actions. Yet, **major aspects of generational renewal** e.g. access to land and price of land **are beyond the scope of the CAP** and need to be addressed through national policies.

Gender moved from a cross-cutting issue of the CAP's Pillar II in the 2014-2022 period to a specific CAP objective (SO8) in 2023-2027. All CSPs recognise **challenges faced by women** but only a minority specifically target women in agriculture. Aspects such as women farmers legal status and social security are beyond the CAP and fall under national responsibility.

**The increased exposure to risks for agricultural production (demand and supply factors, climate risks, dependence on imported inputs) also affects farm competitiveness.** To mitigate them, the CAP intervenes via direct payments and support to diversification (through conditionality, coupled income support, eco-schemes, Agri-Environment-Climate Measures (AECM) and investment support), contributing to the stabilisation of farmers' income, promoting more sustainable farming practices and helping farmers become more autonomous and resilient. More resilient farms are not the most competitive ones as measured by the current productivity indicators. The CAP also provides **risk management tools** to help farmers cope with production, market and income risks, although their use by the Member States remains limited. Finally, the CAP contributes to the stabilisation of markets and provide tools to quickly react to crises.

**Adaptation to climate change** is a major current and upcoming challenge for farm competitiveness. The CSPs address this challenge through increased investment support for adaptation and risk prevention, risk management tools, knowledge exchange and increased sector-specific actions. AECMs and eco-schemes aim to support changes in farming practices. While these tools are crucial for addressing climate change, they merely mark a first step in promoting changes in farming practices. The more severe risks highlighted in predictive models such as those developed by the IPCC are yet to be considered.

The EU has established **stringent legal requirements for sustainable farming practices and food safety**. This mandates the adoption of more costly farming practices that affect competitiveness. The 2023-2027 CAP already allows to compensate for additional costs or lost income, but not to fund the production of environmental public goods.

## Recommendations

- Integrate **sustainability** aspects in competitiveness indicators to measure 'sustainable competitiveness'. The right balance between sustainability and competitiveness should be at the heart of future policies. Therefore, investigate the potential benefits of moving from compensating for additional costs or lost income to rewarding the real production of environmental public goods (biodiversity, CO<sub>2</sub> sequestration, etc.).
- The response to farm competitiveness challenges also depends on other EU policies beyond the CAP. Assess the tangible effects of policy **coherence** between the CAP and other EU policies in the biannual performance review of the CSPs. In the same vein, future public interventions should rest on global strategies that consider the needs, beyond agriculture, for the vitality of rural areas including provisions for young farmers and women. Strengthen the policy coherence between CAP support and national policies on generational renewal and gender.
- Actively promote the 2023-2027 CAP tools regarding **knowledge exchange and cooperation in support to farm competitiveness** and assess them in the biannual review of the performance of CSPs.
- Provide a targeted and inclusive CAP support for the adoption and use of **suited new and digital technologies** by farmers.
- Design a comprehensive approach to **risk management** supported by knowledge exchange, in collaboration with farmers to effectively address their needs.



## 1. INTRODUCTION

### 1.1. Objective and scope of the study

This study on ‘**Rural areas – levels of support and impact on competitiveness of farms**’ was commissioned by the European Parliament’s Committee on Agriculture and Rural Development (AGRI Committee). It aims to analyse how the Common Agricultural Policy (CAP), including the European Agricultural Guarantee Fund (EAGF), the European Agricultural Fund for Rural Development (EAFRD) and state aid contribute to farm competitiveness in the European Union (EU). The study examines the challenges for farm competitiveness, as well as the effectiveness and appropriateness of the CAP in increasing farm competitiveness during the 2014-2022 and the 2023-2027 programming periods. While income support also contributes to the viability of farms, this study focuses on interventions that directly support the CAP’s competitiveness objectives. Additionally, it looks at the role of women and young farmers, exploring how these groups receive support in the context of strengthening farm competitiveness.

Supporting the competitiveness of farms has been at the centre of the CAP since its inception in 1962. The CAP objectives outlined in the Treaty of Rome are: 1) to raise farm productivity and stabilise the agricultural markets; 2) to ensure availability of food at reasonable prices; and 3) to provide fair living standards to farmers (European Parliament, 2023). In addition to these objectives, the 2023-2027 period endeavours to pursue a greener and fairer CAP, while at the same time increasing market orientation and farm competitiveness, as outlined in the CAP’s second specific objective (SO2). However, promoting economic objectives while ensuring environmental and social sustainability is proving a challenging proposition.

Through its various reforms, the CAP has transitioned from providing product and price support to income support, particularly through area-based support. This shift aims to reduce market distortions and to empower farmers to respond to market signals by improving their competitiveness. In the 2023-2027 period, the goal is to strengthen the coherence of the CAP by merging the two pillars, the EAGF and the EAFRD, into a CAP Strategic Plan (CSP) (*Regulation (EU) 2021/2115*). The new delivery model provides more flexibility to Member States and aims to be performance-based to better support farmers and other stakeholders, particularly in terms of their capacity to address competitiveness challenges.

The study is structured as follows: 1) The introduction presents key concepts and definitions related to competitiveness and outlines the study’s approach, including its main limitations; 2) Chapter 2 introduces the indicators used to measure farm competitiveness as well the main challenges of farm competitiveness based on a literature review; 3) Chapter 3 presents the level of CAP support to farm income during the 2014-2020 period. It also presents the CAP support to farm competitiveness in the 2014-2022 programming period, drawing on an intervention logic and the findings from relevant evaluation studies; 4) Chapter 4 considers the 2023-2027 programming period, analysed comparatively to the 2014-2022 period in terms of levels of support; and 5) Chapter 5 concludes with a synthesis of the main findings and policy recommendations.

### 1.2. Competitiveness: concept and definitions

**Competitiveness is a broad and multifaceted concept** that is extensively discussed in the literature. However, there is no consensus on its definition and ways to measure it (Latruffe, 2010). The Organisation for Economic Cooperation and Development (OECD) defines competitiveness as ‘the ability of companies, industries, regions, nations, and supranational entities to generate relatively high

factor income and factor employment levels on a sustainable basis while remaining exposed to international competition' (OECD, 1996). Latruffe (2010) refines the definition of competitiveness as 'the ability to face competition and to be successful when facing competition. Competitiveness would then be the ability to sell products that meet demand requirements (price, quality, quantity) and, at the same time, ensure profits over time that enable the firm to thrive.'

Competition can be analysed at the level of a sector, specific country, set of countries – including cross-country comparisons – or at the firm level using microeconomic data. Hence, competitiveness can be measured in terms of trade or farm performance. In the context of the CAP, the competitiveness of the agricultural sector is considered by two impact indicators from the Performance Monitoring and Evaluation Framework (PMEF)<sup>1</sup>: total factor productivity (TFP) (I6) and agri-trade imports and exports (I7).

**Total factor productivity** is an aggregate index that measures the amount of agricultural output produced from a given set of inputs, including land, labour and capital, from technical and resource inputs to production. As such, an increase in TFP corresponds to a gain in output quantity which does not stem from an increase in input use (Jaenicke and Lengnick, 1999; Latruffe, Diazabakana, *et al.*, 2016; Cárdenas Rodríguez, Hašič and Souchier, 2018; Bureau and Antón, 2022). This study looks at TFP measures to understand the evolution of agricultural productivity in the EU and the production factors that explain TFP growth<sup>2</sup>.

Agricultural competitiveness can also be captured through **agri-food imports and exports**. These show the demand and supply of European agricultural products in the world economy. This study considers the extra-EU agri-food trade value, measuring the value of trade between the EU and non-EU countries to offer insights into the global export performance of the EU agri-food sector. International trade is important to consider to better understand the position of EU farmers in the global value chains and the competitiveness of the EU agricultural sector.

The level of competitiveness of farms is assessed through the Farm Net Value Added (FNVA) per Annual Working Unit (AWU) (see Annex 5). Finally, the productivity of a farm is defined as the ratio between the volume of output and the level of inputs (OECD, 2023a), such as land, labour, capital, or intermediate consumption.

### 1.3. Farm competitiveness and the CAP

The study differentiates CAP support to farm income from CAP support to competitiveness. It examines eight types of interventions (along with their counterparts from the 2014-2022 period) of CAP support aimed at enhancing farm competitiveness (see Table 1). These interventions encompass coupled income support (CIS), complementary income support for young farmers (CIS-YF) and sectoral interventions from EAGF. Additionally, from EAFRD, the study considers support to productive investment, risk management tools, cooperation, knowledge exchange and support for the setting-up of young farmers.

The new delivery model of the CAP 2023-2027 introduced a change in the framework by combining the two pillars (I and II) of the CAP into a single CSP. To ease the comparison across periods, Table 1

<sup>1</sup> The PMEF defines a set of output, result and impact indicators that are tied to the interventions and specific objectives of the CAP (see annexes of the Regulation (EU) 2021/2115). Output and result indicators are reported annually in the annual performance report.

<sup>2</sup> It should be noted that sustainability dimensions are not considered in the TFP measurements. This notion is nevertheless expanded in literature, although it lacks consensus, to account for environmental and ecological endowments and their intrinsic link to farm production capacity, such as soil quality (Bureau & Antón, 2022; Cárdenas Rodríguez *et al.*, 2018; Jaenicke & Lengnick, 1999; Latruffe *et al.*, 2016). To address this challenge, the OECD launched a Network on Agricultural TFP and the Environment in 2017 (OECD, no date).

maps the relevant interventions for the 2023-2027 period to the relevant measures of the 2014-2022 period.

**Table 1: Interventions and measures that directly contribute to farm competitiveness**

Type of interventions, 2023-2027 period (Regulation (EU) 2021/2115)	Regulations and type of measures, 2014-2022 period	
Coupled income support (CIS) (Article 32 to 35)	Direct Payments	Voluntary coupled support (Article 52)
Complementary income support for young farmers (CIS-YF) (Article 30)	<i>Regulation (EU) 1307/2013</i>	Complementary income support for young farmers (Article 50)
Investments, including investments in irrigation (Articles 73 and 74)	Rural development	Investments (Article 17 and 21 and 25, Article 45 and 46) (M4)
Risk management tools (Article 76)	<i>Regulation (EU) 1305/2013</i>	Damage restoration and prevention (Article 18 and 24) (M5) Risk management (Article 36) (M17)
Cooperation (Article 77)		Cooperation (Article 35) (M16) Quality schemes (Article 16) (M03) Producer groups and organisation (Article 27) (M9)
Knowledge exchange and dissemination of information (Article 78)		Knowledge transfer (Article 14) (M1) Advisory services (Article 15) (M2)
Setting-up of young farmers and new farmers and rural business start-up (Article 75)		Farm development (Article 19) (M6)
Sectoral support (Articles 42 to 62)	<i>CMO, Regulation (EU) 1308/2013</i>	<b>Market measures</b> Producer organisations (Article 152-175) and wine sector (Article 145-147)

Source: Project team, 2023, based on CAP intervention logic for Pillars I and II under the [Technical Handbook on Monitoring and Evaluation Framework of the CAP 2014-2020](#), DG AGRI, June 2017

Decoupled direct payments, which are an essential part of the income of many farms and ensure their economic viability, are not considered in the analysis of the level of support to competitiveness. Similarly, agri-environmental and climate commitments (AECMs) and eco-schemes are not considered as these support changes in farming practices relevant for addressing challenges related to climate change and the environment. They aim to support changes in farming practices by (partially) offsetting these costs. Overall CAP support to farm income is considered in Chapter 3, separately from CAP support to competitiveness.

#### 1.4. Approach and main limitations

This study uses a mixed approach to assess the level of support and its impact on the competitiveness of EU farms. It is based on a desk review of academic literature, policy documents, reports and data analysis. The CSPs were used to analyse strategies and interventions related to competitiveness. To provide a framework for the assessment, two intervention logics were drafted, one for each programming period (2014-2022 and 2023-2027). Furthermore, financial data and the relevant indicators in the Common Monitoring and Evaluation Framework (CMEF) and the PMEF were analysed. To obtain an understanding of trends, context and financial allocations, relevant data were analysed from: European statistics (EUROSTAT), the Farm Structure Survey (FSS), the Economic Accounts for Agriculture (EAA), COMEXT, the Farm Accountancy Data Network (FADN) and the CAP Catalogue of Interventions (AGRIDATA portal). Additionally, high level experts were consulted in internal workshops to discuss findings. Finally, the sources and methods were triangulated to ensure the robustness of findings.

This study was carried out under the following **limitations**:

- Assessing the effectiveness of the CAP 2014-2022 programming period is constricted by the lack of recent evaluations carried out at the EU level. **Over 100 ex post evaluations of the Rural Development Programmes (RDPs)**, with detailed assessments of the impact of the CAP on farm competitiveness, **are only expected by the end of 2026** due to the two-year extension of the programming period to 2022. The EU synthesis will only be issued in 2027. As a result, the impact assessment conducted by the Directorate-General for Agriculture and Rural Development (DG AGRI) and latest systematic evaluations of RDPs rely on data from 2019 or earlier.
- In the 2023-2027 period, the new delivery model provides Member States with a greater flexibility to combine interventions in response to their needs. It now allows them to link a single intervention to several specific objectives. This, however, poses a challenge for the analysis and limits the ability to compare Member States and periods. Indeed, some CSPs associate many interventions with several specific objectives, while others tend to link each intervention to a single specific objective. To avoid double counting of interventions, these are considered individually rather than as the total budget of the various specific objectives.
- Comparing the two periods also comes with certain limitations as the actual EU expenditures between 2015 and 2021 are compared to the planned EU expenditures for the entire 2023-2027 programming period, which encompass both anticipated expenditures and expected results. In addition, a comparison is difficult in terms of the shares of CAP expenditures since the concerned periods are not of the same duration.
- Public good costs (including environmental costs) are not included in the calculation of TFP<sup>3</sup> in this report. Nevertheless, the aggregate remains a valid key indicator of economic performance: the TFP measurements in this study are mainly used to show the evolution of the EU agricultural sector performance in terms of productivity growth.

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<sup>3</sup> Projects and networks at the OECD are working to integrate environmental aspects to the TFP measurements, e.g. the Network on Agricultural Total Factor Productivity and the Environment.

## 2. MAIN DRIVERS AND CHALLENGES OF AGRICULTURE AND FARM COMPETITIVENESS IN THE EU

### KEY FINDINGS

- TFP is an index measuring the quantity of output produced from a given set of inputs (labour, capital, land, intermediate consumptions). In the EU, TFP growth is mainly driven by labour productivity and has been slowing down since 2015. While TFP is a key competitiveness indicator, it has its limitations and does not consider sustainability issues.
- The EU is a net exporter of agri-food products which suggests that EU agriculture is competitive. However, this performance should not mask the EU's dependence on the importation of inputs (plant-based proteins, fertilisers, plant protection products) which exposes farmers to price volatility and international supply chain shocks and may threaten their competitiveness.
- EU farmers face numerous competitiveness challenges: low representation in the value chain, input and output price volatility, adaptation to climate change and the high requirements of EU legislation on farming practices. The ability of farmers to respond to these pressures depends on structural characteristics (farm size, specialisation, location and age of the farm manager), with larger farms and more educated farm managers being able to adapt more easily.
- Among upcoming challenges, climate change poses threats to farmers' competitiveness by increasing the likelihood of extreme events. Changes in food systems and consumers diets (reduced meat consumption, growing demand for meat and dairy alternatives) may occur in the next decade, hence affecting the demand for specific products.
- Generational renewal is a major farm competitiveness challenge. Young farmers face difficulties in setting-up and accessing land due to high and increasing prices for agricultural land and limited access to capital.
- Women often lack official recognition and status as farm workers, resulting in lower incomes, limited legal status and access to credit. They remain under-represented as farm managers and less likely to manage large farms than men.

This section starts with an overview of the evolution of two macro-economic indicators included in the PMEF, measuring the competitiveness of the agricultural sector (section 2.1). The key determinants of agricultural and farm competitiveness based on literature review are presented in Annex 3. Current and upcoming competitiveness challenges are summarised in section 2.2.

### 2.1. Indicators of agricultural and farm competitiveness

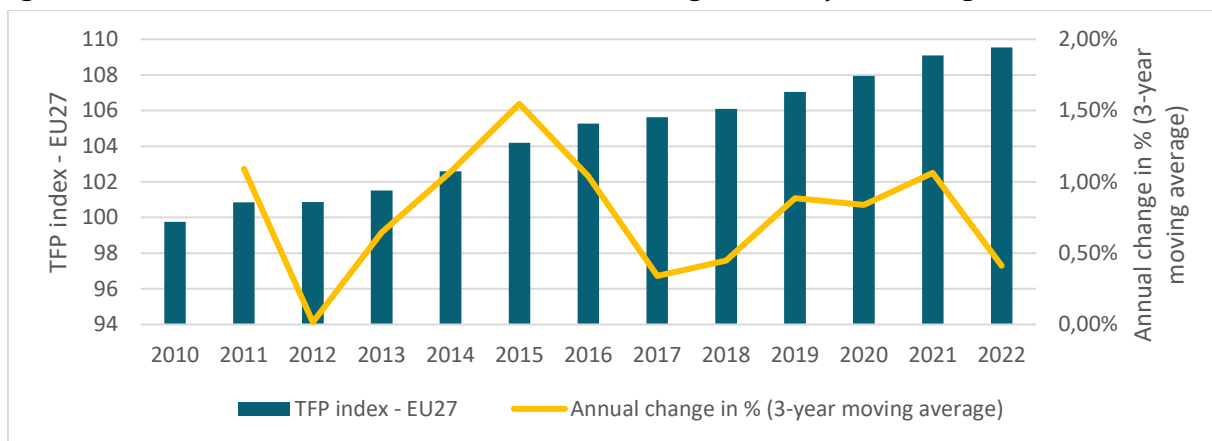
TFP and agri-food imports and exports are two PMEF indicators that measure agricultural competitiveness. Data on these indicators were extracted from the economic accounts for agriculture (EAA) and the database COMEXT (see definitions in section 1.2).

#### a. Total Factor Productivity

Figure 1 shows that TFP growth in the EU has been positive, at least since 2010. TFP growth fluctuates every year, reflecting variations in crop yields which are highly dependent on climatic conditions. To ease these effects, a three-year moving average on the TFP index value was calculated. The growth rate

slowed down in the previous years and dipped to 0.41% in 2022. According to the OECD, average TFP growth has not only declined in the EU-27, but also globally. EU TFP growth remains slightly above the OECD average, but is well below Canada (2.7%), Brazil (2.2%) and China (1.7%). The TFP growth of the United Kingdom and the United States stagnated in the same period<sup>4</sup>. Historically, agricultural TFP was mainly driven by technological progress. The causes of the past decade’s TFP stagnation are not clearly identified and understood; some hypotheses consider that environmental and climate change significantly impact TFP growth (Ortiz-Bobea *et al.*, 2021; OECD, 2023a, 2023b).

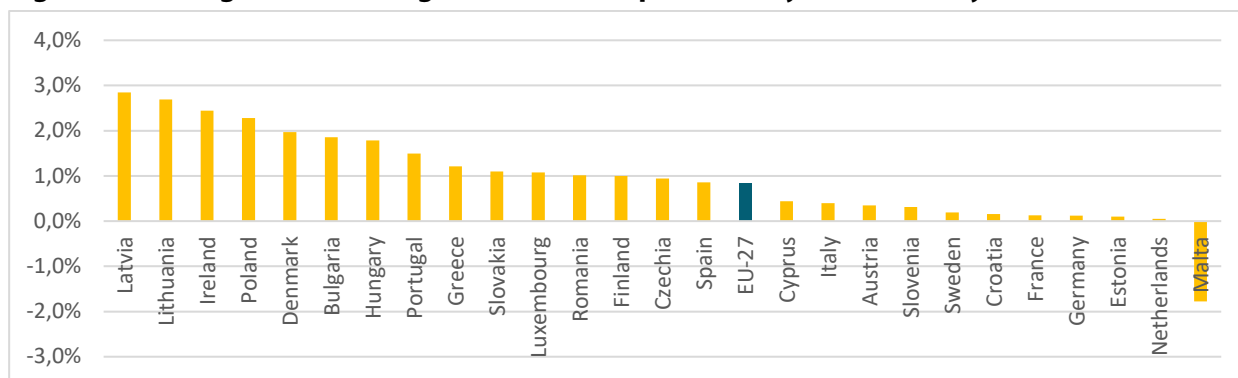
**Figure 1: TFP at EU level 2012-2022 and annual change in % (3-year average, 2010 = 100)**



Source: Project team, 2023, based on the Economic Accounts for Agriculture (EAA) from EUROSTAT, AGRI data portal (<https://agridata.ec.europa.eu/extensions/IndicatorsSectorial/AgriculturalProductivity.html>)

Figure 2 shows the average annual change in TFP by Member State between 2012 and 2022. Latvia, Lithuania, Ireland and Poland show the highest productivity growth, while Malta is the only Member State with a negative TFP growth.

**Figure 2: Average annual change in total factor productivity 2012-2022 by Member State<sup>5</sup>**



Source: Project team, 2023, based on the Economic Accounts for Agriculture (EAA) from EUROSTAT, AGRI data portal

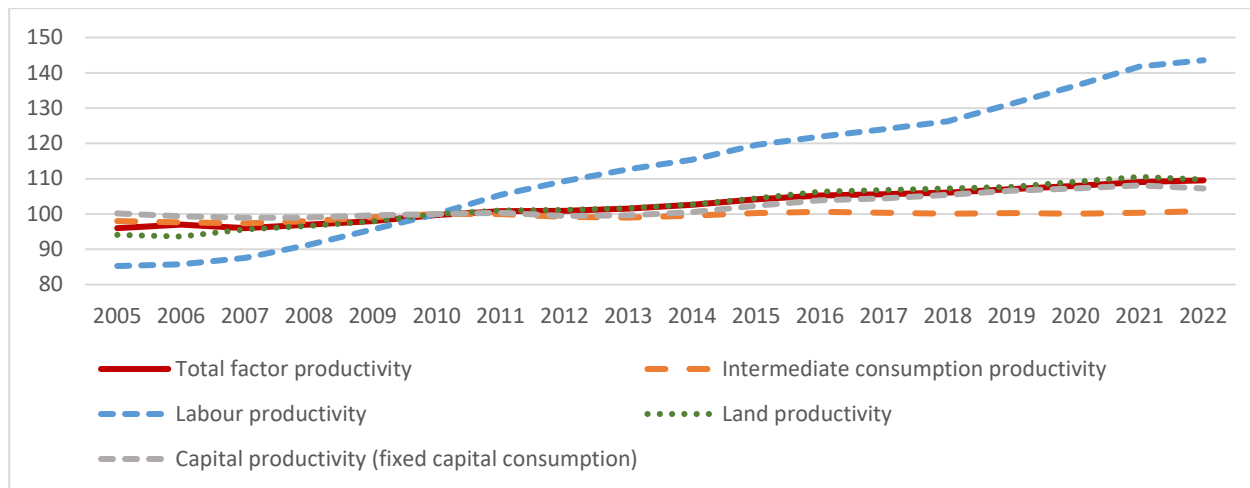
TFP includes all production factors, namely labour, capital and land. It can be disaggregated by production factor, revealing partial productivity indicators. This also includes the productivity of the intermediate consumption (i.e., raw materials, feeding stuffs, fertilisers and other agricultural inputs). Figure 3 shows that labour productivity plays an important role in explaining partial productivity and, consequently, contributes significantly to TFP growth in the EU. Meanwhile, capital and intermediate

<sup>4</sup> During the period 2011-2019, the average annual growth rate of the EU's TFP was 1 and the OECD average was 0.9. Canada (2.7), Brazil (2.2) and Korea (1.7) all reached higher TFPs. The United Kingdom (0.1) and the United States (2.2) remained at these rates through both decades (2001-2010 and 2011-2019).

<sup>5</sup> Note: Belgium data was removed due to an unexplained incorrect value of 4.3%.

consumption partial productivities remain quite stable. Land productivity has a positive trend. The replacement of labour by capital can explain the growth in labour productivity as depicted by a stable capital productivity and a decreased agricultural workforce.

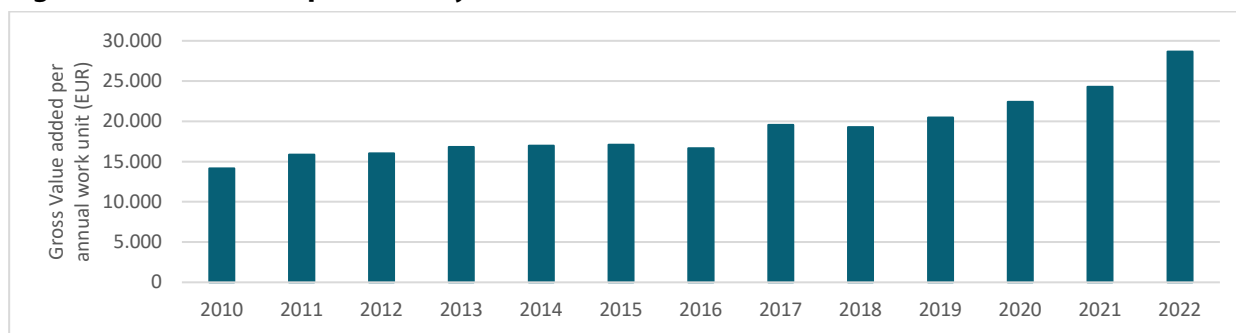
**Figure 3: EU agricultural productivity, by factor of production (2010 = 100, 3-year moving average)**



Source: Project team, 2023, based on The Economic Accounts for Agriculture (EAA) from EUROSTAT (aact\_eaa05 in output index on factors index) and impact context indicator (TFP - CTX\_SEC\_27\_1) (3 years moving average, index 2010 = 100)

As Figure 4 shows, after a period of relative stability, total labour productivity in the EU has been rising more significantly since 2017. The rise is steeper in 2022 and mainly reflects an increase in agricultural prices. This is due to inflationary pressures stemming from supply chain issues induced by the COVID-19 pandemic and Russia’s invasion of Ukraine. The increase in output prices has been larger than the increase in input prices in several EU countries, hence a sharp increase in gross value added per annual working unit in 2022 (Eurostat, 2022a).

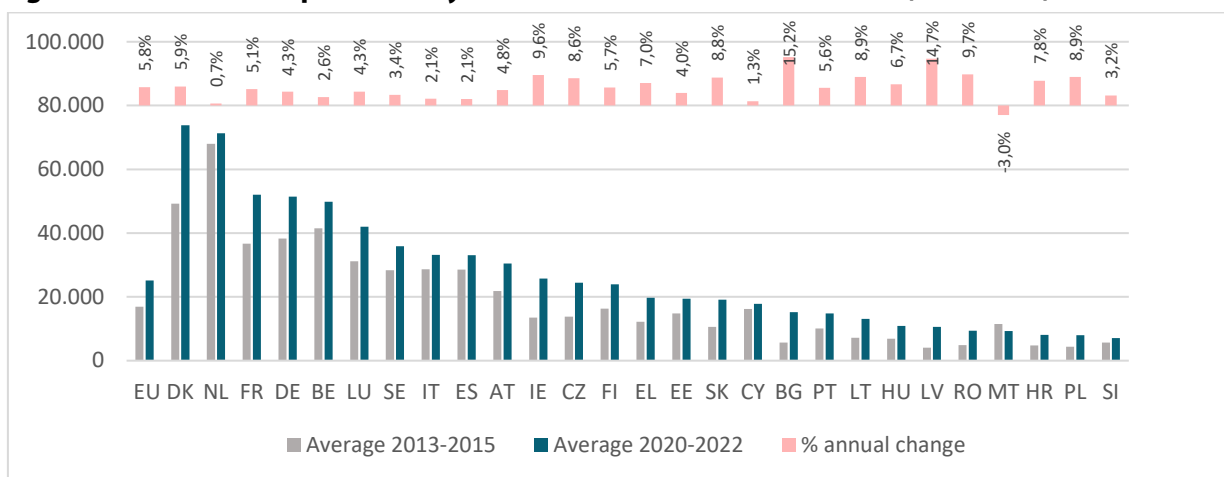
**Figure 4: Total labour productivity 2010-2022 at EU level (EUR/AWU)**



Source: Project team, 2023, CMEF context indicator C.14 Labour productivity in agriculture (CTX\_SEC\_14\_1) based on EUROSTAT, Economic Accounts for Agriculture (aact\_eaa01, aact\_ali01)

Between 2015 and 2022 (3-year moving average), gross value added per annual working unit grew at more than 5% in the EU, with Bulgaria, Latvia, Romania and Ireland depicting the strongest annual growth rates Figure 5. This can be explained by lower initial productivity levels than in the EU-15.

**Figure 5: Total labour productivity 2010-2022 at Member State level (EUR/AWU)**

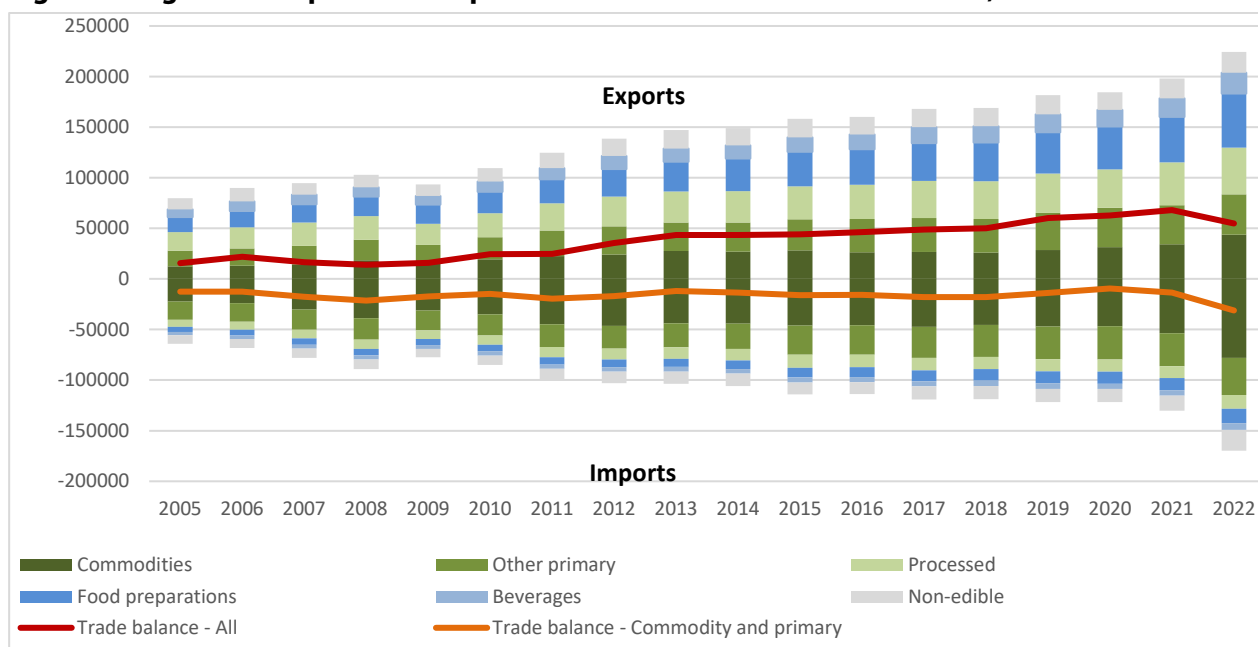


Source: Project team, 2023, CMEF context indicator C.14 Labour productivity in agriculture (CTX\_SEC\_14\_1), based on EUROSTAT, Economic Accounts for Agriculture (aact\_eaa01, aact\_alio1)

**b. Agri-food imports and exports**

**The EU is a net agri-food exporter.** This surplus is explained by the net exports of transformed agri-food products, such as processed food and beverages. Nevertheless, the EU is a net importer of direct farm outputs such as commodities and other primary products (Figure 6). The EU trade balance for such products has been deteriorating, reaching a new low in 2022. The position of the EU farming sector on the international market has gradually weakened; while EU agricultural exports increased over recent years, the overall trade balance decreased.

**Figure 6: Agri-food imports and exports between EU and non-EU countries, 2005-2022**



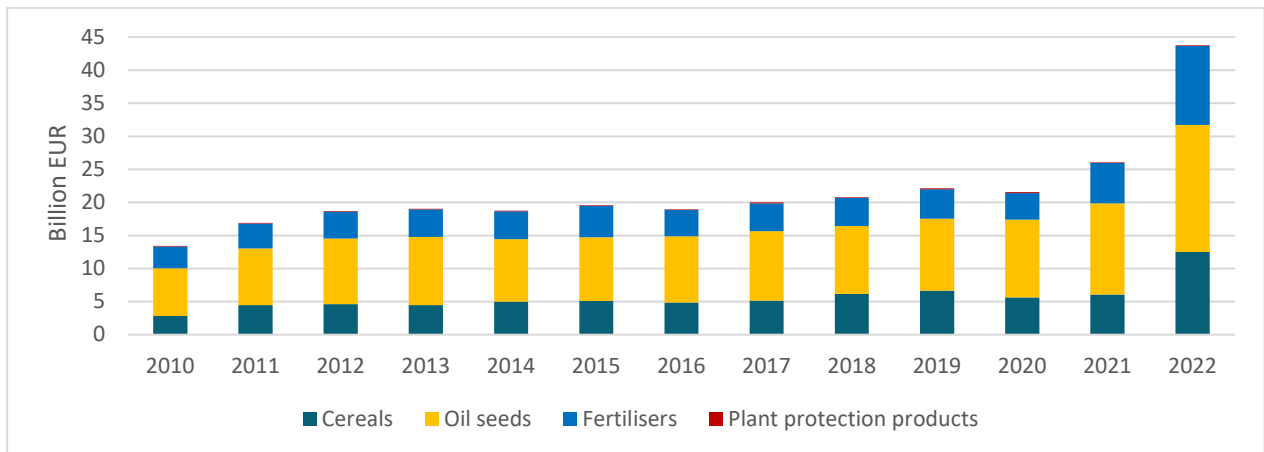
Source: Project team, 2023, based on EUROSTAT – COMEXT (via [AGRIDATA](https://agridata.ec.europa.eu/) portal – Market orientation)

EU agriculture strongly relies on imported agricultural inputs for certain types of farming. These include important quantities of feed inputs, especially plant-based proteins (soya beans, oil seeds etc.), and also fertilisers and plant protection products (Albaladejo Román, 2023). The following figure presents the import volume of key agricultural inputs into the EU. It shows the large share of fertilisers and oil seeds imported in comparison to other inputs. The costs of these inputs are important to consider,



as they affect the profitability of EU farms. In 2021, the EU experienced a trade deficit of inputs. The peak in EU input imports in 2022 can be explained by a strong increase in input prices following Russia's invasion of Ukraine.

**Figure 7: Value of EU imports of key agricultural inputs (2010-2022)**



Source: Project team, 2023, based on COMEXT trade data

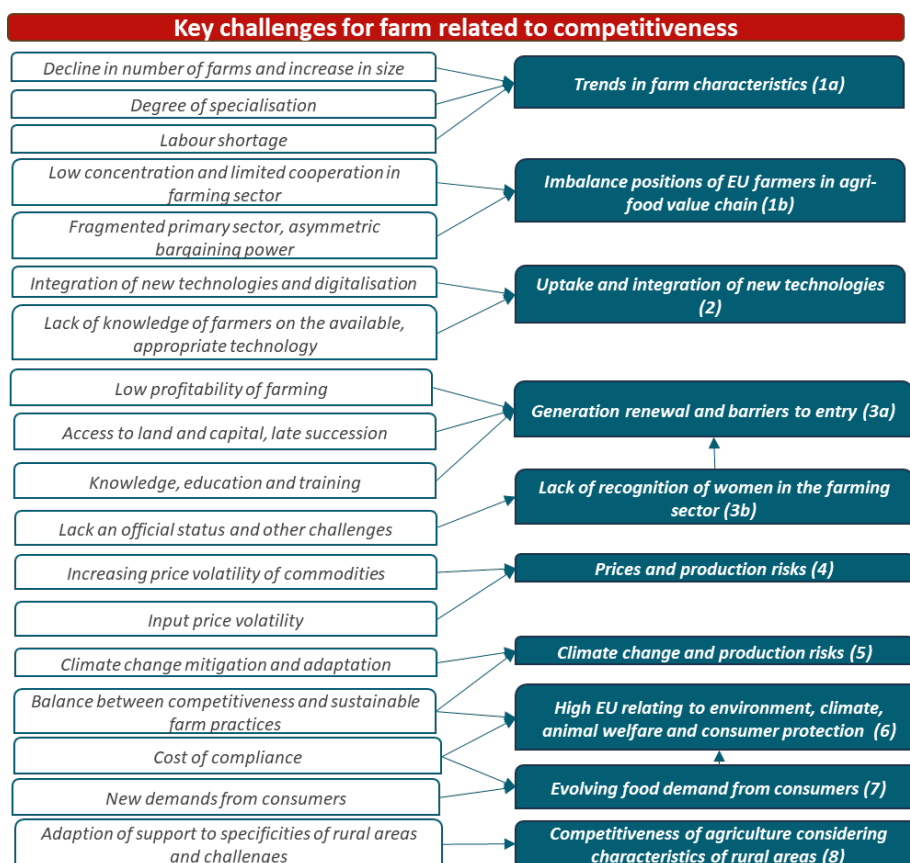
## 2.2. Current and upcoming competitiveness challenges faced by EU farmers

In this section, the analyses of the specific challenges related to the main determinants of farm competitiveness cover:

- Farms characteristics and position of the farmers in the value chain
- Uptake and integration of new technologies by farmers
- Human capital – young farmers and women
- Price and production risks
- Climate change and production risks
- High EU requirements related to environment and climate, animal welfare and food safety
- Evolving food demand from consumers

In addition, a specific cross-cutting challenge relating to rural areas is considered. As shown in the literature review (see Annex 3), location is a key determinant for farm competitiveness. However, rural areas across the EU are very diverse, in terms of topography and climate, and so are the challenges that need to be addressed to take these diversities into account.

**Figure 8: Key challenges for the competitiveness of farms**



Source: Project team, 2023

### 2.2.1. Farm characteristics and position of the farmers in the value chain

#### a. Trends in farms characteristics

The ability of farmers to adequately respond to competitiveness pressure is affected by multiple developments in rural areas and specifically in the agricultural sector. In particular, demographic changes and labour shortages affect the ability of farmers to respond to new pressures and developments (Gaupp-Berghausen *et al.*, 2022).

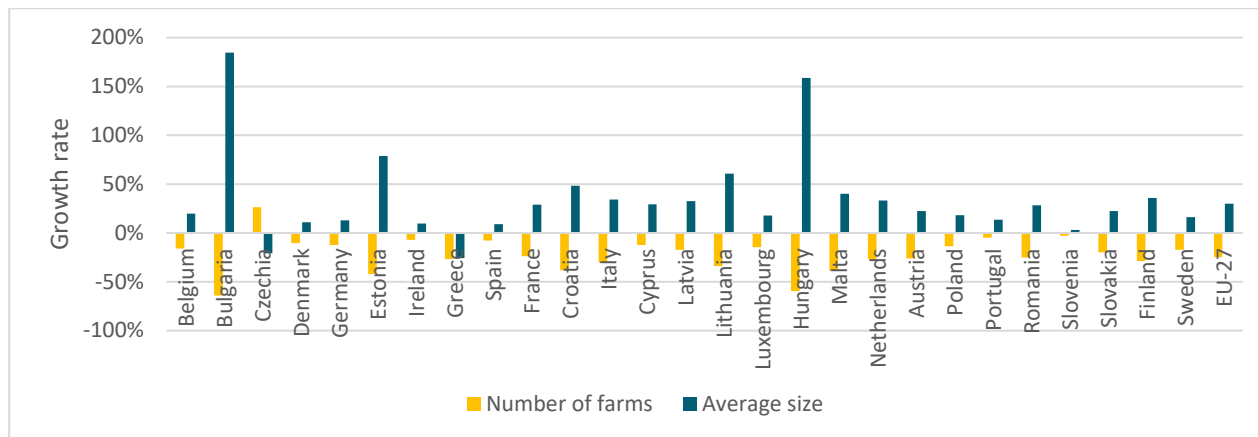
The EU's farming sector is characterised by the strong presence of small and family-owned<sup>6</sup> farms, which are an important pillar of agricultural production and of the wider fabric of rural societies (Gaupp-Berghausen *et al.*, 2022). One of the main structural changes affecting the sector relates to the declining number of farms in the EU-27 and a steady increase in farm concentration, as highlighted by increasing farm sizes (Gaupp-Berghausen *et al.*, 2022). This substantial decrease in the number of farms particularly affects smaller farms (below 20 hectares) that are declining more rapidly than their larger counterparts. Most farms in the EU are small in terms of land size and this decline in farm numbers is tied to a complex interplay of diverse factors, such as competition for land and lack of generational renewal. The reduction in the number of farms affects rural areas in terms of employment and economic activity (Gaupp-Berghausen *et al.*, 2022). It also manifests itself with the increases in consolidation and concentration of smaller farms into larger, economically more competitive businesses. The decline in the number of farms in favour of an increase in their average size continued

<sup>6</sup> Family farms can be understood as 'farms where a relatively large amount of labour is supplied by the farm manager and his/her family' (Agrosynergie, 2011a, p. 31) for example.

between 2010 and 2020. The number of farms has fallen from 12 million in 2010 to 9 million in 2020, a drop of 25%, occupying a relatively stable utilised agricultural area (UAA) (-2.2%).

