Council of the
European Union

Brussels, 21 December 2020
(OR. en)

14282/20
ADD 26

AGRI 492
AGRIFIN 134
AGRISTR 118
AGRILEG 179
AGRIORG 115

COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	18 December 2020
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2020) 396 final
Subject:	COMMISSION STAFF WORKING DOCUMENT Commission recommendations for Italy's CAP strategic plan Accompanying the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Recommendations to the Member States as regards their strategic plan for the Common Agricultural Policy

Delegations will find attached document SWD(2020) 396 final.

Encl.: SWD(2020) 396 final

EUROPEAN
COMMISSION

Brussels, 18.12.2020
SWD(2020) 396 final

COMMISSION STAFF WORKING DOCUMENT

Commission recommendations for Italy's CAP strategic plan

Accompanying the document

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Recommendations to the Member States as regards their strategic plan for the Common Agricultural Policy

{COM(2020) 846 final} - {SWD(2020) 367 final} - {SWD(2020) 368 final} - {SWD(2020) 369 final} - {SWD(2020) 370 final} - {SWD(2020) 371 final} - {SWD(2020) 372 final} - {SWD(2020) 373 final} - {SWD(2020) 374 final} - {SWD(2020) 375 final} - {SWD(2020) 376 final} - {SWD(2020) 377 final} - {SWD(2020) 379 final} - {SWD(2020) 384 final} - {SWD(2020) 385 final} - {SWD(2020) 386 final} - {SWD(2020) 387 final} - {SWD(2020) 388 final} - {SWD(2020) 389 final} - {SWD(2020) 390 final} - {SWD(2020) 391 final} - {SWD(2020) 392 final} - {SWD(2020) 393 final} - {SWD(2020) 394 final} - {SWD(2020) 395 final} - {SWD(2020) 397 final} - {SWD(2020) 398 final}

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1. COMMISSION RECOMMENDATIONS FOR ITALY'S CAP STRATEGIC PLAN

In the framework of the structured dialogue for the preparation of the CAP (Common Agricultural Policy) strategic plan, this document contains the recommendations for the CAP strategic plan of Italy. The recommendations are based on analysis of the state of play, the needs and the priorities for agriculture and rural areas in Italy. The recommendations address the specific economic, environmental and social objectives of the future CAP and in particular the ambition and specific targets of the Farm to Fork Strategy and the Biodiversity Strategy for 2030. As stated in the Farm to Fork Strategy, the Commission invites Italy, in its CAP Strategic Plan, to set explicit national values for the Green Deal targets[1], taking into account its specific situation and these recommendations.

1.1 Foster a smart, resilient and diversified agricultural sector ensuring food security

For Italian farmers the shift to a sustainable food system means both significant economic opportunities as well as challenges. In recent years, positive income developments in Italian farming sectors, even though still quite moderate, are reflected in the narrowing gap between farm and non-farm income. However, this is not always accompanied by the same trend in competitiveness. Italy is still confronted with low productivity growth on its farms due to an ageing farm population, the low level of digitalisation and the small size of the farms. Moreover, despite the good level of organisation of producers, the primary sector's share of value added in the food chain has gone down.

Farm income remains volatile, and despite the crucial role that direct payments play in stabilising farm income, significant differences in the distribution of support (mainly direct payments based on individual historical references) constrain their effectiveness. These differences, which emerge due to characteristics of production in the past, have lost their justification over time as they mostly support those less in need (i.e. the bigger farms and the very small farms) and seem detached both from realities of production today and from future economic and environmental needs. In addition, a fairer distribution to viable family farms, with a greater share of income support tied to environmental performance, is desirable by applying the available tools under the CAP Plan such as the complementary redistributive income support for sustainability.

1.2 Bolster environmental care and climate action and contribute to the environmental- and climate-related objectives of the Union

The environmental objectives are particularly relevant for Italian agriculture. Climate change mitigation is a key issue: agricultural emissions (including both greenhouse gas (GHG) and ammonia emissions) in Italy, after a reduction between 1990 and 2013, have not decreased over the past 7 years, and more will need to be done to reduce them in order to contribute to European Union (EU) targets. The livestock sector, especially in the most intensive agricultural areas in the north of Italy, plays a particularly important

[1] It concerns the targets related to use and risk of pesticides, sale of antimicrobials, nutrient loss, area under organic farming, high diversity landscape features and access to fast broadband internet.

role here, as emissions from enteric fermentation and manure management are the main sources of total emissions. Extensification and appropriate grassland management, the adoption of low emission feeding strategies and better manure management can work in synergy and help make the livestock sector more sustainable, in line with the EU methane strategy[1]. The production of renewable energy from the agriculture and forestry sector can be improved, as Italy is below the EU average despite a significant potential to produce biomass, solar and wind energy.

Sustainable management of forests also holds a lot of potential for the socio economic development of rural areas: despite the significant forest coverage, a large portion of Italian forests are not actively managed, which may prevent forests from playing their role as carbon sinks, reduce their resilience to weather extremes and prevent them from providing other ecosystem goods and services.

Improving climate change adaptation is a transversal priority, as related actions can bring multiple environmental and economic benefits : Italy is highly vulnerable to hydrogeological risks and to risks of soil erosion by water, with increasing damage caused by extreme climate events and related challenges, such as forest fires, invasive species and biotic attacks to forests. Water is a critical natural resource in a Mediterranean country like Italy, where drought episodes are already frequent and could become more acute in the future due to climate change. Switching to less water intensive crops, coupled with enhanced deployment of efficient irrigation technologies, could help to lessen the impacts. The nutrient balance for nitrogen is above the EU average, and many areas have a high level of nitrates pollution, especially in intensive areas and in groundwater. Inn this regard, digital farm nutrient management tools can be of valuable use and there is considerable room for improving the consistency between agricultural policy incentives and environmental legislation (water and nitrate directives). In particular, obstacles to investments in greater irrigation efficiency should be removed. Irrigation should be sustainable. That means limiting the increase in irrigated area or in the quantity of water abstracted and above all ensuring that irrigation is in line with the Water Framework Directive requirements, including those of no deterioration and achievement of good status. All the obligations stemming from the Water Framework Directive are to be fulfilled by Italy. Investments that favour the accumulation of water resources and flood prevention/protection, which are also useful in better regulating the extreme weather events linked to climate change, should also be supported.

Despite organic farming in Italy being well above the EU average (see section 2.5 for details on the main drivers), the situation of biodiversity in Italy is steadily worsening especially for farmland birds, species and habitats. More should be done to promote a much lower and more rational use of plant protection products (considering that certain Italian regions are among the most intensive users of pesticides in the EU), as well as to ensure the presence and conservation of landscape features. Improved management of Natura 2000 and other protected areas is necessary, taking into account the analysis and recommendations from prioritised action frameworks.

1.3 Strengthen the socio-economic fabric of rural areas and address societal concerns

To make the transition towards a green and modern agricultural sector, which could further help to make Italy's variety of high-value food products a global success story, the country needs to address one of the most important social challenges facing European

agriculture: generational renewal. In Italy, the challenge is very acute as the country's proportion of young farmers places it in the lower third of Member States (MSs) and this proportion continues to decline. This trend can also be seen with the ratio of young managers to the elderly (6 young farmers for every 100 elderly ones). Improving the succession of farms critically hinges on having adequate access to primary production factors, which enable investments, and it is intrinsically linked to favourable conditions and perspectives that allow people to stay and live well in rural areas.

Over the last decade, Italy has been faced with a general rural exodus. Of all the Member States, it has the lowest rural employment rate (with one of the highest gender gaps), the second highest share of young people (aged 15-24) neither in a job nor in education and the third highest rural unemployment rate. Addressing the specific needs of rural areas has become crucial for their future. To do so will require investments in both physical and human capital underpinned by adequate financial resources and by particular attention to those territories and stakeholders most in need.

In order to deliver on gender equality, the specific needs of women in agriculture and rural areas will need to be carefully considered. Ensuring the protection of agricultural workers, especially those in precarious, seasonal and undeclared employment, will play a major role in delivering on the respect of rights enshrined in legislation, which is an essential element of the fair EU food system envisaged by the Farm to Fork Strategy.

To contribute to a sustainable food system, such investments should prioritise a stronger shift of production to address consumer preferences in areas such as quality production, and organic production. Italy should make an effort to shift towards more balanced, healthier and environmentally sustainable diets. Antimicrobial resistance (AMR) linked to the excessive and inappropriate use of antimicrobials in animal and human healthcare should be especially prioritised as the sales of veterinary antimicrobial agents in Italy was the second highest among all EU MSs in 2018. An important contribution to sustainable agriculture can be achieved by improving animal welfare, especially for areas with intensive livestock production, pigs and laying hens, by promoting best practices for improved animal husbandry, infection prevention and control.

The use of pesticides remains high, and there is significant room for improvement. Certain issues related to animal welfare must also be tackled and investments and actions need to be promoted to prevent a further spread of infectious plant and animal diseases.

1.4 Fostering and sharing of knowledge, innovation and digitalisation in agriculture and rural areas, and encouraging their uptake

Tackling the economic, environmental and social challenges outlined in the previous paragraphs is an essential step in the transition towards sustainable food production and competitive rural areas. The presence of a well-functioning agricultural knowledge and innovation system (AKIS) will be key in this process, as it can foster knowledge flows among various actors, respond to the growing information needs of farmers, speed up innovation and increase valorisation of existing knowledge to achieve all CAP objectives, not only in agriculture but in any activity related to farming and rural areas.

Currently, the fragmentation of the Italian agricultural knowledge and innovation system and the lack of strategic coordination among its components negatively affects the flow of knowledge and innovation. In order to collect and bring to the field the latest scientific

findings and innovations, advisors need to be supported both in receiving training and in providing innovation support services, also through European Innovation Partnership (EIP) Operational Group (OG) projects. Moreover, the current framework of knowledge sharing actions should be coordinated and strengthened to build a solid National CAP Network, which will facilitate the implementation of relevant research and innovation results.

Considering, in addition to this, the relatively low education level of Italian farmers and the lack of training initiatives for advisors and farmers, the shortcomings of the Italian AKIS may limit their ability to transition towards a greener and more digital agriculture envisaged by the Farm to Fork Strategy and to make rural areas more attractive.

A stronger AKIS could also help to increase the level of digitalisation of Italian farms and rural areas, which now lag behind in comparison to other MSs and in comparison to non-rural areas of the country. The availability of a flawless coverage of fast digital infrastructure will be crucial to improve the uptake of digital technologies and to improve the digital skills of the Italian rural population.

Finally, it should be noted that the overall efficacy of the actions supported by the CAP in Italy is hindered by several obstacles in the functioning of the public administration. Improving the administrative and bureaucratic system, also by increasing its level of digitalisation and by coordinating different, complementary policies, is a key step to be taken in order to efficiently and equally support farmers across the country and people living in Italy's rural areas.

1.5 Recommendations

To address the above interconnected economic, environmental/climate and social challenges, the Commission considers that the Italian CAP strategic plan needs to focus its priorities and concentrate its interventions on the following points, while adequately taking into account the high territorial diversity of the Italian agriculture and rural areas:

Foster a smart, resilient and diversified agricultural sector ensuring food security

- **Strengthening the competitive position and resilience of the agricultural sector,** hampered among others by its low level of digitalisation and small farm size, by improving the fairness of support, advancing in the internal convergence process and better targeting investments and direct payments, using the available tools under the CAP Plan, such as the complementary redistributive income support for sustainability and the reduction of payments. Adequate risk management tools should also be provided;

- **Improving the position of farmers in the food supply chain** with targeted actions available under both CAP pillars, such as strengthening and developing Producers' Organisations (POs) and cooperatives, particularly in regions and sectors were they are less present, as well as promoting innovative short food supply chains;

Bolster environmental care and climate action and to contribute to the environmental- and climate-related objectives of the Union

- **Contributing to the EU Green Deal target on organic farming** by enhancing the currently increasing trend of areas under organic farming through appropriate incentives for conversion and maintenance schemes and initiatives such as the recognition of bio-districts for organic farming; this should be accompanied by an increase in organic food demand;

- **Increasing the sustainability of production, while mitigating climate change and reducing GHG and air pollutant emissions,** through an appropriate blend of voluntary interventions and obligations such as supporting practices leading to more efficient input use (in particular harnessing the potential of carbon farming, precision farming, low input and agro-ecological methods), adopting low emission feeding strategies, improving manure management, increasing the use of energy from renewable sources, improving the management of agricultural residues, grassland and forest areas and their valorisation as a carbon sink;

- **Fostering climate change adaptation and resilience by incentivising sustainable management of agricultural and forestry land** through the definition of requirements and schemes promoting agroforestry, reducing soil erosion and hydrogeological risks, achieving a more sustainable water management (including by improving coordination among different actors and promoting efficient irrigation and less water intensive crops) and enhancing soil quality (particularly the carbon content in soils) with farming practices that increase the efficiency of fertiliser use from animal housing down to fertilization techniques, nutrient management tools and crop management, thereby also **contributing to the EU Green Deal target on nutrient losses**;

- **Halting and reversing the loss of biodiversity** by enhancing appropriate management practices and habitat restoration actions towards protected species and habitats, farmland birds and pollinators, by contributing to the **EU Green Deal target on high diversity landscape features** on agricultural land, as well as by strengthening the role of national-regional registries such as on landscapes and agrobiodiversity resources, while increasing the consistency with environmental legislation at the level of Prioritized Action Framework and Natura 2000 sites' management plans;