EU farming has also become more specialised. In 2010, 74% of farms were specialised holdings; the rest were mixed and non-classified. In 2020, 80% of farms were specialised holdings. In 2010, mixed farming was still the main type of farm (3.1 million farms). Ten years later, this had fallen to 1.8 million (-42%). Field crop farms are now more numerous, accounting for one third of all farms, up 3% between 2010 and 2020 (European Commission. Directorate General for Agriculture and Rural Development, 2022).

**Figure 9: Evolution 2010-2020 of the number of farms and the average size of farms by Member State (in %)**



Source: Project team, 2023, based on EUROSTAT – Farm Structure Survey (FSS) (for 2013 and before [ef\_kvaareg] and for 2016 and after [ef\_m\_farmleg]) (via [AGRIDATA](#) portal)

While larger and specialised farms tend to be more competitive than smaller and diversified farms, all farms tend to face similar significant issues to maintain their competitiveness. This is notably due to ageing farmers and a lack of agricultural workers. Productivity losses stemming from labour shortages can be compensated by further mechanisation, providing there is the capital to support this. However, declining marginal returns to capital investments limit the viability of labour replacement. Simultaneously, accessing and keeping a labour force for agricultural production has become increasingly difficult due to strong patterns of demographic decline in rural areas. In addition, the farming sector is in competition with better paid and more stable employment opportunities in other sectors of the rural economy (Dellapasqua, Ramon and Wessler, 2019; Kryszak, Guth and Czyżewski, 2021; Rossi, 2022). This reduces the ability of farms to compensate dwindling labour supply with increased capital investments and potentially detrimentally affects their long-term viability.

Employment in agriculture is complex due to the structure of the sector, involving part-time activity, family supported businesses and seasonal peaks, especially during harvesting time (Eurostat, 2022b). Precarious employment is more likely to be found in the agricultural sector than in other parts of the economy. This makes it difficult to break out of a vicious cycle where a low profitability of employment leads to low productivity of individual workers (European Parliament, 2010; Franić and Kovačićek, 2019; Lanos *et al.*, 2019). The EU-27's TFP growth in recent years was mainly supported by an increase in labour productivity due to increased capital accumulation (Lanos *et al.*, 2019).

Labour shortages can be explained by several trends. The agriculture sector increasingly fails to attract young and highly qualified workers due to the working conditions and low wages (comparative to other sectors). Furthermore, industry and manufacturing and the service sector has grown over the past decade in more agricultural regions in south-east Europe, reducing the pool of available agricultural workers. While part of this reduction was compensated by the increased use of technology

and the mechanisation of the work, some crops and regions still rely on seasonal workers more than other sectors of the economy (Dwyer *et al.*, 2019). This became more evident during the COVID-19 pandemic (2020-2021) when the free circulation of workers was restricted (Weber *et al.*, 2021).

#### **b. EU farmers' position in the food-chain: imbalances in the value chain and lack of cooperation**

The value chain includes the interlinkages between the various actors involved in the production process of a type of product<sup>7</sup>. In the context of a global economy, those value chains are increasingly global and integrated, with EU farmers generally being constrained in their share of total value added (OECD, 2019c).

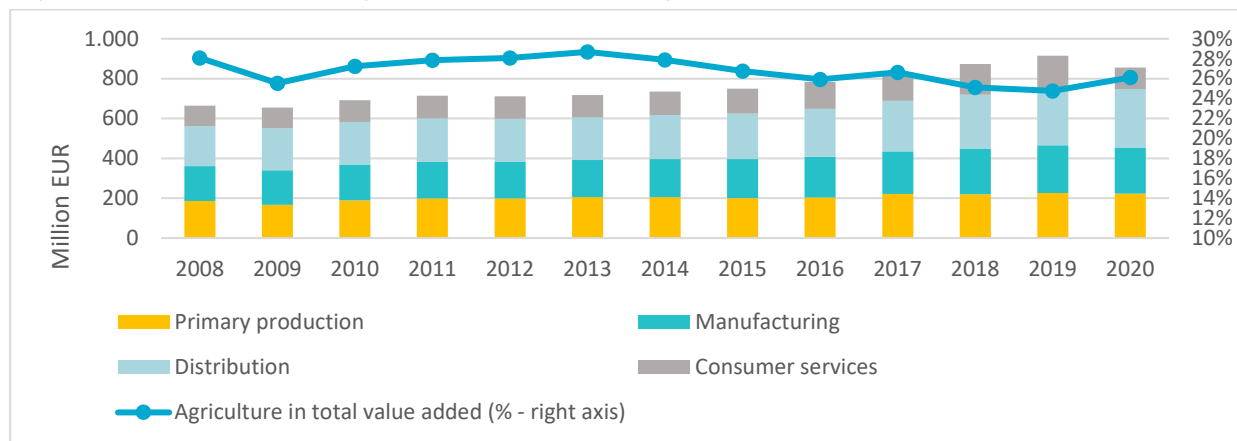
To some extent, farmers **face power imbalances in agri-food value chains**, with relatively limited bargaining power and asymmetric price transmission. Concentration of few economic actors in processing, distribution and retail, but also in upstream sectors such as chemical input production, exacerbates the situation and may reduce farm income and thus lead to **low farm profitability** (Legowski *et al.*, 2019). Moreover, the past 50 years has seen a shift in consumption patterns, away from raw and minimally processed products and in favour of highly processed and ready-made food. The share of the value of agricultural raw materials in highly processed products is lower as the production chain is longer and involves more actors. Hence, agricultural production accounts for less in the price determination. This contributes to limiting farmers' market power (Chambolle and Turolla, 2022).

Barriers to cooperation among farmers (e.g. lack of trust, lack of knowledge on the benefits of producer organisations, etc.) hinder their ability to address these challenges effectively. Additionally, adapting to more recent changing consumer preferences for high-quality, healthy, environmentally friendly, ethically produced and affordable food is crucial (Legowski *et al.*, 2019).

The imbalance in the food system is illustrated in Figure 10, highlighting the share of added value generated by primary food producers along the value chain across the EU-27. While the period of 2010 to 2019 saw continued growth in terms of absolute added value by farmers, the relative share reserved for primary producers has fallen slightly, from an average of 28% over the period 2008-2013 to 26% over the period 2014-2020.

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<sup>7</sup> From the upstream inputs to the final consumer, all activities and actors of the process are represented in a value chain.

**Figure 10: Distribution of gross value added along the food chain (million EUR)**

Source: Project team, 2023, based on EUROSTAT – Economic Accounts for Agriculture and Structural Business Statistics (via [AGRIDATA](#) portal)

Although challenging, the collaboration among agri-food system stakeholders is essential to address health issues, capitalise on growth opportunities and meet EU standards. The low degree of cooperation among farmers impacts the exchange of knowledge and good practices within the sector, potentially limiting farmers' ability to respond to emerging challenges and strengthening their role in the EU agri-food chain. The reasons identified for this insufficient cooperation are: 'a lack of trust, insufficient knowledge of the potential benefits of Producer Organisations; perceiving each other as competitors, wish to keep the control of their individual production and investment decisions or for historical and cultural reasons' (Legowski *et al.*, 2019)<sup>8</sup>.

### 2.2.2. Uptake and integration of new technologies

An important pathway into improving farmers' ability to respond to competitiveness pressures is the uptake and integration of **new technologies** into production processes and **increased levels of digitalisation**. Technical progress, particularly related to digitalisation and robotisation, offers many possibilities to address the various challenges identified. Precision farming is gaining importance among farmers. Digitalisation at all levels of the agri-food sector is also an important element in overarching EU strategies, such as the Farm to Fork strategy, as well as the CSPs (Lanos *et al.*, 2019).

While new technologies are key determinants of productivity and farm competitiveness (see Annex 3), adopting new technologies remains a challenge. An important obstacle is the **lack of farmers' knowledge of available, appropriate technology**. The extent of this knowledge gap and negative perceptions of innovations are expected to be different among farm managers with young farmers tending to be more educated on technological innovations and less-risk averse than their more experienced counterparts (Lanos *et al.*, 2019). The rapid evolution of digital technologies, coupled with their frequent lack of adaptation to the agricultural context and users, adds complexity to the tracking of possibilities and availabilities for EU farmers. The lack of investment capital, the risks and resistance to changing practices, and the limited connectivity and digital skills in rural areas, are all obstacles. For instance, precision farming technologies heavily depend on digital solutions and tools. However, not all farms benefit equally from new technologies. Farms in constrained areas, such as less-favoured areas, may not be able to apply new technologies easily as they are not tailored to work effectively in

<sup>8</sup> While cooperatives and other producer organisations are well represented in the EU, the value of goods marketed through them stays too low to enhance the position of farmers in the EU agri-food value chain. Furthermore, the participation of farmers in producer organisations is not homogeneous across the EU and across sectors (Legowski *et al.*, 2019).

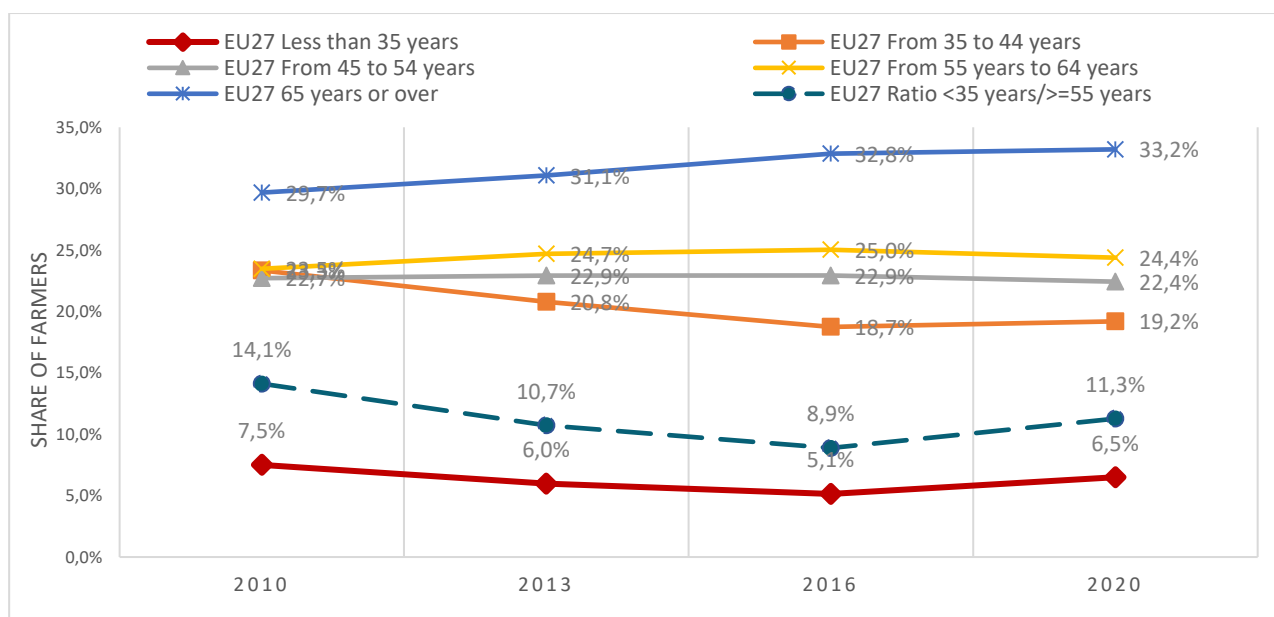
specific geographically constrained areas. This can lead to uneven uptake of technologies across EU farmers (Moschitz and Home, 2014; Bokusheva and Čechura, 2017; Lanos *et al.*, 2019; OECD, 2019; Brunori, 2022; Anastasiou *et al.*, 2023; DG Connect, 2023).

### 2.2.3. Human capital – young farmers and women

#### a. Generational renewal and barriers to entry

The European Parliament identified the ageing of farmers and the lack of generational renewal at the farm level as a significant challenge for the agricultural sector and rural areas. This is particularly relevant given the positive impact of the education level of farm managers on a farm’s economic performance and a potential link between farm managers’ age and competitiveness. The limited generational renewal puts at risk the agricultural model still largely based on family farms while also threatening the vitality and attractiveness of rural areas (European Parliament, 2018).

**Figure 11: Evolution of the age of EU farmers**



Source: Project team, 2023, based on EUROSTAT – Farm Structure Survey (FSS) (ef\_mp\_training)

The average age of farm managers increased slightly from 55.4 years in 2010 to 56.9 years in 2020. While recent data suggests a possible trend change between 2016 and 2020 for farmers under 35 years old (i.e., from a decrease to a slight increase in their numbers, see Figure 11), the overall ageing of the EU’s agricultural population remains one of the greatest challenges faced by rural areas and the agricultural sector (European Parliament, 2022). Indeed, this demographic transition affects farm labour, reducing the number of farm workers and contributing to the reduction in the number of farms and production capacity, thus potentially reducing the weight of EU agricultural products on the world food market.

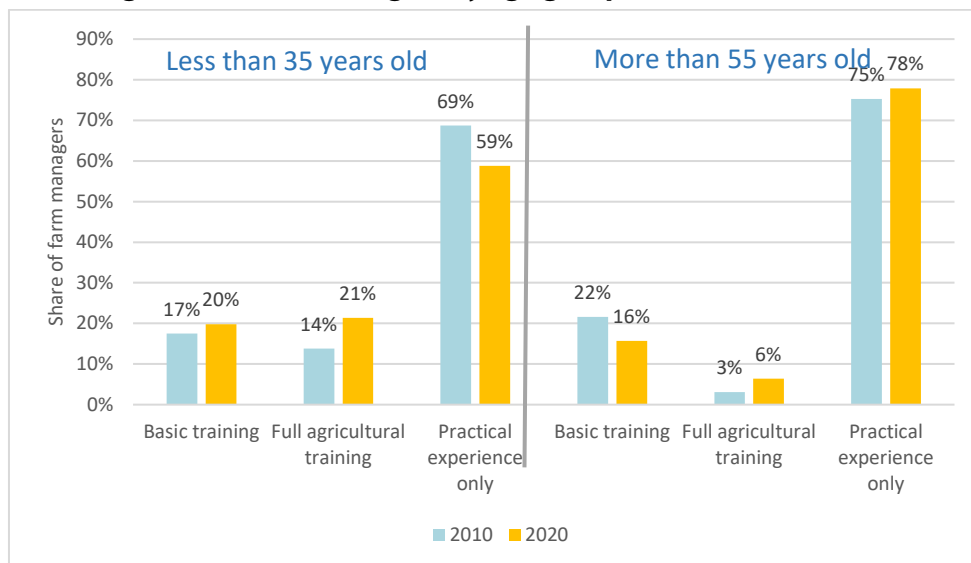
Young farmers and new entrants face significant challenges when starting or taking over a farm. Important barriers to entry or the expansion of farms are typically related to land and capital access. For new entrants, access to land is a significant barrier, due to competition from established farmers, investors, residential use and the limited supply of land for sale or rent in many European regions (Dwyer *et al.*, 2019). Additionally, late succession and limited access to credit and inputs contribute to the challenges faced by farmers, in particular young and new farmers. Lack of knowledge transfer and access to training are also found to be prominent needs of young farmers (Dellapasqua, Ramon and

Wesseler, 2019; Dwyer *et al.*, 2019). Further studies also showed that young farmers could be limited by insufficient participation in collective action and trust between farmers (Koutsou, Partalidou and Ragkos, 2014), as well as advisory support, especially concerning business plan preparations (Balezentis *et al.*, 2020).

Pressure on **land** is increasing as farms are competing with other economic actors who can afford higher land prices (for example, in the case of urban development, tourism, infrastructure projects, energy production, etc.). The concentration of land ownership and the rise of speculative pricing is also negatively impacting farmers throughout the EU-27 (Schuh *et al.*, 2020). Regarding barriers to accessing land and land tenure by young farmers, Eistrup *et al.* (2019) assess that social and political power relations also play an important role.

Most young farmers lack the appropriate knowledge and training essential for operating a modern farm, both on technical and financial issues. Although young farmers are three times more likely to have completed full agricultural training compared to farm managers over 55, 59% of them still rely solely on practical experience (see Figure 12).

**Figure 12: Training level of farm managers by age group in 2010 and 2020 (EU-27)**



Source: Project team, 2023, based on EUROSTAT – Farm Structure Survey (FSS) (ef\_mp\_training)

### **b. Lack of recognition of women in the farming sector and in rural areas**

**Women in rural areas** face specific challenges, particularly in agriculture, and tend to leave these areas, especially if they are remote. This is creating a gender imbalance that is weakening rural areas. As elaborated in the Long-Term Vision for Rural Areas, this imbalance is indicated by the underrepresentation of women in decision-making bodies, the low percentage of young female farmers, low rates of employment that can take the form of hidden female unemployment in the agricultural sector, women's involvement in informal labour, and restricted employment opportunities (European Commission, 2021b).

**Regarding the role of women in farming**<sup>9</sup>, women take over many tasks on the farm, in the fields and in the offices. Women farmers are often considered as spouses and unofficial on-farm 'helping hands' such as caretakers and volunteers. They tend to lack an official status as farm worker, co-manager, or

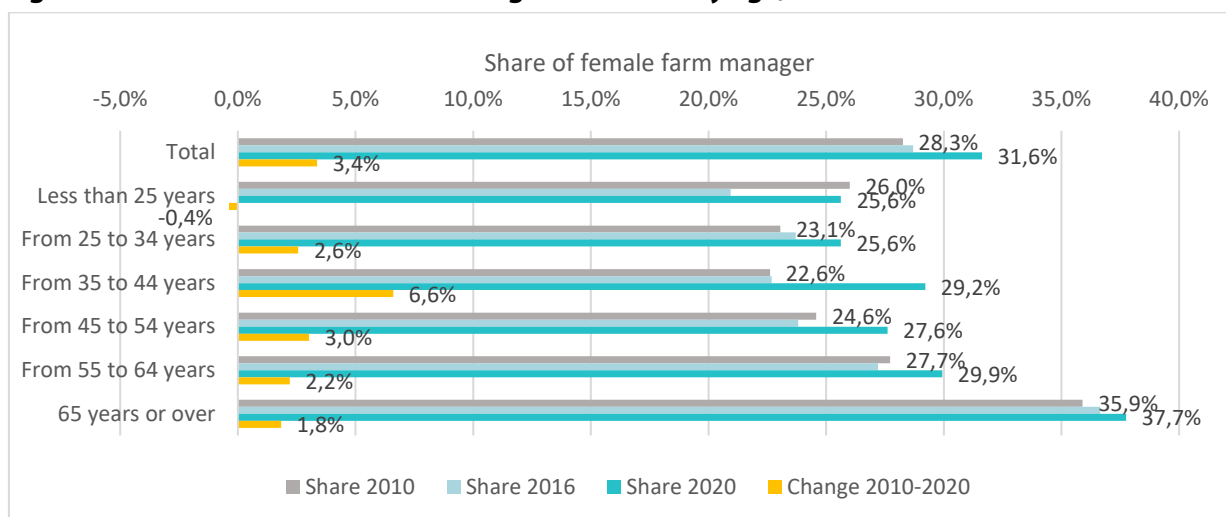
<sup>9</sup> While specific needs of women in farming are discussed in literature, the link between competitiveness and gender/women farm managers remains unclear.

co-owner. The lack of recognition of women farmers leads to informal professional status for many of them, leading to lower incomes and wages, lower financial rights, legal status and the lack of social security. Furthermore, the lack of status can impede on women farmers' capacity to invest and be granted loans (Franić and Kovačiček, 2019). Traditional gender roles also have significant implications when it comes to succession, with women often being disadvantaged compared to men.

While the prominence of informal women farmers presents economic advantages for the farm due to lower labour costs, it can disincentivise the recognition and formalisation of female participation in the farm, for example in terms of social security and retirement benefits (Franić and Kovačiček, 2019).

As illustrated in Figure 13, the **number of women farm managers increased between 2010 and 2020** by approximately 4% across all age groups, except for those below 25 years of age. Despite this, in 2020, women accounted for only 32% of all farm managers in agriculture<sup>10</sup>.

**Figure 13: Share of female farm managers in the EU by age, 2010-2020**



Source: Project team, 2023, based on EUROSTAT data (Farm Structure Survey)

**Women farm managers are also ageing:** while their representation as farm managers is generally increasing across the EU, women appear to be mostly represented in the oldest farm manager age group (37.7% of the 65+ farm managers; see Figure 13). In terms of farm management, women tend to face more challenges than men when settling in the agricultural sector. A study from Adinolfi *et al.*, (2020) identified that women in agriculture face more barriers in terms of accessing credit, knowledge and networks, which reduces their chances for better economic performances. Nevertheless, findings from Anderson *et al.*, (2021) suggest that returns to investing in female farmers could be a significant factor in boosting farm economic performance.

Women tend to be more involved in **increasing the added-value of their farms** or their products by engaging more often than men in diversification paths, both in agricultural and non-agricultural activities (Adinolfi *et al.*, 2020). While **women in the agricultural sector typically face more challenges than men in accessing farmers' networks**, they also have a higher propensity to join collective associations, thus enhancing their access to policy support. Women's involvement in

<sup>10</sup> A detailed assessment of German farms in 2020 found that, in more than 90% of cases, men were the farm managers and signed the grant applications. However, the same study shows no differences in economic parameters, such as the level of turnover, profit or equity development, thus demonstrating the insignificance of the gender of the farm manager as a determining aspect of farm performance (ART, 2020).



bookkeeping/accounting on family farms is vital, yet they often lack support and advice when farms face financial challenges (European Parliament, 2017).

#### 2.2.4. Price and production risk

##### a. Increasing price volatility of commodities

The market of agricultural commodities is subject to strong price volatility. This is due to very rigid agricultural supply and demand in the short-term. On the one hand, agricultural supply features medium-run production processes, but as agricultural commodities are perishable, fresh products are not easily preserved. On the other hand, agricultural commodities respond to basic needs and cannot, in general, be substituted (Agrosynergie, 2011). The liberalised international agricultural market is also marked by intense competition among producers. Hence, a small variation in either demand or supply can trigger important and quick price variations in commodities (Agrosynergie, 2020).

On the agricultural commodity market, inelastic supply and demand are combined with unexpected supply variations due to the nature of agricultural production and to the world market, which in turn leads to price volatility. Indeed, agricultural supply faces important potential variations as it relies on the weather and hence is subject to weather uncertainty (Devot *et al.*, 2023). Due to the open market and the importance of certain producing countries in the world food commodity market, agricultural supply is also vulnerable to geo-political shocks affecting important exporters. For example, the invasion of Ukraine by Russia in 2022 led to a sharp increase in cereals and oil prices (European Investment Bank, 2022) (Figure 14) Despite internal market measures fostering internal stability of commodity prices, EU farmers are sensitive to international price variations and United States Dollar/Euro exchange rate (Agrosynergie, 2020).

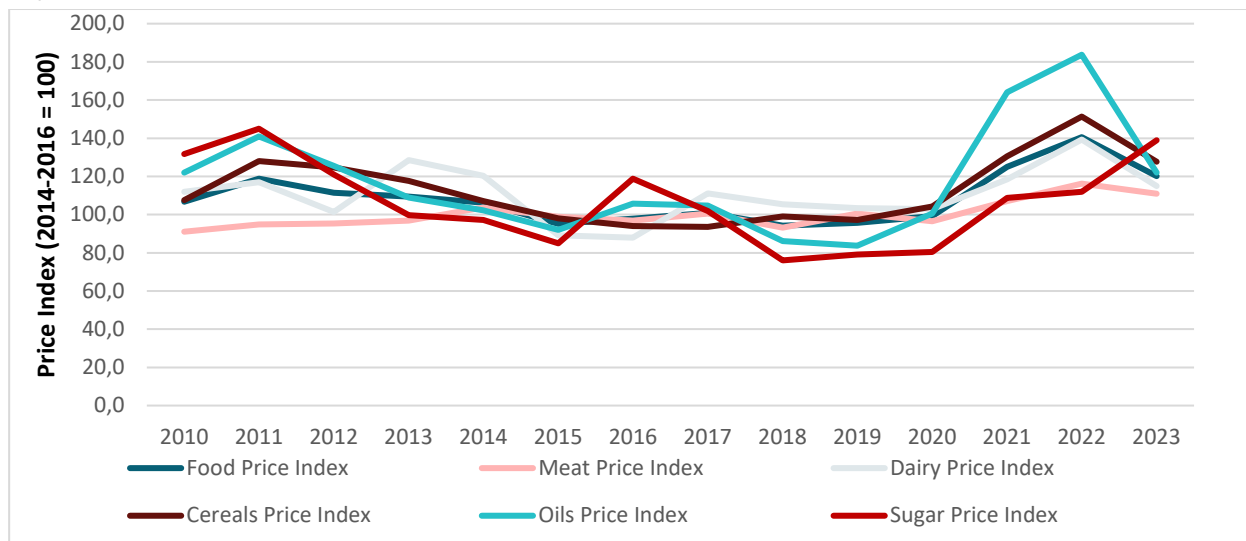
Price volatility affects farmers' capacity to face competition pressure and to increase their competitiveness. Not only can price variation expose farmers to unexpected low prices and hence low incomes, but the quick variation of prices weakens and threatens the viability of farms in the short-term. Agricultural production is a medium to long-term process, where production decisions must be taken several months before product sales and under high uncertainty about output prices (OECD, 2009). A drop in output prices, when production has already been planned and realised, can threaten farm viability. Smaller farms and those facing specific constraints, such as mountain area based farms, or farms facing higher production costs, may be more vulnerable to price variations than larger farms as their capacity to face output price decrease is lower (European Parliament, 2015).

Commodity price volatility also hinders farmers' capacity to invest, hampering potential productivity gains in the medium to long term. Indeed, when facing uncertain output prices, producers might be deterred from undergoing investments to encourage productivity gains, especially if they have low risk-bearing capacity (FAO (Food and Agriculture Organization), 2014). Empirically, volatility is associated with lower accumulation of physical capital (De V. Cavalcanti, Mohaddes and Raissi, 2015). Following standard microeconomic theory, the farms that are most likely to be able to undergo investments when facing high commodity price volatility are larger farms benefiting from economies of scale and generating larger profits.

As shown in Figure 14 agricultural commodity price volatility increased in recent years (FAO, 2023). This could be due to the COVID-19 pandemic, or to geopolitical shocks such as Ukraine's invasion by Russia. EU producers' exposure to price volatility also increased after the removal of EU production quotas that were used to stabilise prices. Moreover, increasing weather uncertainty and variability as a result of climate change might foster weather-related price variations in the future (Devot *et al.*, 2023).

Therefore, price volatility is a current and very likely upcoming challenge for EU farmers' ability to face competition.

**Figure 14: Evolution of annual real food price indices (2014-2016=100)**



Source: Project team, 2023, based on FAO food price index (nominal and real indices from 1990 onwards) (FAO, 2023)

## b. Input price volatility

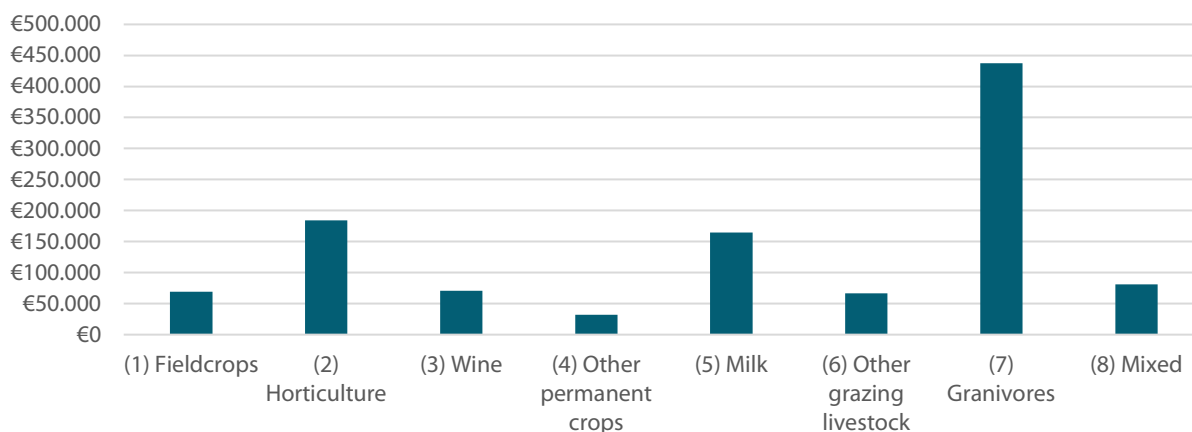
Recent global crises resulted in rising input prices that led to increasing production costs and affecting the overall competitiveness and profit margins of EU agricultural businesses (Wesseler *et al.*, 2015; Gaupp-Berghausen *et al.*, 2022). **The EU agricultural sector was found to be particularly dependent on feed input products, particularly high protein feed, including soy beans, as well as energy, where one third of the imports consist of diesel.** Additionally, seeds and planting material, along with fertilisers and plant protection agents, play crucial roles, as shown in section 2.1.b (Wesseler *et al.*, 2015; Albaladejo Román, 2023). These inputs, including plant-based proteins and maize, are imported to the EU from only a few countries, such as Brazil and the United States. Additionally, the dependence of certain Member States on the import of specific chemicals exceeds 70% (e.g. iodine from Chile and red phosphorus from Kazakhstan) (SWD(2022) 41 final, 2022; Albaladejo Román, 2023). This dependency on inputs was raised, for example, by the European Parliament (*Resolution (EU) 2022/2593*, 2022) and by the European Council in 2022, as input prices for natural gas, nitrogen fertilisers and sunflower products dramatically increased following Russia's invasion of Ukraine (Arce, Koester and Nickel, 2023).

Although energy and fertiliser prices have slightly decreased in 2023, input costs remain high, exacerbated by a weaker Euro in global markets. This affects the international competitiveness of EU agri-food products. While input price pressure is expected to ease in 2023, elevated input costs continue to pose challenges to the livestock farms and **reduces overall farm profitability**. Disparities in income and value creation across farming types and regions further contribute to the complexity of the situation (European Commission, 2023b).

As depicted in Figure 15, some farm types face relatively high input costs. This may also hold true for the type of farm production: Niedermayr *et al.*, (2021), highlights the importance of public subsidies to retain overall market viability in the case of organic and integrated organic hay milk farms. Subsidies are necessary to compensate for economic disadvantages tied to organic production, as compared to non-organic production. In this regard, specific CAP agri-environmental measures are important as they improve farm viability in organic production. While possibly beneficial in terms of promoting

environmental sustainability, these measures also increase farm subsidy dependency (Niedermayr *et al.*, 2021).

**Figure 15: Average input cost per farm per farming type, EU-27 in 2020**



Source: Project team, 2023, based on FADN SE270

### 2.2.5. Climate change and production risks

#### **Agricultural production contributes to climate change**

While EU agriculture is being severely impacted by climate change, it also contributes to it. The existing farming systems in the EU play a role in ongoing climate change, accounting for 12% of the EU's global greenhouse gas emissions in 2016 (Van Doorslaer *et al.*, 2019). This highlights a pressing need to adapt production systems and infrastructure throughout the farming types. Indeed, the current system highly stresses soil and water, two interlinked and essential resources for agricultural production. For instance, a third of the EU's agricultural soil is considered eroded beyond sustainable level; 38% of EU water bodies are contaminated by agricultural pollution (Unesco, 2015; European Court of Auditors, 2021).

#### **Climate change affects the competitiveness of agricultural production**

Agricultural production is highly sensitive to climate and weather and, as such, it is highly exposed to climate change and associated extreme weather events. The latter are already having a direct and severe impact on crop yields affected by, for example, persistent water shortages and droughts. Climate change is expected to alter production patterns in some parts of Europe through altering biodiversity, introducing new pests and diseases, altering seasons and increasing the frequency of catastrophic weather events. The impacts of climate change may also influence agricultural production from a geographic perspective; northern European regions may become more favourable for crops such as wine and the production of water-intensive crops may become less viable in the drier and hotter southern regions. Such changes may also affect farm income and its distribution across the EU (European Environment Agency (EU body or agency), 2019; OECD, 2019a). While changes to crop production and crop yield may be compensated by increased productivity levels – for example through more automation or new technologies – these issues remain pressing challenges for EU farmers (Adamišin *et al.*, 2015; Issanchou, 2016; Garcia-Alvarez-Coque *et al.*, 2018).

Furthermore, negative effects of climate change on agriculture tend to be self-reinforcing. For example, the deterioration of growth conditions for crops may encourage farmers to increase the use of fertilisers and pesticides. Besides the negative impact on biodiversity, this reduces the organic matter of the soil, encouraging more erosion and less water retention. However, this negative self-reinforcing feedback

effect may be mitigated through a change in agricultural practices, such as reducing intensive farming and monoculture farms. Nonetheless, more systemic and disruptive adaptations will be required to fully address the consequences of climate change (Bernal, Alburquerque and Moral, 2009; European Commission. Directorate General for Research and Innovation 2020).

### **Climate change increases vulnerability of agriculture**

Climate change in Europe may lead to major modifications of bioclimatic factors on which the agricultural and food sectors are highly dependent. Global warming will cause temperatures to increase significantly<sup>11</sup>. Hence, the warm season is expected to expand and a change to the production calendar is likely to occur. This change is attributed to an earlier onset of growth in spring and an extended growing season into the autumn (Calvin *et al.*, Intergovernmental panel on climate change (IPCC), 2023). On the one hand, climate change will cause the intensification and severity of droughts, increasing water stress and soil dryness. Water accessibility for agriculture will be a major challenge in the coming decades as municipalities prioritise water for human consumption. On the other hand, extreme climate events with higher rainfall and hailstorms are also expected to occur more frequently and intensively. Such events have a strong impact on production and yields, with risks to soil erosion and associated silting of river systems. This, in turn, exacerbates flooding of land and properties. Warmer winters and late frost impact is expected to be more frequent and severe. Agricultural systems are also expected to face increased exposure to pests and diseases. Overall, climate change will lead to a reduction of the area for cultivation, an increase in yield variability, and less resilient agro-ecosystems exposed and vulnerable to extreme climate events.

### **Finding the right balance between competitiveness and sustainable farming practices**

Results from Niedermayr, *et al.* (2022) show that farms applying ecological farming approaches tend to have better environmental performance than those applying conventional farming practices. However, this transition to more sustainable production techniques can also come at a cost of lower farm productivity and competitiveness. Organic farming practices tend to have a less productive use of land and labour as the technologies associated with ecological approaches may be less productive (Lakner and Breustedt, 2017; Schulte *et al.*, 2018). Yet Guesmi and Serra (2015) found environmental regulations to positively impact farms performance.

The diverging results demonstrate a challenge for farms to find the right balance between competitiveness and sustainable farming practices. This also highlights the dilemma between the achievement of the EU Green Deal's objectives and safeguarding EU food security and affordability, both inducing trade-offs.

#### **2.2.6. The high requirements of EU legislation relating to environment, climate, animal welfare and consumer protection**

EU farmers must comply with regulations and rules to ensure the quality and sustainability of their products. The fulfilment of these EU specific requirements and standards tend to increase production costs and thus the price of farmers' products, decreasing the competitiveness of their products on the global food market.

The EU strives to achieve ethical and high-quality standards of food production processes. Regulatory standards for agricultural production practices – such as in the fields of **environment, animal welfare and food safety** – play an important role in safeguarding food safety and food security, as well as in

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<sup>11</sup> According to the 6th IPCC Report (2023), temperatures are on average already 1.09°C higher than in the timeframe 1850-1900 and the projection anticipates a further rise up to +4°C in 2100 if no changes are made.

the provision of public goods. However, implementing regulatory standards and changes may have a significant impact on the competitiveness of EU producers as well as the international trade in food (Matthews, 2022). Compared to competitors on the world market, EU farmers must meet increasingly stringent requirements, which increase production costs but also administrative requirements. Additionally, EU farmers face regulations and rules to ensure the quality and sustainability of their products.

Some studies from the past 15 years demonstrate a **positive link between environmental practices and the competitiveness of farms**, especially concerning a more efficient use of inputs (Galdeano-Gómez and Céspedes-Lorente, 2008; Guesmi and Serra, 2015; Cohen and Tubb, 2018). These studies show potentially positive impacts on farm competitiveness arising from regulatory changes and standards. For instance, a meta-analysis from Cohen and Tubb (2018), highlights positive effects on innovation and country-level competitiveness of environmental regulations, when environmental regulations remain flexible but are consistently applied.

### 2.2.7. Evolving food demand from consumers

Consumers' demand for plant protein is increasing, driven by an interest in alternative protein sources to meat, awareness of the benefits of plant-based diets to meet climate change objectives, as well as health-conscious dietary choices (Guadarrama *et al.*, 2023). In 2023, 51% of EU citizens reported a reduction in their annual meat intake, reflecting a 5% increase compared to 2021. The survey showed that 28% of EU consumers regularly eat plant-based alternatives and 43% stated they plan to increase their purchase and consumption of such products (Guadarrama *et al.*, 2023). Similar to the findings from Eurobarometer surveys, this purchase is conditioned on the tastiness of the product (53%), its healthiness (46%) and affordability (45%) (Guadarrama *et al.*, 2023). These concerns call for more affordable local and/or organic food products, possibly leading to a reduction of (red) meat consumption by EU citizens, both for health and ethical reasons (European Commission. Directorate General for Agriculture and Rural Development, 2021).

This shift in consumers' preferences is causing important adaptation efforts as well as conveying high costs for the agricultural sector to meet the demand and adapt its production methods (Lanos *et al.*, 2019; European Commission. Directorate General for Agriculture and Rural Development, 2022). For example, the increased consumption of plant-based protein instead of animal protein competes with the use of such crops for animal feed. According to a report from Greenpeace (2019), over 71% of EU farmland is dedicated to the production of fodder for the livestock farms. Furthermore, EU Member States only devote 3% of their agricultural land to plant-based proteins, making the EU depend on third countries. In 2018 more than 75% of the EU's plant-based proteins were imported from third countries, such as Argentina, Brazil and the United States (Albaladejo Román, 2023).

### 2.2.8. Competitiveness of agriculture considering characteristics of rural areas

Most agricultural activities are linked to the soil and related geospatial and environmental conditions. Hence, location has a sizeable impact on the productivity and competitiveness of farms (OECD, 2011; Lakner, Cramon-Taubadel and Brümmer, 2012; Giannakis and Bruggeman, 2015; Nowak, Kijek and Domańska, 2015; Garcia-Alvarez-Coque *et al.*, 2018; Niedermayr *et al.*, 2021).

The specific characteristics of rural areas are a determinant factor for agricultural competitiveness. Depending on area specificities, agriculture competitiveness challenges vary greatly from one rural area to another. In relatively densely populated rural areas with high agricultural potential, competitiveness challenges relate to the coexistence between an agricultural activity and the expectations of rural populations in terms of environmental issues and interaction with other economic

sectors. Yet, in remote and sparsely populated areas, agriculture remains an essential element of the economy, maintaining the vitality of the area.

However, agriculture remains a common feature of all rural areas, regardless of their specificities. Therefore, the development of competitive agriculture is key to achieving the EU's economic, environmental and social objectives.