- **Enhancing multifunctional sustainable forest management, forest protection and restoration of forests ecosystems** to reach good condition of habitats and species linked to the forest biodiversity and to build resilience to threats such as climate change;

Strengthen the socio-economic fabric of rural areas and address societal demands

- **Making significant efforts to reduce the use and risks of pesticides in line with the EU Green Deal target**, by supporting schemes that give priority to non-chemical pest management practices and that foster a switch to less hazardous plant protection products and to sustainable farming practices such as integrated pest management;

- **Contributing to the achievement of the EU Green Deal target on antimicrobials** by putting in place sizeable efforts to significantly reduce the use of antimicrobials in farming, considering that the figures indicate sales of antimicrobials above the EU average. Italy is encouraged to use all available tools, including instruments under the CAP, to support the farmers e.g. by promoting best practices on reduced and prudent use of antimicrobials, together with improved livestock management, biosecurity, infection prevention and control;

- **Improving animal welfare,** especially for pigs and laying hens, by promoting and supporting best practices, knowledge and investments in intensive livestock production and in the sectors and geographical areas most concerned;

- **Encouraging more young people to move into farming and other activities in rural areas**, also by continuing the positive dynamics in terms of young female farmers, by combining interventions including to remove obstacles in the access to production factors (such as the financing gap for young farmers and entrepreneurs and access to land);

- **Promoting the socio-economic development of rural areas and reversing depopulation trends**, by targeting those rural areas most in need, with an appropriate mix of interventions among others to bridge the rural-urban divide in basic services and infrastructure and seize economic opportunities including exploring potential for rural tourism and the bio-economy; in doing so, it will be important to ensure synergies with other EU and national funds;

- **Strengthening efforts to promote social inclusion in rural areas**, paying specific attention to vulnerable groups and in particular the critical situation of migrants and labour exploitation in agriculture;

Fostering and sharing of knowledge, innovation and digitalisation in agriculture and rural areas, and encouraging their uptake

- **Contributing to the EU Green Deal target on broadband by timely completing investments for fast broadband connection coverage reaching the door of all households in rural areas**, especially in sparsely populated areas, closing the gap between rural and urban areas while accelerating the development of digital and knowledge skills in rural areas and agriculture;

- **Tackling the AKIS fragmentation** by using interventions aimed at strengthening the advisory services and interlinking them with the other AKIS components, encouraging knowledge-building and knowledge exchange, supporting training of advisors and farmers, so as to increase the uptake of sustainable farming practices, the level of digitalisation and the adoption of innovations which can foster sustainability of agricultural activities and the competitiveness of rural areas at large.

2. ANALYSIS OF AGRICULTURE AND RURAL DEVELOPMENT IN ITALY

Italy has a population of 60.35 million inhabitants and is divided into 20 administrative regions. The biggest part of the population lives in rural or intermediate areas (53% of the total). These territories together cover the largest surface of the country and account for over 12 million employed people. Agriculture and forestry sectors are the economic backbone of these territories and they play a vital role in keeping rural areas a liveable and vibrant environment. However, many Italian rural areas still suffer from serious development issues and delays in the provision of basic services and fundamental infrastructures such as broadband. This has a negative effect on the economic and social development of these territories, especially concerning generational renewal and business development.

In 2016, there were around 1.1 million farms active in Italy, covering 12.6 million hectares (ha). The vast majority are family-operated and small. Furthermore, more than 50% of the total area in agricultural use is classified as mountainous or with natural constraints. The unique mixture of different climates, soils and territorial morphology fostered the development of a great diversity in Italian agriculture and forestry. This results in one of the most diversified agricultural output in the EU. Furthermore, Italy specialises in the production of quality agricultural goods under EU quality schemes (Geographical Indications - GIs, Protected Designation of Origins - PDOs and Protected Geographical Indications - PGIs). Italy also accounts as a major wine producer in the world by volume. The sustainability of Italian agriculture and forestry is threatened by high fragmentation of the farm structure (one of the most fragmented in the EU), lower agricultural income compared to other EU MSs and widespread labour exploitation.

2.1 Support viable farm income and resilience across the EU territory to enhance food security

In Italy, the average agricultural factor income per worker fluctuates around EUR 18 300 between 2005 and 2018, going from EUR 14 800 in 2010 to more than EUR 22 000 in 2013. The agricultural income per worker is on average about 59% of the average wage in the whole economy between 2005 and 2018[2]. This share ranges from 45% in 2010 to 71% in 2013 and tends to be higher than the EU average, which goes from 33% in 2009 and 50% in 2017, even if it remains lower than the EU 15 average and is partly due to low growth of the economy in Italy.

Data by physical size of the farms show that income per worker dramatically increases to 3 times the average for farms above 250 ha (EUR 97 000 as compared to EUR 32 700 average)[3].

As shown for instance by *Result indicator 6*, the amount per ha of direct payments is on average lower (97.1%)[4] for farms below the average size (which in 2016 was about 11 ha among direct payments beneficiaries in Italy), while their income is significantly lower[5]. Moreover, in addition to the reduction of the support in Italy due to external convergence, the implementation of the current scheme resulted in the relative decrease of the support granted to farms smaller than 10 ha[6]. In 2017, 20% of the beneficiaries owned 75% of the land and received 80% of direct payments[7]. Farms of the economic class above EUR 250 000 have the highest agricultural factor income per worker and also a direct payment per ha above the average.[8]

Direct payments accounted for 15% of the agricultural factor income in Italy in 2018. Payments under Pillar II (except investment subsidies) accounted for more than 5% of the factor income in 2018[9]. When looking at the different sectors, payments for areas facing natural or specific constraints (ANC) are particularly important in the milk and livestock sector.

The income per worker tends to be above average for granivores, milk and horticulture. Income per worker is on average lower in olives, cereals, oilseeds, protein crops, mixed crops and livestock. The amount of direct payments per ha is the highest for olives, milk and cattle and the lowest for sheep and goats, wine and horticulture.

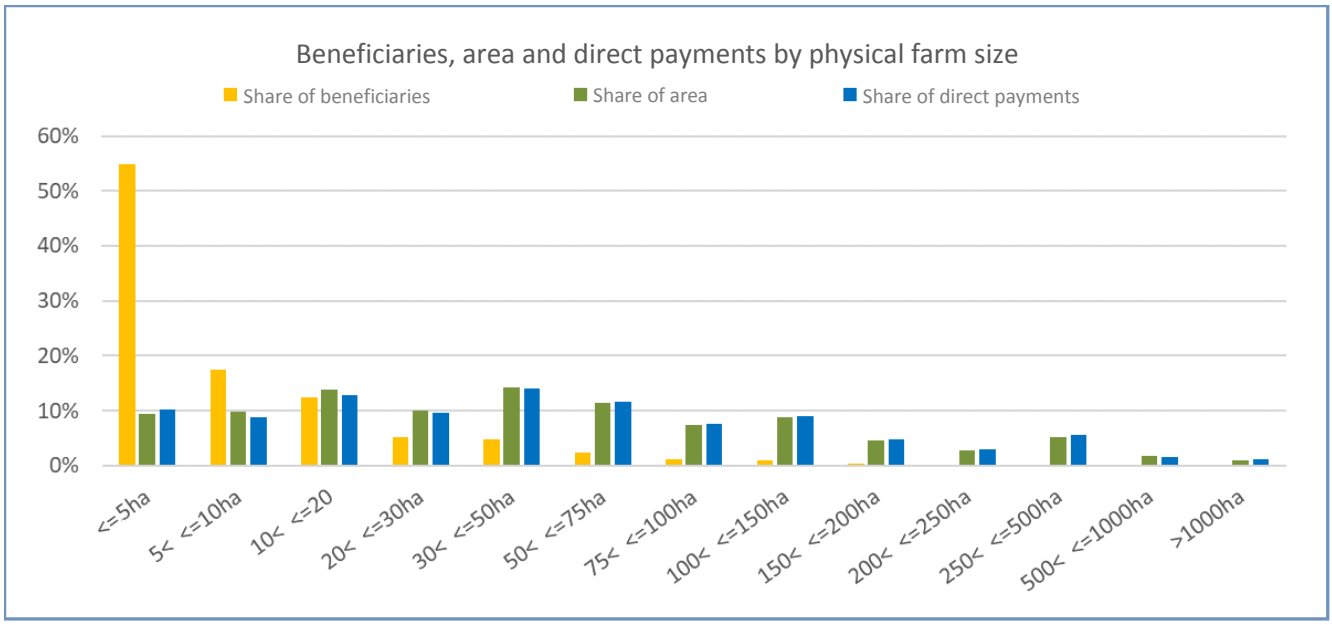
The share of direct payments on income is high especially for field crops (also because of lower income), but it is also important for the sheep, goats and cattle sectors.

The highest income is in granivores (which have the biggest economic size), milk and horticulture; otherwise is comparable across sectors. Due to historic references for direct payments and to different standard output, in 2018 the share of the total operating subsidies (direct payments and rural development support) in income is higher for cereal, oilseed and protein crops and olives (56% and 54%). Horticulture and wine sector receive a very little level of income support (1% and 8% respectively), while the 46% of the sheep sector is due equally to direct payments (26%) and ANC (20%) [10].

Among other reasons, including climatic risks, farm incomes strongly fluctuate, in particular in sectors where the level of support is very low (horticulture). As far as crop insurance covering climatic risks is concerned, uptake in Italy is around 50% of professional farms, even though with regional differences with the southern regions having lower shares[11].

The number of very small beneficiaries continue to drop, with the total number halved compared to 2006 (from 1.6 million to 800 000 in 2018); as from 2005, a slight redistribution of support towards the medium-size family farms (between EUR 10 000 and 100 000) is observed.[12]

Directorate General for Agriculture and Rural Development. *CAP context indicators C.25 Agricultural factor income and CAP context indicator C.26 Agricultural entrepreneurial income.* Income based on EUROSTAT [aact_eaa04], [aact_ali01] and [aact_eaa06], adding back the compensation of employees to the entrepreneurial income and divided by the total number of annual working units. Note: 2019 data estimated. The average wage in the economy based on EUROSTAT [nama_10_a10_e] thousand hours worked using employees' domestic concept and [nama_10_a10], item wages and salaries.



European Commission. Income support breakdown.
Distribution of direct aid to farmers – indicative figures 2018 financial year

2.2 Enhance market orientation and increase competitiveness including greater focus on research, technology and digitalisation

The total factor productivity has remained stable in Italy between 2005 and 2018 with sharp differences per sector. Labour productivity increases mainly due to the outflow of labour (-10% between 2005 and 2019[13]). Land productivity reflects the developments in yields and rents. Productivity per ha and per unit of work increases with the economic size of the farm. Enterprises with higher sizes present a better use of resources, in particular those linked to labour.[14]

The agri-food trade balance in Italy is positive as of 2016, even if regional differences are present[15]. Extra-EU trade balance is positive with a steady increase since 2012. Intra-EU trade balance is negative but showing an upward trend. Wine and processed products show a positive trend in both intra- and extra-EU trade balances; this trend is concentrated in very few regions. The largest share of exports to non-EU countries corresponds to processed foods[16], demonstrating the importance of value-added. Wine (42%) and food preparations (28%) are the most significant in Italian agri-food exports in 2018[17].

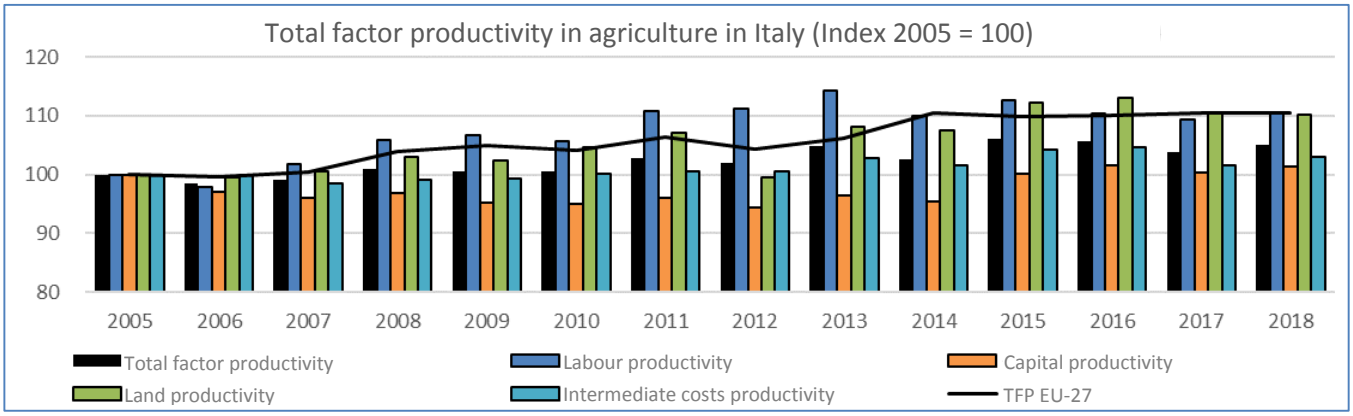
Exports to third countries are even more concentrated in the area of processed food and wine (47.5% of total exports in 2018), which recorded very positive performance (+ 81% compared to 2007) and food preparations (25% of the total, + 146% in 2007). Nevertheless, all exports have experienced significant dynamics, such as non-food products (+ 206.6% since 2007) and beverages (+ 102.4%); for the latter, the value of exports is more than three times higher than imports (EUR 797 million and EUR 240 million).[18]

Over the last decade, given the low national consumption, marketing on foreign markets has been a key factor for the businesses survival, including in the agri-food sector.

There is a downward trend in investments in all sectors and in all geographical areas, though mainly in the South, linked to economic recession. In the period 2007-2016, investments in the agriculture, forestry and fishing sectors have decreased in all regions with the exception of Piemonte and Provincia Autonoma di Bolzano/Bozen. The extent of the decrease of the total factor productivity in agriculture has been different across regions, leaving several regions of the Centre-South lagging behind in comparison to most regions in the Centre-North[19].

In 2017, the output of Italian agricultural sector was of EUR 5.6 billion, 15% of European agricultural gross fixed investment (EUR 57.6 billion) compared with 19% in 2007. Investments in the agricultural sector at national level have decreased significantly in comparison to those of the EU-28 and of the EU-15[20].

In comparison to other European countries, the competitiveness of the Italian agricultural sector is hampered by a low use of digital technologies. Research and innovation are dynamic in Italy (§2.10). There are 20 fully operational Digital Innovation Hubs[21] in the agricultural, forestry and hunting sector. However, the uptake of digital innovations is low, linked to a sub-optimal AKIS (§2.10), the lack of digital infrastructure in rural areas (§2.8) and the lack of digital skills in the rural population. Indeed, only 38% of people living in rural areas have basic or above basic digital skills, compared to an EU average of 45%[22]. Rural development measures in synergy with national and European policies play a key role, as acknowledged in the "Guidelines on the development of Precision Agriculture in Italy" (2015)[23]. Unfortunately, the effectiveness of such actions has been hindered by severe reductions in their initial financial allocations and a slow implementation.



European Commission. *CAP context indicator C.27 Total factor productivity.*
Based on EUROSTAT [aact_eaa05], [aact_eaa04], [aact_ali01], [apro_cpsh1] and [ef_mptenure] and FADN

2.3 Improve farmers' position in the value chain

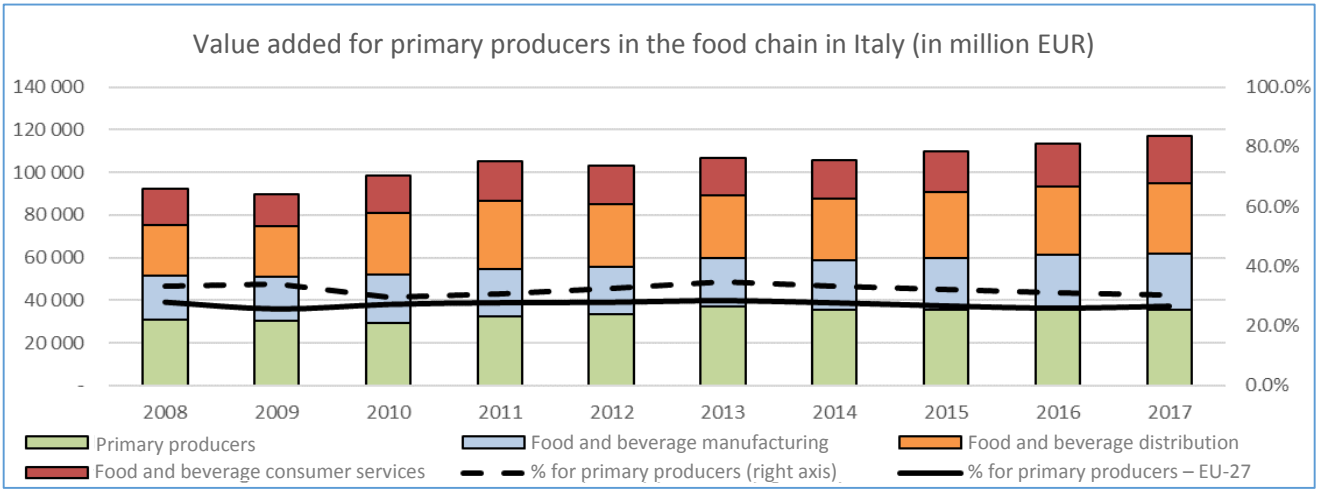
The share of value added by primary producers (30% in 2017) is greater than that added by other operators of the food value chain (including distribution, manufacturing and consumer services), and slightly higher than the EU average in the last years[24]. Nevertheless, we observe a constant decrease of this share (from 35% in 2013 to 30% in 2017, whereas the EU average is recently increasing) since the value for the agricultural sector is rather stable in absolute terms, whereas the other sectors are expanding[25]. This takes place in a challenging context of relative fragmentation of the producers in the food supply chain and of weakening contractual position of agricultural producers versus

upstream and downstream players, where farmers struggle to keep agricultural incomes in line with the evolution of wages and salaries in other sectors despite some recent progress[26]. Further analysis shows that the crop sector generates 64% of Italy's agricultural output, in particular through fruits and vegetables, wine and olive oil[27]. A national Unfair Trading Practices (UTPs) legislation is already in place to a certain extent[28] whereas producers' prices are slightly behind the consumer food prices[29].

Several indicators show the cooperation level amongst farmers[30]: in most of the agricultural sectors there are recognised POs, the number of recognised POs per million of agricultural holdings in Italy is higher than the EU average (360 compared to 254), and the average number of members in POs is very high (25% of POs have more than 2 000 members each). The share of products marketed through POs in the key sector of fruits and vegetables is also one of the highest in the EU, and increasing (from 63% in 2014 to 71% in 2017). Nevertheless, regional disparities exist and several farmers in the South are associated to POs based in the North. The agricultural cooperatives have a prominent place, but they are concentrated in the North. Furthermore, the cooperatives would benefit from innovative forms of cooperation to slow down the ongoing reduction in farmers' participation. Some inter-branch organisations (IBOs) are also operating at national and regional level[31].

The segments of agricultural production with higher value added are rather dynamic: the share of the total organic farming area is higher than the EU average (15% compared to 8% in 2018), the number of organic producers is the top in the EU (almost 67 000 in 2017 out of a total of 309 000) and the data of the latest years confirm this trend[32]. A territorial unbalance can be observed, since organic farming production is coming mainly from the South of the country, and processing/consumption is concentrated in the North[33]. Quality schemes are also well developed (866 products under EU quality schemes, the highest number in the EU)[34], where most of the revenue is generated in the North and concentrated on meat products, cheeses and wines[35]. Quality schemes are normally linked to traditional landscapes[36].

Concerning the short food supply chains, local food systems are significantly developed in Italy, but they focus on on-farm direct sales rather than on more innovative approaches like Community-supported agriculture, systems involving a large number of producers or connecting urban consumers to agricultural production.[37]



European Commission. *CAP indicators – Data explorer*.
CAP Result indicator RPI_03 Value for primary producers in the food chain.

2.4 Contribute to climate change mitigation and adaptation, as well as sustainable energy

In 2018, agricultural emissions of greenhouse gases (GHG) (without the Land Use, Land Use Change and Forestry (LULUCF) sector) in Italy amounted to 30.2 million tonnes of CO2 equivalents, a decrease of 13% compared to GHG emissions in 1990 and 5.8% compared to 2005 but only 1% compared to 2013.[38] Regional differences exist with some regions registering a decrease between 1990 and 2015 as high as 40%, while others only 10%. In terms of share, agriculture represents only about 6.9% of total GHG emissions in Italy (below the EU average of 13%) and 7.6% of the total EU-27 GHG emissions from agriculture.[39] Until 2006, agricultural emissions and their shares in total GHG emissions showed a clear trend of decrease but they have stagnated ever since.[40] 47% of agricultural emissions in Italy relate to enteric fermentation of livestock, 27.5% to agricultural soils (fertiliser), almost 19% to the management of manure and 5.4% to rice cultivation. Compared to 2013 data, emissions from enteric fermentation increased by 3.8% while emissions from manure management and soils management decreased by 7.7% and 2.5% respectively. The emission of GHG from manure per livestock unit is above the EU-average (0.61 and 0.48 respectively).[41]

On LULUCF, according to 2018 data, in addition to forests, both grasslands and croplands in Italy acted as carbon sinks; the LULUCF sector as a total was able to sequester 33.4 million tonnes of CO2 equivalents.[42] However, data show a worrying trend of increase in emissions from grasslands in the period 2013-2018 (+13%), above the EU average of +9.35%.[43] The area covered by peatland in Italy is not significant (0.1%)[44]; however, peatlands can be large sources or sinks for atmospheric CO2 and therefore their management is important for climate change mitigation, even on small areas.

The share of agriculture in the production of total renewable energy in Italy is 8.3%, somewhat below the EU-27 average (12.1%). A more significant percentage (26.5%) of renewable energy production came from the forestry sector although the forestry sector's share decreased compared to 2017 (31.2%).[45] Italy's agricultural and forestry sectors account for 12% of the total production of renewable energy from agriculture and forestry in EU-27.[46] Energy consumption in Italian agriculture and forestry as a share in total final energy consumption is 2.4%, slightly below the EU-27 average of 2.9%. Italy is among the countries with the highest direct use of energy in food production in the EU (third after France and Germany).[47]

The National Energy and Climate Plan 2021-2030[48] puts strong emphasis on increasing energy efficiency and the use of renewables as a means of decarbonisation. The current and future CAP as well as measures to promote CO2 sequestration in agricultural soils and forest systems and measures in the forestry sectors are recognised as contributing to the achievement of the target.[49]

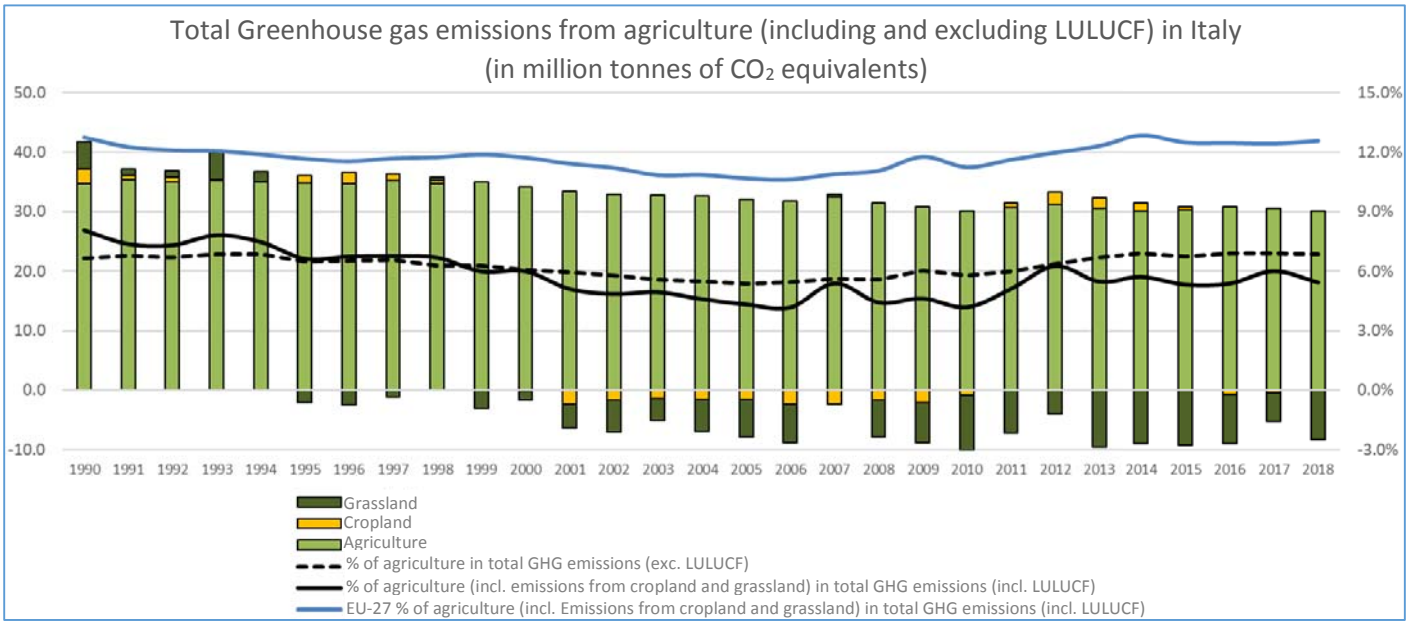
In the current Rural Development Programmes (RDPs) around 2% of land is under contracts targeting climate action (GHG or conservation), in line with the EU average.[50] Farming practices contributing to climate action were a priority in the Partnership Agreement and included, inter alia, agri-environment-climate commitments, genetic resources, investments, knowledge transfer and advisory services, renewable sources of energy (less than the EU average), afforestation, agroforestry and the improvement of

resilience of forest ecosystems. The uptake of these measures was, however, significantly lower than expected and the planned budget was eventually reallocated.

Like other countries of the Southern climate region, Italy is vulnerable to risks stemming from climate change such as an increased risk of drought and soil erosion and a related risk of decrease in water availability and crop yields.[51] Extreme weather events are already causing significant damage to the agriculture sector, estimated to amount to 14 billion euros in the last decade between losses of national agricultural production and damage caused to infrastructure in the fields.

Italy suffers in particular from high hydrogeological risks, caused also by depopulation of rural areas (especially in mountains and hills) and increased urbanization. 7 275 municipalities (91% of the total) are at risks of landslides and/or floods, while 16.6% of the national territory is classified as at high risk[52].

Italy is projected to experience an exceptional rise in temperatures (especially in summer), with warmer temperatures leading to an increase in parasites some of which have already caused significant damage. Livestock in the Continental and Mediterranean area of Italy will be exposed to high risks of reduction in welfare and health conditions due to reduced quality of feed, increase in pathogens and risk of heat stress during the summer period.