### 3. FARM INCOME AND COMPETITIVENESS IN 2014-2022

#### KEY FINDINGS

- The CAP 2014-2022 supported farm incomes with the aim of ensuring a viable farm income, providing on average 27% of gross farm income in 2020. CAP support increased in comparison to the 2007-2013 period. Income stabilisation through direct payments mitigates the impact of market fluctuations and/or production risks.
- CAP income support is important for the diversity of agricultural production and balanced territorial development, including farms located in more constrained areas. It also keeps less competitive farms in the market, whether for social or environmental reasons.
- The measures supporting competitiveness objectives account for approximately 19% of EU CAP 2014-2022 support. The measures in this category include coupled support, market measures, investment in farm modernisation and support for young farmers.
- Labour productivity increased in the 2014-2020 period, overall and across types of farms. Large differences in average labour productivity and gross farm income remain across farming types and Member States, with grazing livestock and non-specialised farms lagging behind.
- As identified by evaluations of the Rural Development Policy (EAFRD 2014-2022 funding), the CAP enhanced farm competitiveness by supporting investments (M04, M06), human capital and digitalisation (M01, M02, M16) at farm level. Investment support (M04, M06) is effective in terms of sustaining farms by enhancing their physical capital. Support to improving human capital (M01, M02, M16) and access to innovation is effective, however, their full effects will likely only be visible in the long term.

The study differentiates CAP support to farm income from CAP support to competitiveness where the level of support is concerned, as mentioned in Chapter 1 (see section 1.3).

This study primarily focuses on measures directly contributing to farm competitiveness. However, a brief assessment of the impact of CAP support on farmers' income for the 2014-2020 period was conducted, as required by the terms of reference. Income support contributes to farms' viability and is an important first step towards farm competitiveness. Hence, Chapter 3 starts with the assessment of CAP subsidies on farm income and income disparities (section 3.1), followed by an analysis of CAP support to farm competitiveness, specifying the instruments and measures supporting competitiveness and the level of support (section 3.2). Finally, section 3.2.4 describes the contribution of the instruments and measures to competitiveness challenges developed in Chapter 2. A review of EU-level evaluation studies of the 2014-2020 period and the 2018 DG AGRI Impact Assessment provided comprehensive insights into the various effects of the CAP with regards to farm incomes, disparities, prices and farm competitiveness.

#### 3.1. CAP support to farm income in 2014-2020

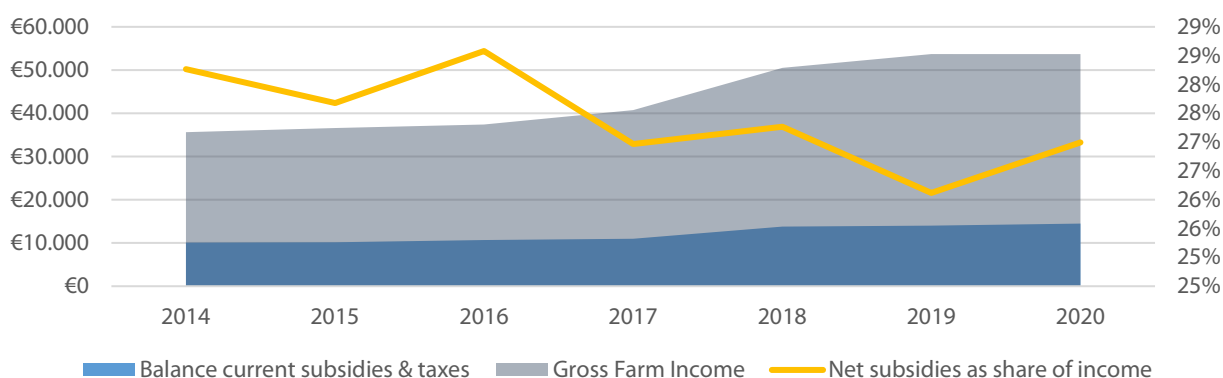
##### 3.1.1. CAP support in gross farm income

Farm income can be measured in multiple ways, notably in terms of gross farm income or FNVA. This section discusses gross farm income as defined by the FADN, which provides data on this metric

(see Annex 5). Gross farm income is composed of farm output, subsidies minus taxes, minus the intermediate consumption by the farm<sup>12</sup>.

Overall, gross farm income has been increasing since 2014 (see Figure 16), with a relatively strong increase from 2017 onwards across the EU-27. Concurrently, there has been a decrease in the share of farm subsidy receipts (defined by the FADN as all farm support except investment support). In 2014, subsidies constituted 28% of the average farm income. By 2021, this proportion declined to 25% due to recovering output prices. The initial high significance of subsidies relative to farm income is attributed, in part, to low market prices, especially for milk and cereals, in 2014 and 2015 when CAP support played a crucial role in income stabilization (Agrosynergie, 2020).

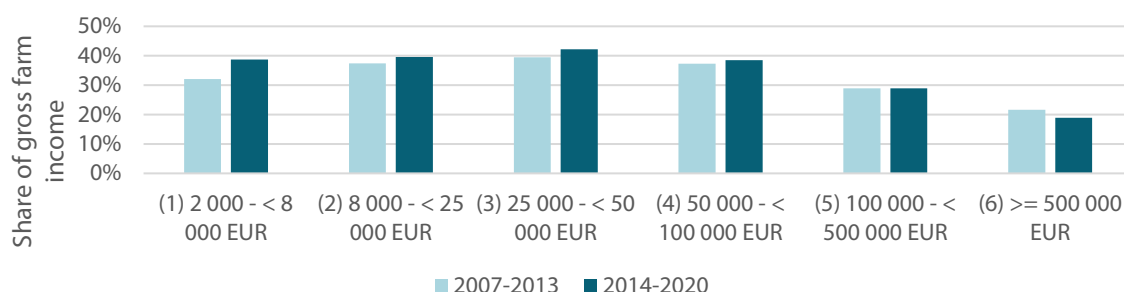
**Figure 16: Average gross farm income and total subsidies (2014-2020, EU-27)**



Source: Project team, 2023, based on FADN indicators SE410 gross farm income and SE605 balance subsidies and taxes. Note: nominal data is presented in the figure

The net public support received<sup>13</sup> by small farms increased in the 2014-2020 period, as compared to the 2007-2013 period (see Figure 17). In 2014-2020, support to the smallest farms (standard output<sup>14</sup> below EUR 25 000) amounted to 34% of gross farm income on average over the period, increasing to 39% for medium farms (standard output between EUR 25 000 and EUR 50 000). Larger high-income farms (above standard output of EUR 500 000) generally saw lower levels of support relative to their incomes, with the largest farms receiving 18% of gross farm income in subsidies on average, down from 22% on average in 2007-2013.

**Figure 17: Intensity of on-farm support by farm size class (average 2007-2013 and 2014-2020, EU-27)**



<sup>12</sup> It must be noted that differences in data collection methodologies across time and across some Member States may introduce a degree of uncertainty in the presented data.

<sup>13</sup> As defined by SE605 subsidies minus taxes.

<sup>14</sup> Standard output, as used by FADN to differentiate between economic size classes of farms, is the average monetary value (in EUR) of the farm agricultural production.



Source: Project team, 2023, based on FADN indicators SE410 and SE605. Note: on-farm support includes all farm support received via CAP, except for investment support

Average **gross farm income** varies significantly by types of production (see Table 2), with average gross incomes particularly high for granivores and horticulture farms. Mixed farming sees relatively lower average gross incomes, as do other permanent crops (olives and specialised orchards) and grazing livestock other than dairy. An increase in gross farm income has not been equal across all farming types in the 2014-2020 period. When assessing farming type differences wine and field crop producers particularly lagged behind (see Table 2) in terms of income growth combined with moderate gross farm income levels.

Whereas farm average incomes increased by approximately 50% across all types, this increase was particularly strong for mixed farms (86%), granivores (59%) and permanent crops such as olives and specialised orchards (57%). However, high-income farming types such as horticulture, dairy and granivores also saw very high income growth rates. In comparison to the 2007-2013 period, these developments represent a sizeable improvement for most types.

Large income differences in terms of gross farm income remained across the EU in 2020 due to differences in farm structure and specialisation (see Annex 2 for a detailed Member State and farming type perspective). Member States with relatively stronger differences in farm type gross income include BE, BG, CZ, DK, EE, FI, IE, NL, SE and SK. In particular, capital-intensive farms (such as horticulture, dairy and granivores) across Member States show high gross income in comparison to other farm types. Horticulture depicts substantially higher average gross income in BE, DK, FI, SE and NL relative to other types. Conversely, farms specialising in granivores portray much higher gross farm income in BG, CZ, DK, IE, RO and SE. Dairy farms are also economically relatively larger in CZ, DK and SK.

**Table 2: Change in gross farm income by type of production**

	Total change 2007-2013	Total change 2014-2020	Gross farm income (2020) *
(1) Field crops	-8%	24%	€ 46 000
(2) Horticulture	11%	57%	€ 125 000
(3) Wine	6%	24%	€ 68 000
(4) Other permanent crops (olives and specialised orchards)	7%	26%	€ 36 000
(5) Dairy	25%	63%	€ 84 000
(6) Other grazing livestock	-9%	47%	€ 39 000
(7) Granivores	84%	65%	€ 165 000
(8) Mixed	18%	86%	€ 40 000
All farming types	21%	51%	€ 55 000

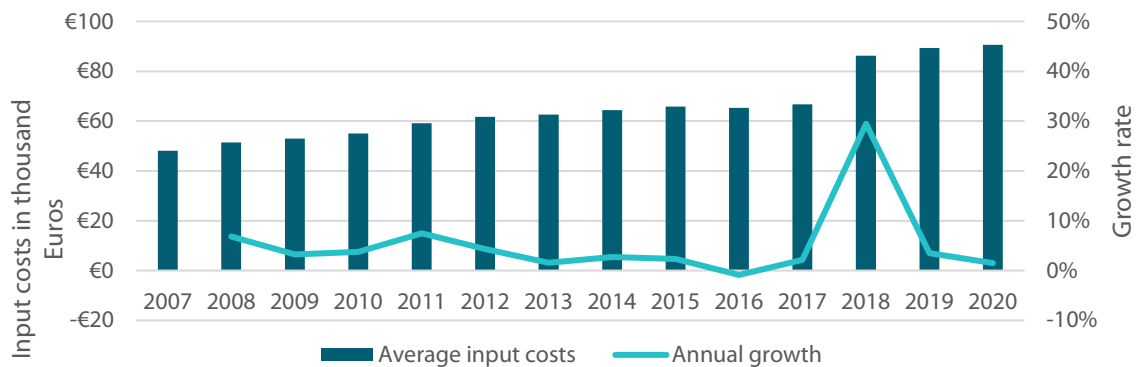
Source: Project team, 2023, based on FADN data, SE410 gross farm income. Note: GFI for 2020 is given indicatively, bearing in mind that income varies greatly from one year to another

**Farm input prices<sup>15</sup> increased significantly between 2007 and 2020, in excess of inflation (see Figure 18).** On average, farm input prices increased by 5% annually between 2007-2013 and by 6% annually between 2014-2020. Average farm inputs were priced at EUR 62 000 by 2013, increasing from EUR 48 000 in 2007. Similarly, strong input cost growth can be observed between 2020 and 2014: average input prices increased to EUR 90 000 in 2020 from EUR 64 000 in 2014. This phenomenon is

<sup>15</sup> As defined via FADN indicator SE270 to include: specific costs + overhead + depreciation + external factors.

well known in the agricultural sector as the “price squeeze” phenomenon, where the price of inputs rises faster than the sale price of the agricultural products themselves.

**Figure 18: Evolution of input costs (2007-2020), EU-27**

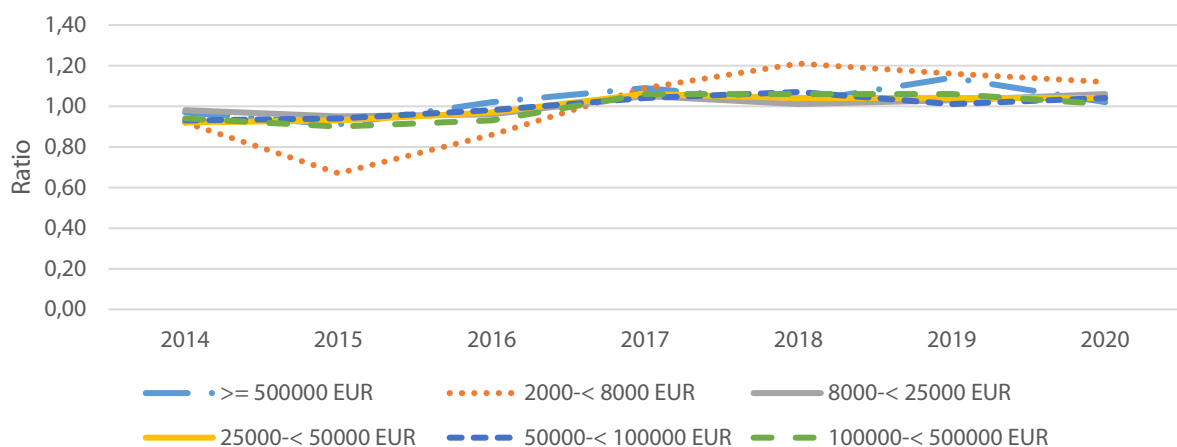


Source: Project team, 2023, based on FADN SE270. Note: this figure presents nominal prices

### 3.1.2. CAP support in farm income and variability

Overall, public support and other state interventions<sup>16</sup> tend to increase the profitability of farms (Garcia-Alvarez-Coque *et al.*, 2018; Niedermayr *et al.*, 2021<sup>17</sup>; Staboulis *et al.*, 2022; Staniszewski & Borychowski, 2020<sup>18</sup>), supporting farm incomes and farm viability (Kleinhanß *et al.*, 2007; Matthews *et al.*, 2016). With the relative reliability of the direct payments as an income source in comparison to market revenues, the CAP contributes to farm income stability. Farm income variability has remained relatively stable for most farms between 2014 and 2020, as the result indicator RPI02<sup>19</sup> (Figure 19) shows. However, the smallest farms (annual income between EUR 2 000 and EUR 8 000) and the largest farms (annual incomes above EUR 500 000) were more exposed to income fluctuations.

**Figure 19: Farm income variability ratio, by farm size, EU-27 (RPI02)**



Source: Project team, 2023, based on CMEF data

<sup>16</sup> With exception of aid redistribution instruments and support targeting environmental issues and societal demands.

<sup>17</sup> Demonstrated for a Swedish, a (West-) German and an Austrian case study.

<sup>18</sup> Demonstrated for large farms.

<sup>19</sup> 'RPI\_02 Variability of farm income'.

Several evaluations identified the important role of CAP support in the overall viability of the EU farming sector (SWD (2018) 301 final, 2018). The evaluation of direct support, conducted in 2011 (Agrosynergie, 2011), highlighted its role in the generation of farm income in the pre-2014 period. The evaluators also found differences in effects between family and non-family farms<sup>20</sup>. In non-family farms, decoupled direct payments<sup>21</sup> stabilised incomes and provided incentives to making investments. In family farms, the effects of decoupled payments may have boosted farm income. However, the positive effects are overall less pronounced since they do not necessarily affect the time split between on-farm and off-farm work of family employees. In both family and non-family farm cases, coupled payments incentivise production, generally above economically efficient levels<sup>22</sup>. Furthermore, Agrosynergie (2011) found that direct support positively impacts the reduction of difference in income per AWU between smaller and larger farms. Direct support may have contributed more strongly to the income of small farms than to the income of larger farms. Income stabilisation was found to be particularly pronounced among farmers in less-favoured areas (LFA), as they tend to have a lower income before subsidies than their non-LFA counterparts. The positive correlation between income support and farms affected by specific constraints or in certain types (e.g. permanent crops, horticulture, grazing livestock and mixed farms) was highlighted by several studies of LFA and organic farming (Agrosynergie, 2011; Bojnec and Latruffe, 2013; Niedermayr *et al.*, 2021; Kumbhakar, Li and Lien, 2023).

**Direct support of the CAP has also been linked to stronger farm concentration and specialisation since the 2003 CAP reform.** The evaluators identified that smaller farms, along with mixed farms and those less specialised, are most likely to exit the agricultural sector (Agrosynergie, 2014). Decoupled support may have resulted in a decrease in labour input intensity among supported farms, as there was a faster decline in labour use across all groups and regions after its introduction. This reduction in labour could be associated initially with inefficient farm labour allocations being artificially sustained due to coupled support. Indeed, this decline appeared to be even more rapid in the EU-12, which historically had a higher level of labour intensity compared to other Member States (Agrosynergie, 2014).

Using an input-output analysis, Matthews *et al.* (2016) estimate that the direct payments between 2015 and 2018 resulted in value generation of approximately EUR 103 billion for farms and upstream businesses. Direct payments provided the income support for farms to remain viable and thus not to exit the sector. While this represents a positive impact in terms of improving farm viability, it may also mean that less competitive farms are artificially sustained through CAP support. As found in an evaluation of the CAP's contribution to viable food production (Agrosynergie, 2020), direct income support enables farmers to cope with negative external income effects, such as strong negative price fluctuations. Both coupled and decoupled support between 2010 and 2015 increased farm income, with decoupled support deemed relatively more effective. Without CAP support, the degree of income uncertainty would have increased significantly throughout the farming types across the Member States. Further income support is positively related to increases in farm income and indirectly contributes to capital accumulation. The Pillar I instrument of redistributive payments is deemed to favour smaller farms, thus contributing to the reduction of disparities between larger and smaller farms (Agrosynergie, 2020). This was also found by Schuh *et al.* (2021) in an evaluation of Pillar I direct support

<sup>20</sup> Here non-family farms are understood as 'farm enterprises where most of the work is provided by external labour' and family farms are understood as 'farms where a relatively large amount of labour is supplied by the farm manager and his/her family' (Agrosynergie, 2011a, p. 31).

<sup>21</sup> Decoupled direct payments are subsidies that are not bound to production variables (e.g. prices, hectares, market conditions). In this case, they primarily take into consideration the CAP's Single Area Payment Scheme implemented with the Regulation (EC) No 1782/2003 (Agrosynergie, 2011a, p. 22).

<sup>22</sup> In this study, all farms whose Return On Assets were higher than, or equal to, the interest paid on their loans (Agrosynergie, 2011a, p. 185), were deemed as economically efficient.

in the 2014-2020 period: direct payments support income reliability and stability. Direct payments can also enable beneficiary farms to compensate otherwise constraining circumstances, such as in LFA, or improve their competitiveness in relation to other economic sectors in peri-urban areas (Schuh *et al.*, 2021).

In the context of income stabilisation, common market organisations (CMOs) in particular were found to improve farm viability by providing cash-flow reliability in the contexts of sectorial crises, as was the case in Apulia (Italy) with support to the olive oil sector due to the *Xylella fastidiosa* crisis (Schuh *et al.*, 2021). While market measures may not fundamentally affect the farmer's production decisions, they limit the effects of price volatility of most agricultural products on farmers by providing essential income stabilisation. Furthermore, they are deemed to be beneficial compared to their administrative costs and **avoid the increase of income disparities** between small and large farm structures (Agrosynergie, 2020).

## 3.2. Support to farm competitiveness over the 2014-2022 period

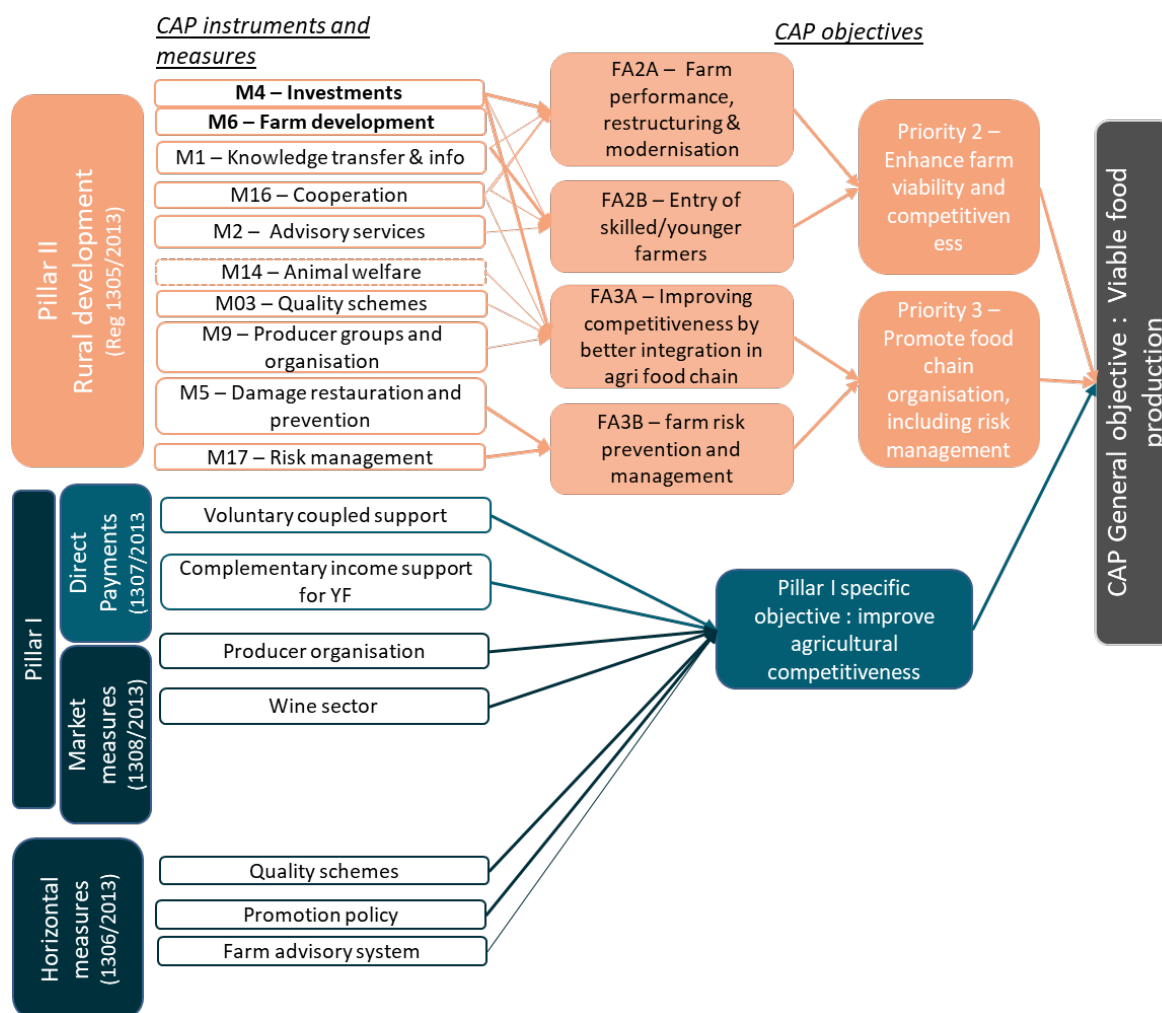
### 3.2.1. CAP instruments and measures supporting farm competitiveness

In relation to analysing CAP support to farm competitiveness, this section focuses on the measures and instruments explicitly associated with competitiveness objectives under Pillar I and Pillar II<sup>23</sup>, as illustrated in the intervention logic (Figure 20).

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<sup>23</sup> In 2014-2020, Pillar II was organised around six priorities and 18 focus areas (FA). Priorities 2 and 3 include focus areas and measures enhancing competitiveness.

**Figure 20: Intervention logic of 2014-2022 CAP related to competitiveness objectives**



Source: Project team, based on CAP intervention logic for Pillars I and II under the [Technical Handbook on Monitoring and Evaluation Framework of the CAP 2014-2020](#), DG AGRI, June 2017.

Specific support under Pillar I concerns voluntary coupled support, complementary income support for young farmers, and specific market measures. Horizontal measures are mentioned for information.

Under Pillar II, Priority 2 (P2 "Enhancing farm viability and competitiveness") and Priority 3 (P3 "Promoting food chain organisation") foster competitiveness. These priorities include support measures for young farmers (Focus Area 2B). Additionally, farm risk and prevention (Focus Area 3B) constitutes one of the 10 policy areas of the OECD's Policy Framework for Investment in Agriculture. In total there are eight different support measures.

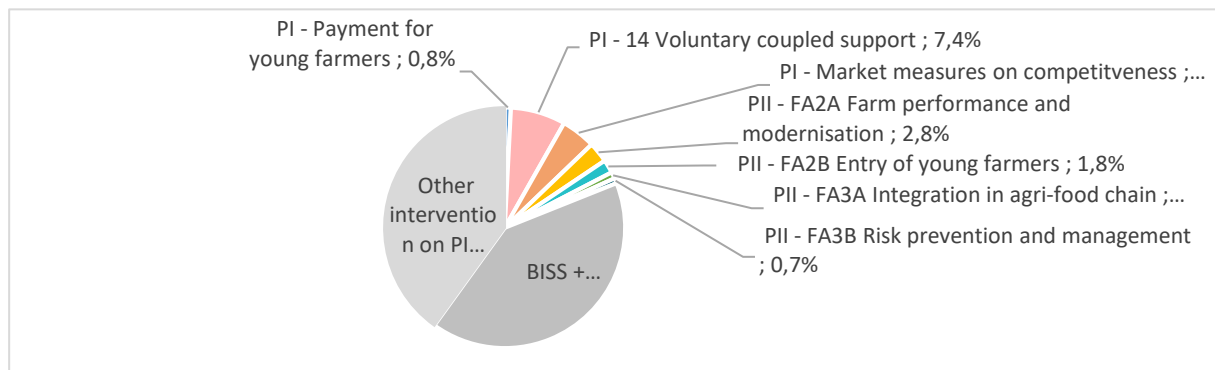
### 3.2.2. Level of CAP support for competitiveness specific objectives

The analysis focuses on the EU 2015-2021 CAP expenditures. The instruments and measures<sup>24</sup> are those identified in the intervention logic (see above). Of the EUR 372 billion of EU CAP expenditure 2015-2021, **around 19.0% concerned interventions linked to competitiveness objectives**. The main interventions or priorities concerned coupled support (Pillar I, 7.4% of EU CAP budget), market measures (Pillar I, 4.6% of EU CAP budget), investment in farm modernisation and performance (Pillar

<sup>24</sup> The term 'measures' was used in the 2014-2022 period especially for support of the EAFRD under the RDPs. In the 2023-2027 period, the CSP Regulation (EU) 2021/2115 considers interventions (see Article 3.3 of Regulation (EU) 2021/2115) meaning a support instrument with eligibility conditions.

II, Focus Area 2A, 2.8% of EU CAP budget) and support to young farmers (Pillar II Focus Area 2B, 1.8% + Pillar I, 0.8% of EU CAP budget).

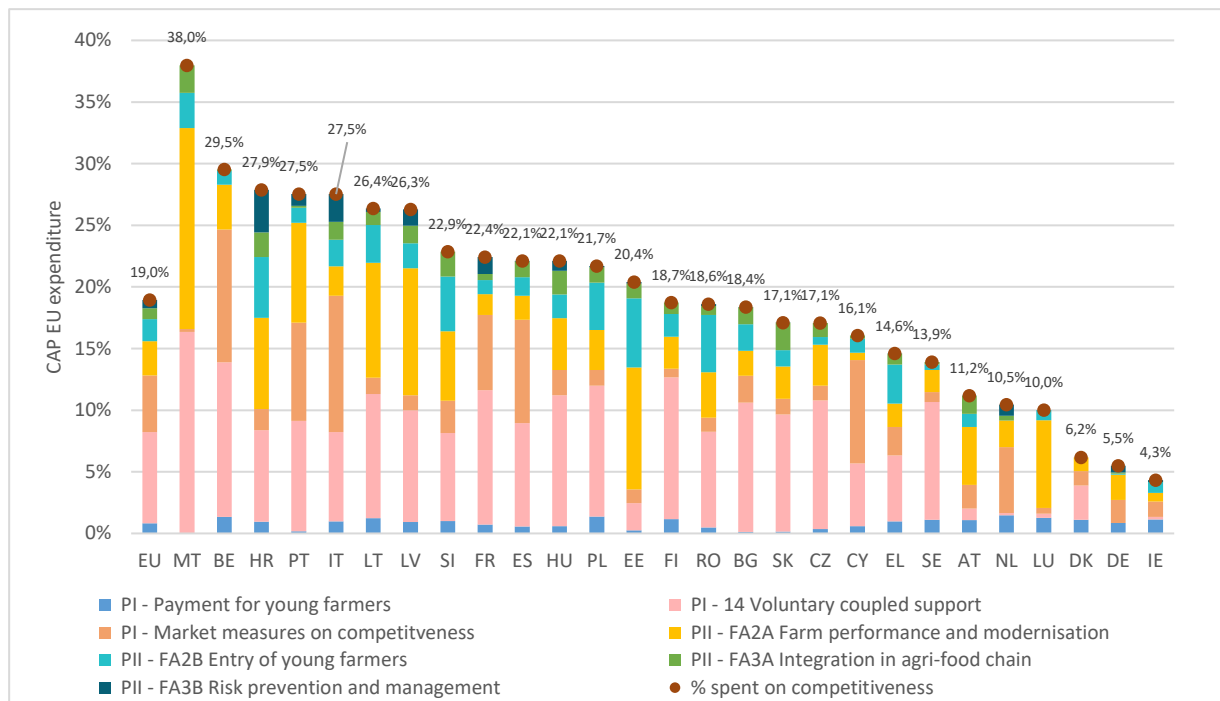
**Figure 21: Share of CAP EU expenditure 2015-2021 on interventions related to competitiveness objectives**



Source: Project team, 2023, based on EC DG AGRI 'Financing the CAP' (<https://agridata.ec.europa.eu/extensions/DashboardIndicators/Financing.html>)

The levels and strategies of support for competitiveness objectives vary from one Member State to another. Some Member States (MT, BE, HR, IT, LT, LV and PT) spend more than 25% of the CAP on these interventions, while others spend less than 10% (DE, DK, IE).

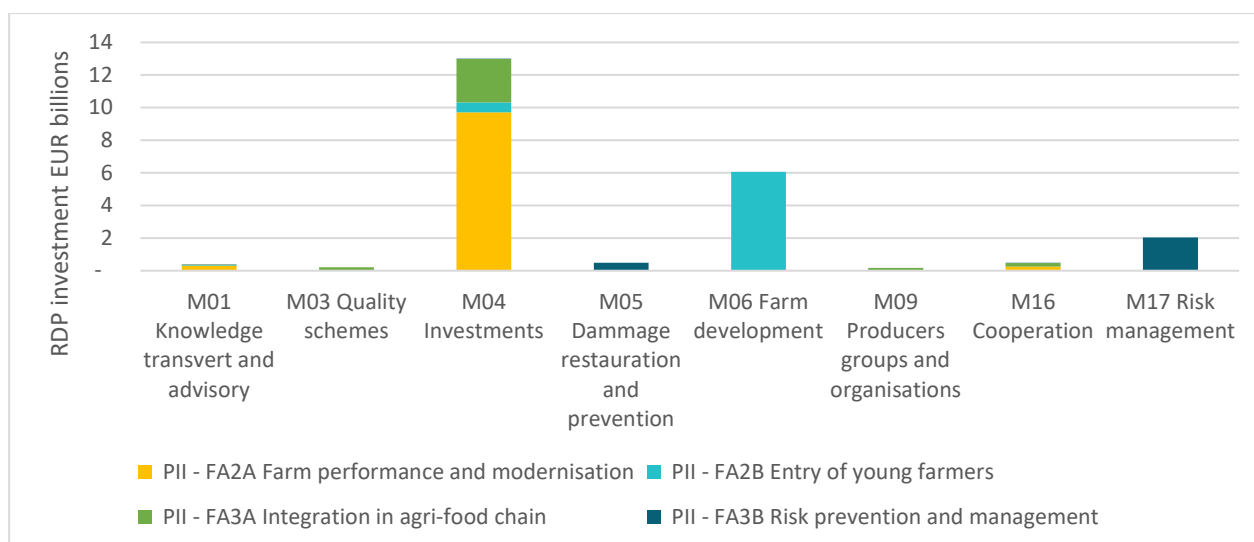
**Figure 22: Share of CAP EU expenditure spent between 2015 and 2021 on intervention related to competitiveness objectives at Member State level**



Source: Project team, 2023, based on EC DG AGRI 'Financing the CAP' (<https://agridata.ec.europa.eu/extensions/DashboardIndicators/Financing.html>)

At RDP level, investments (M04) in modernising agricultural holdings, processing and marketing agricultural products, along with the development of holdings through the setting-up of young farmers (M06), and to a lesser extent risk management (M17), are crucial for supporting competitiveness under Priorities 2 and 3.

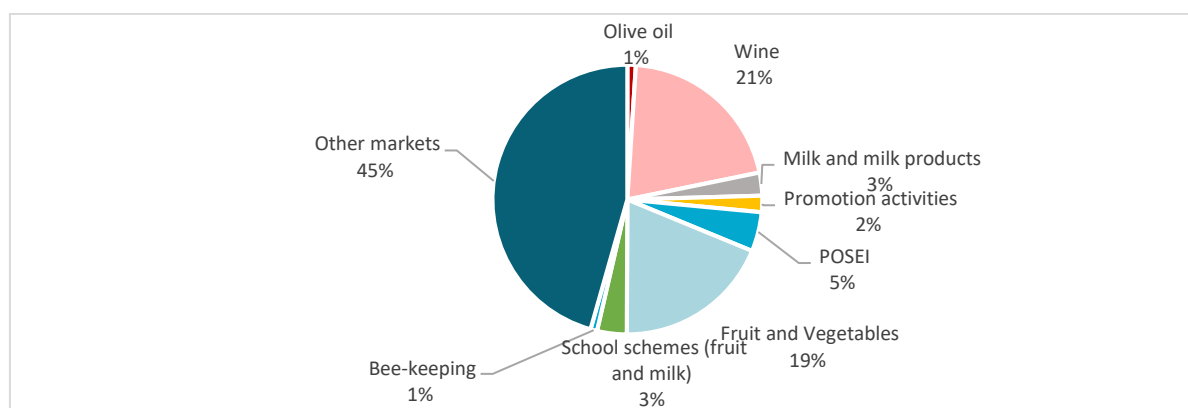
**Figure 23: EAFRD expenditure 2015-2021 on measures related to competitiveness objectives**



Source: Project team, based on EC DG AGRI ‘Financing the CAP’ (via AGRIDATA portal – Financing) (<https://agridata.ec.europa.eu/extensions/DashboardIndicators/Financing.html>)

The wine and the fruit and vegetable farms were the main beneficiaries of market measures between 2015 and 2020.

**Figure 24: EU expenditure 2015-2021 on market measures related to competitiveness objectives in % of total CAP (EAGF and EAFRD) expenditure at EU level**



Source: Project team, based on EC DG AGRI ‘Financing the CAP’ (via AGRIDATA portal – Financing) (<https://agridata.ec.europa.eu/extensions/DashboardIndicators/Financing.html>)

### 3.2.3. CAP support and labour productivity

#### Productivity

As discussed in Section 1.2, farm competitiveness can be measured in terms of productivity (total input needed for a unit of output). Over the period 2013-2021, the farm productivity has been stable across the EU-27 (see Figure 3). Average annual productivity growth per farming type, however, represents a more contrasted picture for the 2014-2020 period in comparison with the 2007-2013 period (see Table 3). While overall annual productivity growth stagnated in 2014-2020, some types saw relatively favourable developments. These included granivores, dairy and permanent crop farms. In contrast, average annual productivity growth at farming type level was lower or even negative for most types in the 2007-2013 period.

**Table 3: Average annual change in productivity by farming type (2007-2013 and 2014-2020)**

	Change 2007-2013	Change 2014 - 2020
(1) Field crops	-1%	2%
(2) Horticulture	-1%	2%
(3) Wine	-1%	3%
(4) Other permanent crops (olives and specialised orchards)	-3%	3%
(5) Dairy	-1%	4%
(6) Other grazing livestock	0%	1%
(7) Granivores	1%	5%
(8) Mixed	-1%	2%
All farming types	-1%	0%

Source: Project team, 2023, based on FADN SE132 Total output / Total input (ratio)

Average annual productivity growth by farm size depicts a similar picture, with farms performing better in the 2014-2020 period, along that metric, than in the 2007-2013 period (see Table 4). In particular, the smallest and the largest farms (respectively categories 1 and 6) saw the strongest annual average increases in productivity growth, with comparatively moderate performance of the remaining farm sizes classes.

**Table 4: Average annual change in productivity by farm size in annual turnover (2014-2020)**

	Change 2007-2013	Change 2014-2020
(1) 2 000 - < 8 000 EUR	-2%	5%
(2) 8 000 - < 25 000 EUR	-2%	2%
(3) 25 000 - < 50 000 EUR	-1%	2%
(4) 50 000 - < 100 000 EUR	-1%	1%
(5) 100 000 - < 500 000 EUR	-1%	1%
(6) >= 500 000 EUR	-2%	5%
All farm classes	-1%	0%

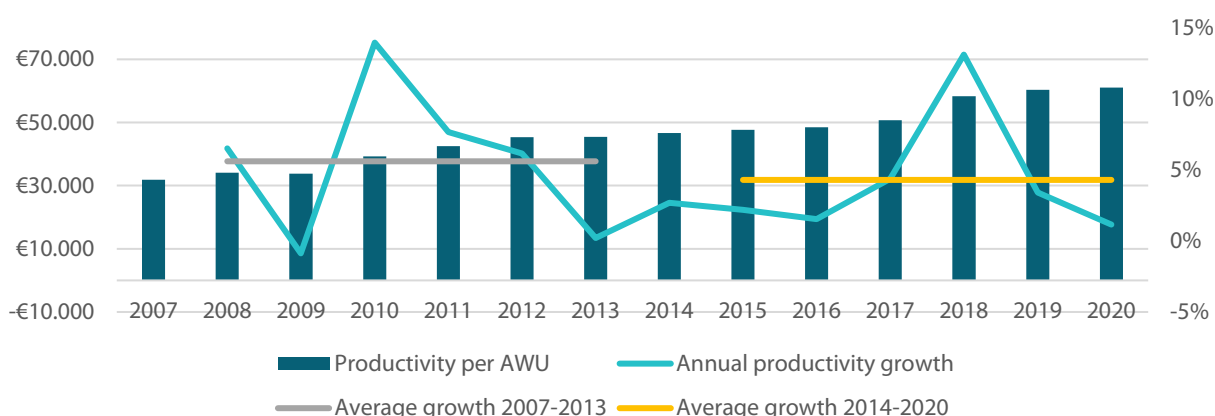
Source: Project team, 2023, based on FADN SE132 Total output / Total input (ratio)

At Member State level, farm competitiveness, as measured by total factor productivity<sup>25</sup>, varies, with some Member States and their farming types performing more strongly along that metric (see Annex 2 for an overview of a detailed Member State and farming type perspective in 2020). Member States showing the overall highest competitiveness in terms of productivity are Italy (especially in wine), Spain (particularly in terms of permanent crops) and Romania. Some Member States' farming types exhibit lower competitiveness. This includes Finland (for field crops, grazing and mixed farming), Estonia (especially for permanent crops, grazing and mixed farming) and Slovakia (for field crops, grazing and mixed farming).

**Labour productivity**, measured in total farm output (in EUR) per AWU has been steadily increasing since 2007 (see Figure 25). However, the average labour productivity growth rate has been declining since 2007 (as denoted by the horizontal bars in Figure 25). In the 2007-2013 period, labour productivity increased at approximately 6% on average, from EUR 31 800 to EUR 45 400. In the 2014-2020 period, labour productivity grew from EUR 46 000 in 2014 to EUR 61 100, representing an average annual increase of 4%.

<sup>25</sup> As measured by FADN SE132 Total output / Total input (ratio).



**Figure 25: Total output in EUR per AWU at EU-27 level**

Source: Project team, 2023, based on FADN SE010 Total labour input (AWU) and (SE131) Total output (Euro/farm)

At farming type level (see Table 5), annual productivity gains were highest in dairy farming and mixed farming in the 2014-2020 period. However, most farming types remained at a lower or similar level in terms of annual productivity gains in the 2014-2020 period compared to the 2007-2013 period, highlighting an element of declining returns to capital accumulation. A similar trend can be observed for labour productivity gains in terms of different farm sizes, with productivity gains slowing down across the farm sizes in 2014-2020, compared to 2007-2013.