European Environmental Agency. As in EUROSTAT [env_air_gge]

2.5 Foster sustainable development and efficient management of natural resources such as water, soil and air

Ammonia emissions in Italy followed a stable though slight decrease over time, in line with the EU average, with some fluctuations in the latest years, reaching around 362 000 tonnes in 2017. With a reduction of 6% between 2005 and 2017, Italy is projected to have the possibility to reach the 2020-2029 National Emission Ceilings Directive emission reduction commitment for ammonia (-5% compared to 2005) and 2030 (-16%)[53], but did not submit a final National Air Pollution Control Programme to date, failing to show how the emission reduction commitments will be reached in the future.

The management of manure contributes to around 56% (above the 45% EU average), while other sources (distribution of manure and inorganic fertilisers) are below the average. Emissions from livestock farming are mostly coming from bovines, especially dairy farms. Higher emissions are concentrated in northern regions where livestock farming and crop production are more intensive. Few regions are increasing the emissions from 2005 to 2015, while others are decreasing less than the national average[54].

Italy is subject to the highest risk of water soil erosion in Europe, with the average loss of soil in all erosive lands (agricultural land including cropland and grassland, forests and sparse vegetated areas) estimated to be above 8.5 t/ha/year in 2016, well above the EU average (about 2.5 t/ha/year)[55]. The overall area at risk of serious erosion in Italy is 6.8 million ha. On the other hand, 32.8% of the Utilised Agricultural Area (UAA) (about 5.6 million ha in total) is at risk of severe erosion, which is also well above the EU average (6.6%). The UAA at risk of erosion is mainly arable and permanent crops (5 million ha) and less on grassland. There is greater erosion risk in Calabria, Sicilia, Marche, Abruzzo, Molise.

The mean soil organic carbon content in arable land in Italy is around 18 g/kg in 2015. Italy, such as other Mediterranean and southern countries (Spain, Greece and Portugal), have lower values compared to northern countries due to the faster organic carbon mineralisation. At regional – local level, lower carbon stock are present in southern regions, on the islands (Sardegna and Sicilia) and in plains, especially in intensive agricultural areas, while higher stocks are found on hilly and mountainous areas[56].In Italy, 92% of tillable UAA is tilled conventionally[57], and an increase in conservation/zero tillage contributes to an improved soil quality.

In Italy, 7.64% of the national territory is covered by artificial impermeable surfaces leading to soil sealing, with a constant increasing trend. In 2018, in 15 regions, 5% of land consumption is exceeded, with the highest percentage in Lombardia, Veneto and Campania. Areas with a lower quality of habitats are the whole Po Valley and urban hubs. Land consumption is predominant in agricultural areas (66% in 2018), leading to a reduction of agricultural production and threats to ecosystem services[58].

Linking soil management practices to research, innovation and demonstration activities available under the forthcoming Horizon Europe Mission on soil health can help to improve soil quality.

Water quality in groundwater stations in Italy is slightly lower than the European average: 71% of the groundwater stations in 2012 were of high quality (74% for EU 28), 18% were of moderate quality (14% for EU 28) and 11% was of poor quality (12% for EU 28). Over the period 2012-2015, the most risky class of the monitoring sites (concentration of more than 50 mg/l) have a near constant trend, showing a slight improvement. However, several hot spots with high concentrations located in different regions are still present over time. Water quality in surface water stations show a better trend: over the period 2012-2015, around 83.7% of sites belong to the high quality classes (below 10 mg/l) with positive trends also for the other classes[59].

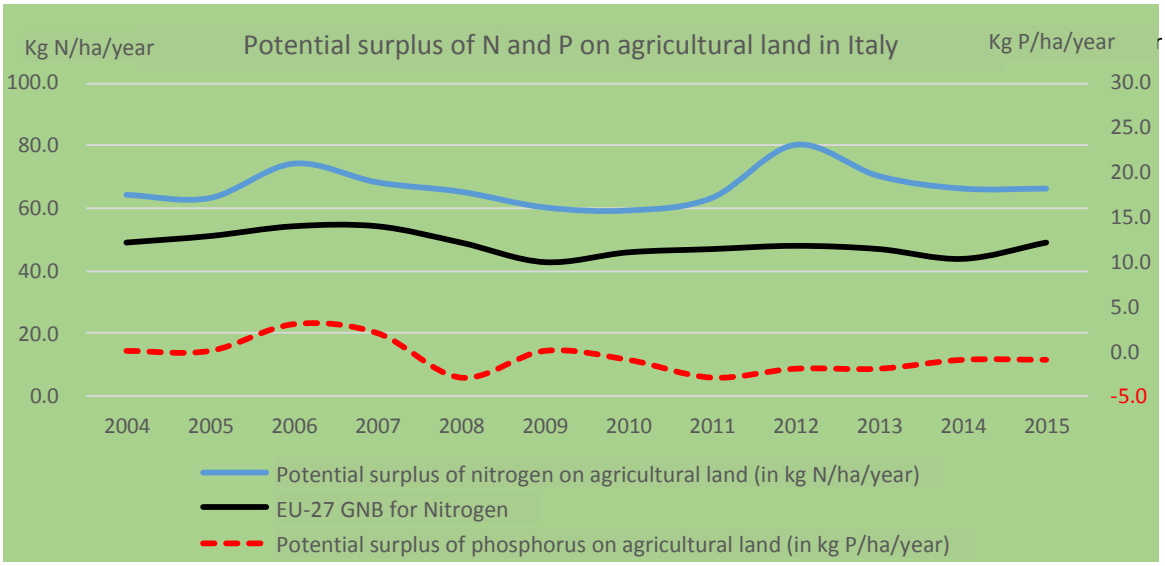
The implementation of water framework directive and nitrate directive still show several shortcomings: in 2018, Italy was subject to an infringement procedure on the nitrate directive, addressing the revision of nitrate vulnerable zones and the need to improve

actions included both in the CAP and river basin management plans to improve water quality. Recommendations on a better consistency with the CAP and improved monitoring were provided also for the water framework directive. Agricultural management practices such as soil cover in winter can also contribute; in 2016, 16%[60] of arable land in Italy was bare during winter months.

The nitrogen surplus measured by the gross nutrient balance in Italy has remained stable over time between 2004 and 2014, compared of a decrease of around 10% at EU level (calculated on a three years average). The quantitative average value in 2017 is of 66 kg/ha/year in Italy, higher than the EU-27 average of 46.5 kg/ha/year. Over the same period, phosphorus surplus has been declining below zero kg/ha/year (-1.0 kg/ha/year in Italy), lower than the EU-27 average.

Water quantity is a critical aspect: in 2016, there were 2.5 million ha of irrigated land, around 20% of UAA, with an increase of 6% from 2010 to 2016[61], higher than the EU trend. Irrigated land is around 60% of the irrigable area, which amounts to 4 million ha and is stable over time. Water consumptions varies according to the regions, crops and irrigation systems. The indicator Water Exploitation Index plus (WEI+) shows average annual stress conditions at national level; in particular, it shows conditions of stress in several Italian river basin districts located in the South and in the islands[62], with a potential risk of soil salinization by salt-rich irrigation water and/or insufficient drainage in some areas. Similarly to other countries, it is difficult to have a clear picture of the situation of water consumption due to lack of reliable information. The river basin management plans recommendations highlighted the need to reinforce water metering, review the abstraction permits system and improve the water consumption monitoring[63]. In 2017, Italy committed to incentivise the efficient use of the resource in agriculture by extending water metering and volumetric charging based on actual consumption.[64]

Regarding the CAP implementation, in 2018 53% of the arable land was subject to greening crop diversification compared to 74% at EU level[65]. Italy committed in 2018 around 12% of UAA for agro environmental climate measures contracts dedicated to water management and to soil quality and erosion, in line with the EU average[66]. According to the current rural development implementation, specific needs were highlighted to increase investments related to manure management with the aim to reduce ammonia emissions, measures supporting farming practices targeted to sustainable fertilisation and reduction of nitrogen surplus, improved water quantity management. There is a strong need to improve national coordination between regions, especially for water management. The Italian RDPs also pursue water efficiency in agriculture through investments in irrigation. EU level evaluations[67] recommended avoiding as much as possible exemptions based on farm dimension on basic environmental obligations which are particularly important for water issues, such as in the current period for cross compliance and greening.



European Commission. *CAP context indicator C.40 Water quality.* Based on EUROSTAT [aei_pr_gnb]

2.6 Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes

The farmland bird index (FBI) in Italy follows a similar trend to the EU average, with a decline of around 23% in 2017, (24% reduction at EU level compared with the 2000 baseline value, which equals to 100). In the plains, the indicator shows a significantly worse trend (-45%) than in the hills (-26%)[68]. The development of individual species is stable in the hills, but declining in the plains. A national FBI has been calculated for species sensitive to pesticides, which a higher decline of 36% from 2000 to 2014. On the other side, the woodland bird index in Italy is positive with an increase of about 20% between 2014 and 2000, higher compared to the EU average, which shows a substantial stability.

According to the indicator conservation status of grasslands agricultural habitats for the period 2013-2018, 2.6% of agricultural habitats (natural and semi-natural grassland) are in favourable status, while 97.4% are bad (50%) or inadequate (47.4%) with a very strong decrease of favourable status, compared with the previous periods and especially with the EU average, which shows substantial stability over time[69]. The greatest habitat richness is concentrated in the mountainous regions of the Alpine area located in northernmost regions of the country and in the central regions along the Apennines. The target species identified for extensive farming habitats are in traditional farming - pastoralism areas, especially on the Apennine and in Sicilia. For grassland habitats, the main pressures identified include conversion of grassland to cropland, overgrazing and unregulated grazing, abandonment of traditional shepherding systems and of mowing practices, draining, use of fertilizers. For cropland and permanent crops, the pressures include excessive use of pesticides, degradation of landscape features, alteration of the hydrographic networks.

The Natura 2000 network covers in 2016 around 19% of the country with more than 2 600 sites and 8% of UAA (9% EU)[70]. Agricultural land is a substantial part: more than 210 000 farms receiving CAP subsidies are located in the network for 1.5 million ha of UAA, with around 33% permanent grassland. As suggested by the Prioritized Action Frameworks of Italy, there is a need to better prioritize financial support in Natura 2000 and outside for grassland (e.g. periodical mowing and controlled grazing to optimize the

cattle load in Basilicata), for croplands (e.g. maintenance and restoration of dry stone walls in favour of reptiles in Campania), for forests (e.g. conversion of coppice woods into high forests in Abruzzo). In terms of governance/administrative capacity/training, support is needed for forest and agricultural advice, for monitoring the habitats of EU interest and for the creation of management plans.

Forest area in Natura 2000 sites is 1.9 million ha, covering 20% of total forestry areas and 33% of total Natura 2000 areas. Italy has also a consistent area of national protected areas, partly overlapped with the Natura 2000 areas, covering 10% of the national territory (3 million ha)[71].

Regarding farming intensity for year 2016, Italy have 48% of the UAA in low, 25% in medium and 27% in high intensity farming, slightly less intensive compared to the EU-28 average, but with higher expenses for agricultural inputs. The trend in the country across time between 2004 and 2016 show substantial stability. According to further national analysis, the intensity is different across regions and agricultural sectors, also due to different input prices[72].

Regarding the CAP implementation, in 2018 Italy committed in 2018 around 14% of UAA for agro environmental climate measures dedicated to biodiversity and landscapes, in line with the EU average. For forestland, the share of contracts for biodiversity is 0.7%, around double the EU average[73]. Specific measures such as the Natura 2000 measure has been implemented with an overall low financial allocation. Permanent grassland covers 3.6 million ha and represent 28% of the UAA in 2019, close to the EU average. Italy designated all permanent grassland in Natura 2000 as environmentally sensitive for enhanced protection[74]. Available Prioritised Action Frameworks (PAF) analysis (available for eight regions at the time of drafting) identify overgrazing and abandonment as major threats for grassland, especially on mountains[75]. Co-existence between wild animals (such as wolves, bears and deer) and agricultural productions is an issue highlighted in all available PAFs, as well as in the EU evaluation on the impact of the CAP on biodiversity[76].

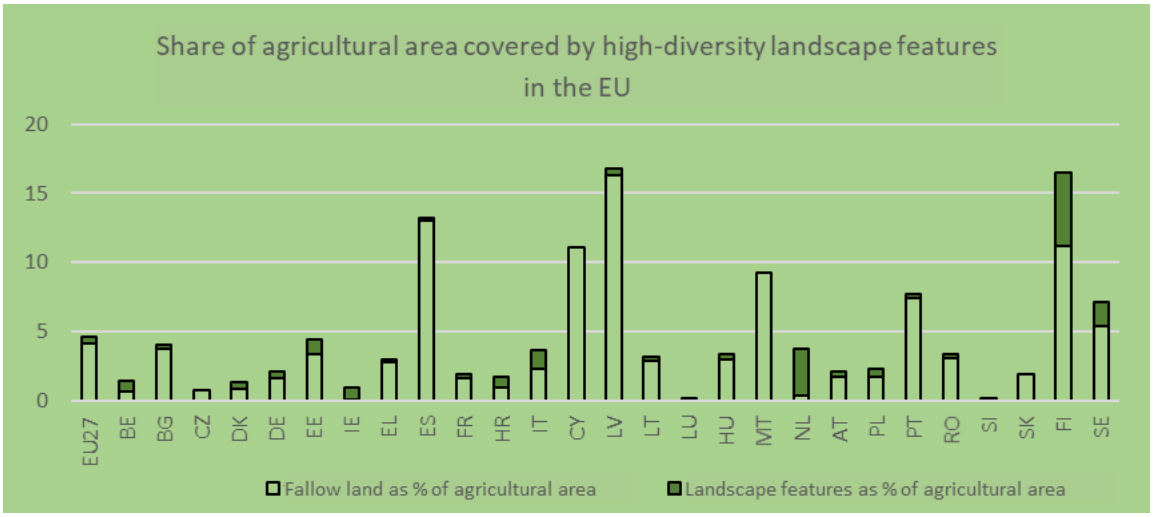
Non-productive features (land lying fallow and landscape features) amount to a total of 474 000 ha, 3.7% of UAA. According to Eurostat crop statistics information, Italy has 294 000 ha of land lying fallow in 2018 (2.3% of UAA) with a decreasing trend, in line with other EU countries. The estimation of linear landscape features coming from the 2015 LUCAS survey amounts to 180 000 ha (1.4% of UAA)[77].