**Table 5: Average annual labour productivity growth by farming type**

	Change 2007-2013	Change 2014 - 2020	Labour productivity (2020)
(1) Field crops	3%	2%	€53 000
(2) Horticulture	3%	3%	€64 000
(3) Wine	2%	2%	€56 000
(4) Other permanent crops	2%	3%	€32 000
(5) Dairy	8%	5%	€90 000
(6) Other grazing livestock	3%	5%	€45 000
(7) Granivores	13%	3%	€189 000
(8) Mixed	8%	7%	€50 000

Source: Project team, 2023, based on FADN SE010 Total labour input (AWU) and (SE131) Total output (Euro/farm)

**Table 6: Average annual labour productivity growth by farm size**

	Change 2007-2013	Change 2014-2020	Labour productivity (2020)
(1) 2 000 - < 8 000 EUR	1%	1%	€7 000
(2) 8 000 - < 25 000 EUR	0%	0%	€16 000
(3) 25 000 - < 50 000 EUR	-1%	0%	€30 000
(4) 50 000 - < 100 000 EUR	-1%	-1%	€47 000
(5) 100 000 - < 500 000 EUR	2%	-1%	€93 000
(6) >= 500 000 EUR	6%	1%	€142 000

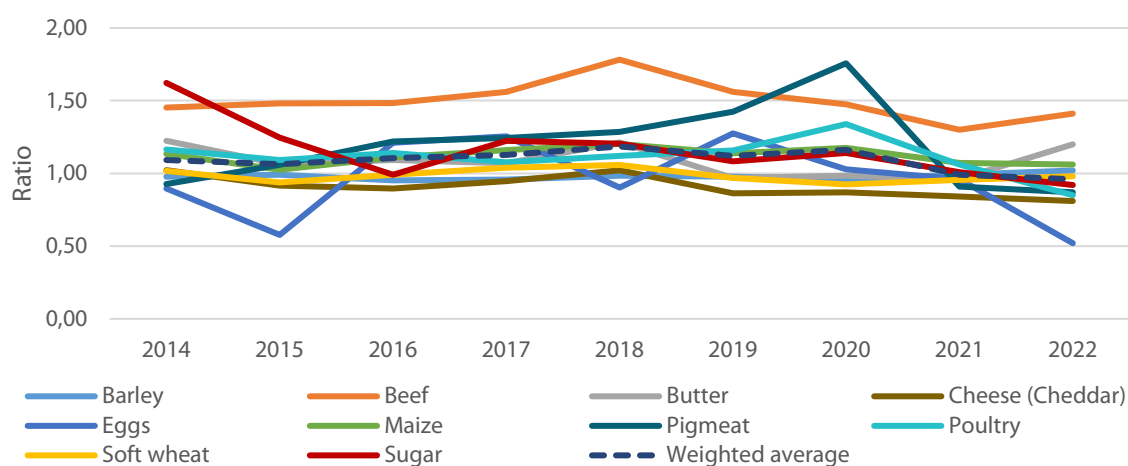
Source: Project team, 2023, based on FADN SE010 Total labour input (AWU) and (SE131) Total output (Euro/farm)

**Labour productivity**, measured as total output per AWU, varies significantly across Member States and farming types in Europe. In 2020, EU farms exhibited a wide range of labour productivity, with the highest observed in granivores type and the lowest in permanent crops, such as olives and specialised

orchards (see Figure 48 of Annex 2 for a Member State and sectorial perspective in 2020). Particularly striking is the broad divergence of labour productivity from one Member State to another, peaking at over EUR 690 000 per AWU in Irish dairy farming. Conversely, average productivity levels were notably low in BG, CY, HR, LT and RO. Granivores, mixed farms, field crops or dairy appear in the top three productive farming types in several Member States (prominently for IE, BE, DK, DE and SE).

The prices of **agricultural outputs** saw a higher degree of stability on average for most primary products. Figure 26 shows the evolution of the ratio between EU prices for primary products and world prices during the 2014-2022 period (as denoted by RPI08 “EU vs World prices”). The weighted average of this ratio shows a relatively stable evolution with only slight decreases since 2020. This figure also demonstrates that EU products are not necessarily the most price-competitive on the global market, with beef and butter particularly more expensive than world prices.

**Figure 26: EU prices to world prices (RPI 08)**



Source: Project team, 2023, based on CMEF data

### 3.2.4. CAP support to farm competitiveness

The CAP direct payments support agricultural incomes, providing income stability and reliability for farmers (Matthews *et al.*, 2016). These interventions may also have direct effects on prices and farm competitiveness, as outlined in this section. Furthermore, the EAFRD employed dedicated support to improving farm competitiveness through measures aiming to improve capital accumulation, access to innovation and knowledge exchange, advisory services and cooperation<sup>26</sup>. These initiatives played an important role in supporting farm competitiveness during the 2014-2022 period: by 2021, approximately 2.6% of all EU farms received support for restructuring or modernisation<sup>27</sup>.

### CAP support, income disparities and generational renewal

Overall, the instruments of Pillar I are considered necessary to reduce inter-sectoral and inter-territorial disparities in the EU when it comes to income, employment and business maintenance (Agrosynergie, 2020; Piet and Desjeux, 2021; Schuh *et al.*, 2021). The continued relevance of the CAP income support objective is further confirmed by an evaluation study of the impact of CAP measures towards the

<sup>26</sup> The final impacts of these measures for the 2014-2022 period may only be identified with the ex-post evaluations which are expected in 2026. Some other relevant CMEF information sources, such as the result indicator R.02 ('Change in agricultural output on supported farms/AWU (Annual Work Unit) (Focus Area 2A)'), are not yet available.

<sup>27</sup> See the CMEF result indicator R.01 'Percentage of agricultural holdings with RDP support for investments in restructuring or modernisation (Focus Area 2A)'.

general objective “viable food production” (Agrosynergie, 2020), which shows that the share of farms exhibiting a negative income grew between 2013 (5.8%) and 2015 (6.6%).

A study from the Joint Research Centre (European Commission. Joint Research Centre 2021), investigating the causal links between CAP policies and balanced territorial development, demonstrated that all CAP policies played an important role in maintaining agricultural jobs during the period 2011-2015<sup>28</sup>. For the same period, the study found that regions with CAP funding mixes featuring a relatively higher Pillar I expenditure had more positive impacts on agricultural value-added and land productivity compared to regions with very low Pillar I support.

Nevertheless, some side-effects of such subsidies can be observed, especially when it comes to disparities between farms. The evaluation study on viable food production, for example (Agrosynergie, 2020), shows that in 2015, 26% of the European farms were overcompensated (i.e. reaching an income per unit of labour superior to the average national labour productivity) while 74% were not reaching the benchmark.

The impact of the CAP’s measure encouraging **greener methods of farming** (Ecological Focus Area, crop diversification, permanent grassland) are evaluated as having no explicit impact on farms’ competitiveness. The Ecological Focus Area only had a very low impact on the area available for crop production. At the EU level, the crop diversification measure slightly decreased the areas cultivated for cereals and showed no significant effect on the profitability of farmers at Member State level. Signs of diverging effects on the profitability of crop diversification and production costs started to appear at NUTS 2<sup>29</sup> level. The study observed the evolution of economic variables of farmers engaging in crop diversification for all the Member States. At this level, no change of their economic viability was explained by their engagement in crop diversification. Divergences appeared, however, in the case studies which analysed the economic variables for some NUTS 2 regions (DE, PL, ES, FR).

The permanent grass measure only resulted in marginal changes in farm management decisions rather than limiting changes to farming systems (refraining from grassland ploughing, for example) (Hart *et al.*, 2017).

Positive impacts can be observed when looking at CAP’s support to **generational renewal** in Member States applying dedicated support. Instruments of the CAP Pillar I, such as the basic payments, were also found to have an indirect but positive impact on **generational renewal** of the farms by reducing depopulation<sup>30</sup> (Schuh *et al.*, 2021). However, this positive impact on generation renewal is accompanied by more long-term pervasive impacts of the CAP’s Pillar I instruments. As several studies showed (European Parliament, 2010, 2018; Dwyer *et al.*, 2019; Eistrup *et al.*, 2019; Gaupp-Berghausen *et al.*, 2022), young farmers, women and new farmers are particularly obstructed by difficulties in accessing land. This hampered land mobility is attributed to two factors:

- high land prices as a result of increases in land value relative to subsidies, as well as the capitalisation of direct subsidies by farmers into land prices and land rent (Ciaian and Swinnen, 2006; Kilian *et al.*, 2012; Matthews *et al.*, 2016; Salhofer and Feichtinger, 2020; Varacca *et al.*, 2022);
- the use of direct payments as substitutes and/or complement to pensions, thus delaying the retirement of older farmers (Dwyer *et al.*, 2019).

<sup>28</sup> The authors of the study did not make clear conclusions on the period 2016-2018, finding the limitations on data availability and the lack of a control group for this period too important.

<sup>29</sup> Nomenclature of Territorial Units for Statistics (NUTS), basic regions for the application of regional policies.

<sup>30</sup> These findings were gathered via interviews at regional and EU level (Schuh *et al.*, 2021, p. 13).

Increases in land prices in relation to basic payments are especially observed in Member States where agricultural land is usually rented and owned by non-agricultural investors, thus not completely supporting farmers and their businesses (Agrosynergie, 2020). Here, EAFRD measures (e.g. M06.1) may compensate such increases for young farmers. However, a case study in Castilla-La Mancha shows that the compensation is only partial (Schuh *et al.*, 2021).

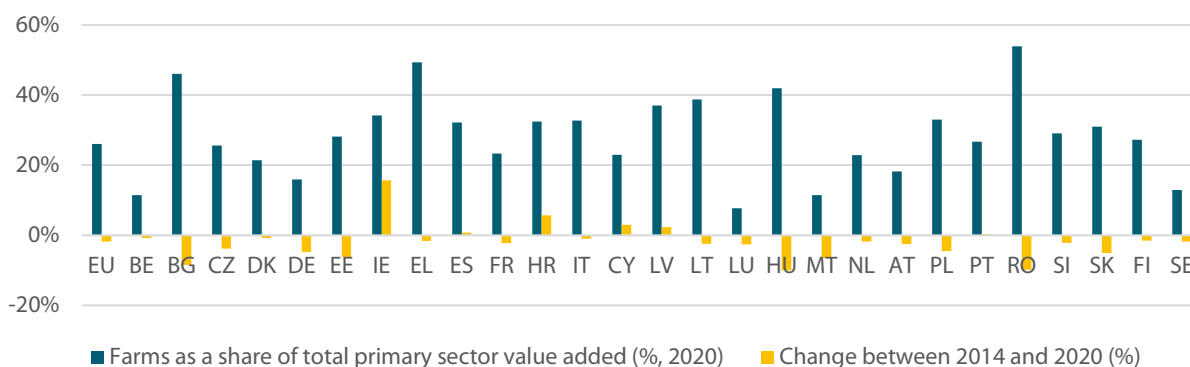
Nevertheless, CAP can support generational renewal in agriculture, even if with varying effectiveness, depending on the Member States or even the territories within Member States (Dwyer *et al.*, 2019). **The most effective use of the CAP’s generational renewal appears to happen where complementary policy support is implemented at several levels of governance, i.e. where CAP support is coherent with relevant national and regional policies on inheritance, pensions and land-use.** Such a multi-level governance approach allows a combination of institutional mechanisms and fiscal incentives to increase land mobility and the accompanying transfer of businesses between generations. The study provides several examples of measures implemented to enhance and facilitate generational renewal (Dwyer *et al.*, 2019). These include: creating farm partnerships; incentivising share-farming and other collective business models; providing help with retirement income planning and tax breaks for the gradual transfer of assets; using land banks; creating new non-profit organisations to consolidate and re-let landholdings to new entrants; initiatives targeted towards older farmers, including awareness-raising, advice and planning for successful handover.

### CAP support to farm competitiveness via investment and innovation support

The EAFRD 2014-2020 provides support to increasing farm competitiveness through supporting capital investments, support to advisory services and knowledge exchange, digitalisation, training, as well as diversification.

The relatively low degree of value chain integration is also highlighted in relevant literature as a negative aspect affecting farm competitiveness (see Annex 3). However, farmers throughout the EU-27 are not consistently well-integrated into value-chains (see Figure 27, RPI03). Farm value-chain integration works relatively well in some Member States, such as BG, RO, HU, LT and LV, where farmers represent an above-average share of primary sector value-added. Between 2014 and 2020, the position of farmers in the food chain improved by that metric only in some Member States, namely in IE, HR, CY and LV, and stagnating or deteriorating in most others.

**Figure 27: Farmers’ integration in the agricultural value chain (RPI03)**



Source: Project team, 2023, based on CMEF data

While **coupled and decoupled support was found to be relatively effective in directly increasing farm income**, EAFRD farm investment support (M04) played a significant role in **directly supporting capital accumulation at the farm level** (Agrosynergie, 2020) and **increasing farm productivity**

(Schuh *et al.*, 2020). However, support granted through M04 remains relatively low in comparison to EAGF support.

M06 particularly supported young and new farmers by alleviating investment constraints and reducing barriers to entry (Dwyer *et al.*, 2019). In general, support provided to young farmers (through M06 and the young farmers payments) can foster knowledge exchange and innovation. This is, in-part, due to EAFRD support being conditional on adequate training levels among beneficiaries. According to several case studies analysed by Dwyer *et al.* (2019), this approach demonstrated increased knowledge exchange and improved farm managers' technical and business skills.

EAFRD measures supporting knowledge transfer (M01), advisory services (M02) and cooperation (M16), including European innovation partnerships for agricultural productivity and sustainability (EIP-AGRI), supported competitiveness among farms by strengthening knowledge exchange, advisory services and innovation in rural areas. However, the impact of these measures may take relatively longer to materialise (Agrosynergie, 2020). The effectiveness of these three measures in improving human capital accumulation at the farm level was also found by Schuh *et al.* (2020) in an evaluation of the CAP's impacts on balanced territorial development. Support to on-farm innovation, however, may not be only linked to a limited set of measures within the EAFRD; primarily M01, M02, M16 and M19, and secondly M04 and M17, were identified as having the potential of influencing the emergence and adoption of innovation among farmers (Alliance Environnement, 2019).

Support through CMO also provided an important avenue towards improving farm competitiveness by supporting sectoral investment decisions (Schuh *et al.*, 2021); in Castilla La Mancha, CMO aided the restructuring of the wine sector between 2000 and 2020. CMO support also enabled the sector to increase their investments, modernising the sector and improving its competitiveness.

Additional support to farm competitiveness was made through LEADER (M19 of EAFRD, 'Links between activities for the development of rural economy' programme), as local action groups (LAGs) in the 2014-2020 period have supported farm diversification, farm restructuring and modernisation (Dwyer *et al.*, 2021). Explicit links between LEADER and farm diversification and competitiveness were found in the evaluation of LEADER (Dwyer *et al.*, 2021): LAGs in CZ, IT, PT and HR had a strong emphasis on Focus Area 2A farm restructuring and modernization; in AT and ES, support by LAGs was prominent in terms of on-farm diversification and agritourism. In addition, support through village renewal (M07) contributes towards improving infrastructure and quality of life in rural areas (Schuh *et al.*, 2021). This can have a beneficial effect on the farming sector, as highlighted by Schuh *et al.* (2021), in the case of new entrants as it makes the overall rural area more attractive for businesses.

### **Trade policy and farm competitiveness**

Trade policy can support the farm sector by creating jobs and enhancing added value. An analysis of the implications of EU trade agreements with South Korea, Mexico and Switzerland revealed the addition of nearly 13 700 jobs among primary producers, with agri-exports increasing by almost EUR 1 billion (European Commission. Directorate-General for Agriculture and Rural Development and Copenhagen Economics 2016). A thematically similar study on agricultural promotion policy (Tetrattech International Development Deloitte and IPSOS 2020), highlights the importance of labelling schemes as an essential tool to promote EU agri-food products. The evaluation found that the promotion policy was highly effective in enabling exporters to enter new markets in third countries and increase their market share there. Moreover, a Joint Research Centre study assessing the economic impact of future trade agreements on EU agriculture (Boulanger *et al.*, 2016 and Ferrari *et al.*, 2021), attributed potential

benefits to future trade agreements with 12 potential free trade partners<sup>31</sup>. The authors estimated an annual increase of agri-good exports between EUR 5.2 billion and EUR 6 billion with these trade partners by 2030. In particular, dairy and pork products stand to gain from trade liberalisation, along with others, including wheat, high value or processed agri-forestry products and alcohol. However, other products would be more exposed to risks, including beef, rice and, to a lesser extent, poultry and sugar.

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<sup>31</sup> United States of America, Canada, Southern Common Market countries (Mercosur), Australia, New Zealand, Japan, Vietnam, Thailand, Turkey, Mexico, Philippines and Indonesia.

## 4. OVERVIEW OF THE CAP 2023-2027 POTENTIAL SUPPORT TO FARM COMPETITIVENESS<sup>32</sup>

### KEY FINDINGS

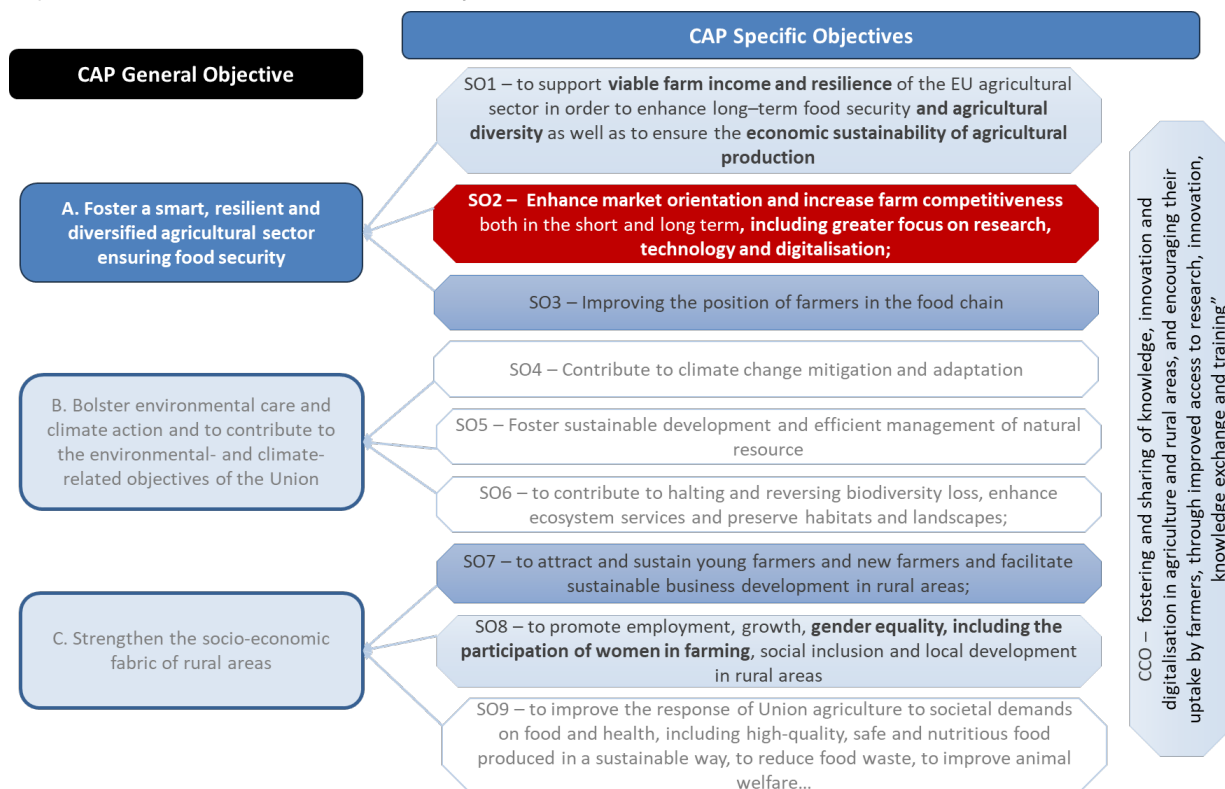
- The 2023-2027 CAP support to competitiveness is in continuity with the 2014-2022 period, including in budgetary terms (from 19% to 21% in EU funding). Co-financing and the national top-up should increase support from EUR 55 billion to EUR 73 billion.
- As in the 2014-2022 period, the use of the CAP interventions supporting competitiveness and the level of support varies significantly across Member States (from 10% to 30%). Member States' strategies notably differ in terms of the risk management tools, investment, sectoral support, including support to producer organisations, and cooperation.
- Support to productive investments remain one of Member States' main responses to farm competitiveness challenges. Six Member States stand out in funds allocated to productive investments.
- Although increasing, interventions such as risk management, knowledge exchange or cooperation have only limited resources and are often implemented outside the CAP. Most support to these interventions is concentrated on few Member States. The expected share of beneficiary farms generally remains limited and is not necessarily correlated with the level of support.
- Generational renewal is a priority of the 2023-2027 CAP associated with mandatory minimum spendings. The overall planned budget for young farmers is constant compared to 2014-2022, with a shift of funding from Pillar 2 (EAFRD) to Pillar 1 (EAGF).
- Gender is now explicitly integrated as a specific CAP objective (SO8) in 2023-2027. Eight Member States tackle women in agriculture under SO8, most of them (seven) also specifically target women in agriculture under generational renewal (SO7) and one does it under competitiveness (SO2).

### 4.1. Intervention logic and CAP interventions in support to farm competitiveness

The CAP 2023-2027 is structured around **three general objectives, nine specific objectives (SO) and a cross-cutting objective (XCO)** (Regulation (EU) 2021/2115 Article 6.2).

<sup>32</sup> In the 2023-2027 CSPs, competitiveness is mainly supported by productive investment (Articles 73-74), coupled income support (Articles 32-35), sectoral interventions, cooperation (Article 77) and knowledge exchange (Article 78). The support to young farmers (Articles 30 and 75), risk management (Article 76) and, beyond the CSPs, other CMO provisions also support farm competitiveness.

**Figure 28: General and specific objectives of CAP 2023-2027**



Source: Project team, 2023. Regulation (EU) 2021/2115 Articles 5 and 6

The study focuses on the **second specific objective (SO2), aiming to “enhance market orientation and increase farm competitiveness both in the short and long term, including greater focus on research, technology and digitalisation”** (Article 6.1b).

The third specific objective (SO3) "to improve the farmers' position in the value chain" (Article 6.1c) is also closely linked to the objective of farm competitiveness and market orientation, as shown by the analysis of the CSPs. In fact, Member States could allocate the amount of the same intervention under several SOs<sup>33</sup>. More than three-quarters (78%) of the amounts allocated under SO3 concern interventions that are also included under SO2. Interventions supporting young farmers (SO7) also form an integral part of the scope of the study and are therefore also considered.

The descriptive sections are notably based on an analysis of the SO2 and SO3 intervention logics of the 28 CSPs, a comparative analysis of the CSPs (Münch *et al.*, 2023) and the summary of the CSPs approved by the Commission (European Commission, 2023a).

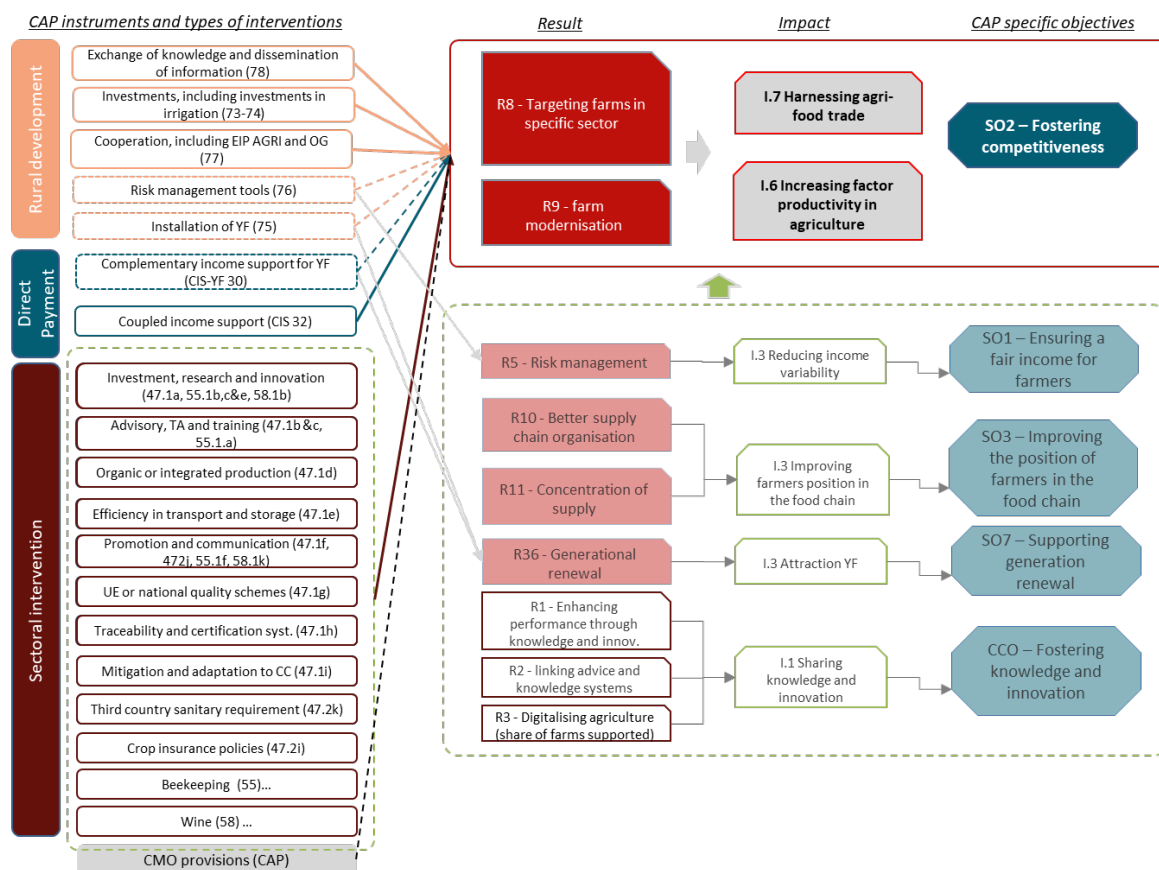
This chapter starts with the intervention logic and a short presentation of the main 2023-2027 CAP tools aimed at impacting competitiveness (section 4.1). Section 4.2 presents an overview of the levels of support for the interventions associated with competitiveness at the EU level, within the context of this intervention framework. Section 4.3 analyses the 28 CSPs on competitiveness objective. Sections 4.4.4 and 4.5 respectively, focus on young farmers and how CSPs have addressed women and gender issues in agriculture.

<sup>33</sup> As shown by the financial allocation to CAP specific objectives on the AGRIDATA portal ([https://agridata.ec.europa.eu/extensions/DashboardCapPlan/financial\\_allocation.html](https://agridata.ec.europa.eu/extensions/DashboardCapPlan/financial_allocation.html)), interventions with financial allocations under several SOs are in the majority. Thus, the sum of the allocations to the various SOs is 2.3 times greater than the CAP budget.



The intervention logic related to market orientation and farm competitiveness of the 2023-2027 CAP was elaborated based on the CSP Regulation (EU) 2021/2115, the PMEF and the analysis of CSPs.

Figure 29: Intervention logic of the CAP 2023-2027 of the competitiveness objective



Source: Project team, 2023, based on Regulation (EU) 2021/2115, the PMEF and the analysis of CSPs

Interventions targeting farm competitiveness, included in the intervention logic and associated with SO2 (market orientation and competitiveness) and SO3 (improving the position of farmers in the food chain), are considered. The 2023-2027 CAP aims to support market orientation, farm competitiveness and farmers' position in the value chain, mainly through tools such as investment support, coupled income support, strengthening cooperation, knowledge and innovation and risk management tools.

**Investment support** (INVEST, EAFRD, Articles 73 and 74 of Regulation (EU) 2021/2115) under SO2 and SO3 aims to improve the economic and environmental performance of farms with impacts on the agricultural sector. These mainly cover **on-farm productive investments** with a view to restructuring, diversifying, modernising and/or improving the efficiency of agricultural holdings. Additionally, they include **off-farm productive investments**, particularly in processing and marketing, as well as support for agricultural infrastructure with a focus on irrigation (Article 74). They also aim to meet the needs of digitalisation of agriculture, restoration or prevention against climatic and other risks.

**Coupled Income Support** (CIS, EAGF, Articles 32 to 35) aims to support targeted sectors and productions facing challenges that hold significant importance for the Member States for social, economic and/or environmental reasons (i.e., maintaining grazing livestock farming). The objective of this aid is to address the challenges facing targeted sectors and enhance their competitiveness, sustainability, or quality (Article 32). It allows Member States to link direct payments to agricultural

production in specific sectors<sup>34</sup>, subject to strict preconditions and limits, to minimise the risk of market and trade distortion. This support is capped at 13% of the total initial allocation of direct payments and may be increased by two percent for protein crops (Article 96) to maintain the supply for animal feed (*Regulation (EU) 2021/2115*).

The **sectoral interventions** (SECT, EAGF, Articles 42 to 62) provide targeted support for specific agricultural sectors. They were integrated into the CSPs to ensure consistency with other CAP interventions. They still cover fruit and vegetables, wine, hops, olive oil and table olives and beekeeping products (Articles 42 to 66). A new feature is the possibility for Member States to extend support to other sectors based on the model for the fruit and vegetable sector. The interventions are mainly implemented through multiannual sectoral operational programmes targeting members of **producer organisations**. These programmes cover a wide range of measures in line with CAP objectives, such as support for investment, research and innovation, production and marketing, transport and storage efficiency, promotion, communication and information measures, advisory services, technical assistance, training, and support aimed at mitigating the effects of climate change.

In addition, the EAFRD also supports **cooperation** (COOP, EAFRD, Article 77) linked to the objectives of competitiveness and integration of farmers in the value chain, without targeting specific sectors. This includes direct support for producer groups and inter-branch organisations, EIP-AGRI operational groups, EU and national quality systems and other forms of cooperation. Additionally, it supports **knowledge exchange** interventions (KNOW, EAFRD, Article 78) designed to promote innovation, advice, training and other forms of knowledge exchange.

**In the reviewed literature, risk management is generally associated with competitiveness**, as does this study, although the CAP associates it to its first specific objective related to viable farm income, resilience and economic sustainability. The CAP provides **risk management** tools (RISK, EAFRD, Article 76) that aim to assist farmers in handling production risks associated with their farming activities, particularly those beyond their control. Support is provided through subsidies for the costs of insurance schemes or mutual funds.

In addition, setting up support for **young farmers** (INSTAL, EAFRD, Article 75) and **complementary income support for young farmers** (CIS-YF, EAGF, Article 30) are specifically aimed at facilitating the entry of young farmers and the generation renewal under SO7.

In addition to the CSPs, CMO provisions play an important role in competitiveness by maintaining market stability and responding to crisis. The CMOs cover market intervention and private storage aid, exceptional measures in the event of a crisis, market transparency, trade provisions, competition rules, market monitoring, marketing standards, quality schemes and promotion policy (*Regulation (EU) 2021/2117*).

As far as quality schemes are concerned, the Protected Designation of Origin (PDO) and Protected Geographical Indicators (PGI), originally restricted to cheese and ham, have been extended to all sectors in the new CMOs. This expansion enables an increase in the number of farms that are suited to market their products under a designation of origin. A new agricultural reserve of EUR 450 million per year has been created to provide additional support under the CMO measures for market management or stabilisation and rapid reaction in the event of a crisis affecting agricultural production or distribution (*Regulation (EU) 2021/2116*, Article 16).

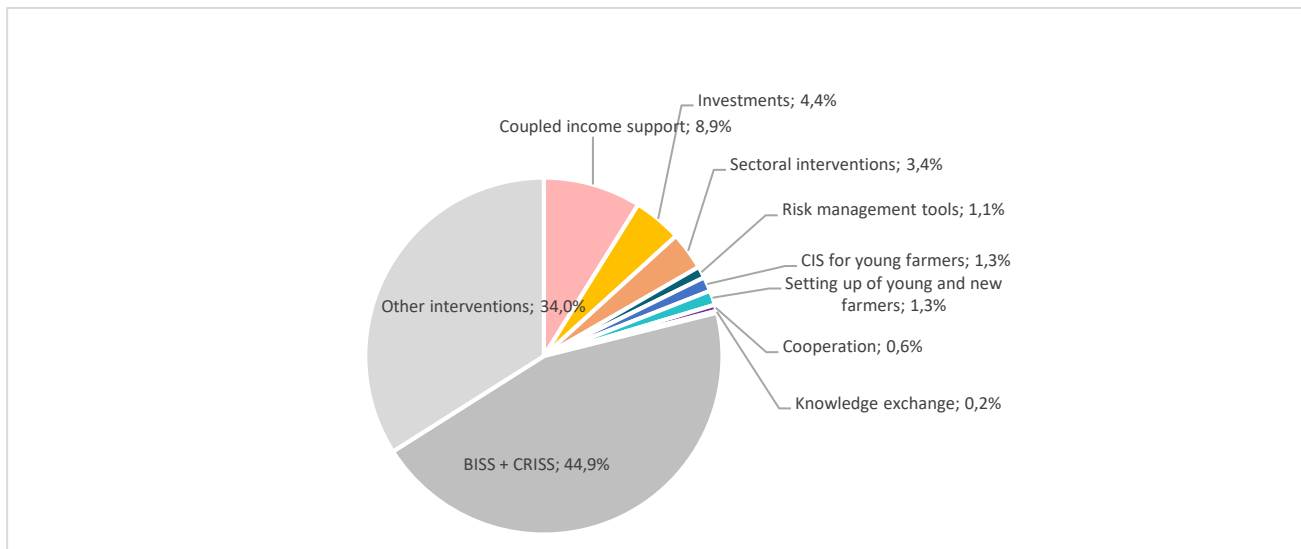
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<sup>34</sup> These are cereals, oilseeds, protein crops, grain legumes, flax, hemp, rice, nuts, starch potato, milk and dairy products, seeds, sheep meat and goat meat, beef and veal, olive oil, silkworms, dried fodder, hops, sugar beet, cane and chicory, fruit and vegetables and short rotation coppice.

## 4.2. Level of CAP support for competitiveness

The **level of CAP support for competitiveness** is presented in terms of **planned EU expenditure** (EAFRD and EAGF) for the 28 approved 2023-2027 CSPs. To have a comparable basis between Member States and between periods, only the interventions identified in the intervention logic presented in section 5.1 are considered. For interventions relating to investments, cooperation and knowledge exchange, only the amounts for interventions associated by the Member States under one of the specific objectives (SO2, SO3 or SO7) are considered.

**Figure 30: Share of total CAP EU planned expenditure 2023-2027 on interventions related to competitiveness objectives at EU level**



Source: Project team, 2023, based on the '[Catalogue of CAP interventions](#)', DG AGRI (via AGRIDATA portal)

The total CAP EU budget planned for the 2023-2027 period represents more than EUR 260 billion from both the EAGF (75%) and the EAFRD (25%). **About one fifth (21.1%)** concerns interventions **related to competitiveness objectives**. The **main and most financially significant interventions** supporting competitiveness objectives are **coupled income support** (8.9%), **investments** in farms and the agri-food chain (4.4%), and **sectoral interventions** (3.4%). Support for young farmers (PI 1.3% plus PII 1.3%) and risk management tools (1.1%) also support this objective. Finally, cooperation measures (0.6%) and knowledge exchange (0.2%) associated with SO2, SO3 or SO7 represent 0.8% of the EU's contribution to the CAP.

**Table 7: Comparison of the share of EU planned expenditure 2023-2027 and share of EU spending 2015-2021<sup>35</sup> on interventions related to competitiveness objectives at EU level**

Types of interventions CAP 2023-2027		Scope	EU planned 2023-2029	EU spending 2015-2021	Types of interventions CAP 2014-2020	Scope
CIS	Coupled income support	(SO1-9)	8.86%	7.39%	Voluntary coupled support	all
INVEST	Investments, including investments in irrigation	(SO2, 3, 7)	4.40%	3.48%	M4 - Investments	FA 2A/2B/3A/3B
SECTOR	Total sectoral support	(SO1-9)	3.43%	4.62%	Market (*) except school scheme)	All*
RISK	Risk management tools	(SO1-9)	1.05%	0.68%	M5, M17	FA3B

<sup>35</sup> To ease the comparison between the two periods, relative shares of the interventions to the CAP are presented. It should be noted that the two periods are not of the same duration (8 years for the 2014-2022 period, 5 years for the 2023-2027 period). For the 2014-2022 period, expenditures from 2015 to 2021 are presented as there were no expenditures in 2014 and data for 2022 was not available at the time of the report.

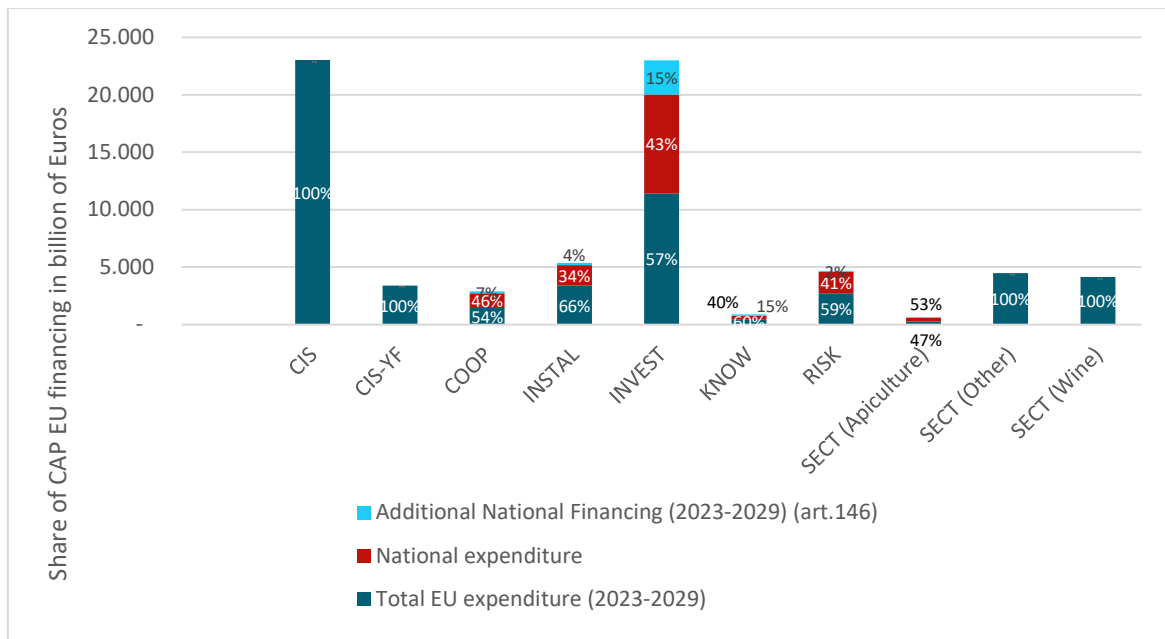
Types of interventions CAP2023-2027		Scope	EU planned 2023-2029	EU spending 2015-2021	Types of interventions CAP 2014-2020	Scope
				0.55%	M5 – Damage restoration and prevention	FA3B
				0.13%	M17 – Risk management	FA3B
CIS-YF	Complementary income support for young farmers	(SO7)	1.31%	0.82%	Complementary income support for YF	all
INSTAL	Setting up of young farmers and new farmers and rural business start-up	(SO7)	1.31%	1.63%	M6 – Farm development	FA2B
COOP	Cooperation	(SO2, 3, 7)	0.56%	0.23%	M16, M3, M9	FA 2A/ 2B/3A/3B
				0.12%	M16 – Cooperation	FA 2A/ 2B/3A/3B
				0.05%	M03 Quality schemes	FA3A
				0.05%	M9 Producer groups and organisation	FA3A
KNOW	Knowledge exchange and dissemination of information	(SO2, 3, 7)	0.18%	0.10%	M1 – Knowledge transfer & M2 - advisory services	FA 2A/ 2B/3A/3B
<b>TOTAL EU – Share for competitiveness</b>			<b>21.10%</b>	<b>18.95%</b>		

Source: Project team, 2023, based on the '[Catalogue of CAP interventions](#)' and '[Financing the CAP](#)', DG AGRI (via AGRIDATA portal)

A comparison between the two periods shows, overall, a very small increase in the level of CAP support for competitiveness objectives, rising from 18.95% (2015-2021 expenditures) to 21.1% (planned 2023-2029 expenditures). Productive investments and CIS increase slightly. Sectoral interventions decrease from 4.6% to 3.4%. The support for the setting-up of young farmers under Pillar II decreased from 1.6% to 1.3%, in favour of an increase in complementary income support for young farmers under Pillar I (up from 0.8% to 1.3% of the CAP). Overall, support for young farmers (under PI and PII) increased slightly between the two periods, both in terms of EU expenditure (from 2.45% to 2.61%) and total public expenditure (from 2.77% to 2.81%). The share of other interventions is increasing, particularly concerning investments (from 3.5% to 4.4%), cooperation (from 0.2% to 0.6%) and knowledge exchange (from 0.1% to 0.2%) in connection to SO2, SO3 and SO7. Additionally, there is an increase in risk management tools (from 0.7% to 1.1%) and coupled income support (from 7.4% to 8.9%).