As a country with highly diversified agro-ecosystem conditions, in Italy there is plenty of traditional landscapes, which are an important factor for rural areas for both environmental and economic (e.g. related to tourism) aspects. The main threats are intensification, abandonment and landscape fragmentation. High nature value areas covers potentially around 16% of the UAA taking in consideration national estimations for the most valuable class: the most important typology being mosaic areas with low intensity farming and semi natural elements. Invasive species are a serious threat to biodiversity and agricultural production due to favourable climatic conditions. In Italy, alien species have increased by 96% over the last 30 years and the phenomenon has increased dramatically[78].

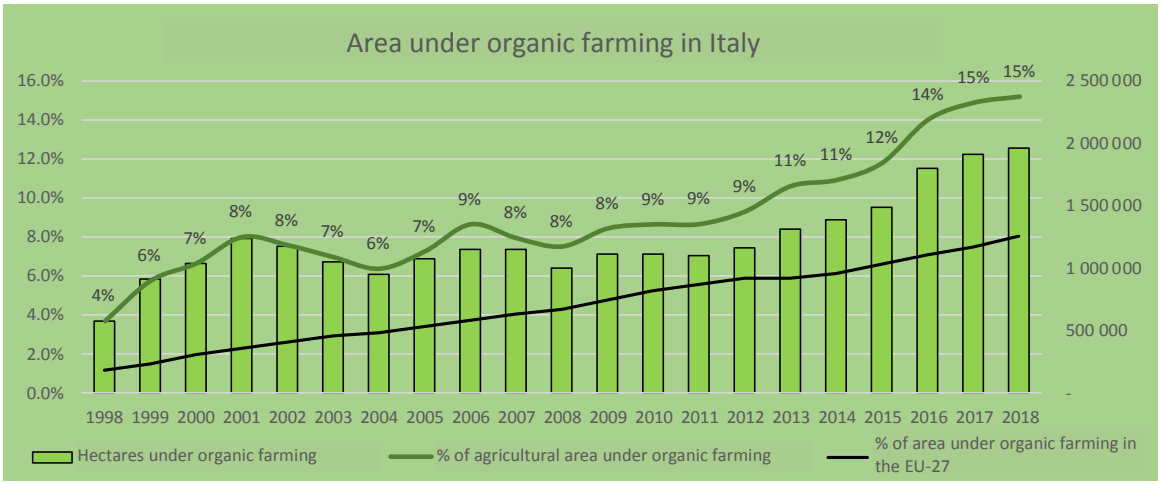
Local agrobiodiversity resources are included in a national registry from 2015: in 2018, 300 animal breeds were included, of which 200 at risk of extinction following EU

criteria. The aim is to protect and maintain both traditional crop varieties and animal breeds, which are linked to traditional farming systems and disappearing due specialisation of the sector[79].

The total area under organic farming is increasing in Italy, covering about 1.9 million ha in 2017 in around 67 000 farms. With 15.2% of the total utilized agricultural area under organic farming in 2018, Italy has almost double the share of the average European country (8%). Organic surfaces are mainly concentrated in southern regions, while an increased consumption of organic products is recorded in northern regions. Differently from the distribution by crops at EU level, permanent crops are of significant importance and represent 24% of the organic UAA (11% in the EU), while permanent grassland is less important (28% in Italy, 44% at EU level). Among arable crops, the most represented biological crop group is forage crops (28.5% of the organic UAA). The proportion of organic livestock in animal husbandry is below 10% for cattle and pigs, however organic bovine are steadily increasing over time. The Italian policy brief indicates a clear positive correlation between the increase in number of farms - areas and the CAP support. The concentration of organic production is actively supported at local – regional level through the creation of more than 40 "biodistricts" which have the objective of promoting organic products along the food chain and through tourism[80].



Directorate General for Agriculture and Rural Development. Based on EUROSTAT for land laying fallow and Joint Research Centre based on LUCAS survey for estimation of landscape elements.



European Commission. *CAP context indicator C.19 Agricultural area under organic farming.* Based on EUROSTAT [org_cropar_h1] and [org_cropar]

2.7 Attract young farmers and facilitate business development in rural areas

In Italy, there were 46 510 young farmers (aged below 35 years) in 2016 corresponding to 4.1% of all farm managers (slightly lower than the share of 5.1% for EU-27). For both Italy and EU-27 this share first increased between 2005 and 2010 (to 5.1% or +1.6 pp for Italy and to 7.5% or +0.6 pp for EU-27) and subsequently decreased between 2010 and 2016 (-1 pp for Italy and -2.4 pp for EU-27). This is also confirmed by the old age dependency ratio: whereas in 2010 in Italy there were eight young farmers for every 100 elderly ones (14 in EU-27), in 2016 there were only six (nine in EU-27).[81] The ratio was most favourable in the Provincia Autonoma di Bolzano/Bozen (15-20 young every 100 elderly farmers) and least favourable in the Nord-South extension of the areas between the Appennino mountain range and the Adriatic Sea (from Emilia-Romagna to Puglia region; 5 young or less every 100 elderly farmers).[82] To note that within the group of young farmers, between 2005 and 2016 those aged below 25 years increased by 6%, whereas those from 25 to 34 years decreased by 25%. In terms of gender, in Italy the ratio of young female managers to male managers was roughly still only 1:3 in 2016, but had improved from roughly 1:4 in 2005/2007.

Compared to the elderly, young farmers tend to have bigger farms and a higher economic (standard) output. In 2016, farmers aged less than 25 years farmed on average on 21 ha and farmers between 25 and 34 years on 20 ha compared to 11 ha for farmers from 55 to 64 years and 7 ha for the ones aged 65 years or older; for all these age groups the average had increased compared to 2005 (respectively up from 17, 15, 7 and 5 ha). The same year (2016), the average economic output was EUR 59 700 for farmers under 25 years, EUR 103 500 for farmers between 25 and 34 years, EUR 41 800 for farmers from 55 to 64 years and EUR 22 900 for the ones aged 65 years or older. To note that in 2016 the farmers between 25 and 34 years also outperformed the middle-aged ones[83] in terms of average farm size and economic output. The same year farmers under 25 years had on average the biggest farms (21 ha), but only the third highest economic output (EUR 59 700) which, unlike for some other age groups, corresponded in essence to the level of 2005.

Compared to the elderly, young farmers tend to embrace less subsistence farming, but more livestock farming. In 2016, 9% of all farmers under 25 years old managed a semi-

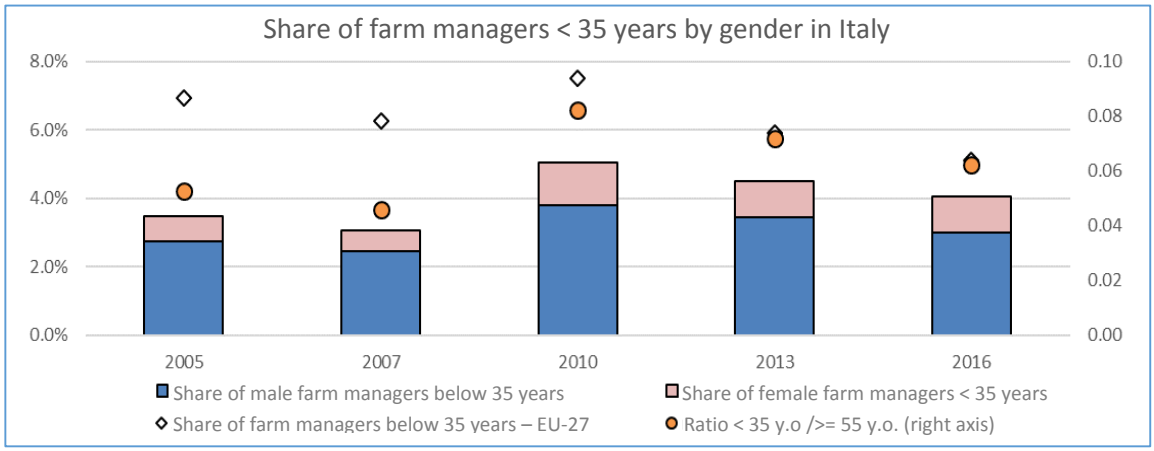
subsistence farm[84] and 12% of those aged 25 to 34 years compared to 27% of those aged 55 to 64 years and 30% of the ones aged 65 years or older; since 2005 semi-subsistence farming had decreased in all these age groups by over 40%. In 2016, 28% of all farmers under 25 years old managed a live-stock farm and 30% of those aged 25 to 34 years compared to 14% of those aged 55 to 64 years and 7% of the ones aged 65 years or older; since 2005 livestock farming had decreased in all these age groups except for the youngest for which it increased (+9%). In 2016, farmers aged 25 to 34 years had the highest livestock intensity together with those aged 45 to 54 (respectively 76 and 80 livestock units per farm on average) and farmers aged under 25 years ranked in the middle-range (56 livestock units per farm on average). While farmers aged 65 years or older had the least intensity (44 livestock units per farm on average), with +225% they had the highest increase compared to 2005. The intensity of farmers between 25 and 34 years increased by 31%, whereas the one of those under 25 decreased by 16%.[85]

Between 2010 and 2016 the share of young farmers with basic training decreased in Italy (by 9 pp to 77%), compared to a slight increase in EU-28 (by 4 pp to 21%), whereas the share of young farmers with full training increased for both Italy (by 9 pp to 23%) and the EU-28 (by 8 pp to 22%). Young farmers tend to be better trained than the general farming population in both Italy and EU-28 (full training of farm managers was respectively only 6% and 9% in 2016).[86]

The financing gap in the Italian agricultural sector[87] is estimated to amount to between EUR 110 million and EUR 1.3 billion of which non-satisfied financing of young farmers and new entrants determines an important part. Long-term loans are usually heavily collateralised particularly penalising young farmers and new entrants (unless supported by families or with prior experience in the sector). Similarly, access to land is an issue particularly for young farmers[88], even if special support is foreseen in the activities of some national and regional land banks[89]. The financing gap in the Italian agri-food sector[90] is estimated to amount up to EUR 1.5 billion mostly driven by a lack of credit history (affecting particularly start-ups and young entrepreneurs) and insufficient financial education and collateral (affecting mainly businesses in Central and Southern Italy).[91]

In Italy, young farmers are supported via the top-up payment in Pillar I and via different Pillar II measures which can be modulated in favour of young farmers, notably also through a "package" approach under which various measures are grouped providing a «one-stop shop» with facilitation for farmers. While this approach has shown the benefits of integrated farm-level projects, it could embrace more measures relevant for young farmers (e.g. promotion, cooperation or mentoring schemes) and the selection process improved with regard to timing and competences. [92]

As far as businesses in rural areas are concerned, in 2016 in Italy the birth rate of enterprises was lower in rural (7.1%) and intermediate areas (7.3%) than in urban areas (8.6%) and for all types of territories it was lower than for most other MSs for which data were available[93]. A positive trend has been observed in agritouristic activities, which increased by 13% between 2013 and 2018[94]. Even in presence of limited statistical evidence, the structural context characterised by unemployment and depopulation across rural areas (see §2.8) strongly hints at a generally difficult business environment in Italian rural areas. Moreover, the bottom-up approach promoted in the framework of LEADER did not produce the expected results, due to delays in its implementation.



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2.8 Promote employment, growth, social inclusion and local development in rural areas, including bio-economy and sustainable forestry

Italy has relatively less rural (26%) and more intermediate (54%) areas than the EU-27 (45% and 46%)[95]; rural areas are most important in mountainous areas (60% or more in the Provincia Autonoma di Bolzano/Bozen, Molise and Basilicata)[96]. Italian population lives, comparatively, clearly less in rural (10%) and more in intermediate/urban (43%-47%) areas than the EU-27 (21% and 39%-40%)[97]. Similar to urban areas, in rural areas nearly 15% are aged under 15, nearly 65% are aged between 15 and 64 and over 20% are aged over 65, while, in terms of gender, nearly 50% are men and just over 50% are women.[98]. While recently population decreased in all types of areas, it decreased substantially more in rural areas (-1.5% in 2015-2019 compared to -0.8% in intermediate and -0.4% in urban areas).[99][100] In the context of a general rural exodus over the last decade[101], the migration balance for rural areas decreased or turned negative across the country; while rural areas of the Centre-North overall kept a certain attractiveness, the balance was particularly negative for rural areas in Calabria, Sicilia and Sardegna in 2018.[102] While already today the old age dependency ratio is very strong (>= 42.5%) in parts of the Appennino and coastal areas of the Centre-North and some parts of the Alpine arc/Sardegna[103], unfavourable depopulation and ageing dynamics are likely to persist in large parts of the South and Sardegna with projected negative demographic trends until 2032[104]. The share of foreign-born residents in rural areas is quite similar for EU-born (4% in 2019) and not EU-born (6%) persons (and respectively 1 pp and 2 pp above EU-27 average) and, compared to other MSs, the situation in intermediate/urban areas is quite similar[105].