National co-financing of EAFRD interventions provide beneficiaries with an additional EUR 14.1 billion to the EU contribution in support of competitiveness. Member States may also provide additional funding under Article 146, subject to certain regulatory conditions. Overall, **co-financing by Member States and national funding increases the financing of interventions relating to competitiveness from EUR 54.9 billion to EUR 72.6 billion.**

**Figure 31: Share of total CAP 2023-2027 EU and national financing of planned interventions related to competitiveness objectives by type of interventions**



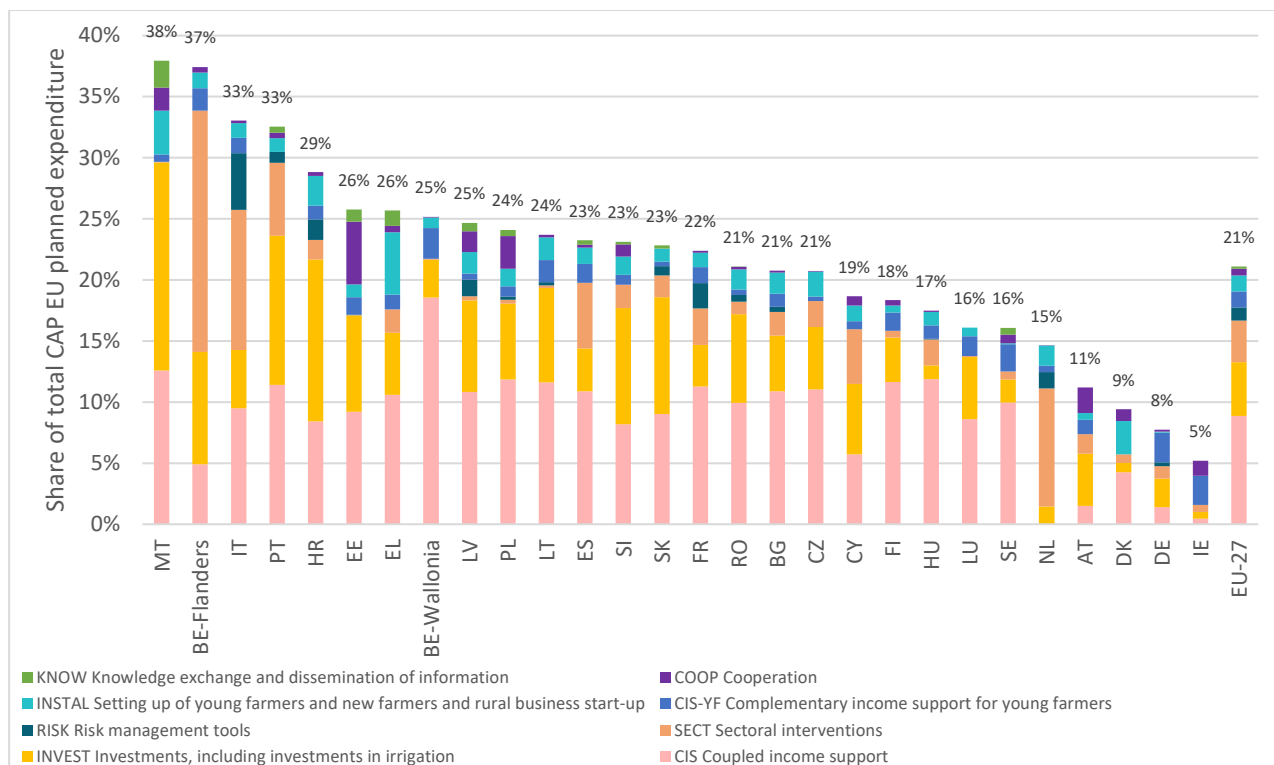
Source: Project team, 2023, based on the ‘[Catalogue of CAP interventions](#)’ and ‘[Financing the CAP](#)’, DG AGRI (via AGRIDATA portal)

In the agricultural sector, the general state aid rules mentioned in Articles 107, 108 and 109 of the Treaty on the Functioning of the European Union (TFEU) are not automatically applicable. The European Parliament and Council have decided, based on TFEU Article 42, that state aid rules shall not apply to EU-funded CAP support to the production of, and trade in, agricultural products listed in Annex I of the TFEU. State aid rules do not apply for measures and interventions partly or wholly financed by the EU. In contrast they apply to those financed by Member States alone, which is increasingly the case under the 2023-2027 CAP. A recent working document of the European Commission (*SWD (2018) 301 final*, 2018) shows that risk management tools, such as insurance premiums, animal diseases and plants pest, adverse climatic events, fallen stocks, etc., compose the largest expenditures of the notified or exempted state aid during the 2014-2018 period. In the 2023-2027 period, with regard to interventions relevant to competitiveness, Member States mainly address Agricultural Knowledge and Information Systems (AKIS) and risk management outside the CAP and are thus subject to state aid (European Commission, 2021a).

### 4.3. Analysis of the 28 CSPs in relation to the competitiveness objective

**Strategies and levels of support for competitiveness objectives vary considerably between Member States.** Some CSPs (MT, BE-FL, IT and PT) allocate more than 30% of CAP funds to this objective, while others allocate less than 10% (DE, DK, IE).

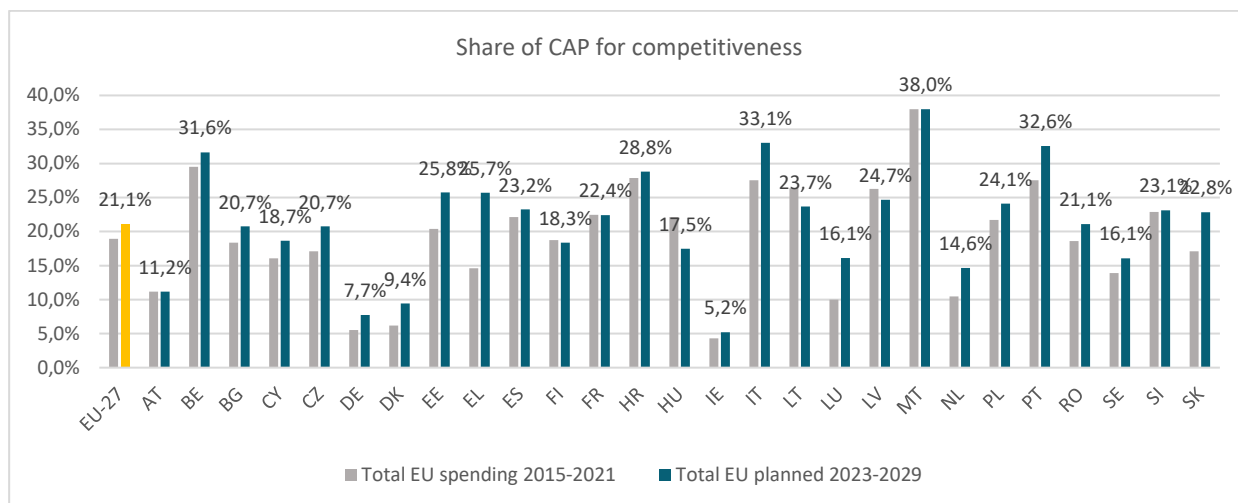
**Figure 32: Share of total CAP EU planned expenditure 2023-2027 on intervention related to competitiveness objectives at Member State level**



Source: Project team, 2023, based on the ‘[Catalogue of CAP interventions](#)’, DG AGRI (via AGRIDATA portal) data programmed 2023-2027

As shown in Figure 33, compared to the 2014-2022 period, the overall expected level of EU support for competitiveness is stable or increasing for all Member States in the 2023-2027 period, except for HU, LV and LT. The increase is greater than 3 percent for DK, CZ, NL, PT, EE, IT, SK, LU and EL. Nevertheless, some changes have been observed in the relative weight of interventions for some Member States (see section 4.3).

**Figure 33: Share of total CAP EU planned expenditure for 2023-2027 and EU spending in 2015-2021 on interventions related to competitiveness objectives by Member States**



Source: Project team, 2023, based on the ‘[Catalogue of CAP interventions](#)’ and ‘[Financing the CAP](#)’, DG AGRI (via AGRIDATA portal)

National co-financing of EAFRD measures provide beneficiaries with an additional EUR 14.1 billion to the EU contribution in support to competitiveness. In addition, Member States may provide additional funding under Article 146 of *Regulation (EU) 2021/2115*, subject to certain regulatory conditions. Moreover, 13 Member States (AT, BE-Flanders, DE, DK, ES, FI, FR, HR, HU, IT, LT, LV, SE) have seized this opportunity to strengthen their interventions relating to competitiveness by a total of EUR 3.6 billion, mainly for investments (+15%), exchange of knowledge (+15%), cooperation (+7%) and support for the setting-up of young farmers (+4%).

#### 4.3.1. Typology of Member States strategies for increased competitiveness

The strategies presented by the Member States in support of competitiveness generally combine three to five types of interventions, with varying levels of funding depending on the Member States' strategies (see Figure 32). In this respect, the CSPs can be grouped into five groups according to the combination of interventions and their levels of support for the competitiveness objective, taking into account the level of support and the gap in relation to the EU average (Table 8).

**Table 8: Level of support to competitiveness objectives through the CAP per CSP**

CSPs	Overall level of support to competitiveness objectives	Average level of CIS	Average level of investment support	Average level of sectoral support and cooperation
DE, DK, HU, IE, NL, AT	Low (4-12%)	Low (0-3%)	Low (1-4%)	Low (0-2.4%)
BG, BE-WA, LT, RO, FI, FR	Medium (18-22%)	High (7-15%)	Medium (5-9%)	Low (0-2.4%)
EL, SE, ES, LV	Medium (18-22%)	High (7-15%)	Medium (5-9%)	Medium (2.5%-6%)
HR, SK, SK, CZ, LU	Medium (18-22%)	High (7-15%)	High (10-21%)	Low (0-2.4%)
IT, PL, CY, EE, PT, BE-FL, MT, SI	High (24-35%)	High (7-15%)	High (10-21%)	Low to very high (2-21%)

Source: Project team, 2023, based on the '[Catalogue of CAP interventions](#)', DG AGRI (via AGRIDATA portal)

The first group (DE, DK, HU, IE, NL, AT) devotes limited resources to the competitiveness objective. However, within this first group, IE, AT and DK invest more than the EU average in cooperation actions. NL is the only Member State to not implement coupled support but invests significantly in sector-specific interventions for fruit and vegetables. BE-FL also has a large share of sectoral interventions, but in addition to coupled income support.

The support to competitiveness of the second group (BG, BE-WA, LT, RO, FI, FR) is closer to the EU average. This is primarily achieved through coupled support near the maximum authorised, an average level of investment support, and support for cooperation and sectoral interventions below the EU average.

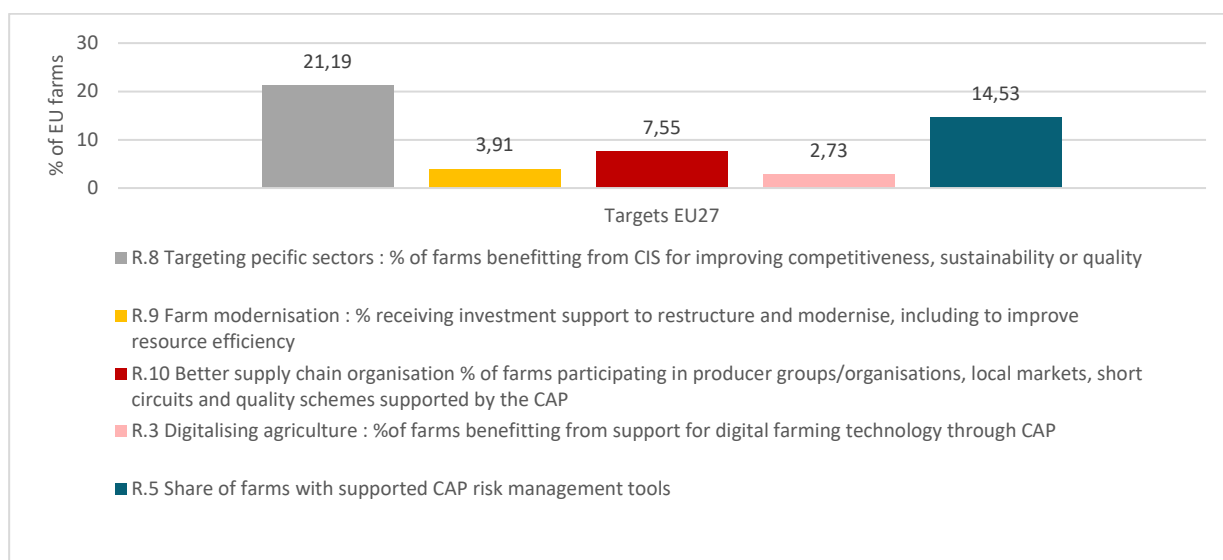
The third group (SE, ES, LV) is also near the average, but stands out for its higher support for sectoral interventions (ES), cooperation (LV, SE) and knowledge exchange (ES, LV, SE, EL). The fourth group mainly supports competitiveness through the CIS and a high level of support for investment (LU, SK, CZ, HR), but with minimal or no sectoral or cooperation support. Finally, the last group (MT, BE-FL, PT, SI, EE, IT, PL, CY) generally invests heavily in competitiveness, combining high levels of support for the CIS and for investments, as well as for sectoral (BE-FL, PT, CY), cooperation (EE, MT, SI, CY) and/or knowledge exchange (MT, EE, PT, SI) interventions. Risk management tools are another relevant aspect supporting competitiveness and their implementation varies significantly across the CSPs.

#### 4.3.2. Competitiveness and main result indicators

The PMEF associates several results indicators with SO2 and SO3. Results indicators aim to measure the direct and immediate effects of interventions. Moreover, they are generally expressed for competitiveness as a percentage of farms receiving CAP support. The comparative analysis presented

in this section reveals certain limitations in the result indicators. Indeed, the degree of correlation may vary between levels of support and the proportion of farms affected. This limitation arises from the indicator’s inability to account for the intensity of support or the demographic composition of farms at a national level. For instance, some Member States may decide to concentrate their investment support on a limited number of farms to facilitate major structural changes, while others may support a larger proportion of their farms with small investments.

**Figure 34: Result indicators related to competitiveness at EU level (in % of EU farms receiving support)**



Source: Project team, 2023, based on result indicators (via AGRIDATA portal)

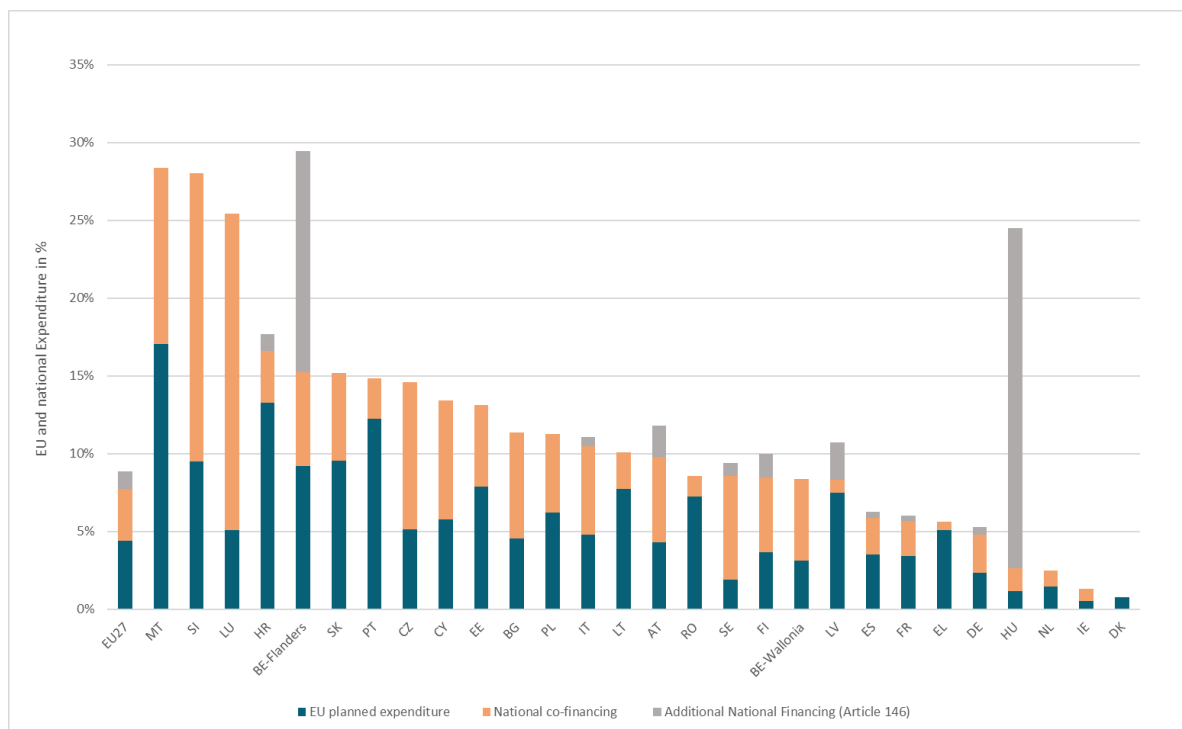
### 4.3.3. Member States’ interventions supporting farm competitiveness

Regarding the **main interventions**, Member States predominantly rely on support for on-farm and off-farm **investment** (Articles 73 and 74 of *Regulation (EU) 2021/2115*) as **the main instrument** to support the competitiveness of the agricultural sector and its market orientation. Support is primarily aimed at improving the overall performance and sustainability of farms, **adapting and modernising farms** to improve their **resilience** and **efficiency in the use of factors** and inputs.

In total, EUR 11.4 billion of EAFRD (4.4% of the CAP) is planned to support investments in competitiveness under SO2, SO3 and SO7. Overall, the share of **EU support** dedicated to competitiveness-related investments **has increased** compared to expenditure in the 2014-2022 period. Support for investments has also been strengthened by national co-financing (EUR 8.6 billion) and additional national funding (Article 146, EUR 2.98 billion) mobilised in 11 Member States (AT, BE-FL, DE, ES, SI, FR, HR, HU, IT, LV, SE), making it possible to double EU support for investments. HU and BE-FL have used the additional national funding to significantly increase their support for investment. Overall, MT, SI, LU, HR, BE-FL, SK, PT and HU allocate more than 15% of their CAP total public expenditure to productive investments.



**Figure 35: INVEST – EU and national expenditure planned on investment support related to competitiveness objectives (SO2, SO3 and SO7) by Member State in % of total EU CAP funding<sup>36</sup>**



Source: Project team, 2023, based on ‘[Catalogue of CAP interventions](#)’, DG AGRI (via AGRIDATA portal)

All CSPs have planned to support **productive investment on farms** and most have allocated the largest part of their investment budget to this. These investments, in particular, aim to accelerate the modernisation and restructuring of agricultural holdings and to introduce new technologies and thus improve output productivity<sup>37</sup>. Some Member States, mainly in the Eastern regions of the EU, have placed special emphasis on small farms (EE, HR, HU, LT, LV, PL and RO) (European Commission, 2023a). Among the Member States allocating the highest expenditures to productive investment support on farms, CSPs analysis shows that this support covers specific fields. These include construction and modernisation of facilities for production (CZ, HU, PT, SK, HR), purchase of new technologies and modernisation (HU, HR), storage and manure management (HU, HR), support to renewable energy use (SK, HR), and in the case of Slovakia, support for auto-production (buildings, processing and selling) is also endorsed. Additionally, less precise, and larger fields, such as the purchase of new machinery (CZ, PT, SK) and vehicles (SK), receive support.

<sup>36</sup> BE-Flanders and Hungary dedicate both the highest share and the highest amount of additional national financing to investment support (EUR 242 million and EUR 1.8 billion respectively), and lower amounts of EU funds and national co-financing relative to other EU Member States. This translates into a significantly higher share of investment support. The main investment measures undertaken by Flanders and financed by additional national financing are: Productive green investments on agricultural holdings (EUR 145 million) and productive investments for further sustainability on farms (EUR 90 million). The main investment measures undertaken by Hungary are: Development of agricultural holdings (EUR 1 133 million), supporting the digital transition of agricultural holdings (EUR 258 million), on-farm investment to improve irrigation and water efficiency (EUR 169 million), diversification of activities of farmers (EUR 95 million), support for investments by young farmers (EUR 85 million), and sustainable development of small farms (EUR 75 million).

<sup>37</sup> Hungary dedicates 62% of its EUR 2.1 billion envelope to the development of agricultural holdings, Slovakia devotes 55% of the planned EUR 830 million to productive investments on-farm, Flanders dedicates 36% of its EUR 658 million planned spendings to productive investment for farm sustainability, and Estonia dedicates 27% of EUR 2.9 million to tangible and intangible farmers investments. Croatia dedicates 26% of EUR 1.7 million of investment support planned spendings to primary agricultural production, and Luxembourg 16% to agricultural investments. Hungary dedicates 13% of the planned spendings for investment to farm modernisation, and Portugal 37% of its EUR 1.6 billion on investment spendings.

The vast majority of CSPs also provide **support for off-farm productive investment**, mainly through support for the development, processing and marketing of agricultural products. These investments target different aspects of productivity and market orientation, including the development of agricultural products, the introduction of new technologies, as well as cooperation and integration of producers and cooperation within the food chain.

Other types of investment supported mainly include agricultural infrastructure, in particular the improvement or reinforcement of irrigation facilities (IT, RO, DE, MT, SK, BG, CY, PT, BE-FL, FR, HU, FI, SE, SI and HR), diversification of agriculture, restoration of agricultural potential following natural disasters (BG, PT, FR, HR and IT), and prevention against climatic and other risks (IT, RO, MT, CZ, SK, FR, IE and HR) (European Commission, 2023a).

**Around 3.9% of EU farms are expected to receive support for investment** in modernisation and restructuring (indicator R.9) (see Figure 43 in Annex 1). This also varies significantly across Member States and is not necessarily correlated with the level of support. The support should benefit more than 15% of farms in BE-FL, AT, LU, CZ, LV, FR, and PT. Conversely, at the other end of the spectrum, it should benefit less than 2% of farms for EL, LT, MT, DK, and RO, despite the magnitude of the aid. This target is more ambitious than the results of the 2014-2022 period (2.56% in 2021 according to indicators R1\_PII<sup>38</sup>).

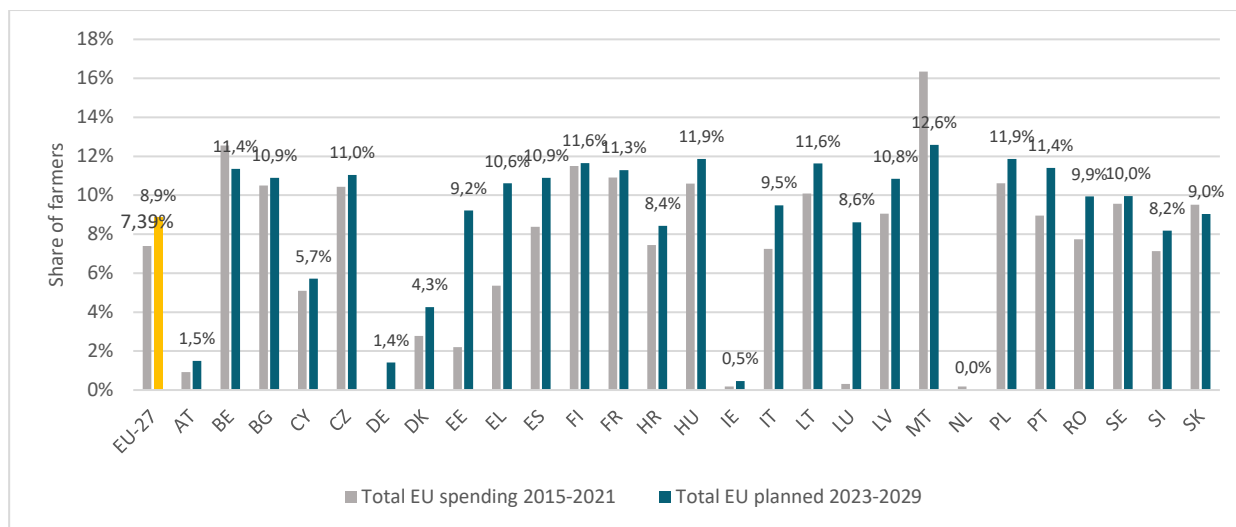
The supported sectors and production types under coupled income support fall under two categories: coupled income support for animal production (e.g. suckler cattle, dairy cattle), and coupled income support for crop production (e.g. fodder legumes, soya, protein crops notably legumes, durum wheat, grass seed, starch potatoes, hops, processed fruit, hemp and rice). The supply chain issues and the inflation burden resulting from Russia's invasion of Ukraine led several Member States (CY, EL, ES, FI, HR, LT, LV, MT, PL) to plan coupled support targeted to sectors, including livestock farming (Münch *et al.*, 2023).

All CSPs provide for coupled income support, except for the Netherlands. The ongoing discussion on the role of CIS in competitiveness (see section 4.2) is reflected in the strategies of the Member States. It is observed that out of 28 CSPs, 13 (BE-WA, BG, CY, CZ, EL, ES, FR, HU, IT, LT, LU, RO, SK) have linked it to the competitiveness objective (SO2), while 14 CSPs primarily link it to SO1 as income support. In financial terms, CIS is one of the main forms of aid used by Member States, and it has slightly increased in most Member States, rising on average from 7.4% to 8.9% of the CAP. Some countries have reintroduced coupled income support (DE) or substantially increased its expected share (LU, EE). Most of the Member States have allocated funds at a level close to, or equal to, the maximum authorised threshold. However, seven CSPs (see Figure 36) only use this tool at a low (CY, BE-FL) or very low level (NL, IE, DE, AT, DK).

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<sup>38</sup> R.01 Percentage of agricultural holdings with RDP support for investments in restructuring or modernisation (Focus Area 2A).

**Figure 36: Coupled income support – Share of total CAP EU planned expenditure 2023-2027 and EU spending 2015-2021 on intervention related to competitiveness objectives by Member State**



Source: Project team, 2023, based on the '[Catalogue of CAP interventions](#)' and '[Financing the CAP](#)', DG AGRI (via AGRIDATA portal)

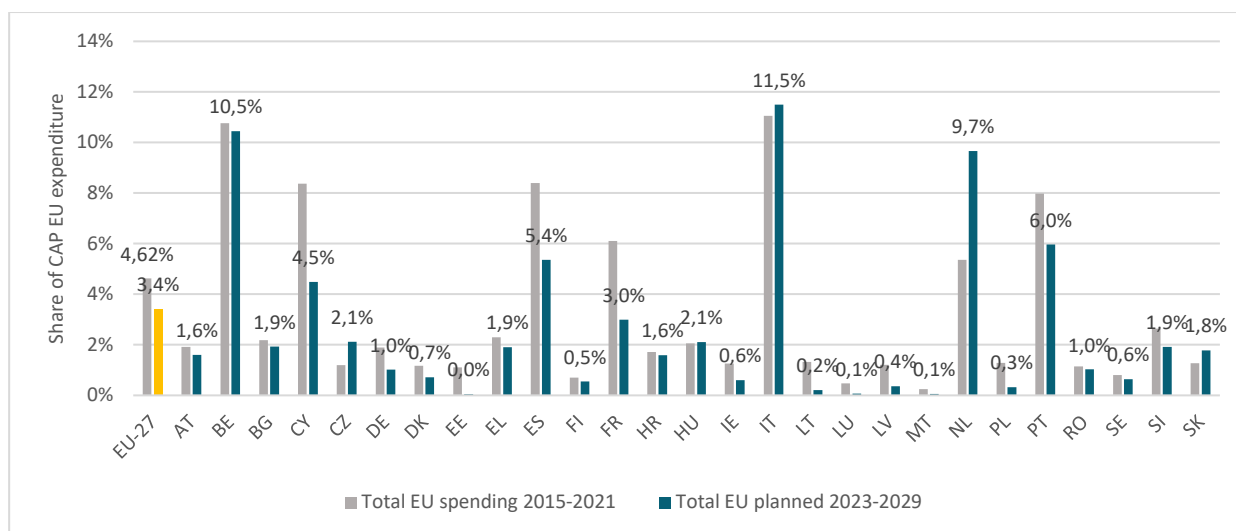
At the sectoral level, 70% of the aid remains allocated to the ruminant and grazing sectors (the pig and poultry sectors are not eligible) in all Member States, except for NL and IE. The remaining 30% is mainly earmarked for legume and protein crops production (20 CSPs, 13% of the CIS envelope, +25% in the 2014-2022 period), fruit and vegetables (19 Member States, 5%, +12%), cereals (six CSPs, 4%, +71%), rice (seven CSPs, 2.5%, +69%) and sugar beet (2.5%, -6.5%). The other eligible productions account for less than 3% of the total CIS envelope (European Commission, 2023a).

Support for protein crops, notably legumes, has increased by almost 25% (from 11% to 14%) for most Member States, with a view to limiting dependence on imports. Five CSPs have newly introduced coupled support for these crops (BE-WA, EE, PT, SI), while twelve CSPs have increased the financial envelope allocated to them (IE, FR, PL, IT, LV, EL, ES, LT HU, BG, SK and LU). The support area for protein crops, particularly legumes, is anticipated to expand by over 50%, progressing from 4.2 million hectares in 2022 under voluntary coupled support, to 6.4 million hectares in 2023 under CIS. This area is projected to further increase to almost 7.1 million hectares in 2027 (European Commission, 2023a).

The CSPs expect 2.1 million farms to benefit from coupled support over the period 2023-2027, representing 21% of EU farms. The proportion of farms receiving aid varies considerably from one Member State to another, particularly in relation to the proportion of farms involved in cattle farming. While most Member States are close to the maximum, CZ, IT, FR, BE-WA, EE and LU plan to reach more than 40% of their farms, while MT and RO plan to reach less than 5% of their farms (see Figure 44 in Annex 1).

Planned EU spending on sectoral interventions (3.4% of CAP) is generally **lower** in the majority of the 2023-2027 CSPs **than the 2015-2021 expenditures on the corresponding market measures** (4.6% of CAP). The exceptions are CZ, HU, IT, SK, and most notably NL, which has significantly increased its investment in sectoral and cooperation interventions (see Figure 37).

**Figure 37: SECT – Share of total CAP EU planned expenditure 2023-2027 and EU spending 2015-2021 on intervention related to competitiveness objectives (SO2, SO3 and SO7) by Member State**



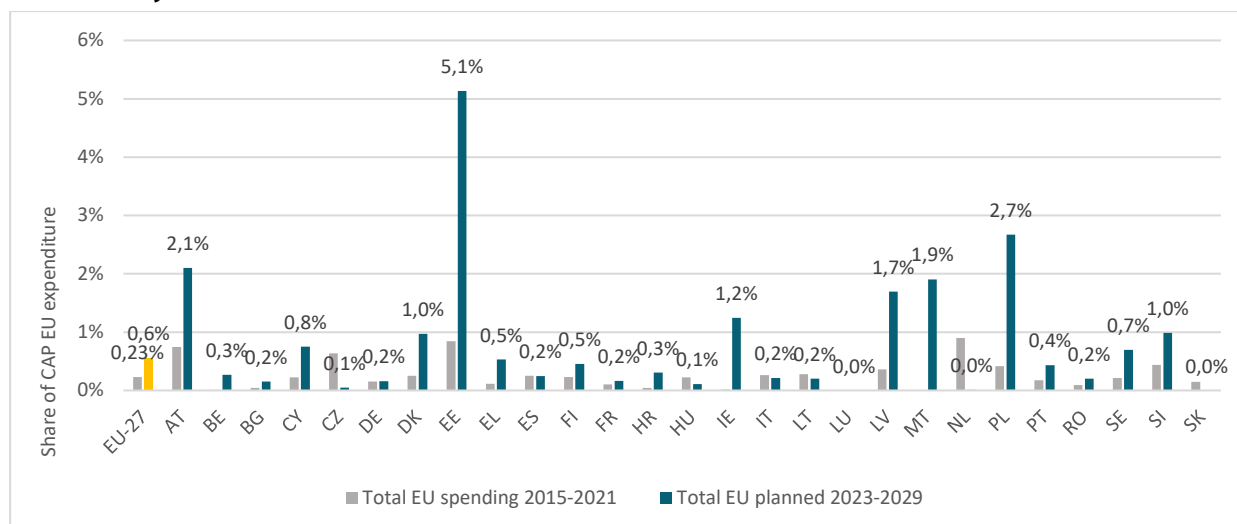
Source: Project team, 2023, based on the ‘[Catalogue of CAP interventions](#)’ and ‘[Financing the CAP](#)’, DG AGRI (via AGRIDATA portal)

Most of the EU expenditure planned for 2023-2027 is concentrated in two sectors: wine (46.5%, in 16 Member States); and fruit and vegetables (46.5%, in 24 Member States). Beekeeping (3.2%, all Member States), olives (2.5%, EL, FR and IT), hops (0.1%, DE), and other sectors (1.24%) account for a much smaller proportion. **Only five Member States** (BG, CZ, LV, IT and SK) **have extended sectoral aid to other sectors**: milk and dairy products (BG, SK), beef and veal (LV), pig, sheep and goat meat (SK), eggs (CZ), potatoes (CZ, IT, SK) and cereals (LT) (European Commission, 2023a). The other Member States may have prioritised support to these sectors through Pillar II.

The share of sectoral interventions varies greatly depending on the presence of eligible crops: BE-FL (19.7%), IT (11.5%), NL (9.7%), PT (6.0%) and ES (5.4%) devote more than 5% of their planned EU expenditure to sectoral interventions. Conversely, LV, PL, LT, BE-WA, LU, MT and EE are devoting less than 0.5% of their EU budget to this area. The most frequent actions concern investment in research and experimental production methods, promotion, communication and marketing, training, advisory services, and technical assistance. Additionally, they involve the implementation of quality, traceability and certification systems. Sector-specific and cooperation interventions are expected to contribute to strengthening market orientation within the respective sectors, both in the short and long term, while also promoting innovation and research.

Even if it remains a limited amount, the share of support planned for **cooperation** under SO2 and SO3 **has increased significantly compared to the 2014-2022 period**, rising from 0.2% to 0.6% of EU CAP expenditure. This mainly concerns support for cooperation in setting-up and running producer organisations and groups and inter-branch organisations (EUR 16 million), support for and promotion of quality schemes (EU or national) (EUR 16 million), preparation and implementation of EIP-AGRI projects (EUR 9 million), or other forms of cooperation such as setting-up short supply chains and local markets (EUR 7 million) or innovations beyond the scope of the EIP-AGRI (European Commission, 2023a).

**Figure 38: COOP – Share of total CAP EU planned expenditure 2023-2027 and actual EU expenditures in 2015-2021 on interventions related to competitiveness objectives (SO2, SO3 and SO7) by Member State**



Source: Project team, 2023, based on the '[Catalogue of CAP interventions](#)' and '[Financing the CAP](#)', DG AGRI (via AGRIDATA portal)

Overall, sectoral or cooperation interventions are expected to cover 4% of farms in the EU (see Figure 45 in Annex 1). This includes farms either affiliated with a CAP-supported producer organisation or directly engaged in projects facilitated by producer members of such organisations, again with great variability between Member States.

For the 2023-2027 period, the emphasis was placed on **strengthening knowledge transfer, innovation and digitalisation**, which are essential for improving the competitiveness of farms and the agricultural sector. Member States were notably requested to highlight the elements of their CSP that support the modernisation of agriculture and the CAP. This included describing the organisational set up of **the national AKIS** and the strategy for developing digital technologies in agriculture (Article 114 of the *Regulation (EU) 2021/2115*).

As in the 2014-2022 period, many activities are funded outside the CAP. Except for BE-WA, DK, and LU, which use other funds, all the CSPs support interventions for knowledge exchange. These interventions represent a total of 0.43% of planned EU expenditure, up on the 2014-2022 period (0.10% of CAP under P2 and P3). Of these, nine Member States (EE, LV, SE, PL, PT, MT, EL, ES, RO) explicitly linked these interventions to SO2 or SO3. They essentially included support for advisory activities, training for advisors and farmers, and on-farm demonstrations, information and dissemination. In total, the CSPs aim to provide support to more than 6 million individuals (Result indicator R1). This includes over 200 000 advisors for the integration into AKIS (R2) and 2.7% of farms for the incorporation of digital agricultural technologies (R3)<sup>39</sup>. Additionally, the CSPs intend to triple the number of EIP operational groups supported throughout the 2023-2027 period.

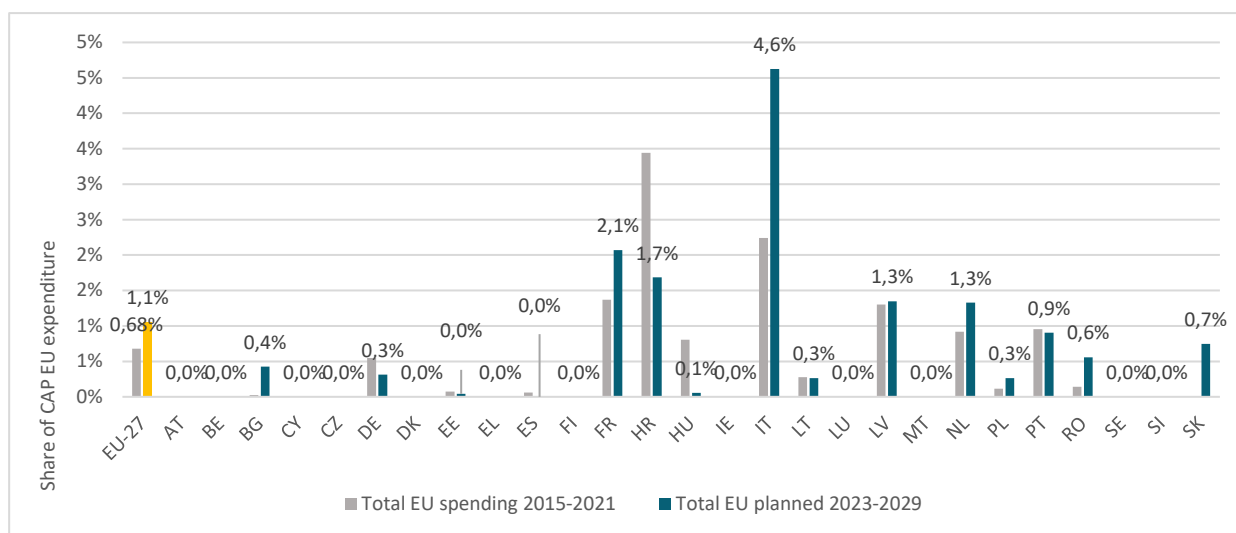
Interventions aiming to foster the digitalisation of agriculture can be key contributors to competitiveness objectives. For the 2023-2027 period, Member States planned four types of

<sup>39</sup> It should be noted that seven Member States (AT, BE-FL, BG, FI, EL, HU, SE) target more than 5% of farms; eight Member States (CY, DK, EE, DE, PT, SK, SI, ES) target between 1-5% of farms, ten Member States (BE-WA, HR, CZ, IE, IT, LV, LT, MT, PL, RO) target less than 1% of farms and three Member States (FR, LU, NL) did not plan a target for R.3.

interventions in relation to R3: investments, cooperation, knowledge exchange, and eco-schemes.<sup>40</sup> NL, FR and LU are the only countries that did not plan any interventions linked to R3.

Beyond SO2, **risk management tools** are optional as part of the CAP strategic plan. Insurance schemes and mutual funds can compensate farmers in the event of a significant loss of production value or farm income. The uptake these tools should enable farmers to cope with the volatility of the sector and contribute to stabilising incomes and improving their resilience in the face of market, natural or climatic risks. **The use of risk management tools and the share of farms supported are very heterogeneous.** Fourteen Member States included risk management tools in their CSPs as part of their rural development measures. Of these 14 countries, IT and FR provide the most funding for risk management. In addition, sectoral interventions also offer the possibility of obtaining aid to cover risk management. Notably, 17 Member States provided for this possibility in the fruit and vegetable sector and 10 in the wine sector.

**Figure 39: RISK – Share of total planned CAP EU expenditure 2023-2027 and EU spending 2015-2021 on risk management tools (article 76) by Member State**



Source: Project team, 2023, based on the ‘[Catalogue of CAP interventions](#)’ and ‘[Financing the CAP](#)’, DG AGRI (via AGRIDATA portal)

When considering all these factors collectively, the CSPs planned to allocate funds to risk management with the objective of benefiting nearly 15% of farms across the EU. FR and IT planned to support 70% to 90% of their farms with these tools, while most Member States planned less than 10% coverage of farms (see Figure 46 in Annex 1).

#### 4.4. Young farmers and generational renewal

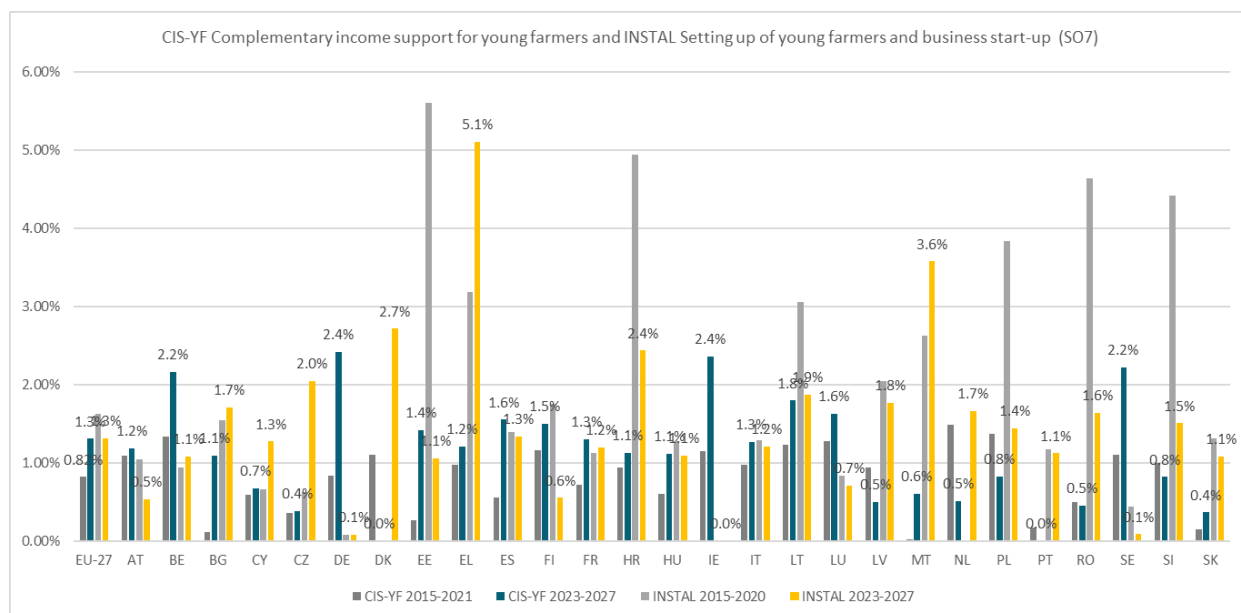
Generational renewal in the agricultural sector is a CAP priority. In the 2023-2027 period, Member States must allocate a minimum amount of spending to young farmers, representing around 3% of the initial direct payment budget of each Member State. This allocation should either be through complementary income support interventions, setting-up support for young farmers or investment support (Article 95 of Regulation (EU) 2021/2115, Annex XII of Regulation (EU) 2021/2115). The overall

<sup>40</sup> Investments related to R3 represent EUR 4.783 billion of EU funding and are implemented by all Member States, except FI, SE, ES, FR, NL, and LU. Cooperation represents EUR 285 million of EU funding and is implemented by ES, SL, SK, LT, LV, CY, HR, BG, BE-WA, and AT. Knowledge exchange represents EUR 345 million of EU funding and is implemented by ES, SK, SI, PT, LT, LV, HU, EL, FI, CY, BG, BE-FL. Finally, eco-schemes represent EUR 157 million of EU and total funding and are implemented by Sweden only.

planned budget for young farmers remains constant in comparison to the 2014-2022 period. A significant shift of funding from EAFRD to EAGF has however been noticed<sup>41</sup>.

Overall, Member States have targeted support to over 376 000 young farmers over the 2023-2027 period (R36), with an average CSP allocation fluctuating between 1.1% to 6.3% of EU planned expenditure. Twenty-four Member States plan to support young farmers through both pillars of the CAP. Meanwhile, IE supports young farmers through complementary income support only, and PT and DK support young farmers through Pillar II exclusively. FR, HU, NL, PT, SK also support young farmers through investment support. Finally, it is important to note that young farmers are also usually supported through national instruments.

**Figure 40: Share of total planned CAP EU expenditure 2023-2027 and EU spending 2015-2021 on CIS-YF (Article 30) and setting-up support (article 75) by Member State**



Source: Project team, 2023, based on the 'Catalogue of CAP interventions' and 'Financing the CAP', DG AGRI (via AGRIDATA portal).

#### 4.5. Women and gender in CSPs related to competitiveness

The challenges faced by women in agriculture encompass a wide range of intricate issues as illustrated in Section 2.2.3. Within the agricultural sector, women's contributions often lack official recognition and an official status as farm worker or manager. These factors contribute to the difficulties women face in accessing credit, land and social security and the higher rate of outmigration from the agricultural sector among young women (European Parliament, 2022). As participants in the labour market, women can play an important role in competitiveness, notably by contributing to the diversification and innovation of EU farms. Lowering barriers to entry and addressing the challenges faced by women in agriculture could contribute to making farming more attractive to women, boost their formal economic participation and render the sector more dynamic.

<sup>41</sup> The setting-up support under Pillar II decreased from 1.6% in 2014-2022 to 1.3% in 2023-2027, while Pillar I funding of complementary income support for young farmers increased from 0.8% to 1.3% of the CAP (in EU funding).

**Specific objective 8 (SO8)** seeks: ‘to promote employment, growth, gender equality<sup>42</sup>, including the participation of women in farming, social inclusion and local development in rural areas, as well as the circular bio-economy and sustainable forestry’. A thorough screening of the CSPs<sup>43</sup> revealed the interventions adopted by the Member States to tackle gender-related challenges. Two categories of Member States' CSPs were identified:

- Category 1: Those mentioning a **gender approach within SO8**
- Category 2: Those integrating a gender approach into other CAP specific objectives beyond SO8. *This includes how gender is addressed in relation to competitiveness (SO2) by the Member States.*

It should be noted that all CSPs refer to women and the need to support them in their CSP. Annex 3 presents the detailed analysis of gender strategies by each CSP.

**Table 9 describes how the Member States address gender equality and women through SO8 (category 1).** All Member States, except LU, explicitly consider women's participation through SO8. FI, SE and HR<sup>44</sup> mention women and gender under SO8 but did not plan specific interventions targeting women. Interventions within SO8 generally go beyond farming to cover rural areas in general, however, they do not particularly address gender in relation to competitiveness challenges.

In category 1, **eight Member States plan to support women farmers specifically.** Ireland and Portugal focus on supporting women farmers with the provision of financial aid and educational training through the EIP-AGRI. DK, FR, DE, IT, LT and ES also plan to support women farmers, especially on issues related to access to land, knowledge sharing, market access, economic diversification, etc.

#### **Box 1: Portugal's gender approach**

Portugal's Innovation Agenda 2030 aims to contribute to the revitalisation of rural areas and the agri-food sector, including through family farming, young farmers, and women farmers. It aims to encourage more people to engage in the agri-food sector and related activities. Portugal's CSP notably provides financial instruments to ease access to capital and risk management, supporting small farms and young farmers with a focus on mobilising women to use these instruments. The CSP also encompasses actions to foster women's participation in rural areas through CLLD and LEADER.

Source: Project team, 2023, based on Portugal's CSP

The remaining Member States in this category target women in rural areas (not specifically in farming). Austria and Portugal planned family-oriented, maternity and childcare measures. BE-WA, IE, PT and RO promote and support female entrepreneurship, while CY, CZ, BE-FL, EL, HU, LT, PL, SK, NL, and MT integrate gender-oriented strategies within the framework of LAGs.

<sup>42</sup> Indeed, in the 2023-2027 period, gender and women in farming are integrated within SO8. In the 2014-2022 period, gender was a cross-cutting objective in Pillar II of the CAP.

<sup>43</sup> To obtain information on measures taken by the Member States to support gender equality and women in farming, a review of each CSP was conducted. This entailed: 1) Identification of terms related to gender, including 'gender', 'women', 'equality'; 2) translation of key words from English to national languages; 3) extraction of sections comprising identified terms from each CSP; 4) mapping of extracts with corresponding interventions and SO into a matrix; and 5) systematic review and qualitative analysis of extracts leading to a typology of gender strategies.

<sup>44</sup> In Finland, while the recognition of gender imbalance in rural areas is evident within the SO8 framework, concrete measures to address this challenge are currently lacking. In contrast, Croatia distinguishes itself by emphasising a balanced gender representation in its agricultural workforce as a notable strength, but did not plan specific interventions. Finally, Sweden has taken a critical stance towards the way gender is articulated within the CAP regulation (Regulation (EU) 2021/2115), highlighting weaknesses in the 2014-2022 CAP framework. They advocate for further analysis. In Sweden, gender will mostly be addressed through national measures (CAP Strategic Plan Sweden, 2022 p. 539).



**Table 9: Gender within CAP SO8**

Categories	Measures	Countries
1.1. Family-oriented Approaches	Investments in social services: family-oriented, maternity and childcare measures.	Austria, Portugal
1.2. Women Farmers	Strong focus on women farmers.	Ireland, Portugal
	Financial aid, female-focused Knowledge transfer groups, and EIP themes.	Ireland
	Facilitating access to land, promoting knowledge sharing, providing financial instruments and/or grants, enhancing market access, developing smart rural territories, and encouraging economic diversification.	Denmark, France, Germany, Italy, Lithuania, Portugal, Spain
1.3. Entrepreneurship	Promoting female entrepreneurship.	Belgium-Wallonia, Estonia, Germany, Ireland, Italy, Slovenia, Romania
1.4. LEADER and/or LAGs	Integrating gender-oriented strategies through LEADER within the framework of LAGs.	Austria, Bulgaria, Cyprus, Czechia, Estonia, Flanders, Greece, Hungary, Latvia, Malta, Poland, Portugal Slovakia, Slovenia, The Netherlands
1.5 Critical posture	A critical stance in relation to SO8. It addresses a concern on the absence of a thorough analysis of the conditions required for the proposed measures to achieve the intended impact	Sweden
1.6. No measures addressed	<ul style="list-style-type: none"> <li>- Finland recognises a gender imbalance, primarily caused by the migration of young people, especially women, to urban centres. However, no measures to address this challenge have been explicitly mentioned within the CSP</li> <li>- Croatia argues that there is a balanced gender representation across the entire country. It has a higher ratio of annual labour units per person, particularly for female agricultural workers</li> </ul>	Finland, Croatia

Source: Project team, 2023, based on CSPs 2023-2027

In the second category, as shown in Table 10, only six Member States (AT, ES, LU, IT, PT, and FR) address gender under other specific objectives than SO8. LU, PT, ES, IT, AT and FR address gender notably through SO7: LU planned state aid to reinforce its social services in rural areas, notably for farmers. ES, IT and FR consider women in their approach to generational renewal and aid to young farmers. Portugal promotes intergenerational cooperation, planned specific vocational training and the dissemination of knowledge.

### Box 2: Spain's gender approach

Spain is the only Member State that directly links gender to farm competitiveness (SO2). It does so by providing support to innovation cooperation projects involving women. In addition, Spain plans to support women through redistributive payments, youth support and forestry investment. Allocation of funds coming from Spain's Resilience and Recovery Plan should provide women farm owners with a 15% higher unit amount due to differences in profitability. Encouragement of new female-led rural businesses will be supported. Specific interventions are also planned to address local challenges, such as increased aid to women (Aragon irrigation communities) or the promotion of inclusive advertisements (Galicia, Basque Country). Non-CAP measures include supporting women's entities, shared-ownership subsidies, promoting gender data collection, awareness-raising training, and addressing broader gender equality and rural development needs.

Finally, Spain emerges as the sole country that intersects a gender approach across all specific objectives, including competitiveness objectives, and provides direct payments targeted at women farm owners (see Box 2). PT introduced a gender approach within the cross-cutting objective, notably addressed through national actions to foster the participation of women in agriculture.

**Table 10: Gender approach in specific objectives beyond SO8**

Categories	Measures	Countries
2.1. Gender Approach within SO7	- Strengthening of social services: state-aid to reinforce protection of farmers in case of illness, maternity leave, replacement during absences.	Luxembourg
	- Generational renewal: Support to young (including women) farmers and rural entrepreneurs	Spain, Italy, France
	Seminars and vocational training on farm succession planning and successful business management	Austria
	- Promotion of intergenerational cooperation and revitalisation of rural areas through dissemination of knowledge, and vocational training with a focus on young farmers and women farmers.	Portugal
2.2. Gender Approach within SO1	- Direct payments with a 15% higher unit amount to women farm owners	Spain
2.3. Gender Approach within SO2, SO3, SO4, SO5, SO6, SO7, SO8 SO9	- Innovative cooperation projects outside EIP-AGRI involving women	Spain
2.4. Gender Approach within XCO	- Advisory services for both female and male farmers	Portugal
	- Financial instruments for capital access, fostering knowledge sharing, and promoting the participation of women	Portugal

Source: Project team 2023, based on CSPs 2023-2027

## 5. CONCLUSIONS AND POLICY RECOMMENDATIONS

### 5.1. Conclusions

The concept of farm competitiveness is broad, complex and lacks a standardized definition and measurement approach. It includes ‘the ability to sell products that meet demand requirements (price, quality, quantity) and, at the same time, ensures profits over time that enable the firm to thrive on the domestic or international market’ (Latruffe 2010). Farm competitiveness notably depends on farm size, type of farming, location, including in areas with natural constraints, human capital, and access to technology and innovation.

Two PMEF indicators are used to measure the competitiveness of the agricultural sector: TFP and agri-food exports and imports. TFP is an index measuring the quantity of output produced from a given set of inputs. In the EU, the TFP growth is positive, but it has been slowing down since 2015 and has been mainly driven by the growth in labour productivity. While TFP serves as a key indicator of competitiveness, it has its limitations, particularly because it does not include sustainability issues. Moreover, the EU is a net exporter of agri-food products which suggests that EU agriculture is competitive. Yet, the EU remains dependent notably on imports of plant-based proteins, fertilisers and plant protection products. This dependency exposes EU farmers to price volatility and supply chain challenges, potentially impacting their competitiveness.

Farmers face many other competitiveness challenges. **Current** challenges include strengthening the position of farmers in the value chain, price volatility and production risks, generational renewal, adhering to the stringent requirements of EU legislation on farming practices, addressing climate change and the adoption and use of new and digital technologies. **Upcoming** challenges include risks related to climate change, other environmental issues (biodiversity, water quantity and quality, air and soil quality) as well as changes in consumer diets and agri-food systems.

This study considers eight types of CAP interventions for the 2023-2027 period (and their counterparts for 2014-2022)<sup>45</sup> for assessing the level of support to competitiveness. It is important to note that income support differs from CAP support to competitiveness (specific objective 2) although both are closely linked. **In general, the CAP tools enable Member States to address many of the current competitiveness challenges.**

Beyond the CAP interventions, the CAP policy framework also provides various mechanisms to improve market transparency, stabilise markets and respond to crises. Nevertheless, there are still a number of areas where challenges are not covered by the CAP and need to be addressed at the Member State level. An example is access to land and price of land, including for young farmers, a major issue that largely depends on national legislation. This also applies to the promotion of women in agriculture, another area mainly regulated by national legislation.

In addition, the CAP interventions do not sufficiently address more disruptive events that may drastically affect production patterns in the coming decades, such as significant changes in bioclimatic factors (drought, heavy rainfall and hailstorms, flooding of land, impact of late frost, etc.), the largely

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<sup>45</sup> Coupled income support (CIS) (Article 32-35), complementary income support for young farmers (CIS-YF) (Article 30), sectoral interventions (Article 42-62), productive investment support (Articles 73-74), risk management tools (Article 76), cooperation (Article 77), knowledge exchange (Article 78), and support for the establishment of young farmers (Article 75) of Regulation (EU) 2021/2115.

unpredictable consequences of climate change<sup>46</sup>. Upcoming challenges also include significant changes in agri-food systems linked to changes in consumer diets.

The CAP's new delivery model (2023-2027) gives Member States the responsibility to combine the various tools in a coherent way, depending on their national context and needs. However, the expected impact of the CAP on farms' competitiveness in the EU is complex and will depend on the context and the various ways in which Member States combine and implement interventions.

Overall, the study concludes that the strategies developed under the CSPs show a continuity with the 2014-2022 period; the budgets allocated to interventions supporting competitiveness remain constant at the EU level, averaging around 20% of the total CAP budget in EU funding. For the 2023-2027 period, this represents EUR 55 billion and up to EUR 73 billion when adding co-financing and additional national financing. However, the levels of support (defined as the share of CAP interventions targeting competitiveness) remain quite heterogeneous from one Member State to another, with some allocating less than 10% of CAP planned expenditure while others are allocating more than 30%. Member States' strategies differ, mainly in terms of the risk management tools used, the levels of productive investment support, the sector-specific support including support to producer organisations, and the support to cooperation. They also differ in terms of share of targeted farms.

The 2014-2022 Rural Development Policy supported physical capital accumulation with investment support (M04) and human and social capital accumulation with knowledge transfer (M01), advisory (M02), and cooperation (M16) support. The precise impacts are not yet known as ex-post evaluations of the rural development programmes 2014-2022 will only take place in 2025-2026 due to the two-year extension of the programming period.

**Knowledge exchange, the development, dissemination and adoption rate of new technologies, and cooperation possess significant potential to address many of the challenges related to agricultural competitiveness cross-cuttingly.** The ongoing process of strengthening national AKIS provides an interesting framework for developing and structuring the other CAP interventions around the responses to the identified challenges. However, although the CAP support is increasing, cooperation and knowledge exchange currently receive only very limited resources (less than 1% of the planned CAP budget in EU funding). Furthermore, these initiatives are often implemented outside of the CAP. Their implementation is often restricted, with Member States tending to favour simple interventions over more complex ones that would require animation effort and time to be deployed, and often yield more uncertain outcomes. More complex interventions are also often constrained by more stringent administrative requirements, making them more difficult to implement.

Strengthening the **position of farmers in the value chain** is one of the nine specific objectives of the CAP 2023-2027. Indeed, the share of added value captured by farmers in the value chain is low and slightly decreasing (from 28% in 2014 to 26% in 2020 – see Figure 9). Within the scope of the CAP, this objective is primarily supported through sector-specific interventions (mainly in the wine, fruit and vegetable sectors), cooperation among producers, and productive investments in the value chain. However, **most CSPs have only made limited use of the available tools to improve the position of farmers in the value chain.** In addition, the position of farmers depends to a large extent on the organisation of the entire value chain, over which the CAP has only a limited leverage.

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<sup>46</sup> IPCC scenarios foresee increased intensity and severity of droughts, more frequent and intense extreme climate events, such as heavy rainfall and hailstorms, flooding of land, impact of late frost, etc.). Due to the various current scenarios based on different global warming hypotheses, as well as the unpredictable interactions between the different effects of climate change.

The **adoption of new technologies and digital technologies** by farmers remains a challenge, although it represents an opportunity to strengthen farm competitiveness. This challenge is addressed in the CSPs in a heterogeneous way through investment support, knowledge exchange and cooperation (including EIP-AGRI), and to a lesser extent through eco-schemes in some Member States. A more targeted CAP support could contribute to the use and adoption of suitable new and digital technologies by all farmers. However, lacking data at the EU-level, little is known about the uptake of digital technologies by farmers and about the added value of the many existing and emerging innovations. Member States also address digitalisation through their national or regional digital strategies.

**Young farmers and women** are **essential to the vitality of rural areas**, notably in remote rural areas where their presence has declined. **Young farmers** play an **important role in improving the competitiveness of farms** and the dynamics of the agricultural sector, including in addressing some of the upcoming challenges. The arrival of a young farmer is often an opportunity to restructure and modernise the farm and diversify or change farming practices. In addition, young farmers are generally better trained and more aware of new and digital technologies and new societal demands. Generational renewal and support to young farmers are a priority of the CAP and are associated with mandatory minimum spendings for 2023-2027 (1.1% to 6.3% of planned EU expenditures). The CAP primarily addresses generational renewal by offering setting up support, complementary income support for young farmers, and investment support in agricultural holdings. Some CSPs propose specific actions focussed on cooperation and knowledge exchange. Some **important aspects of generational renewal are beyond the scope of the CAP** and are addressed through national policies. Examples are access to land and more generally to capital and credit, the price of land, or the pension schemes established by the Member States. At this stage, the impact on generational renewal of reallocating financial resources from setting-up support (Pillar II) to CIS-YF (Pillar I) cannot be assessed. This is also the case for the new provisions on definitions and new entrants.

For the first time, the 2023-2027 CAP integrates gender in one of its specific objectives (SO8). All Member States recognise the **challenges faced by women** in their CSPs, including the lack of recognition of female farmers. However, only eight Member States address women in agriculture under SO8, most of these (seven) also specifically target women in agriculture under generational renewal (CAP specific objective 7) and one tackles it under competitiveness (CAP specific objective 2).

**The increased risk exposure of agricultural production may also reduce farm competitiveness.** The CAP intervenes in various ways to mitigate the impact of such risks (climatic, production, etc.). Foremost, direct payments and support to diversification (through conditionality, coupled income support, eco-schemes, AECMs and investment support) contribute to the stabilisation of farmers' income, promote change to sustainable farming practices and help farmers become more autonomous and resilient. More resilient farms are not necessarily the most competitive ones as measured by the current productivity indicators.

To foster the EU's autonomy concerning input production, the CAP provides the possibility to exceed the ceiling on coupled income support by 2% to support protein crop production, including legumes. This support aims to increase the supported areas by more than 50%, although this figure still falls short of meeting the actual needs.

In addition, the CAP provides risk management tools through both sector-specific interventions in Pillar I and specific risk management tools in Pillar II to help farmers cope with uncertainty. However, only five Member States earmarked more than 1% of their planned CAP expenditure for these tools. In addition, the CAP also contributes to the stabilisation of markets (i.e., aid for private storage, long-term

contracts, etc.) and provides tools to quickly react to crises. As a support, a new additional agricultural reserve of EUR 450 million per year was created (from EUR 400 million per year in 2014-2020).

**Adaptation to climate change** is a pivotal challenge for the present and future competitiveness of EU farms. The CSPs plan to address this challenge through increased investment support for adaptation and risk prevention, risk management tools, knowledge exchange and increased sector-specific actions (wine, fruit and vegetables, olives), as well as through AECMs and eco-schemes aimed at supporting changes in farming practices and systems. While these tools are essential for addressing climate change, they only represent a first step in supporting changes in farming practices. The current risk management tools are designed to help farmers respond to known risks based on past events, but do not encompass more severe risks that are highlighted by predictive models such as those developed by the IPCC.

The EU has established **stringent legal requirements in terms of environment and climate, animal welfare and food safety**. This translates into requirements covering agricultural production that represent additional costs for farmers and affect the competitiveness of agricultural production. Even if farmers receive specific support to compensate for these additional costs, they may find themselves in competition with world producers who are not facing the same levels of scrutiny and can therefore bring more price-competitive products to the market. Notwithstanding the potential health benefits of sanitary and phytosanitary (SPS) measures, the stringent food safety and environmental standards cause real disadvantages on the world market. In this context, the level of support for compensating additional costs and the trade agreements are particularly important. The current CAP already allows for compensation for additional costs or lost income, but does not pay for specific climatic, environmental or animal welfare practices or services.

**In addition, agricultural competitiveness is intricately linked to the unique characteristics of rural areas**. Even if all rural areas have agricultural production in common, the rural areas themselves are very diverse and the challenges of agricultural competitiveness vary according to the specific characteristics of each area and region. Pillar II of the CAP acknowledges this diversity, offering support for areas with natural or other constraints. Additionally, it also promotes cooperation and encourages innovative proposals tailored to local needs through the LEADER programme.

## 5.2. Policy recommendations

This study illustrates the complexity of the concept of competitiveness and its interconnection with the other CAP objectives.

In theory, the current challenges can be partly addressed with the tools provided by the new delivery model and with the interventions and mechanisms of the CAP. However, major modifications of the environment and bioclimatic factors due to global warming are anticipated over the next few years and decades, with areas of cultivation becoming notably more exposed and vulnerable to extreme climate events.

One of the main challenges for farms and for the CAP **is therefore to find the right balance between competitiveness and sustainability**. This also highlights the dilemma between the achievement of the EU Green Deal's objectives and safeguarding EU food security and affordability, both inducing trade-offs. This includes the needs, issues and requirements posed by climate change mitigation and adaptation, the protection of the environment, the respect for animal welfare and high-level food safety. These are all requirements that may have a negative impact on productivity and price competitiveness. Therefore, these stricter requirements set by EU legislation need to be adequately compensated to not jeopardise the competitiveness of EU agricultural production. This compensation

is also justified by non-market considerations to avoid, or at least limit, pollution, and support animal welfare for food safety at the world scale. Additional costs must be offset at the right level without over or under-compensation.

<b>Recommendation in the framework of the 2023-2027 CAP</b>	<ul style="list-style-type: none"> <li>The indicators currently used to assess competitiveness (TFP) do not integrate resilience and sustainability issues. In order to reconcile sustainability and competitiveness objectives, it is recommended to include sustainability aspects to measure 'sustainable competitiveness'<sup>47</sup>.</li> </ul>
<b>Recommendation for the future</b>	<ul style="list-style-type: none"> <li>The right balance between sustainability and competitiveness should be at the heart of future policies. In this context, it is recommended to investigate the potential benefits of moving from compensating for additional costs or income foregone to rewarding farmers for the real production of environmental public goods (biodiversity, CO2 sequestration, etc.) by developing payments for climate and environment services.</li> </ul>

**Competitiveness challenges** require interventions that **do not only depend on the CAP** but also on **national policies**, as well as on **other EU policies** such as the competition policy, the cohesion policy, or the research policy (agricultural value chains and producer organisations, the challenges of digitalisation in rural areas, of mobility, of training, and the challenges of the green transition and the circular economy).

<b>Recommendation in the framework of the 2023-2027 CAP</b>	<ul style="list-style-type: none"> <li>Tangible effects of policy coherence between the CAP and other EU policies should be assessed in the biannual review of the performance of the CSPs. These analyses should lead to practical recommendations aimed at improving synergies and complementarities within the framework of this CAP, notably by promoting exchanges of good practices.</li> </ul>
<b>Recommendation for the future</b>	<ul style="list-style-type: none"> <li>Future public interventions in rural areas should be based on global strategies encompassing the analyses of needs for the vitality of rural areas including of young farmers and women and extending beyond the agricultural sector.</li> </ul>

**Young farmers and women are essential to the vitality of rural areas.** However, price of land, access to land to capital are major current and future challenges for generational renewal not covered by the CAP. The question of gender in agriculture is also a matter that is only covered at national level by the legislation of the Member States (legal status, social security).

<b>Recommendation for the future</b>	<ul style="list-style-type: none"> <li>With respect to generational renewal and gender, it is recommended to strengthen the policy coherence between CAP support and national legislation and policies.</li> </ul>
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**Technological innovation and digitalisation** offer promising prospects to answer the competitiveness challenges identified in this study. In this context, it is important to support farmers to adopt and use relevant technological solutions that are tailored to their needs.

<b>Recommendation in the framework of the 2023-2027 CAP</b>	<ul style="list-style-type: none"> <li>It is recommended to actively promote the current CAP instruments, such as knowledge transfer and experience-sharing including through cooperation and AKIS in the uptake of suitable new and digital technologies.</li> </ul>
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<sup>47</sup> This is, for instance, the case in the framework of the OECD's Network on Agricultural TFP and Environment launched in 2017, which investigates how to include environmental dimensions in TFP measures (OECD, no date).

**Recommendation  
for the future**

- The uptake of new technologies will remain a critical competitiveness issue and will have significant consequences for the agricultural sector. Therefore, it is important to provide an enabling and inclusive environment for the adoption and use of suitable new and digital technologies by farmers.

European agriculture is facing increased **risks**, resulting in a higher variation of yields, agricultural production and prices. Risk management tools are available in the CAP. However, only a few Member States include them in their CSPs with more than 1% of their total CAP budget. Most Member States address risk management outside of the CAP.

**Recommendation  
for the future**

- A comprehensive approach to risk management, supported by knowledge exchange and in collaboration with farmers, should be prioritised in order to address risk management needs effectively.



## REFERENCES

- Adamišín, P. *et al.* (2015) 'Natural climatic conditions as a determinant of productivity and economic efficiency of agricultural entities', *Agricultural Economics*, 61 (2015) (No. 6), pp. 265–274. Available at: <https://doi.org/10.17221/153/2014-AGRICECON>.
- Adinolfi, F. *et al.* (2020) 'Gender differences in farm entrepreneurship: comparing farming performance of women and men in Italy', *New Medit*, 19, pp. 69–82. Available at: <https://doi.org/10.30682/nm2001e>.
- Agrosynergie (2011) *Evaluation of income effects of direct support*. Brussels, Belgium: European Commission, p. 261. Available at: [https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cmef/farmers-and-farming/evaluation-income-effects-direct-support\\_en](https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cmef/farmers-and-farming/evaluation-income-effects-direct-support_en).
- Agrosynergie (2014) *Evaluation of the structural effects of direct support: final report*. Edited by Directorate-General for Agriculture and Rural Development (European Commission). LU: Publications Office of the European Union. Available at: <https://data.europa.eu/doi/10.2762/19754> (Accessed: 25 October 2023).
- Agrosynergie (2020) *Evaluation study of the impact of the CAP measures towards the general objective "viable food production": final report*. Edited by European Commission. Directorate General for Agriculture and Rural Development. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/821351> (Accessed: 13 September 2023).
- Albaladejo Román, A. (2023) 'BRIEFING: EU feed autonomy Closing the gaps in European food security'. Edited by European Parliament.
- Alliance Environnement (2019) *Evaluation study of the impact of the CAP on climate change and greenhouse gas emissions: final report*. Edited by European Commission. Directorate General for Agriculture and Rural Development. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/54044> (Accessed: 13 September 2023).
- Anastasiou, E. *et al.* (2023) 'Precision farming technologies for crop protection: A meta-analysis', *Smart Agricultural Technology*, 5, p. 100323. Available at: <https://doi.org/10.1016/j.atech.2023.100323>.
- Anderson, C.L. *et al.* (2021) 'Economic Benefits of Empowering Women in Agriculture: Assumptions and Evidence', *The Journal of Development Studies*, 57(2), pp. 193–208. Available at: <https://doi.org/10.1080/00220388.2020.1769071>.
- Antón, J. and Sauer, J. (2021) *Dynamics of farm performance and policy impacts: Main findings*. Paris: OECD. Available at: <https://doi.org/10.1787/af1f4600-en>.
- Arce, Ó., Koester, G. and Nickel, C. (2023) 'One year since Russia's invasion of Ukraine – the effects on euro area inflation'. Edited by European Central Bank (ECB). Available at: <https://www.ecb.europa.eu/press/blog/date/2023/html/ecb.blog20230224~3b75362af3.en.html> (Accessed: 22 May 2023).
- Balezentis, T. *et al.* (2020) 'Young farmers' support under the Common Agricultural Policy and sustainability of rural regions: Evidence from Lithuania', *Land Use Policy*, 94, p. 104542. Available at: <https://doi.org/10.1016/j.landusepol.2020.104542>.
- Baráth, L., Fertő, I. and Bojnec, Š. (2018) 'Are farms in less favored areas less efficient?', *Agricultural Economics*, 49(1), pp. 3–12. Available at: <https://doi.org/10.1111/agec.12391>.
- Bernal, M.P., Alburquerque, J.A. and Moral, R. (2009) 'Composting of animal manures and chemical criteria for compost maturity assessment. A review', *Bioresource Technology*, 100(22), pp. 5444–5453. Available at: <https://doi.org/10.1016/j.biortech.2008.11.027>.

- Biswas, M.K., Patil, A. and Sunkad, G. (2023) 'Enhancing Legume Cultivars through Agronomy, Breeding, and Genetics', *Agronomy*, 13(4), p. 1035. Available at: <https://doi.org/10.3390/agronomy13041035>.
- Bojnec, Š. *et al.* (2014) 'Determinants of Technical Efficiency in Agriculture in New EU Member States from Central and Eastern Europe', *Acta Oeconomica*, 64(2), pp. 197–217.
- Bojnec, Š. and Latruffe, L. (2013) 'Farm size, agricultural subsidies and farm performance in Slovenia', *Land Use Policy*, 32, pp. 207–217. Available at: <https://doi.org/10.1016/j.landusepol.2012.09.016>.
- Bokusheva, R. and Čechura, L. (2017) *Evaluating dynamics, sources and drivers of productivity growth at the farm level*. Paris: OECD. Available at: <https://doi.org/10.1787/5f2d0601-en>.
- Boulanger, P. *et al.* (2016) 'Cumulative economic impact of future trade agreements on EU agriculture'. Publications Office of the European Union.
- Brunori, G. (2021) 'CAP, European Green Deal and the Digital Transformation of Agriculture | ARC2020', *Agricultural and Rural Convention*, 28 February. Available at: <https://www.arc2020.eu/cap-european-green-deal-and-the-digital-transformation-of-agriculture/> (Accessed: 17 November 2023).
- Brunori, G. (2022) 'Agriculture and rural areas facing the "twin transition": principles for a sustainable rural digitalisation', *Italian Review of Agricultural Economics*, 77(3), pp. 3–14. Available at: <https://doi.org/10.36253/rea-13983>.
- Bureau, J.C. and Antón, J. (2022) *Agricultural Total Factor Productivity and the environment: A guide to emerging best practices in measurement*. Paris: OECD. Available at: <https://doi.org/10.1787/6fe2f9e0-en>.
- Calvin, K. *et al.* (2023) *IPCC, 2023: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland*. First. Intergovernmental Panel on Climate Change (IPCC). Available at: <https://doi.org/10.59327/IPCC/AR6-9789291691647>.
- Cárdenas Rodríguez, M., Hašič, I. and Souchier, M. (2018) 'Environmentally Adjusted Multifactor Productivity: Methodology and Empirical Results for OECD and G20 Countries', *Ecological Economics*, 153, pp. 147–160. Available at: <https://doi.org/10.1016/j.ecolecon.2018.06.015>.
- Carroll, J. *et al.* (2009) 'Productivity and the Determinants of Efficiency in Irish Agriculture (1996-2006)', *83rd Annual Conference, March 30 - April 1, 2009, Dublin, Ireland* [Preprint]. Available at: <https://ideas.repec.org/p/ags/aesc09/50941.html> (Accessed: 17 July 2023).
- Chambolle, C., Turolla, S., 2022. The CAP and the Distribution of Value, in: Détang-Dessendre, C., Guyomard, H. (Eds.), *EVOLVING THE COMMON AGRICULTURAL POLICY FOR TOMORROW'S CHALLENGES*. EDITIONS QUAE, S.I.
- Ciaian, P. and Swinnen, J.F.M. (2006) 'Land Market Imperfections and Agricultural Policy Impacts in the New EU Member States: A Partial Equilibrium Analysis', *American Journal of Agricultural Economics*, 88(4), pp. 799–815. Available at: <https://doi.org/10.1111/j.1467-8276.2006.00899.x>.
- Cohen, M.A. and Tubb, A. (2018) 'The Impact of Environmental Regulation on Firm and Country Competitiveness: A Meta-analysis of the Porter Hypothesis', *Journal of the Association of Environmental and Resource Economists*, 5(2), pp. 371–399. Available at: <https://doi.org/10.1086/695613>.
- Coppola, A. *et al.* (2018) 'Endogenous and Exogenous Determinants of Agricultural Productivity: What Is the Most Relevant for the Competitiveness of the Italian Agricultural Systems?', *Agris on-line Papers in Economics and Informatics*, 2(June), pp. 33–47. Available at: <https://doi.org/10.7160/aol.2018.100204>.

- De V. Cavalcanti, T.V., Mohaddes, K. and Raissi, M. (2015) 'Commodity Price Volatility and the Sources of Growth', *Journal of Applied Econometrics*, 30(6), pp. 857–873. Available at: <https://doi.org/10.1002/jae.2407>.
- Dellapasqua, C., Ramon, R. and Wesseler, G. (2019) 'Structural change and generational renewal'. Edited by European Commission. Agriculture and Rural Development and European Commission. Agriculture and Rural Development, CAP specific objectives ... explained, p. 19.
- Devot, A. et al. (2023) 'Research for AGRI Committee - The impact of extreme climate events on agriculture production in the EU', *European Parliament, Policy Department for Structural and Cohesion Policies, Brussels* [Preprint].
- Dwyer, J. et al. (2019) *Evaluation of the impact of the CAP on generational renewal, local development and jobs in rural areas: final report*. Edited by European Commission. Directorate General for Agriculture and Rural Development. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/364362> (Accessed: 6 September 2023).
- Eistrup, M. et al. (2019) 'A "Young Farmer Problem"? Opportunities and Constraints for Generational Renewal in Farm Management: An Example from Southern Europe', *Land*, 8(4), p. 70. Available at: <https://doi.org/10.3390/land8040070>.
- El-Hage Scialabba, N. (2002) *Organic agriculture and genetic resources for food and agriculture*.
- European Commission (2020) *Increasing Competitiveness: The Role of Productivity. CAP Specific Objectives Explained*. Available at: [https://agriculture.ec.europa.eu/system/files/2019-10/cap-briefs-2-productivity\\_en\\_0.pdf](https://agriculture.ec.europa.eu/system/files/2019-10/cap-briefs-2-productivity_en_0.pdf).
- European Commission (2021a) *Evaluation of the instruments applicable to State aid in the agricultural and forestry sectors and in rural areas*. Commission staff working document SWD (2021) 107 final, pp. 1–73.
- European Commission (2021b) *Long-term vision for rural areas, European Commission - European Commission*. Available at: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_21\\_3162](https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3162) (Accessed: 4 July 2023).
- European Commission (2023a) 'Approved 28 CAP Strategic Plans (2023–2027): Summary overview for 27 Member States'. Available at: <https://agriculture.ec.europa.eu/system/files/2023-06/approved-28-cap-strategic-plans-2023-27.pdf>.
- European Commission (2023b) *Short-term outlook for EU agricultural markets*. Brussels: European Commission, DG Agriculture and Rural Development, Available at: [https://agriculture.ec.europa.eu/system/files/2023-04/short-term-outlook-spring-2023\\_en.pdf](https://agriculture.ec.europa.eu/system/files/2023-04/short-term-outlook-spring-2023_en.pdf).
- European Commission. Directorate General for Agriculture and Rural Development. (2021a) *EU agricultural outlook for markets, income and environment 2021-2031*. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/753688> (Accessed: 27 November 2023).
- European Commission. Directorate General for Agriculture and Rural Development (2021b) *EU Farm Economics Overview based on 2018 FADN data*. Brussels, Belgium: European Commission, p. 70. Available at: [https://agriculture.ec.europa.eu/system/files/2021-11/eu-farm-econ-overview-2018\\_en\\_0.pdf](https://agriculture.ec.europa.eu/system/files/2021-11/eu-farm-econ-overview-2018_en_0.pdf).
- European Commission. Directorate General for Agriculture and Rural Development. (2022) *EU agricultural outlook for markets, income and environment 2022-2032*. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/29222> (Accessed: 13 November 2023).

European Commission. Directorate General for Agriculture and Rural Development. and Copenhagen Economics. (2016) *Impacts of EU trade agreements on the agricultural sector*. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/750618> (Accessed: 29 November 2023).

European Commission. Directorate General for Research and Innovation. (2020) *Caring for soil is caring for life: ensure 75% of soils are healthy by 2030 for food, people, nature and climate : report of the Mission board for Soil health and food*. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2777/821504> (Accessed: 29 November 2023).