In Italy the employment rate[106] in rural areas is just under the total employment rate (both close to 60%) and clearly under the EU-27 employment rate in rural areas (68%; with a gap of 10 pp); these patterns in essence hold since 2005; Italy ranks lowest among all EU MS[107] and employment is particularly low in rural areas in large parts of the South[108]. Despite a favourable overall trend (down by 6 pp since 2005), Italy continues to have a considerable gender gap in rural employment (20.5 pp in 2019); over the last 15 years, female employment in rural areas rose quite steadily, but overall just by 5.5 pp[109]. For both men and women with low/medium educational level the employment rate[110] is higher in rural than in urban areas, while the opposite holds for the highly educated; also here the gender gap clearly shows (31 pp for the low and 10 pp for the high educated in rural areas)[111].

While the share of employment in tourism and the food industry has slightly grown since 2010, reaching 6.3% and 2.2% in 2017, the share of employment in agricultural remained around 3.5%[112]; globally the primary sector still accounted for 7.5% of employment in rural areas in 2016[113]. While in 2016 agricultural labour force was still predominantly male (27% female) and of family origin, non-family origin had slightly increased[114]. Labour exploitation in agriculture is a widespread phenomenon in Italy[115] and it mainly concerns migrants living in rural areas in critically vulnerable conditions. The rate of irregular work in agriculture (over 24% in 2018) is the highest among all economic sectors; the rate increases to 35% of employed workers (164 000 on a total of 470 000 in 2018); however, these figures are underestimated because they do not take into account migrants without visa or not registered; in fact, controls run by INL (Ispettorato Nazionale del Lavoro) detect a much higher rate of irregularities (55% in 2018)[116]. With 32%, Italy had the fifth highest share of female farmers in EU-28 (28%) in 2016[117]. In 2016, farms in the two categories of smallest farms[118] accounted respectively for 15% and 51% of farms, but only for a small share of farmland and a minor share of economic output.[119]

In the aftermath of the financial crisis, since 2014 the unemployment rate[120] in Italy, both in total and in rural areas, has been steadily (but only very slightly) declining to 10%[121], which, compared to the nearly 6% for EU-27, implies that Italy has the third highest rural unemployment rate (after Greece and Spain).[122] The situation is particularly problematic for the young generation (aged 20-24) of which, despite a decrease of 14 pp since 2014, 24% remain unemployed in rural areas (13% for EU-27) in 2019; for young women the unemployment rate in rural areas is with 26% slightly higher than for young men with 22% (however woman recovered faster since 2014 with -17 pp compared to -12 for men). The situation of the population aged 50-64 in rural areas is in essence the opposite with a very low total unemployment rate in rural areas of 5.5% (just over 4% for EU-27) which in essence corresponds to the unemployment rate for women and men of that age group in rural areas. To note that urban areas are worse off in terms of unemployment rate (overall and for the age groups looked at).[123]

After a period of growth in 2010-2013/14, which deepened the urban-rural gap, the share of young people (aged 15-24) neither in employment nor in education and training, has decreased over the last years to just under 20% in all type of areas and, in rural areas, for both men and women[124]. However, since 2015 the total share for rural areas has been on average over 8 pp higher than for EU-27, while currently Italy has the second highest share (after Bulgaria)[125]. In comparison, the share of early leavers from education and training (aged 18 to 24) rather constantly decreased in all areas from around 19% to around 14% in 2010-2019; with 18% in 2019 young men in rural areas continue to be clearly worse off than young women (11%). Over the same period, the total share for rural areas has been on average over 3 pp higher in Italy than for EU-27, while currently Italy has the fifth highest share[126]. Since 2009, in Italy the educational level has improved in all types of areas (relative weight decreased for low education and increased for high education), but in 2018 the urban-rural gap for higher education still was 11 pp[127].

Looking at Gross Domestic Product (GDP)/capita, in Italy rural areas were already *relatively* poorer (100% of EU-27 average) than intermediate (108%) and urban areas (117%) in 2005. While since then all three territories have become clearly *relatively* poorer, without change in their order (89%, 94% and 103% in 2016), also intermediate areas have in the last years been below the EU-27 average.[128] Between 2010 and 2016,

the share of value added has grown by 4 pp in EU-27 rural areas, while in Italy it remained in essence stable in rural areas (at around 9%) as well as in the primary sector (at around 2%)[129]. Tourism continues to be an important sector in Italy with a growing share of employment and in number of beds in 2012-2017; however, since 2012 the share of beds in rural areas has been clearly lower than in EU-27 (35% vs 45% in 2018) and, just like it, decreased until 2018 (by 11 vs 6 pp)[130].

Before the financial crisis[131], in Italy the poverty rate in rural areas was higher than, but steadily converging towards, the one of towns and suburbs and cities; between 2010 and 2012, it increased clearly more in rural areas (8 pp) than in towns and suburbs (4.5 pp) and cities (4 pp); between 2013 and 2015, it sharply fell in rural areas and slightly grew in towns and suburbs and cities; since 2015 it fluctuates for all three between 26 to 31% and is since 2017 relatively higher in urban areas; over 2010-2018 it was on average 3.6 pp higher in rural areas in Italy than in EU-27[132]. In 2017, the risk of poverty for natives in rural areas was roughly half the one for migrants (both from the EU and from third countries)[133]. Since 2014, in Italy the mean income has overall increased in all territories and continues to be higher in urban (EUR 20 600 in 2018) relative to intermediate (EUR 18 900) and rural areas (EUR 17 700; being ca. EUR 700 higher for men than for women); the median income followed the same patterns.[134] It is currently roughly aligned with the EU-27 averages for all types of territories (all within 15 000 to 18 000 Purchasing Power Standard), but less dispersed[135].

As remarked in the Partnership Agreement with Italy for the use of European Structural and Investment (ESI) Funds in 2014-2020 [136] and in the latest Country Specific Recommendations issued in the context of the European Semester exercise[137], a significant gap in the provision of services between urban and rural areas has been growing in Italy in the last decade, with intermediate rural areas and areas with development problems[138] being especially affected. It regards primarily the quantity and quality of basic services (health, education and social services), but also other sectors, including transport, culture and leisure.

In Italy, forests cover 32.5% of the total land area and other wooded land 6.3% (respectively 39.8% and 5.3% in EU-27).[139] Between 2005 and 2017, Italy saw a strong increase in major economic indicators for forestry and logging: the total output increased from EUR 456 to 2 662 million (services, secondary activities and other products and trees accounted for the biggest shares in 2017), persons employed[140] from 31 900 to 39 800 annual working units (while decreasing for EU-27), the alleged labour productivity[141] from EUR 11 400 to EUR 54 200 Gross Value Addedperson employed and the investments from EUR 83 to 237 million[142]. Italy was in the upper third of MSs both in terms of timber resources (2015[143]) and of their net annual increment (2010[144]).[145] Between 2011 and 2015, the turnover from bio-economy was roughly 290 billion EUR, while employment decreased from close to 2 million in 2008 to 1.8 million in 2015; in line with it, the turnover per person employed increased from EUR 147 100 in 2008 to EUR 163 300 in 2015 (from EUR 97 000 to EUR 119 000 for EU-27). Food, beverages and tobacco, agriculture and bio-based textiles were the three most important sectors (45%, 16% and 17% of the 2015 turnover and 24%, 43% and 15% of 2015 employment)[146].

Despite the serious and growing development needs of Italian rural areas and rural-urban divide (also highlighted in the Commission 2020 Country Specific Recommendations to Italy and the 2020 Country Report in the context of the European Semester exercise), the

attention dedicated to the development of rural areas in terms of European Agricultural Fund for Rural Development (EAFRD) allocations in the 2014-2020 programming period has been limited both compared to the previous programming period and the EU average.

2.9 Improve the response of EU agriculture to societal demands on food and health, including safe, nutritious and sustainable food, as well as animal welfare

Antimicrobial resistance (AMR) is a priority area for the Farm to Fork strategy. In Italy, sales of antimicrobial agents in the past five years averaged 293.4 mg/PCU, which is significantly above the EU average of 118.3 mg/PCU in 2018. A significant decrease in sales is noticeable, however. In terms of species, cattle is the dominant category although sales are significant also for pigs, poultry and sheep/goats[147]. Italy adopted a National Action Plan on AMR 2017-2020 that sets clear targets most notably to reduce the consumption of antibiotics in the veterinary sector by at least 30% and the use of critically important antimicrobials by at least 10%. A fact-finding mission in 2018 concluded that Italy has invested considerable resources in the introduction of a compulsory e-prescription system for veterinarians and raising AMR awareness among veterinarians, farmers and other stakeholders. However many of their other initiatives on this topic are voluntary and focus on awareness raising. Some farmers might choose to continue using (comparatively cheap) antimicrobials as they do not have the capacity to finance improvements in farm infrastructure or husbandry systems.[148]

The Farm to Fork strategy also highlights how the respect of the social rights of agri-food workers (including social protection, working and housing conditions as well as protection of health and safety) will play a major role in building fair, strong and sustainable food systems. In this context, the scope of labour exploitation in Italian agriculture is alarming (see details under §2.8).

In terms of animal welfare, another priority area for the Farm to Fork strategy, tail docking of pigs remains routine practice in Italy despite being forbidden as a routine practice by EU rules.[149] Notwithstanding recent success in increasing the percentage of pigs reared with intact tails in Italy, this has not yet become the common system of production. Efforts could also be made to increase the production of eggs under non-cage systems for laying hens: in Italy, around half of hens is produced in cages (49%), in line with the EU average[150]. Biosecurity is equally a challenge. Italy is among the countries affected by African Swine Fever (ASF).

On pesticides, implementation of the directive on sustainable use of pesticides is central and, although a National Action Plan has been adopted in 2012, no revised action plan was submitted.[151] Harmonised Risk Indicator 1 (HRI1)[152] on pesticides shows a slight positive trend that is worth mentioning although the decrease is slower than at EU level. Data showing evolutions per group demonstrate that the sale of low risk active substances (group 1) has increased significantly while pesticides classified as candidates for substitution (group 3) show a decreasing trend in terms of volume of sales although their share in overall sales is stable. Italy is the fifth most intensive user of pesticides in the EU calculated as kg active substance sold per ha of UAA (although it must be taken into account that pesticides are not only used in agriculture and the statistics are not split by sector). In 2018, there were 4.2 kg of pesticide active substances used per ha of UAA,

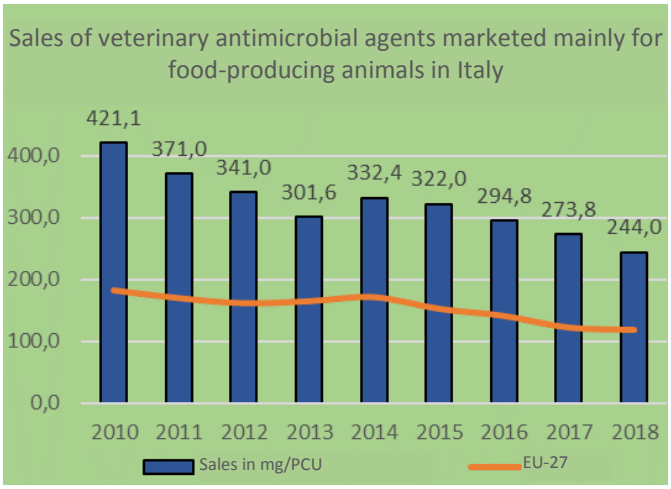
compared to an average of 2.3 kg/ha for the EU.[153] Harmonised Risk Indicator 2 (HRI2) indicates that emergency authorisations, although stable in the last 3 years, remain above the baseline. In addition, there is significant room for improvement concerning the training and certification of professional operators on the proper handling of pesticides, inspections of equipment used for pesticide application and effective controls on the implementation of the general principles of the integrated pest management by all professional pesticides users.[154]

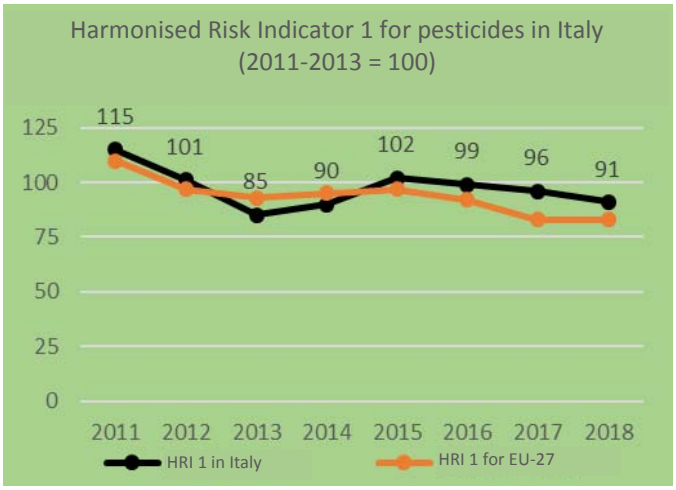
On consumption trends, demand for organic products has increased by 217% in the past ten years but remains low in certain rural areas and areas where the GDP per capita is low.[155] Demand for products with quality denominations (PGO/PDO) is also high. On consumption of fruits and vegetables, Italy has a higher proportion of the population that eats at least one portion of vegetables and fruits per day compared to the EU average.[156]At the same time, Italy has a high estimated consumption of red and processed meat[157]. Efforts should focus on shifting towards healthy sustainable diets, in line with national recommendations in order to contribute to reducing overweight and obesity rates and the incidence of non-communicable diseases while simultaneously improving the overall environmental impact of the food system. This would include moving to a more plant based diet with less red meat and more fruits and vegetables, whole grains, legumes, nuts and seeds.