European Commission. Directorate-General for Communications Networks, Content and Technology (2023) *The Digitalisation of the European Agricultural Sector | Shaping Europe's digital future*. Available at: <https://digital-strategy.ec.europa.eu/en/policies/digitalisation-agriculture> (Accessed: 15 November 2023).

European Commission. Joint Research Centre. (2021) *The demographic landscape of EU territories: challenges and opportunities in diversely ageing regions*. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2760/658945> (Accessed: 3 August 2023).

European Court of Auditors (2021) 'Special Report 20/2021: Sustainable water use in agriculture: CAP funds more likely to promote greater rather than more efficient water use'.

European Environment Agency (EU body or agency) (2019) *Climate change adaptation in the agriculture sector in Europe*. LU: Publications Office of the European Union. Available at: <https://data.europa.eu/doi/10.2800/537176> (Accessed: 29 August 2023).

European Investment Bank (2022) *How bad is the Ukraine war for the European recovery?*. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2867/945503> (Accessed: 29 November 2023).

European Parliament (2010) *Women Working on the Farm: How to Promote their Contribution to the Development of Agriculture and Rural Areas in Europe | Think Tank | European Parliament*. Available at: [https://www.europarl.europa.eu/thinktank/en/document/IPOL-AGRI\\_NT\(2010\)438609](https://www.europarl.europa.eu/thinktank/en/document/IPOL-AGRI_NT(2010)438609) (Accessed: 17 July 2023).

European Parliament (2015) 'Briefing: Measures to support dairy farmers after the end of EU milk quotas'. Available at: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2015/569012/EPRS\\_BRI\(2015\)569012\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2015/569012/EPRS_BRI(2015)569012_EN.pdf).

European Parliament (2017) 'European Parliament resolution of 4 April 2017 on women and their roles in rural areas (2016/2204(INI))'.

European Parliament (2018) 'European Parliament resolution of 29 May 2018 on the implementation of CAP young farmers' tools in the EU after the 2013 reform (2017/2088(INI))'.

European Parliament (2022) *A long-term vision for the EU's rural areas - Tuesday, 13 December 2022*. Available at: [https://www.europarl.europa.eu/doceo/document/TA-9-2022-0436\\_EN.html](https://www.europarl.europa.eu/doceo/document/TA-9-2022-0436_EN.html) (Accessed: 3 August 2023).

European Parliament (2023) 'The Common Agricultural Policy (CAP) and the Treaty - Fact sheet'. Available at: [https://www.europarl.europa.eu/erpl-app-public/factsheets/pdf/en/FTU\\_3.2.1.pdf](https://www.europarl.europa.eu/erpl-app-public/factsheets/pdf/en/FTU_3.2.1.pdf).

Eurostat (2022a) 'EU's agricultural labour productivity up by 13% in 2022', *Eurostat*. Available at: <https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20221219-1>.

Eurostat (2022b) *Farmers and the agricultural labour force - statistics*. Available at: <https://ec.europa.eu/eurostat/statistics->

explained/index.php?title=Farmers\_and\_the\_agricultural\_labour\_force\_-\_statistics (Accessed: 4 August 2023).

FAO (ed.) (2014) *Food and nutrition in numbers: 2014*. Rome: FAO.

FAO (2023) 'FAO food price index, nominal and real indices from 1990 onwards'. Available at: <https://www.fao.org/worldfoodsituation/foodpricesindex/en>.

'Farm Accounting Data Network An A to Z of methodology' (2020). CIRCABC. Available at: <https://circabc.europa.eu/ui/group/befb6055-ab0c-4305-84fe-0c80c1c0553d/library/1df3a121-11ee-40c3-a991-70a5f3cdd9d7/details>.

Ferrari, E. *et al.* (2021) 'Cumulative economic impact of trade agreements on EU agriculture'. Publications Office of the European Union.

Finger, R. (2023) 'Digital innovations for sustainable and resilient agricultural systems', *European Review of Agricultural Economics*, p. jbad021. Available at: <https://doi.org/10.1093/erae/jbad021>.

Franić, R. and Kovačićek, T. (2019) *The professional status of rural women in the EU*. European Parliament's Committee on Women's Rights and Gender Equalit. Available at: [https://www.europarl.europa.eu/RegData/etudes/STUD/2019/608868/IPOL\\_STU\(2019\)608868\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2019/608868/IPOL_STU(2019)608868_EN.pdf).

Galdeano-Gómez, E. and Céspedes-Lorente, J. (2008) 'Environmental spillover effects on firm productivity and efficiency: An analysis of agri-food business in Southeast Spain', *Ecological Economics*, 67(1), pp. 131–139. Available at: <https://doi.org/10.1016/j.ecolecon.2007.12.004>.

Garcia-Alvarez-Coque, J.-M. *et al.* (eds) (2018) *Determinant Factors of High Performing Agricultural Regions*. Available at: <https://doi.org/10.22004/ag.econ.277456>.

Gaupp-Berghausen, M. *et al.* (2022) 'Research for AGRI Committee - The Future of the European Farming Model: Socio-economic and territorial implications of the decline in the number of farms and farmers in the EU'.

Giannakis, E. and Bruggeman, A. (2015) 'The highly variable economic performance of European agriculture', *Land Use Policy*, 45, pp. 26–35. Available at: <https://doi.org/10.1016/j.landusepol.2014.12.009>.

Greenpeace Europe Unit, 2019. Feeding the problem: the dangerous intensification of animal farming in Europe.

Grossenbacher, V. (2019) 'Frauen bewegen Landwirtschaft'.

Guadarrama, E. *et al.* (2023) *Evolving appetites: an in-depth look at European attitudes towards plant-based eating*. European Commission | Horizon. Available at: [https://smartproteinproject.eu/wp-content/uploads/Smart-Protein-European-Consumer-Survey\\_2023.pdf](https://smartproteinproject.eu/wp-content/uploads/Smart-Protein-European-Consumer-Survey_2023.pdf) (Accessed: 24 November 2023).

Guesmi, B. and Serra, T. (2015) 'Can We Improve Farm Performance? The Determinants of Farm Technical and Environmental Efficiency', *Applied Economic Perspectives and Policy*, 37(4), pp. 692–717. Available at: <https://doi.org/10.1093/aep/ppv004>.

Hadley, D. (2006) 'Patterns in Technical Efficiency and Technical Change at the Farm-level in England and Wales, 1982–2002', *Journal of Agricultural Economics*, 57(1), pp. 81–100. Available at: <https://doi.org/10.1111/j.1477-9552.2006.00033.x>.

Hart, K. *et al.* (2017) *Evaluation study of the payment for agricultural practices beneficial for the climate and the environment: final report*. Edited by European Commission. Directorate General for Agriculture and

Rural Development. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/71725> (Accessed: 13 September 2023).

Hochuli, A., Hochuli, J. and Schmid, D. (2021) 'Competitiveness of diversification strategies in agricultural dairy farms: Empirical findings for rural regions in Switzerland', *Journal of Rural Studies*, 82, pp. 98–106. Available at: <https://doi.org/10.1016/j.jrurstud.2021.01.021>.

*Informal meeting of heads of state or government, Versailles, 10-11 March 2022* (2022). Available at: <https://www.consilium.europa.eu/en/meetings/european-council/2022/03/10-11/> (Accessed: 29 November 2023).

Issanchou, A. (2016) 'Soil resource, at the core of competitiveness and sustainability issues in agriculture: an economic approach', *Working Paper SMART – LERECO N°16-01* [Preprint].

Jacquet, F. *et al.* (2022) 'Pesticide-free agriculture as a new paradigm for research', *Agronomy for Sustainable Development*, 42(1), p. 8. Available at: <https://doi.org/10.1007/s13593-021-00742-8>.

Jaenicke, E.C. and Lengnick, L.L. (1999) 'A Soil-Quality Index and Its Relationship to Efficiency and Productivity Growth Measures: Two Decompositions', *American Journal of Agricultural Economics*, 81(4), pp. 881–893. Available at: <https://doi.org/10.2307/1244331>.

Jansik, C. and Irz, X. (2015) 'Competitiveness of Dairy Farms In Northern Europe: A Cross-Country analysis', *Agricultural and Food Science*, 24(3), pp. 206–218. Available at: <https://doi.org/10.23986/afsci.50881>.

Kilian, S. *et al.* (2012) 'Impacts of 2003 CAP reform on land rental prices and capitalization', *Land Use Policy*, 29(4), pp. 789–797. Available at: <https://doi.org/10.1016/j.landusepol.2011.12.004>.

Kleinhanß, W. *et al.* (2007) 'Efficiency, subsidies, and environmental adaptation of animal farming under CAP', *Agricultural Economics*, 36(1), pp. 49–65. Available at: <https://doi.org/10.1111/j.1574-0862.2007.00176.x>.

Koutsou, S., Partalidou, M. and Ragkos, A. (2014) 'Young farmers' social capital in Greece: Trust levels and collective actions', *Journal of Rural Studies*, 34, pp. 204–211. Available at: <https://doi.org/10.1016/j.jrurstud.2014.02.002>.

Kryszak, Ł., Guth, M. and Czyżewski, B. (2021) 'Determinants of farm profitability in the EU regions. Does farm size matter?', *Agricultural Economics (Zemědělská ekonomika)*, 67(3), pp. 90–100. Available at: <https://doi.org/10.17221/415/2020-AGRICECON>.

Kumbhakar, S.C., Li, M. and Lien, G. (2023) 'Do subsidies matter in productivity and profitability changes?', *Economic Modelling*, 123, p. 106264. Available at: <https://doi.org/10.1016/j.econmod.2023.106264>.

Lakner, S. and Breustedt, G. (2017) 'Efficiency Analysis of Organic Farming Systems – A Review of Concepts, Topics, Results and Conclusions', *GJAE – German Journal of Agricultural Economics* [Preprint]. Available at: <https://www.gjae-online.de/articles/efficiency-analysis-of-organic-farming-systems-a-review-of-concepts-topics-results-and-conclusions/> (Accessed: 26 July 2023).

Lakner, S., Cramon-Taubadel, S. von and Brümmer, B. (2012) 'Technical efficiency of organic pasture farming in Germany: The role of location economics and of specific knowledge', *Renewable Agriculture and Food Systems*, 27(3), pp. 228–241. Available at: <https://doi.org/10.1017/S1742170511000330>.

Lankoski, J. and Thiem, A. (2020) 'Linkages between agricultural policies, productivity and environmental sustainability', *Ecological Economics*, 178, p. 106809. Available at: <https://doi.org/10.1016/j.ecolecon.2020.106809>.

- Lanos, B. *et al.* (2019) 'Increase competitiveness - The role of productivity'. Edited by European Commission. Agriculture and Rural Development and European Commission. Directorate General for Agriculture and Rural Development, CAP specific objectives ... explained (2), p. 16.
- Latruffe, L. (2010) *Competitiveness, Productivity and Efficiency in the Agricultural and Agri-Food Sectors*. Paris: OECD. Available at: <https://doi.org/10.1787/5km91nkdt6d6-en>.
- Latruffe, L., Dakpo, K.H., *et al.* (2016) *CAP Subsidies and Technical Efficiency Including Environmental Outputs: The Case of European Farms*. report. auto-saisine. Available at: <https://hal.science/hal-01611424> (Accessed: 26 July 2023).
- Latruffe, L., Diazabakana, A., *et al.* (2016) 'Measurement of sustainability in agriculture: a review of indicators', *Studies in Agricultural Economics*, 118(3), pp. 123–130. Available at: <https://doi.org/10.7896/j.1624>.
- Latruffe, L. *et al.* (2023) 'Identifying and assessing intensive and extensive technologies in European dairy farming', *European Review of Agricultural Economics*, p. jbad023. Available at: <https://doi.org/10.1093/erae/jbad023>.
- Legowski, M. *et al.* (2019) 'Farmer position in the value chain'. Edited by European Commission. Directorate General for Agriculture and Rural Development, CAP specific objectives ... explained (3), p. 12.
- Matthews, A. *et al.* (2016) 'RESEARCH FOR AGRI COMMITTEE – CAP REFORM POST-2020 - CHALLENGES IN AGRICULTURE'. Edited by European Parliament, p. 314.
- Matthews, A. (2022) 'Implications of the European Green Deal for agri-food trade with developing countries', *96th Annual Conference, April 4-6, 2022, K U Leuven, Belgium* [Preprint]. Available at: <https://ideas.repec.org/p/ags/aesc22/321162.html> (Accessed: 29 November 2023).
- Mishra, A., Wilson, C. and Williams, R. (2009) 'Factors affecting financial performance of new and beginning farmers', *Agricultural Finance Review*, 69(2), pp. 160–179. Available at: <https://doi.org/10.1108/00021460910978661>.
- Mizik, T. (2021) 'Agri-Food Trade Competitiveness: A Review of the Literature', *Sustainability*, 13, p. 11235. Available at: <https://doi.org/10.3390/su132011235>.
- Moschitz, H. and Home, R. (2014) 'The challenges of innovation for sustainable agriculture and rural development: Integrating local actions into European policies with the Reflective Learning Methodology', *Action Research*, 12(4), pp. 392–409. Available at: <https://doi.org/10.1177/1476750314539356>.
- Münch, A. *et al.* (2023) 'Research for AGRI Committee - Comparative analysis of the CAP Strategic Plans and their effective contribution to the achievement of the EU objectives'. Available at: [https://www.europarl.europa.eu/RegData/etudes/STUD/2023/747255/IPOL\\_STU\(2023\)747255\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2023/747255/IPOL_STU(2023)747255_EN.pdf).
- Niedermayr, A. *et al.* (2021) *LIFT Deliverable D3.1 Farm technical-economic performance depending on the degree of ecological approaches*. Available at: <https://doi.org/10.13140/RG.2.2.11868.10885>.
- Niedermayr, A. *et al.* (2022) 'Farm level sustainability of ecological farming'.
- Nowak, A., Kijek, T. and Domańska, K. (2015) 'Technical efficiency and its determinants in the European Union', *Agricultural Economics (Zemědělská ekonomika)*, 61(6), pp. 275–283. Available at: <https://doi.org/10.17221/200/2014-AGRICECON>.

OECD (1996) *Globalisation and competitiveness: relevant indicators*. STI Working Papers 1996/5. Paris. Available at: <https://one.oecd.org/document/OCDE/GD%2896%2943/En/pdf>.

OECD (2009) *Agricultural Commodity Price Volatility: An Overview*, *oecd-ilibrary.org*. Available at: [https://read.oecd-ilibrary.org/agriculture-and-food/agricultural-commodity-price-volatility\\_5kg0t00nrhc-en](https://read.oecd-ilibrary.org/agriculture-and-food/agricultural-commodity-price-volatility_5kg0t00nrhc-en) (Accessed: 29 November 2023).

OECD (2011) *Fostering Productivity and Competitiveness in Agriculture*. Paris: Organisation for Economic Co-operation and Development. Available at: [https://www.oecd-ilibrary.org/agriculture-and-food/fostering-productivity-and-competitiveness-in-agriculture\\_9789264166820-en](https://www.oecd-ilibrary.org/agriculture-and-food/fostering-productivity-and-competitiveness-in-agriculture_9789264166820-en) (Accessed: 10 August 2023).

OECD (2019a) *Enhancing the Mitigation of Climate Change through Agriculture: Policies, Economic Consequences, and Trade-offs*. OECD. Available at: <https://doi.org/10.1787/e9a79226-en>.

OECD (2019b) 'Executive Summary', in OECD, *Digital Opportunities for Better Agricultural Policies*. OECD, pp. 10–11. Available at: <https://doi.org/10.1787/49c5d689-en>.

OECD (2019c) *Innovation, Productivity and Sustainability in Food and Agriculture: Main Findings from Country Reviews and Policy Lessons*. Paris: Organisation for Economic Co-operation and Development. Available at: [https://www.oecd-ilibrary.org/agriculture-and-food/innovation-productivity-and-sustainability-in-food-and-agriculture\\_c9c4ec1d-en](https://www.oecd-ilibrary.org/agriculture-and-food/innovation-productivity-and-sustainability-in-food-and-agriculture_c9c4ec1d-en) (Accessed: 7 August 2023).

OECD (2023a) *Benchmarking agricultural productivity performance in the EU*. Available at: <https://www.oecd.org/coronavirus/en/data-insights/benchmarking-agricultural-productivity-performance-in-the-eu>.

OECD (2023b) *Policies for the Future of Farming and Food in the Netherlands*. OECD (OECD Agriculture and Food Policy Reviews). Available at: <https://doi.org/10.1787/bb16dea4-en>.

OECD (no date) *Network on Agricultural Total Factor Productivity and the Environment*. Available at: <https://www.oecd.org/agriculture/topics/network-agricultural-productivity-and-environment/> (Accessed: 19 July 2023).

Ortiz-Bobea, A. *et al.* (2021) 'Anthropogenic climate change has slowed global agricultural productivity growth', *Nature Climate Change*, 11(4), pp. 306–312. Available at: <https://doi.org/10.1038/s41558-021-01000-1>.

Piet, L. and Desjeux, Y. (2021) 'New perspectives on the distribution of farm incomes and the redistributive impact of CAP payments', *European Review of Agricultural Economics*, 48(2), pp. 385–414. Available at: <https://doi.org/10.1093/erae/jbab005>.

Qaim, M. (2020) 'Role of New Plant Breeding Technologies for Food Security and Sustainable Agricultural Development', *Applied Economic Perspectives and Policy*, 42(2), pp. 129–150. Available at: <https://doi.org/10.1002/aapp.13044>.

*Regulation (EU) 2021/2116 of the European Parliament and of the Council of 2 December 2021 on the financing, management and monitoring of the common agricultural policy and repealing Regulation (EU) No 1306/2013*

*Regulation (EU) 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007, n.d.*



*Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 establishing rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013* (2023). Available at: <http://data.europa.eu/eli/reg/2021/2115/2023-01-01/eng> (Accessed: 4 July 2023).

*Resolution (EU) 2022/2593 of the European Parliament of 24 March 2022 on the need for an urgent EU action plan to ensure food security inside and outside the EU in light of the Russian invasion of Ukraine.* (2022) 2022/2593(RSP). Available at: <https://oeil.secure.europarl.europa.eu/oeil/popups/printficheglobal.pdf?id=736696&l=en> (Accessed: 4 July 2023).

Rossi, R. (2022) 'Small farms' role in the EU food system', *European Parliamentary Research Service*, PE 733.630.

Rudinskaya, T., Hlavsa, T. and Hruska, M. (2019) 'Estimation of technical efficiency of Czech farms operating in less favoured areas', *Agricultural Economics (Zemědělská ekonomika)*, 65(10), pp. 445–453. Available at: <https://doi.org/10.17221/52/2019-AGRICECON>.

Salhofer, K. and Feichtinger, P. (2020) 'Regional differences in the capitalisation of first and second pillar payments of the CAP into land rental prices', *European Review of Agricultural Economics*, p. jbaa028. Available at: <https://doi.org/10.1093/erae/jbaa028>.

Schuh, B. *et al.* (2020) *Research for AGRI Committee - The challenge of land abandonment after 2020 and options for mitigating measures*. Brussels: Policy Department for Structural and Cohesion Policies, European Parliament, p. 98. Available at: [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652238/IPOL\\_STU\(2020\)652238\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652238/IPOL_STU(2020)652238_EN.pdf).

Schuh, B. *et al.* (2021) *Evaluation support study on the impact of the CAP on territorial development of rural areas: socioeconomic aspects : final report*. Edited by European Commission. Directorate General for Agriculture and Rural Development. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/541389> (Accessed: 18 September 2023).

Schulte, H.D. *et al.* (2018) 'Let the cows graze: An empirical investigation on the trade-off between efficiency and farm animal welfare in milk production', *Land Use Policy*, 79, pp. 375–385. Available at: <https://doi.org/10.1016/j.landusepol.2018.07.005>.

Slijper, T. *et al.* (2022) 'Quantifying the resilience of European farms using FADN', *European Review of Agricultural Economics*, 49(1), pp. 121–150. Available at: <https://doi.org/10.1093/erae/jbab042>.

Staboulis, C. *et al.* (2022) 'Assessing the Role of the Young Farmer Scheme in the Export Orientation of Greek Agriculture', *Sustainability*, 14(6), p. 3287. Available at: <https://doi.org/10.3390/su14063287>.

Staniszewski, J. and Borychowski, M. (2020) 'The impact of the subsidies on efficiency of different sized farms. Case study of the Common Agricultural Policy of the European Union', *Agricultural Economics (Zemědělská ekonomika)*, 66, pp. 373–380. Available at: <https://doi.org/10.17221/151/2020-AGRICECON>.

SWD (2018) 301 final (2018). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD%3A2018%3A301%3AFIN> (Accessed: 29 November 2023).

SWD (2022) 41 final (2022) *EU strategic dependencies and capacities: second stage of in-depth reviews*. Brussels, Belgium: European Commission. Available at: <https://commission.europa.eu/strategy-and->

policy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy/second-depth-review-strategic-areas-europes-interests\_en (Accessed: 22 May 2023).

Tauer, L. (ed.) (2019) 'Farmer productivity by age in the United States', *International Journal of Agricultural Management* [Preprint]. Available at: <https://doi.org/10.22004/ag.econ.329824>.

Tetratich International Development., Deloitte., and IPSOS. (2020) *Evaluation support study of the EU agricultural promotion policy, internal and third country markets: final report*. Edited by European Commission. Directorate General for Agriculture and Rural Development. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2762/96596> (Accessed: 24 October 2023).

Tyczewska, A., Twardowski, T. and Woźniak-Gientka, E. (2023) 'Agricultural biotechnology for sustainable food security', *Trends in Biotechnology*, 41(3), pp. 331–341. Available at: <https://doi.org/10.1016/j.tibtech.2022.12.013>.

Unesco (ed.) (2015) *Water for a sustainable world*. Paris: UNESCO (The United Nations world water development report, 6.2015).

Van Doorslaer, B. et al. (2019) 'Agriculture and climate mitigation'. Edited by European Commission. Agriculture and Rural Development, CAP specific objectives ... explained (4), p. 16.

Varacca, A. et al. (2022) 'A meta-analysis of the capitalisation of CAP direct payments into land prices', *European Review of Agricultural Economics*, 49(2), pp. 359–382. Available at: <https://doi.org/10.1093/erae/jbab014>.

Weber, T. et al. (2021) *Tackling labour shortages in EU Member States*. European Foundation for the Improvement of Living and Working Conditions. Available at: <https://doi.org/10.2806/363602>.

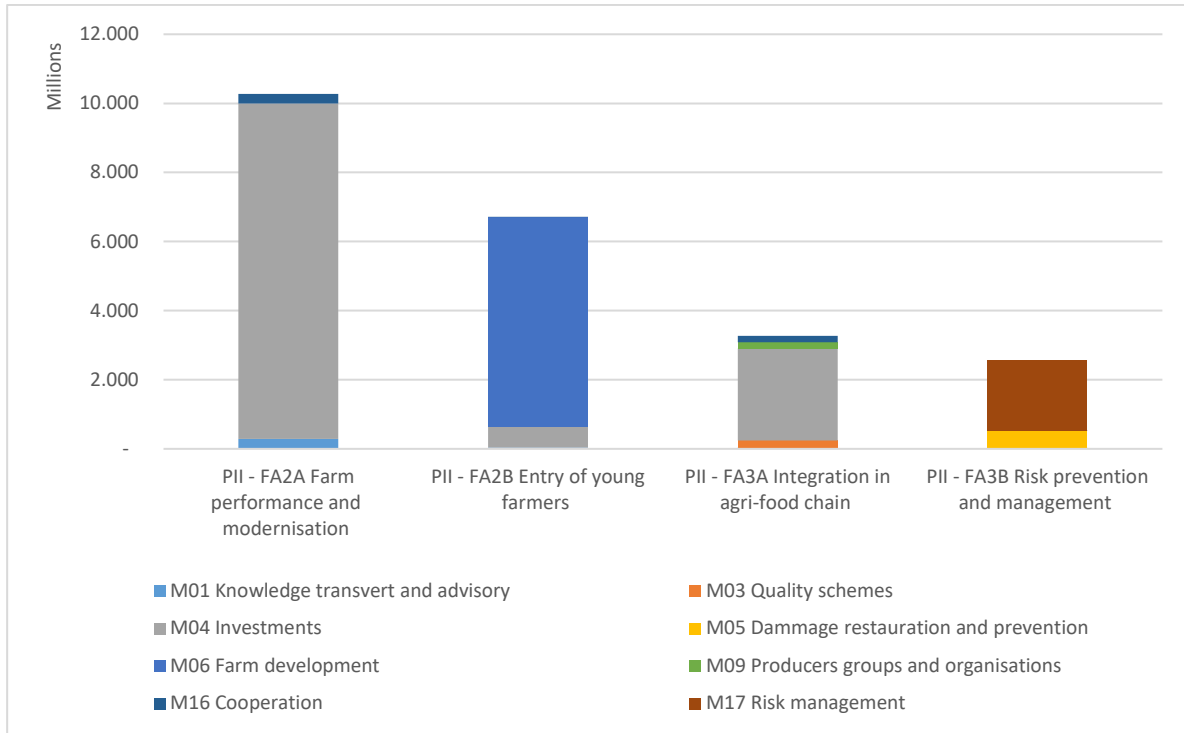
Wesseler, J. et al. (2015) *Overview of the agricultural inputs sector in the EU*. Edited by European Parliament. Directorate General for Internal Policies of the Union. LU: Publications Office. Available at: <https://data.europa.eu/doi/10.2861/5604> (Accessed: 17 May 2023).

Wilson, P. (ed.) (2014) 'Farmer characteristics associated with improved and high farm business performance', *International Journal of Agricultural Management* [Preprint]. Available at: <https://doi.org/10.22004/ag.econ.236912>.

Zhu, X., Demeter, R.M. and Oude Lansink, A.G.J.M. (eds) (2008) *Competitiveness of dairy farms in three countries: the role of CAP subsidies*. Available at: <https://ageconsearch.umn.edu/record/44143/>.

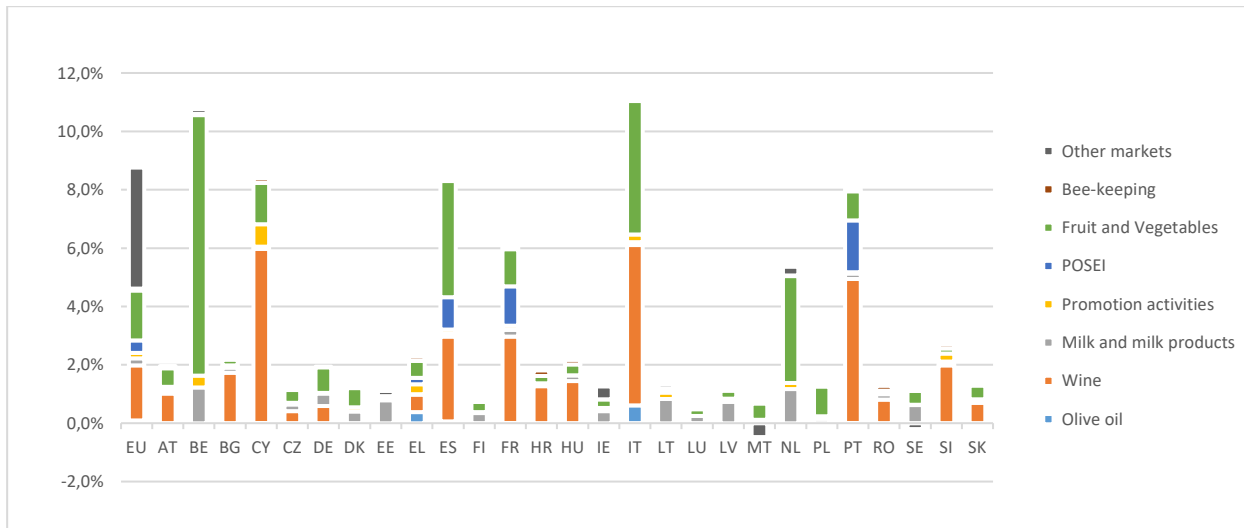
## ANNEX 1: ADDITIONAL FIGURES TO CHAPTER 3 AND 4

**Figure 41: EAFRD expenditure 2015-2021 on measures related to competitiveness objectives**



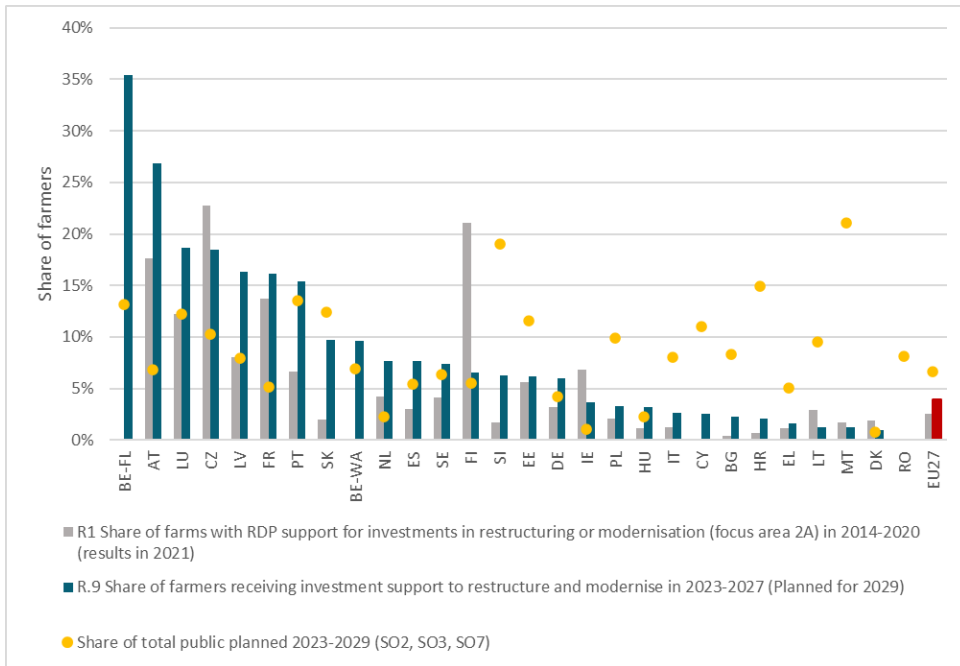
Source: Project team, based on EC DG AGRI 'Financing the CAP' (<https://agridata.ec.europa.eu/extensions/DashboardIndicators/Financing.html>)

**Figure 42: EU expenditure 2015-2021 on market measures related to competitiveness objectives as % of the CAP at Member State level.**



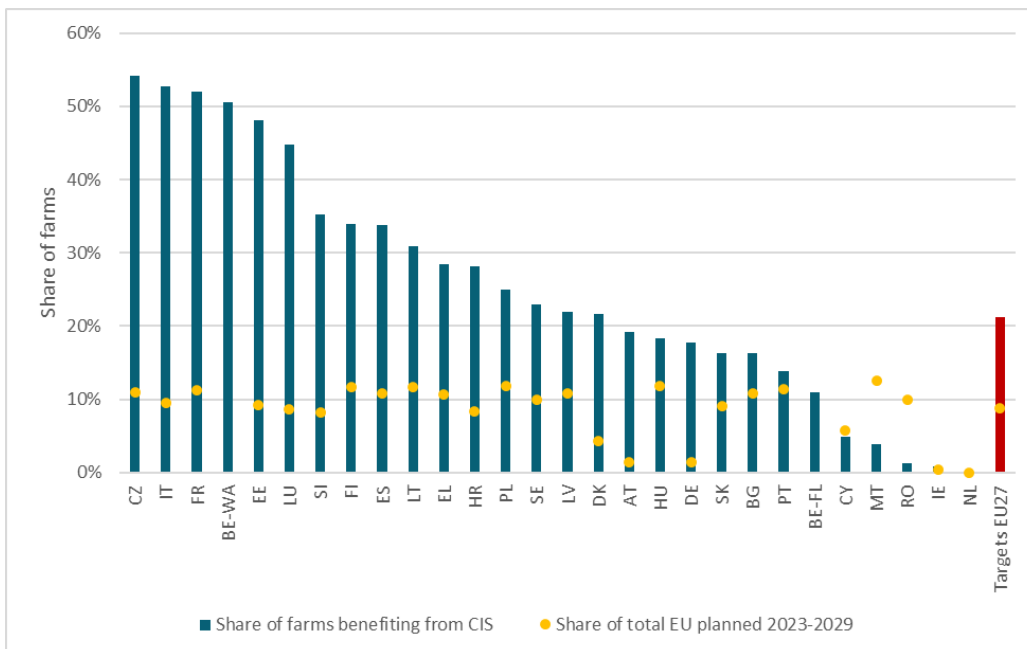
Source: Project team, based on EC DG AGRI 'financing the CAP' (<https://agridata.ec.europa.eu/extensions/DashboardIndicators/Financing.html>)

**Figure 43: R.9 Target share of farmers receiving investment support to restructure and modernise, including to improve resource efficiency**



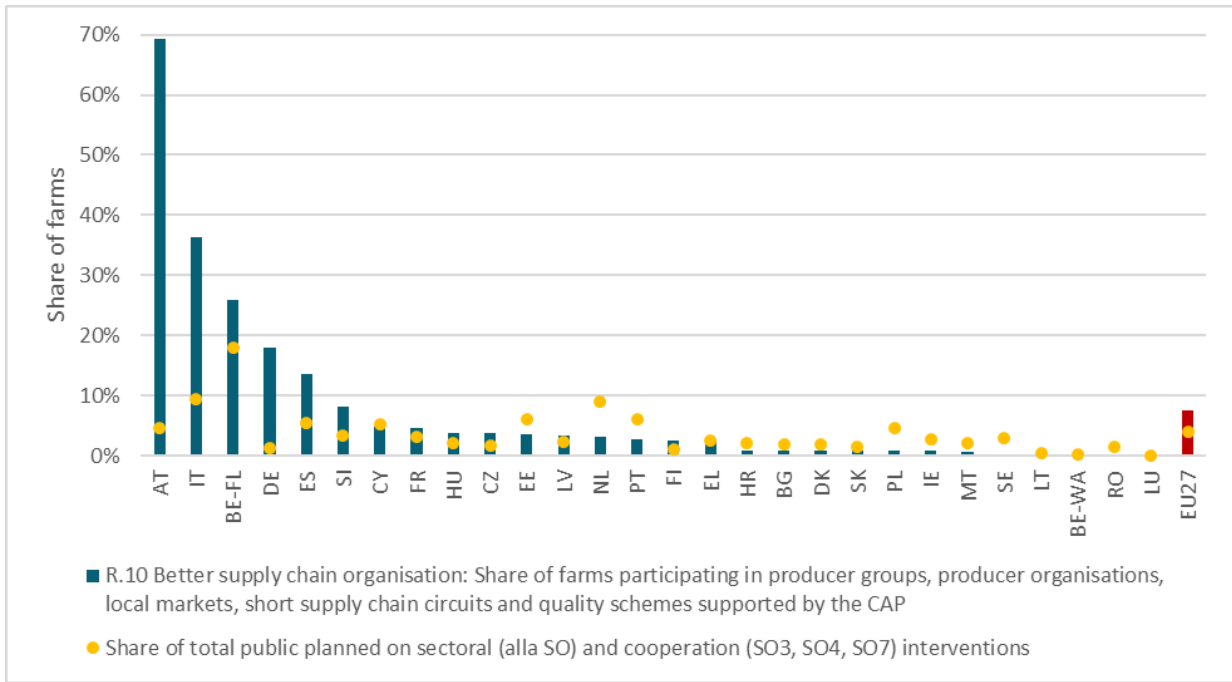
Source: Project team, 2023, based on CSP targets and the '[Catalogue of CAP interventions](#)', DG AGRI (via AGRIDATA portal)

**Figure 44: R8 CIS – Targeted share of farms benefiting from Coupled Income Support and share of CAP EU planned expenditure 2023-2027 by Member State**



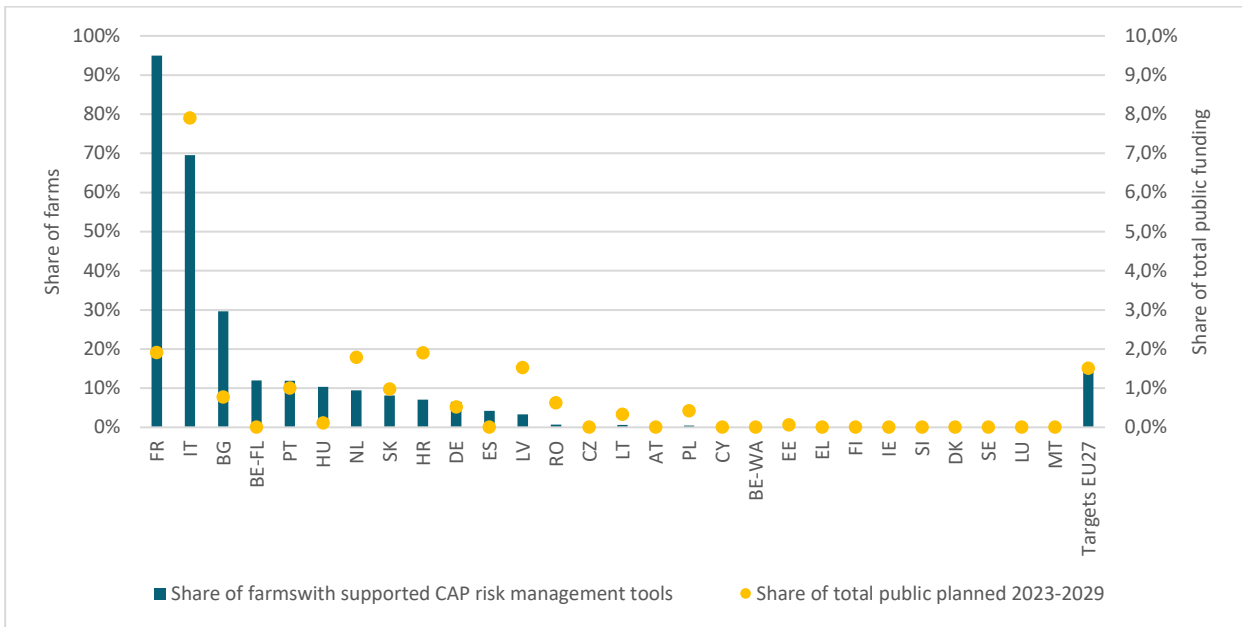
Source: Project team, 2023, based on CSP targets and the '[Catalogue of CAP interventions](#)', DG AGRI (via AGRIDATA portal)

**Figure 45: R.10 Targeted share of farms participating in producer groups, producer organisations, local markets, short supply chain and quality schemes supported by the CAP**



Source: Project team, 2023, based on CSP targets and the [‘Catalogue of CAP interventions’](#), DG AGRI (via AGRIDATA portal)

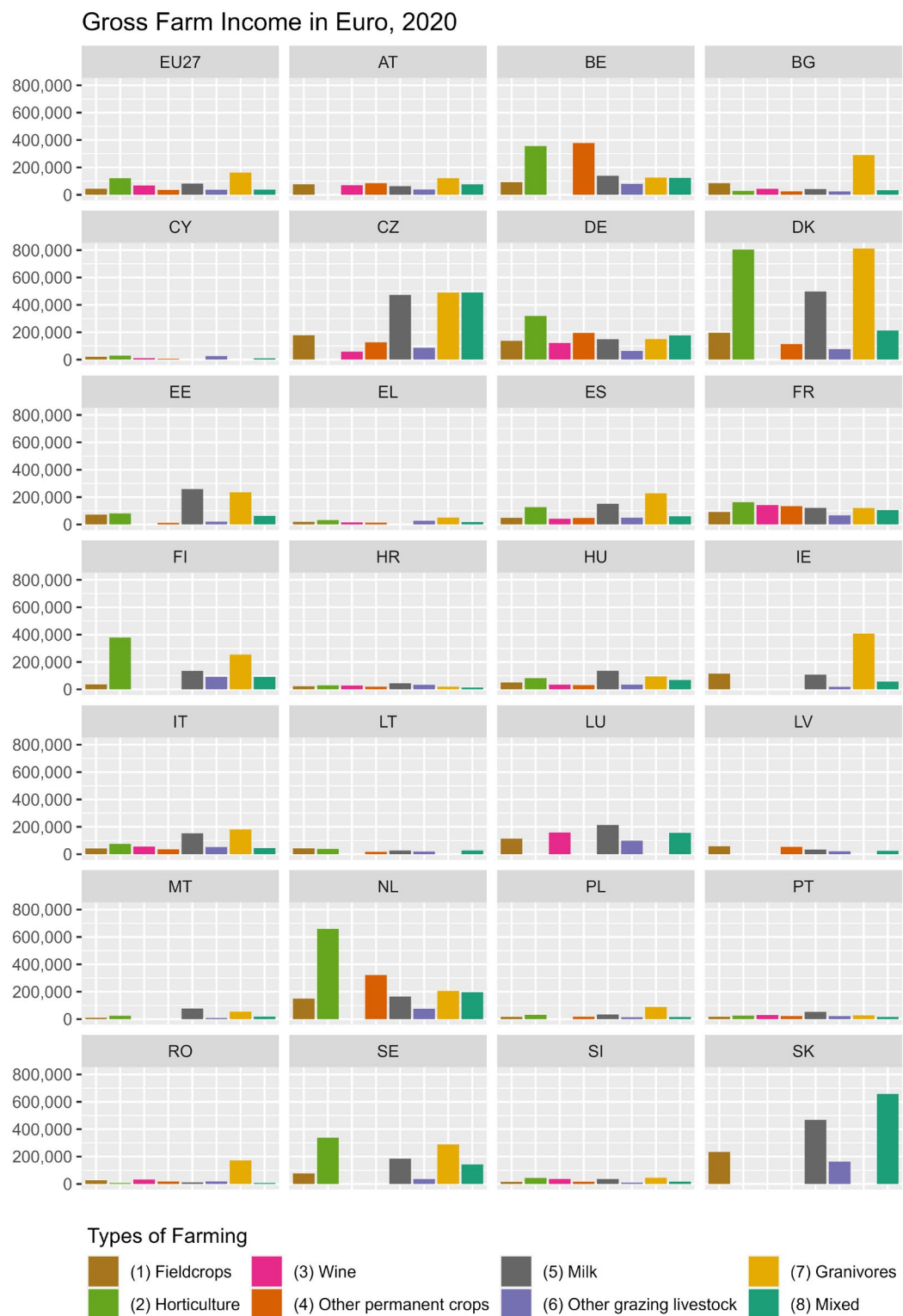
**Figure 46: R.5 Risk management: Share of farms with supported CAP risk management tools**



Source: Project team, 2023, based on CSP targets and the [‘Catalogue of CAP interventions’](#), DG AGRI (via AGRIDATA portal).