On food loss and food waste, food waste amounts to 30% of produced food, 10% of which stem from agricultural production and processing.[158] It is expected that food loss and waste in agriculture will be part of new national food waste prevention programme as required by Article 29(2a) of the Waste Framework Directive 2008/98/EC.

The RDPs 2014-2020 included measures to improve animal welfare and sustainable pesticide use. The budget allocated to animal welfare was significant but data on policy impact is not yet available. Some regions, notably Sardegna and Calabria, were particularly successful in implementing animal welfare measures thus playing a key role not only in improving welfare of animals on farms but also in driving innovation and modernisation in the farming sector.

Integrated production, based on the principles of integrated pest management and including broader commitments on agricultural production aimed at sustainable pesticides use, is one of the most important agro environmental climate measures in Italy, amounting to around one third of the budget allocated to measure 10[159].





Left: European Medicines Agency, European Surveillance of Veterinary Antimicrobial consumption (ESVAC). *Sales of veterinary antimicrobial agents in 31 countries in 2018 – trends from 2010 to 2018 Tenth ESVAC Report.* EMA/24309/2020.

Right: European Commission. *Harmonised Risk Indicator for pesticides (HRI 1), by group of active substance.*
As in EUROSTAT [SDG_02_51]

2.10 Cross-cutting objective on knowledge, innovation and digitalisation

The Italian AKIS is characterised by a high level of fragmentation[160]. Agricultural research is conducted by numerous universities, research institutes and companies, public and private, which are not well interconnected[161]. Advisory services as well are provided by several entities acting independently. Despite the fact that in the past the EU has generously financed technical assistance services for Italy through agricultural advisors, advisory services are not present everywhere on the national territory. Public advisory services are only provided by a few Regions. Private services, provided by self-employed advisors, employees of farmers' organisations or by private agribusiness companies, are not always available or affordable everywhere. Strong advisory networks are present only in a few high value added sectors (e.g. organic agriculture, wine)[162]. Therefore, even if the number of actors involved in the AKIS has a good potential to bring innovation to farmers in every Region and in every sector, the lack of strategic coordination often impacts negatively vertical and horizontal flows of knowledge and innovation in the Italian AKIS.

So far, knowledge-sharing actions have largely benefited from the activities of the National Rural Network and its dedicated website (www.innovarurale.it)[163]. As of August 2020, Italy holds the highest number of approved OGs (545) in the EU[164]. Italian OGs deal with a great variety of themes, thus reflecting the innovation need of the very diverse sectors of Italian agriculture[165]. However, some shortcomings will need to be addressed in order to increase the effectiveness of knowledge sharing actions. Firstly, a territorial unbalance can been observed: even if all Regional RDPs foresee the setting up of OGs, not all of them made progress as of August 2020[171]. Moreover, there is no provision for national or cross-border OGs. Lastly, according to the available data, it appears that the involvement of advisors is marginal: as of August 2020, they represent only 3% of the partners in Italian OGs[166]. More in general, only part of the advisors are systematically exposed to updated knowledge and innovation through regular training courses[167]. Their training has not been supported by public policies. Measure 2[168]

financial allocation was more than halved in comparison to the original RDP financial plan[169]. Its implementation was not timely nor efficient, as on December 2018, none of the RDPs had succeeded in providing training to advisors[170]. In this context, advisors may need to pay personally for their training and may have limited access to Knowledge & Innovation (K&I) resources[171].

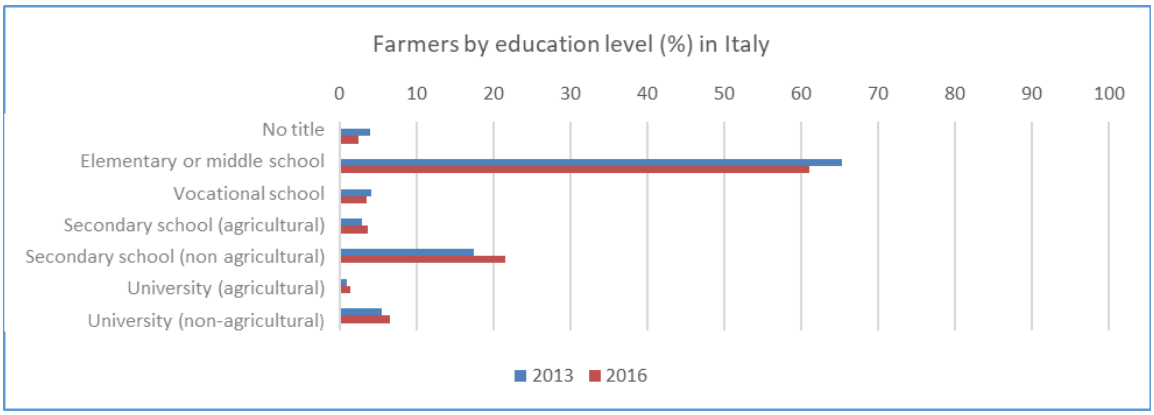
The highlighted shortcomings of the Italian AKIS, both in the structure and in the K&I flows, can represent a serious obstacle in the transition towards a greener, more digital and more competitive agriculture[172].

Farmers' education level correlates positively with farms' economic size[173] in Italy. Nevertheless, Italian farmers tend to have a low education level: in 2016, only 3.65% of Italian farmers had received a secondary education in agriculture and only 1.32% held a degree in agriculture[174]. Furthermore, training for farmers has not been fully supported by public policies: in Quarter 2 of 2020, only 22% of the financial resources allocated to Measure 1[175] had been spent. An improvement in the farmers' education level has been observed since 2013[176], probably also thanks to the higher educated younger generations (§2.7), but improvement is still necessary in order not to affect adversely Italian farms' competitiveness.

As observed in the latest European Semester recommendations[177] and in a recent Opinion of the European Court of Auditors[178], the Italian administrative system does not succeed in absorbing effectively EU funds, albeit with great differences among administrative Regions. The sector of agricultural policies is no exception, affecting negatively farms' competitiveness and territorial cohesion, and producing distorting effects among entrepreneurs of different Regions. Nonetheless, much progress is still needed. In the first place, lengthy administrative and bureaucratic procedures and the lack of uniform and/or interoperable IT systems have brought delays in area-related rural development payments in more than one instance. Such delays have been recorded in some Regions more than in others, thus producing disparities among farmers who operate in the same market but different geographical areas. The need for coordination among regions can also be observed in the actions to support investments in rural development programmes: the number of calls for such measures varies greatly among Regions, pointing to an unbalanced national context, rather than to a policy with a territorial target. Finally, a lack of coordination with regional, national and European policies has been recorded: in several instances, this resulted in overlaps of different policies funding similar investments, in noticeable gaps or in contradictory legislation[179]. In the framework of a more general process of digitisation of the public administration, in the attempt to improve its efficiency and effectiveness, action has been taken to improve the quality of the Land Parcel Identification System (LPIS) and to adopt Check-by-Monitoring technologies[180], which can reduce the administrative burden on the beneficiaries; in addition to this, governmental organisations have been participating in EU projects dealing with the uptake of new technologies for the modernisation of CAP administrations, CAP controls and interactions with farmers. Nonetheless, the aforementioned examples show that much progress is still needed for the administrative system to timely meet the needs of the CAP current and potential beneficiaries.

In 2013, fast broadband was scarce in Italy with only 21% of overall households and 0% of rural households covered. Between 2015 and 2017, a fast catch-up dynamic took place and, after a strong slowdown in 2017/2018, recently reassumed[181]. In 2019, nearly 90% of overall households, but only 68% of rural households were covered by fast

broadband[182]. Considerable efforts in rural areas will be needed to meet the EU target of 100% coverage by 2025, while EU 2020 targets[183] will not be met on time. Particular attention will need to be paid to the "last mile" connection between the main infrastructure and the end user as well as to sparsely populated areas not covered by planned investments despite being those most at risk of depopulation[184]. In 2019, the share of people with basic or above basic digital skills was lower in rural areas (below 40%) compared to towns/suburbs (40%) and cities (close to 50%). While this meant that the differences between territories were not as wide as in other MSs, it made Italy one of the MSs with the lowest share, and clearly below the EU average, for all territories[185].



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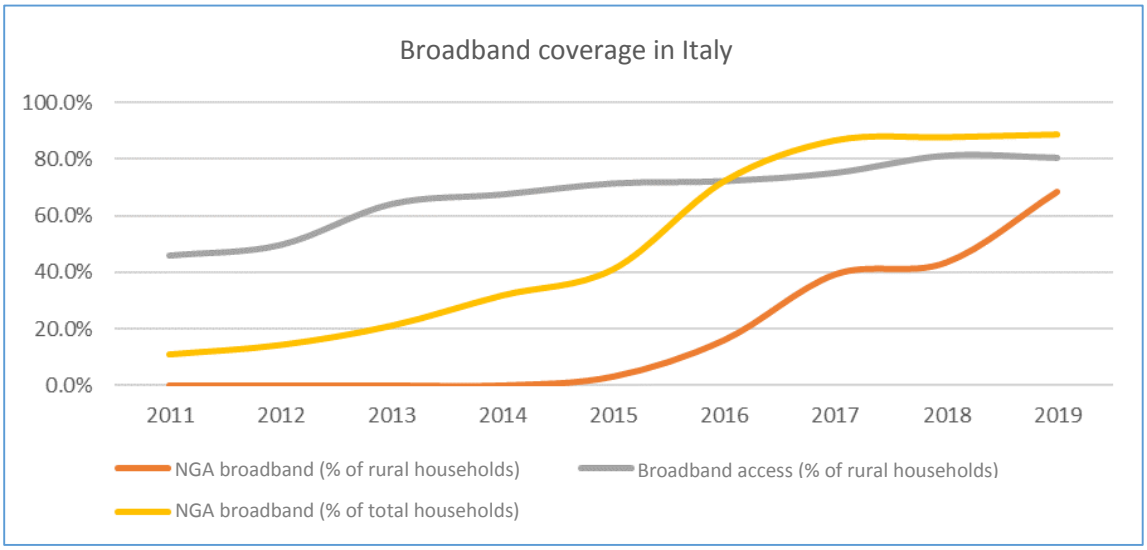
Tipo di dato: Aziende per titolo di studio del conduttore (2013, 2016)



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DESI individual indicators – 1b1 Fast BB (NGA) coverage [desi_1b1_fbbc]

1 European Commission. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on an EU strategy to reduce methane emissions*. COM(2020) 663.

[2] Directorate General for Agriculture and Rural Development. *CAP context indicators C.25 Agricultural factor income and CAP context indicator C.26 Agricultural entrepreneurial income.* Income based on EUROSTAT [aact_eaa04], [aact_ali01] and [aact_eaa06], adding back the compensation of employees to the entrepreneurial income and divided by the total number of annual working units. Note: 2019 data estimated. The Average wage in the economy based on EUROSTAT [nama_10_a10_e] thousand hours worked using employees domestic concept and [nama_10_a10], item wages and salaries. All the latest data for the context indicators is available on the EUROPA website. For more information about the Common Monitoring and Evaluation Framework (CMEF) to assess the performance of the Common Agricultural Policy is available here.

[3] Directorate General for Agriculture and Rural Development own calculations based on FADN (Farm Accountancy Data Network) data.

[4] Directorate General for Agriculture and Rural Development own calculations based on CATS (Clearance of Accounts Trailing System) data (2017).

[5] Directorate General for Agriculture and Rural Development own calculations based on FADN data (up to 2018).

[6] Directorate General for Agriculture and Rural Development own calculations based on FADN data.

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[8] European Commission. *CAP context indicator C.26 Agricultural entrepreneurial income.* Based on EUROSTAT [aact_eaa04] and [aact_ali01].

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[16] Directorate General for Agriculture and Rural Development based on COMEXT.

[17] European Commission. *CAP Impact indicator I.06 Agricultural trade balance.* Based on EUROSTAT – COMEXT database. Data at EU level available on the Agri food trade webpage. Data for Italy available in Analytical factsheet.

[18] See endnote 17.

[19] European Commission. *CAP context indicator C.27 Total factor productivity.* Based on EUROSTAT [aact_eaa05], [aact_eaa04], [aact_ali01], [apro_cpsh1] and [ef_mptenure] and FADN; Osservatori RRN-ISMEA. *Indicatori di competitività – Contesto socio-economico. Investimenti*

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[28] European Commission. *Commission Staff Working Document – Impact Assessment – Initiative to improve the food supply chain (unfair trading practices)*. SWD(2018) 92 final.

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[34] See endnote 24.

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[46] European Commission. *CAP context indicator C.43 Production of renewable energy from agriculture and forestry.* Based on EUROSTAT [nrg_bal_c] and [nrg_cb_rw], and Strategie Grains.

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[69] European Commission. *CAP context indicator C.36 Conservation status of agricultural habitats.* Original source: European Environmental Agency.

[70] European Commission. *CAP context indicator C.34 Natura 2000 areas.* Based on NATURA 2000 Barometer and European Environmental Agency, Corine Land Cover 2018; Trisorio A. e Lauricella P.. *L'Italia e la PAC post 2020 – Policy Brief 6. OS6: Contribuire alla tutela della biodiversità, rafforzare i servizi ecosistemici e preservare gli habitat e il paesaggio*. 2019. pp. 10-13. Study performed for the Rete Rurale Nazionale 2014-2020.