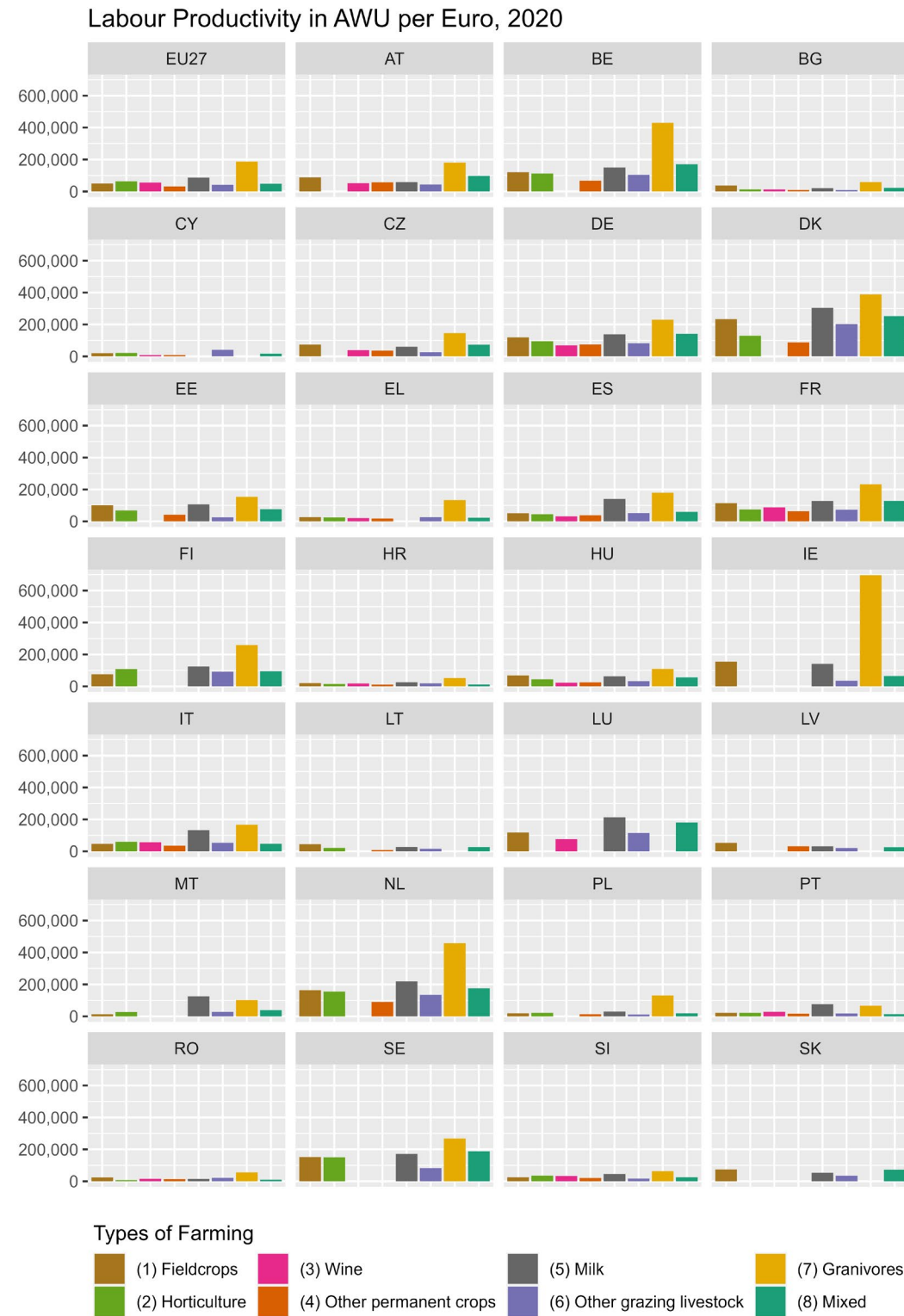
## ANNEX 2: MEMBER STATE FIGURES ON INCOMES AND LABOUR PRODUCTIVITY

**Figure 47: Average gross farm incomes at sectoral level per Member State (2020)**



Source: Project team, 2023 based on FADN SE410

**Figure 48: EU-27 farm output per annual work unit (AWU) in Euro for the year 2020**



Source: Project team, based on FADN data. NB: For the Member States: CY, LV, LT, LU, SK, MT, AT, FI, SE, EL data was missing for this year.

**Figure 49: Ratio of EU-27 farms' total output and input for the year 2020, per type of farming**



Source: Project team based on FADN data.



## ANNEX 3: KEY DETERMINANTS OF FARM COMPETITIVENESS

Key determinants of the competitiveness of EU farms are identified and discussed in this section, based on the outcomes of the literature review. It led to the following grouping:

- Farm characteristics, including size, diversification and specialisation;
- Technological change and innovative capital available to the farms;
- Human capital, that is farmers' education which is positively impacting the degree of farm competitiveness;
- Location, impacting productivity due to the practices they impose (e.g. less favoured areas (LFA)) and the environmental quality that is locally available (e.g. soil health).

### a. Farm characteristics

The degree of farm competitiveness as measured by TFP varies along the type and structure of farms across the EU. Generally, **larger, specialised farms are economically more competitive than smaller farms**, as they can employ economies of scale contrary to their smaller peers. This positive relation between farm size (as expressed by higher utilised agricultural areas (UAA)) and competitiveness is also highlighted broadly across literature (Carroll *et al.*, 2009; Rudinskaya, Hlavsa and Hruska, 2019; Niedermayr *et al.*, 2021). Generally, intensive farming methods are also associated with more productive farms, as shown by Latruffe *et al.* (2023). However, intensive and specialised farms tend to have higher negative impacts on the environment.

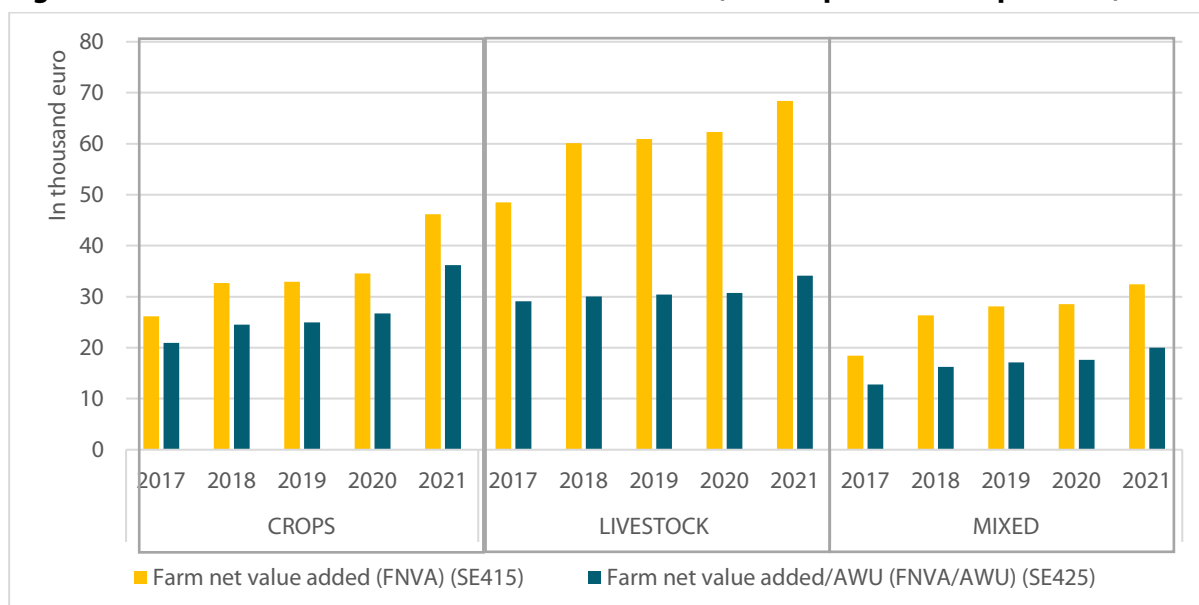
In addition, the impact of **specialisation** of farms on their competitiveness is highlighted by the literature (Hadley, 2006; Carroll *et al.*, 2009; Lakner and Breustedt, ) as a positive driver of farm competitiveness. This can be illustrated when considering the generation of value-added of crops, livestock and mixed production of farms<sup>48</sup> (see Annex 2). The value-added generation per farm is slightly higher for livestock farming per farm, with value added in crops per annual work unit (AWU) growing steadily and surpassing livestock farming by 2020. Mixed farms continue to face significantly lower value-added generation.

However, the specific link between the sector or type of farm and competitiveness remains unclear. Organic farming, for example, despite tending to have a lower productivity stays competitive by being able to sell at a higher price or being able to reduce input costs (Niedermayr *et al.*, 2021). The extent to which such compensation can happen varies again per sector.

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<sup>48</sup> According to information available on the FADN Agri-Food Portal, the three categories cover the following:  
Crops: oilseeds protein, horticulture, olives, orchards (fruits), wine, other field crops.  
Livestock: dairy farm, cattle farm, granivore farm (pigs and poultry), sheep and goat farm.  
Mixed production of farms: farms on crop cultivation and livestock raising.

**Figure 50: Farm net value added between 2017-2021 (in euro per farm and per AWU)<sup>49</sup>**



Source: Project team, 2023 based on [FADN](#) (3 types)

Findings from the literature also show the impact of diversifying farm productions on the competitiveness of farms. The impact can be positive when the goods produced are of higher value added and generate larger margins, rather than when diversifying into a new products (Mishra, Wilson and Williams, 2009; Mizik, 2021). Likewise, positive impacts on competitiveness levels may arise when farms activities encompass niche products such as agro-tourism services (Hochuli, Hochuli and Schmid, 2021).

The link of farm specialisation and increased competitiveness must however be nuanced in the light of the decline of biodiversity, including genetic resources for food and agriculture. Farm and crop specialisation is indeed associated with the adoption of high-yielding and uniform cultivars which has led to a substantial reduction in the number of genetically viable species (El-Hage Scialabba, 2002). While in the short to medium term, farm and crop specialisation may, as described above, lead to gains in terms of competitiveness, the decrease in food crop and animal variety ultimately hinders the resilience of the agricultural sectors, making them more vulnerable to sanitary crisis and diseases, and thereby leading to a possible reduction of agricultural competitiveness.

### **b. Technological change and innovative capital**

Investments in technology , Information and Communications Technology and innovation are generally seen as drivers for productivity and improved economic performance of farms in the literature (Hadley, 2006; Carroll *et al.*, 2009; Bojnec *et al.*, 2014; Jansik and Irz, 2015; Bokusheva and Čechura, 2017; Coppola *et al.*, 2018; Garcia-Alvarez-Coque *et al.*, ; European Commission, 2020; Finger, 2023). Better production technologies increase labour productivity and improve the efficiency of output production. Such technologies can also help farmers better adapt to climate change. The digitalisation of farming is also seen as an opportunity to replace human labour in the most difficult and painful tasks, as well as helping farmers anticipate pest and diseases through forecasts, thus helping reduce their impact. Beyond fostering production, integrating digital innovations in the farming sector can also facilitate the farmers integration in the market, by fostering on-farm sales for example. Well-suited and regulated new technologies such as high-tech irrigation systems or other

<sup>49</sup> Farm Net Value Added (FNVA) = Gross Farm Income – depreciation

precision farming techniques could also help improve the efficiency of output production and have positive effects on the environment (Brunori, 2021; Jacquet *et al.*, 2022; Anastasiou *et al.*, 2023).

New technologies in the breeding/selection of plants<sup>50</sup> are also seen as having great potential to alleviate both the EU's objectives in terms of sustainable agriculture and food security (Qaim, 2020). Such technologies could contribute to increase the productivity and economic competitiveness of the EU farms as well as their environmental impact (higher crop yields, more resilient crops, lower use of fertilisers and pesticides etc.) (Qaim, 2020; Jacquet *et al.*, 2022; Biswas, Patil and Sunkad, 2023; Tyczewska, Twardowski and Woźniak-Gientka, 2023).

### c. Human capital

The improvement of human and social capital is an essential driver improving the competitiveness of farms, as reported comprehensively in the literature (Hadley, 2006; OECD, 2011; Wilson, 2014; Giannakis and Bruggeman, 2015b; Lakner and Breustedt, ; Tauer, 2019). The research on this issue has been well-developed since Hadley (2006) explored the positive impact of the farmer's age and of the level of specialisation on competitiveness. Human capital improvements as a driver of farm competitiveness are highlighted by an OECD report (2011): it underlines the positive impact of the education level of farm managers on the farm's economic competitiveness. The same report also had a look at the impact of age of the farm manager on performances but with more conflicting results.

Another study analysing different agricultural sectors at national level found a positive relationship between the overall age and level of training of sector's farm population and the gross value added per farm. The study found that 'agricultural sectors characterised by a young and better trained farm population are more likely to attain high economic performance' (Giannakis and Bruggeman, 2015b, p. 26). However, the relationship between the age of farm holders as a driver of competitiveness may not be linear: Tauer (2019) describes the productivity of U.S. farmers to increase with age, peak at mid-life and decrease by age and notes that this curve has flattened in the last years. Similar developments have been found in the EU-27 (DG AGRI, 2021).

### d. Location and environmental factors

The location i.e., the environmental and geospatial conditions influencing agricultural production, has a sizeable impact on the productivity and competitiveness of farms (Garcia-Alvarez-Coque *et al.*, 2018; Giannakis & Bruggeman, 2015; Lakner *et al.*, 2012; Niedermayr *et al.*, 2021; Nowak *et al.*, 2015b; OECD, 2011). This influential factor is of particular importance in agriculture as most of the farming activities are immobile thus not being able to adjust their location to best suited places as easily. The productivity index of soil is underlined as the most prevalent environmental element influencing farm productivity, but other natural elements are listed such as climatic conditions and slope (Nowak, Kijek and Domańska, ; Garcia-Alvarez-Coque *et al.*, . Farms situated in less favoured areas (LFA), territories where production conditions are difficult, see a negative impact on farm productivity (Giannakis and Bruggeman, 2015b). A study on the technical efficiency<sup>51</sup> (TE) of German organic pasture farms over the years 1994 to 2006 also suggests that farms closer to urban centres would also to have higher TE (Lakner, Cramon-Taubadel and Brümmer, 2012). For example, a study on sheep farming in Ireland (Niedermayr *et al.*, 2021) revealed that farms in the lowland had higher outputs and profitability than their counterparts on the hills. This result is explained by differences in the environmental context;

<sup>50</sup> Several methods are comprised under this terminology comprising for example Genetically Modified Organisms, genomic-selection and gene editing (Jacquet *et al.*, 2022; Biswas, Patil and Sunkad, 2023).

<sup>51</sup> In this study, TE is calculated with the Stochastic Frontier Analysis, which estimates a producer's (in the following we will refer to farms) Technical efficiency by measuring the distance between its observed input-output combination and the best-feasible input-output combination that it could obtain if it were located on the so-called 'production frontier'

however the study did not provide details on the most influencing factor (Niedermayr *et al.*, 2021). Another study analysing farms in Czech regions found that farms in mountainous areas had the lowest technical efficiency of the country (Rudinskaya, Hlavsa and Hruska, 2019).

To take this pronounced link between environmental factors and farm competitiveness into account, some productivity calculations explicitly consider the impact of environmental factors on the agricultural sector (Jaenicke and Lengnick, 1999; Latruffe, Dakpo, *et al.*, 2016; Cárdenas Rodríguez, Haščíč and Souchier, 2018; Bureau and Antón, 2022) and propose different methods/indicators. Jaenicke & Lengnick (1999) for example, propose to include a soil quality index in their modelling of technical efficiency and productivity growth. Nowak, Kijek and Domańska, also stress the importance of soil quality in the assessment of farms' technical efficiency<sup>52</sup>.

Still, not all studies agreed with the structural disadvantages that are associated with being situated in LFA. When studying Slovenian farms, Baráth *et al.* (2018) found that farms situated in less favoured areas show no significant difference in farm technical efficiency than farms in favoured areas. They are therefore more dependent on subsidies intended to maintain agriculture in these regions (i.e. they tend to have limited opportunities to use advanced agricultural machinery or technology, and thus have to compensate via other ways) (Baráth, Fertő and Bojnec, 2018).

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<sup>52</sup> This result was found via data envelopment analysis while looking at the 27 EU Member States (including the UK but not Croatia) in 2010.

## **ANNEX 4: GENDER STRATEGIES WITHIN THE CSP**

### **5.3. Introduction**

This Annex provides an overview of gender-related approaches identified in the CSPs. It highlights their position in regard to women's participation and inclusion within agriculture. This summary additionally underscores the strategy to promote gender equality, empower women, and address specific challenges in the agricultural sector and in rural areas.

### **5.4. CSP analysis**

#### **SPAIN**

According to Spain's CSP, EAFRD will support 13 245 young farmers in 2023-2027. This represents a slightly reduced number of young farmers compared to the 2014-2022 period. This decline is attributed to the fact that many young farmers had already initiated their farming activities. Support to rural women will be done mostly through redistributive payments, youth support and forestry investment. Allocation of funds coming from the Resilience and Recovery Plan of Spain will provide female farm owners a 15% higher unit amount, due to differences in profitability. New rural businesses will be encouraged and priority of attention will be given to women. When it comes to regions, Aragon irrigation communities with gender-balanced leadership may receive a 5% aid increase for gender equality. In Galicia advertising and promotional campaigns that contain sexist and discriminatory messages towards women will not be eligible for subsidies. In the Basque Country, promotional materials should promote change in gender roles, avoid stereotypes, and showcase the presence of women in actions, projects, or associations with equal representation. Non-CAP measures include supporting women's entities, shared ownership subsidies, promoting gender data collection, and awareness-raising training, addressing broader gender equality and rural development needs.

#### **IRELAND**

Ireland's approach to gender equality and women within the CAP encompasses a comprehensive strategy. It involves supporting rural female entrepreneurs through programmes like ACORNS (Accelerating the Creation Of Rural Nascent Start-ups), and ensuring gender-inclusive Knowledge Transfer Groups. Efforts are directed at enhancing opportunities for women in agriculture and business development, as seen in initiatives like the On-Farm Capital Investment Scheme (OFCIS) programme. Gender balance is promoted within Environmental Improvement Projects, which support projects related to circular and bioeconomy opportunities and women's participation in agriculture. The Capital Investment Scheme includes support for young and female farmers, encouraging generational renewal and gender equality. Moreover, there's a focus on gender representation in Local Action Groups and committees, reinforcing Ireland's commitment to fostering gender balance and women's inclusion in CAP-related matters.

#### **GREECE**

Greece's approach within the CAP emphasises local development and social inclusion. Through the Rural Development Programme 2014-2020, Greece supports local initiatives, particularly those enriching tourism and modernising craft businesses, with a priority on unemployed individuals, women, and businesses in mountainous areas. Social perspectives are integrated into local programmes by involving at least one local social organisation in decision-making bodies, focusing on women and individuals under 40. Education and training are provided to various groups in the primary sector, including farmers and beekeepers, with an emphasis on 'New Farmers' and newcomers,

addressing environmental, climate change, and competitiveness actions. Advisory services and agricultural advisors cater to both male and female farmers. While LEADER promotes women's participation in the labour market and supports women's entrepreneurship in the secondary and tertiary sectors, specific support for women in the primary sector, such as new farmers or agricultural enterprise investments, is limited due to EU regulations against positive discrimination.

## **AUSTRIA**

Austria's stance involves several interventions aiming at strengthening regional innovation capacity, improving employment opportunities, and enhancing work-life balance, particularly for women. These measures include closer networking of institutions and stakeholders to boost innovation capabilities, improving care services for children, the elderly, and people with disabilities in rural areas, offering specialised seminars and events for women entering the agricultural and forestry sectors, and investing in social services with a focus on childcare. Funding for these interventions should come from the Austrian CSP that aligns with and contributes to the objectives of the Common Agricultural Policy. Plans are in place to develop gender equality projects in collaboration with Local Action Groups (LAGs). Additionally, gender equality has been promoted by ensuring women's representation in project selection committees for LAGs, contributing to increased gender equality in the Austrian Rural Development Programme.

## **FLANDERS**

Flanders' approach to gender equality and women's inclusion within the CAP is primarily indirect. It involves ensuring representation on the CSP Supervisory Committee by at least one entity advocating for gender equality and women's interests. Additionally, Flanders focuses on improving labour conditions, employer obligations, and health and safety at work within the fruit and vegetable sector, with a specific emphasis on better accommodation for seasonal workers. The Flemish agricultural investment fund VLIF plays a pivotal role in indirectly supporting these efforts. Various interventions from the Flemish agricultural investment fund VLIF, such as investments for sustainability on agricultural farms, diversification activities, and direct sales, are designed to create job opportunities and promote social inclusion. Moreover, these investments enable companies to transition towards producing raw materials for the bio-economy and utilising bio-economy by-products as input. Initiatives like the development of local development strategies through LEADER projects also contribute indirectly to gender equality, employment, and rural development by fostering innovative and sustainable practices within the agricultural sector.

## **WALLONIA**

Wallonia's approach to gender equality and women's inclusion within the CAP recognises the challenges posed by an aging agricultural workforce, where 49% of farmers are over 55 years old and only 10% are under 35. To address this, the focus is on key areas such as training, land access, credit, cash flow for young entrants, and promoting new farms, particularly in small-scale horticulture. Gender equality efforts within the CAP involve supporting farm diversification activities, often led by women, through interventions like 354 and 373. Beyond the CAP, Wallonia's "Gender Plan 2020-2024" introduces measures to empower women in agriculture, including financial support, property access, education, and networks. Gender balance is maintained in CAP monitoring committees. Furthermore, Wallonia's recovery plan tackles digital exclusion, targeting vulnerable groups like seniors and women through digital mediation initiatives with a 4 100 000 euros budget.

## GERMANY

Germany's approach to gender inclusion within the CAP involve the intervention programme EL-0412. This intervention aims to boost rural employment and economic growth by improving Small and Medium Enterprises competitiveness, creating skilled jobs, and supporting non-agricultural startups with a focus on empowering women. In rural Baden-Württemberg, EL-0412 promotes non-agricultural business development, addressing limited job options for women due to childcare gaps and traditional gender roles. Germany's gender equality efforts in rural areas extend beyond CAP, involving initiatives to enhance gender competence, expand support programmes, and integrate gender concerns into rural development policies. The German Federal Ministry of Food and Agriculture (BMEL) supports women's associations through digital training, while Lower Saxony's European Social Fund programme RIKA (Regional initiatives and cooperation for women in the labour market) focuses on career counselling, work-life balance, and gender equality networks, receiving 42 million euros in funding. These efforts aim to improve rural living conditions, reduce the need for relocation, and promote sustainable development.

## BULGARIA

Bulgaria states that the LEADER/CLLD (Community Led Local Development) approach provides added value by integrating minority and at-risk groups into local communities and involving them in territorial development decisions. Over a decade of implementation has established key EU policies like gender equality, non-discrimination, equal opportunities, sustainable development, employment promotion, and competitiveness at the local level.

## CROATIA

Croatia's stance towards a gender approach is mentioned within their Strengths, Weaknesses, Opportunities, and Threats analysis (SWOT), in the "strengths" section. It argues that, in terms of gender representation in the workforce in agriculture, there is a balanced presence of women throughout Croatia, with 45.3% in Continental Croatia and 42.2% in Adriatic Croatia. However, examining the share of women as holders of family farms in relation to the total number of farm holders reveals a relatively modest increase. In 2013, the share of women as farm holders was 27.94%, rising slightly to 28.08% in 2016. The ratio of annual working units per person in Croatia compared to the EU is higher in Croatia, especially for female labour in agriculture (0.42 compared to 0.35 in the EU).

## CYPRUS

Cyprus' approach to gender, is through LAGs. In this sense, for the selection of LAG actions supported through the strategies, LAGs will apply transparent criteria and procedures that ensure non-discrimination, gender equality, consideration of the Charter of Fundamental Rights of the European Union, the principle of sustainable development, as well as EU policy in the field of the environment and relevant National Legislation in these areas.

## CZECHIA

According to Czechia, a dedicated initiative for young female farmers will be established to actively support and encourage women's participation in the sector, aligning with a gender-focused approach. LEADER project selection will prioritise those related to production processing and specific commodities, taking into consideration the gender aspect. Finally, steps will be taken to ensure gender balance in decision-making processes by monitoring and addressing imbalances in the participation of women and young people, both in project selection and the composition of the Monitoring Committee.

## DENMARK

According to Denmark's CSP, there is a notable presence of women among farm employees and working relatives (40%), despite the male-dominated agricultural sector and land ownership. The government is actively addressing the gender-segregated labour market through measures like parental leave for self-employed individuals and legislation promoting women in leadership roles. These actions are part of broader efforts to reduce gender influence on educational choices and create equal opportunities in education and the labour market, with a specific focus on gender equality emphasized by the Minister of Transport and Gender Equality.

## ESTONIA

As stated in Estonia's CSP, implemented activities prioritise equal treatment, align with the Wellbeing Development Plan 2016–2023, aim to reduce the rural gender gap in education, and empower women through business startups and job opportunities. In rural areas, the plan creates 350 jobs, supports entrepreneurship, economic growth, and equality, including the circular bioeconomy. Additionally, 70 businesses receive support, and 15 benefit from bioresource opportunities. The budget allocated totals 117 487 129 euros, addressing economic and social aspects, including inequality and social inclusion, for rural socio-economic improvement.

## FINLAND

As outlined in Finland's CSP, a prevailing trend of population decline has characterised the majority of Finnish municipalities throughout the entire 21st century. This demographic shift is notably pronounced in numerous Eastern Finnish municipalities, where the presence of an aging population is prominent. In these rural areas, the dependency ratio is notably weak, reflecting challenges associated with an increasing proportion of elderly residents. Furthermore, a notable gender imbalance is emerging as young individuals, particularly women, migrate to larger urban centers for educational and employment opportunities.

Although there is a recognition of the weaknesses in terms of gender imbalance in rural areas, Finland has not proposed a specific measure to address such needs within the CAP.

## FRANCE

France's approach to women and gender within the CAP and their CSP involves supporting the setting up of new farmers and female farmers through the Young Farmers' Grant (DJA), which is accessible across the country. This grant assists around one-third of farm installations annually, although this rate has been decreasing over the years. Notably, about a third of the supported installations are not family-related, indicating a broader reach. In 2019, 23% of Young Farmers' Grant were awarded to women, reflecting efforts to promote gender inclusivity in agriculture. Additionally, France's intervention aims to facilitate farm transfers and installations, particularly in the Outermost Regions (Régions Ultra Périphériques), while also focusing on professionalising small-scale farmers. This approach aligns with the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, emphasising the need to support new entrants and enhance the skills and professionalism of farmers, including women, to address the challenges and opportunities in French agriculture.

## HUNGARY

Hungary's approach to gender involves the LEADER programme. LEADER improves rural women's employment, supports small businesses, and renewable energy. Progress begins in 2025, targeting completion by 2029. This includes rural infrastructure development, especially in remote areas, to boost women's employment, enhance small businesses, and promote renewable energy projects.



## **ITALY**

According to Italy's CSP, the strategies prioritise rural revitalisation with a focus on youth and women. They promote non-agricultural economic development (E3.3), improved training (EA.3), and entrepreneurship support, especially for young and female entrepreneurs. SO7 actions target gender equality and job diversification, particularly in sustainable sectors. The strategies aim to enhance multifunctionality in agriculture and forestry, empowering women and young generations.

## **LATVIA**

Latvia's approach through gender is notably implemented through LAG. According to their CSP, in developing and implementing the local development strategy, LAG ensures equal opportunities and promotes gender equality, preventing discrimination based on various factors. LAG supports networking activities within its operational territory, nationally, and internationally, facilitating collaboration and addressing local development issues. Key networking partners include the national CAP network and the EU CAP network.

## **LITHUANIA**

In Lithuania's CSP, it appears that the mention of women, specifically regarding gender equality and their participation in agricultural activities, is relatively limited. The document identifies nine needs related to the promotion of employment, growth, and gender equality, encompassing women's involvement in rural areas, circular bioeconomy, and sustainable forestry. However, the level of detail and emphasis on addressing these gender-specific needs seems to be modest.

## **LUXEMBOURG**

Luxembourg outlines its gender approach in various manners. For instance, through the European LEADER initiative, the Ministry of Agriculture, Viticulture & Rural Development supports rural development by forming partnerships with various entities, including municipalities and private partners. However, the Small and Medium Enterprises sector is underrepresented in these partnerships. A new state aid scheme is proposed to assist farmers in situations like illness or maternity leave, aiming to improve work-life balance and encourage young women to enter farming. This national aid scheme offers subsidies for farm replacement services, covering costs when a farmer or family member, dedicating at least 20 hours per week to farming, is absent due to various reasons.

## **MALTA**

Malta's gender strategies promote community and social activities in rural areas, addressing changing social dynamics, including increased female workforce participation and growing migrant populations. National strategies like the 'Gender Equality & Mainstreaming Strategy & Action Plan (2022-2027)' and 'Migrant Integration Strategy' focus on gender equality and social inclusion across Malta, where rural-urban distinctions blur. LEADER aligns with these goals by enhancing community activities. Local Action Groups (LAGs), non-profit organisations, must follow governance rules to avoid single-interest dominance per EU Regulation 2021/1060. This partnership prioritises youth and women's participation in LAG decision-making during Local Development Strategy development and implementation.

## **NETHERLANDS**

Netherlands' gender approach is outlined in various manners within its CSP. For instance, LEADER adopts a region-specific approach to promote social inclusion, with a focus on empowering women. The National Strategic Plan emphasizes gender equality in agriculture through female farmer networks, prioritised gender considerations in LEADER projects, and subsidies for female agricultural

entrepreneurship networks. Local Action Groups (LAGs) require a majority (51%) of decision-makers from non-government bodies to ensure inclusivity per the Local Development Strategy. LAGs with less than 50% female representation receive lower quality ratings for decision-making bodies, but it doesn't affect meeting attendance. A balanced mix of private and government sector representatives with equitable interests is favoured.

## **POLAND**

According to Poland's CSP, under SO8, investment projects prioritise accessibility for people with disabilities and support disadvantaged groups, including women, job seekers, migrants, and cultural minorities, through collaborative project implementation.

To meet the needs of various disadvantaged groups, tailored educational and informational programmes will be provided, including older people, youth, women, farmers, entrepreneurs, job seekers, and those with mobility limitations. These initiatives will be planned using LEADER/CLLD (I 13.1.), with implementation across multiple funds in the 2021-2027 period to enhance coordination at the local level.

## **PORTUGAL**

Portugal's approach to gender is outline in various manner within its CSP. For instance, the Agenda under Flagship Initiative 7 aims to revitalise rural areas, particularly in agriculture, with a focus on family farming, young farmers, young rural entrepreneurs, and women farmers. It emphasizes land access, knowledge sharing, financial support, market access, smart rural development, and economic diversification for sustainability. The Innovation Agenda 2030 promotes inclusive agriculture, intergenerational collaboration, youth engagement, and gender equality, aiming to establish 80% of new young farmers in low-density regions by 2030. The 2023-2027 local development strategies align with these goals, supporting non-agricultural activities, rural services, and sustainable growth while promoting employment, growth, gender equality, women's participation in agriculture, social inclusion, and local development in rural areas, including circular bioeconomy and sustainable forestry, through LEADER.

## **ROMANIA**

Romania's approach to gender within the CAP is encapsulated in the "Citizens, Equality, Rights, and Values" programme. This initiative is dedicated to promoting equality and combating discrimination across various dimensions, including gender, race, religion, disability, and age. The programme places a specific emphasis on women's rights, gender equality, and addressing issues such as racism and intolerance. In the context of agriculture and forestry, the approach acknowledges a significant gender imbalance, with male managers outnumbering their female counterparts, and a substantial portion of unpaid family workers being women. To rectify this, the programme underscores the importance of encouraging women in entrepreneurship, with a focus on increasing opportunities for women in these sectors. The overarching goal is to achieve gender equity by fostering increased female workforce participation, providing ongoing financial support, and diversifying agricultural activities to create more avenues for women within the Romanian CAP framework.

## **SLOVAKIA**

Gender equality in rural development is a priority, focusing on supporting women in agriculture and related sectors, promoting entrepreneurship, and ensuring participation in decision-making. LEADER addresses social issues, offers diverse support, and involves young people, women, and vulnerable groups in decision-making. The Slovak Programme supports gender equality through employment opportunities, education access, and assistance to disadvantaged groups, including Roma women and

third-country nationals, with tailored educational support and work skills development to enhance their participation in education and the job market.

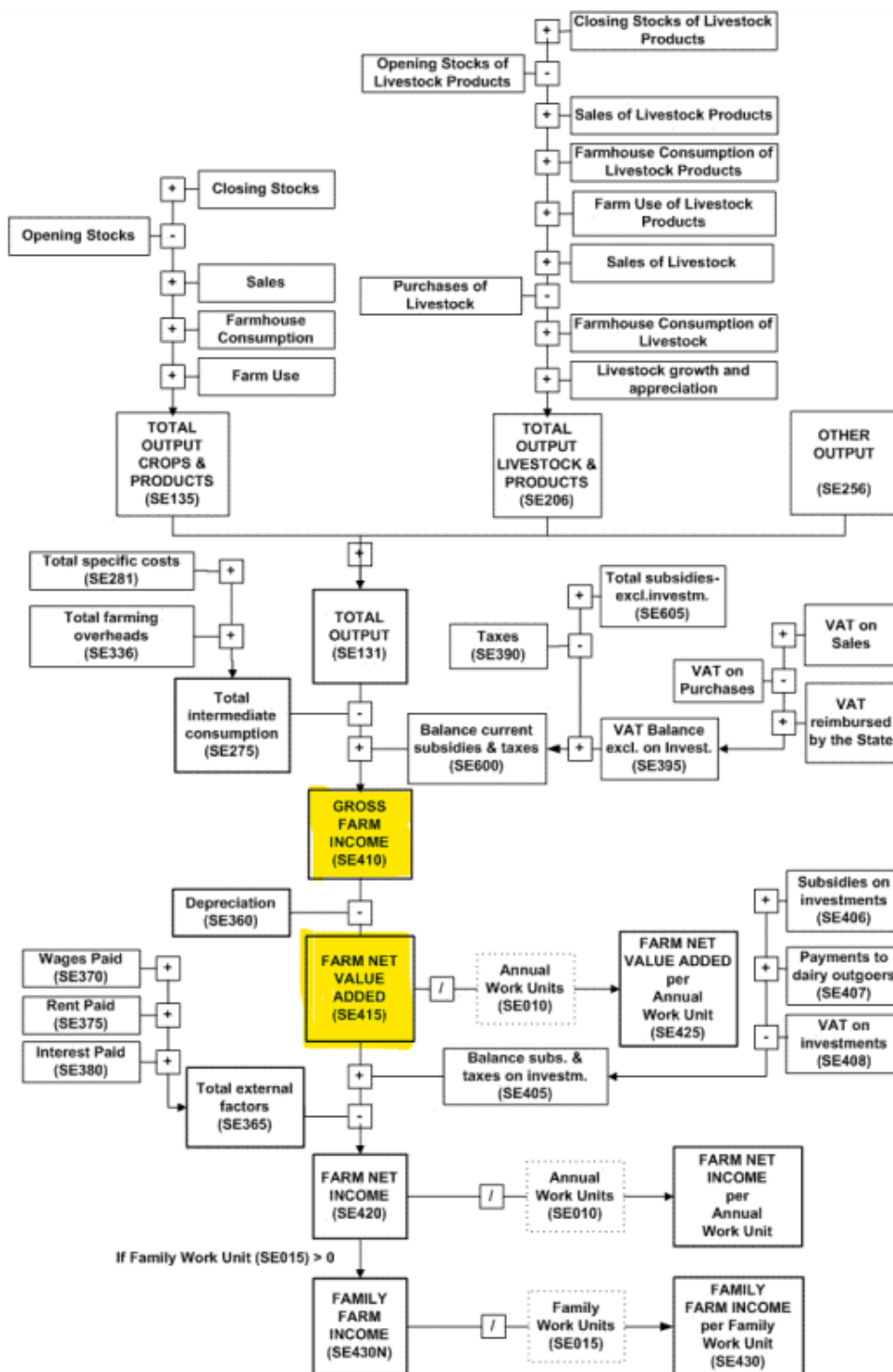
## **SLOVENIA**

The measures for promoting gender equality and enhancing women's participation in agriculture and rural development are strategically incorporated within the Slovak Programme, primarily emphasizing intervention 75.1. Past experiences from the 2014-2022 period underscore the effectiveness of supporting business plan implementation in motivating women to engage in agricultural activities. Additionally, educational initiatives will encourage flexible work arrangements within the agriculture sector, facilitating women's reintegration into the workforce and fostering the development of women-owned agricultural businesses. The LEADER intervention ensures compliance with gender equality principles by addressing social exclusion, unemployment, and supporting women, youth, and active aging in rural areas. Social innovations will facilitate better integration of marginalised groups into the labor market while strengthening interpersonal relationships and the sense of security in rural areas.

## **SWEDEN**

In the realm of promoting gender equality, especially concerning women's involvement in agriculture, Sweden advocates for a more structured and results-driven approach. They highlight a crucial issue with the existing regulations, noting that they primarily outline activities rather than clearly defined expected outcomes. Sweden asserts that this aspect can be enhanced in the development of a new regulation. According to their perspective, establishing a well-defined goal hierarchy and formulating plans based on a theory of change is essential for ensuring effective results. Additionally, Sweden recommends a more comprehensive analysis of proposed measures within specific objective 8, considering the interdependence of multiple measures working together to achieve desired effects. This approach, they argue, is vital for effectively navigating the complexity of reality.

## ANNEX 5: FADN STANDARD RESULTS: INCOME INDICATORS



Source: Circabc, Accounting Data Network An A to Z of methodology', 2020



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This study analyses how the CAP and state aid support farm competitiveness, including the role of young farmers and women. Challenges and drivers of EU farm competitiveness are identified. Key competitiveness indicators are analysed and their limitations are considered. The level of CAP support to competitiveness is assessed, with a comparison of the 2014-2022 and 2023-2027 programming periods. The study illustrates the Member States' differentiated approaches to supporting competitiveness.

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