[71] Trisorio A. e Lauricella P.. *L'Italia e la PAC post 2020 – Policy Brief 6. OS6: Contribuire alla tutela della biodiversità, rafforzare i servizi ecosistemici e preservare gli habitat e il paesaggio*. 2019. pp. 17-19. Study performed for the Rete Rurale Nazionale 2014-2020.

[72] European Commission. *CAP context indicator C.33 Farming intensity.* Based on FADN –Agri-environmental indicator "Intensification/Extensification" ; De Leo S. et al. *L'Italia e la PAC post 2020 – Policy Brief 9. OS9: Migliorare la risposta dell'agricoltura dell'UE alle esigenze della societa in materia di alimentazione e salute, compresi alimenti sicuri, nutrienti e sostenibili, sprechi alimentari e benessere degli animali*. 2019. pp. 31-35. Study performed for the Rete Rurale Nazionale 2014-2020.

[73] European Commission. *CAP indicator, 'Biodiversity' dashboard: Share of land under contracts supporting biodiversity and/or landscapes and forests (%)*. August 2020.

[74] Trisorio A. e Lauricella P.. *L'Italia e la PAC post 2020 – Policy Brief 6. OS6: Contribuire alla tutela della biodiversità, rafforzare i servizi ecosistemici e preservare gli habitat e il paesaggio*. 2019. pp. 26-27. Study performed for the Rete Rurale Nazionale 2014-2020; European Commission, DG Agriculture and Rural Development analysis based on Member States' notifications pursuant to Regulation (EU) No 1307/2013.

[75] Member State notifications to the Directorate General for Environment.

[76] EEIG Alliance Environnement. *Impact of the CAP on habitats, landscapes, biodiversity*. Publications Office of the European Union, Luxembourg. 2019. Study performed for the Directorate General for Agriculture and Rural Development (European Commission).

[77] Directorate General for Agriculture and Rural Development own calculations based on EUROSTAT and JRC calculations based on LUCAS data. Linear elements considered: grass margins, shrub margins, single trees bushes, lines of trees, hedges and ditches.

[78] Trisorio A. e Lauricella P.. *L'Italia e la PAC post 2020 – Policy Brief 6. OS6: Contribuire alla tutela della biodiversità, rafforzare i servizi ecosistemici e preservare gli habitat e il paesaggio*. 2019. pp. 23-25, 28-33, 37-40. Study performed for the Rete Rurale Nazionale 2014-2020.

[79] Trisorio A. e Lauricella P.. *L'Italia e la PAC post 2020 – Policy Brief 6. OS6: Contribuire alla tutela della biodiversità, rafforzare i servizi ecosistemici e preservare gli habitat e il paesaggio*. 2019. pp. 44-46. Study performed for the Rete Rurale Nazionale 2014-2020.

[80] EUROSTAT [org_cropar_h1]; De Leo S. et al. *L'Italia e la PAC post 2020 – Policy Brief 9. OS9: Migliorare la risposta dell'agricoltura dell'UE alle esigenze della societa in materia di alimentazione e salute, compresi alimenti sicuri, nutrienti e sostenibili, sprechi alimentari e benessere degli animali*. 2019. pp. 41-42. Study performed for the Rete Rurale Nazionale 2014-2020.

[81] Number of farmers aged below 35 years to number of farmers aged 55 years or older; here expressed in 100 of elderly farmers.

[82] To note that here the ratio is defined as young farmers below 35 years to elderly farmers above 55 years.

[83] No information for age class 35-44 years.

[84] Farms whose household consumes more than 50% of the final production.

[85] European Commission. *CAP context indicator C.23 Age structure of farm managers.* Based on EUROSTAT [ef_m_farmang] For livestock intensity, "farm" means "livestock farm" and there are no data for the age group 35 to 44 years.

[86] European Commission. *CAP context indicator C.24 Agricultural training of farm managers.* Based on EUROSTAT [ef_mp_training] To note that a) data consulted were for EU-28 and not EU-27 and b) there is a discrepancy in the definition of "full" and "basic" training for Italy compared to EU-28 (see methodological fiche).

[87] The financing gap consists of the unmet financing demand from economically viable enterprises operating in the sector. The unmet demand includes lending applied for but not obtained, as well as lending not applied for due to the expectation that the application will be rejected by the financial institution.

[88] fi-compass. *Financial needs in the agriculture and agri-food sectors in Italy*. Study report. 2020. 86 pages. The information on access to land for young farmers is based on CREA. *Indagine sul mercato degli affitti in Italia Rapporto regionale 2017*. 2018 as in fi-compass. *Ibidem*.

[89] Zanetti B. et al. *L'Italia e la PAC post 2020 – Policy Brief 7. OS 7: Attirare i giovani agricoltori e facilitare lo sviluppo imprenditoriale nelle aree rurali*. 2019. pp. 17-21. Study performed for the Rete Rurale Nazionale 2014-2020.

[90] The financing gap calculated for the agri-food sector is independent of the financing gap calculated for the agriculture sector. It follows the same methodology.

[91] See endnote 88. To note that the source indicates that the drivers are "suggested" by the available data.

[92] Dwyer, Janet et al. *Evaluation of the impact of the CAP on generational renewal, local development and jobs in rural areas*. Evaluation for the European Commission by ADE s.a , CCRI and OIR. 2019. p. 65 and p.209 (summary of recommendations of national workshops).

[93] EUROSTAT. [urt_bd_hgn2]. Birth rate refers to the number of enterprise births in the reference period (t) divided by the number of enterprises active in t. Data are available for 16 Member States for 2016.

[94] ISTAT. dataset: *Agriturismo*, tipo dato: *aziende agrituristiche autorizzate*.

[95] European Commission. *CAP context indicator C.03 Territory.* Based on EUROSTAT [reg_area3] and [urt_d3area]. Reference year: 2016.

To note that since 2013 Italy developed a national urban-rural classification, which is often referred to in the Policy Briefs per specific objective constituting the analytical basis for Italy's future CAP strategic plan. This classification defines four types of areas: A) urban and peri-urban areas; B) rural areas with intensive agriculture; C) intermediate rural areas: and D) rural areas with development difficulties. See in particular Amato, A. et al.. *L'Italia e la PAC post 2020 – Policy Brief 8. OS8: Promuovere l'occupazione, la crescita, l'inclusione sociale e lo sviluppo locale nelle aree rurali, comprese la bioeconomia e la silvicoltura sostenibile*. 2019. Annex. Study performed for the Rete Rurale Nazionale 2014-2020. https://www.reterurale.it/PACpost2020/percorsonazionale.

[96] European Commission. *CAP context indicator C.03 Territory.* Based on EUROSTAT [demo_r_d3area] as in European Commission. *CAP context indicators 2014-2020. 3. Territory*. 2018 update. Reference year: 2015.
To note that on the grounds of the national urban-rural classification, the rural areas with development difficulties (type D) basically cover the whole Alpine and Appenino arc as well as large parts of Sicilia and Sardegna. See Amato, A. et al.. *Ibidem*. Figure 3 at endnote 95.

[97] European Commission. *CAP context indicator C.01 Population.* Based on EUROSTAT [urt_gind3]. Reference year: 2019.

[98] European Commission. *CAP context indicator C.02 Age structure.* Based on EUROSTAT [urt_pjanaggr3]. Reference year: 2019.

[99] See endnote 97. Reference year: 2015-2019.

[100] Please note that there are different ways to define "rural areas". The text above is based on the so-called "urban-rural typology" in line with the CAP common context indicators. However, according to the definition based on the "degree of urbanisation typology", in Italy 61% of the territory are rural areas and 18% of the population lives in rural areas. Source: Eurostat. [code to be added].

[101] Between 2008 and 2018 only the population of Type D rural areas decreased by 2.2%, while it increased in all other types of areas. See Amato, A. et al.. *Ibidem*. Figure 13 at endnote 95.

[102] Compared to 2008, Type D rural areas of all Italian regions experience a lower or even a negative migration saldo in 2018. See Amato, A. et al.. *Ibidem*. Tables 7 and 8 at endnote 955. Depopulation trends in Italian rural areas, especially in the South, are also confirmed by the 2020 Country Specific Recommendations to Italy and the 2020 Italy Country Report issued in the context of the European Semester exercise.

[103] European Commission. *Commission Staff Working Document – Additional figures, maps and tables on the key aspects of demographic change and its impact. Accompanying the report on the impact of demographic change*. SWD(2020) 241 final. Map 2: Old-age dependency ratio by region. 2019.

[104] Copus, A. et al.. *ESCAPE European Shrinking Rural Areas: Challenges, Actions and Perspectives for Territorial Governance*. Interim Report. Espon Escape project. Map 5: Future demographic trends 2017-2032 in shrinking intermediate and rural regions.

[105] See endnote 103. Figures 40 and 41: Proportion of population born in another EU Member State and proportion of population born outside the EU as share of population aged 15 years or over by degree of urbanisation. 2019.

[106] 15-64 years.

[107] European Commission. *CAP context indicator C.05 Employment rate.* Based on EUROSTAT [lfst_r_ergau]. Reference year: 2005-2019.

[108] In 2018, the rural employment rate was below 45% in Calabria, Campania, Puglia and Sicilia, while it was 75% in the Provincia Autonoma di Bolzano/Bozen. See Amato, A. et al.. *Ibidem*. Table 11 at endnote 95. To note that it is based on ISTAT data classified according to NUTS urban-rural definition per Italian region and covering 15-64 years old.

[109] See endnote 107. Reference year: 2005-2019.

[110] 20-64 years.

[111] EUROSTAT. [lfst_r_erednu]. Reference year: 2018.

[112] European Commission. *CAP context indicator C.13 Employment by economic activity.* Based on EUROSTAT [lfst_r_lfe2en2]. Reference year: 2010-2017.

[113] European Commission. *CAP context indicator C.11 Structure of the employment.* Based on EUROSTAT [nama_10r_3empers]. Reference year: 2016.

[114] European Commission. *CAP context indicator C.22 Farm labour force.* Based on EUROSTAT [ef_lf_main]. Reference year: 2013 and 2016. In annual working units.

[115] Despite the national Law No 199 and the recent national plan (*Piano triennale 2020-2022*) against irregular work in agriculture.

[116] Italy, Ministry of Labour and of Social Policies. *Piano triennale di contrasto allo sfruttamento lavorativo in agricoltura e al caporalato 2020-2022*. 2020. The seriousness of the phenomenon in Italy is also highlighted in the Commission 2020 Country Specific Recommendations to Italy and the 2020 Italy Country Report issued in the context of the European Semester exercise.

[117] Franić, R. and Kovačićek. T. *The professional status of rural women in the EU*. Study for the European Parliament. 2019. Figure 17 : Proportion of farm managers who are women. 2016. Based on Eurostat. https://www.europarl.europa.eu/RegData/etudes/STUD/2019/608868/IPOL_STU(2019)608868_EN.pdf

[118] Defined in terms of economic output ("standard output" or "SO"). The two classes are respectively farms with "< 2000 EUR of SO" and "< 8000 EUR of SO".

[119] EUROSTAT. [ef_m_farmleg]. Reference year: 2016.

[120] 20-64 years.

[121] In 2019, it was 0.3 pp less in rural areas than in total. European Commission. *CAP context indicator C.07 Unemployment rate.* Based on EUROSTAT [lfst_r_urgau]. Reference year: 2013-2019.

[122] See endnote 121. Reference year: 2019.

[123]See endnote 121121. Reference year: 2013-2019 and 2019.

[124] Eurostat. [edat_lfse_29]. Reference year: 2010-2018. Statement that all shares are under 20% is true also for 2019.

[125] See endnote 124. Reference year: 2015-2019.

[126] Eurostat. [edat_lfse_30]. Reference year: 2010-2019.

[127] Eurostat. [edat_lfs_9913]. Reference year: 2009-2018.

[128] European Commission. *CAP context indicator C.08 GDP per capita.* Based on EUROSTAT [urt_10r_3gdp]. Purchasing power standard (PPS, EU27 from 2020), per inhabitant in percentage of the EU27 (from 2020) average. Reference year: 2005-2016.

[129] European Commission. *CAP context indicator C.10 Structure of the economy.* Based on EUROSTAT [urt_10r_3gva]. Reference year: 2010-2016. For the sectoral breakdown data exist until 2019; they are in line with the sentence.

[130] European Commission. *CAP context indicator C.30 Tourism infrastructure.* Based on EUROSTAT [tour_cap_natd]. Reference year: 2012-2017/8.

[131] 2005-2008.

[132] European Commission. *CAP context indicator C.09 Poverty rate (People at risk of poverty or social exclusion).* Based on EUROSTAT [ilc_peps13]. Reference year: 2005-2018.

[133] Natale, F., Kalantaryan, S., Scipioni, M., Alessandrini, A. and Pasa, A. *Migration in EU Rural Areas*. EUR 29779 EN. Publications Office of the European Union, Luxembourg. 2019. ISBN 978-92-76-08600-0 (online), doi:10.2760/544298 (online), JRC116919. Figure 1.9 Comparison of the risk of poverty indicators between and natives and migrants in rural areas, by country (2017).

[134] EUROSTAT. [ilc_di17]. Reference year: 2012-2018 in Euro.

[135] See endnote 103. Figure 37: Median equivalised net income, 2018 (Purchasing power standard (PPS), by degree of urbanisation).

[136] Italy, Presidency of the Council of Ministers – Department for Cohesion Policies. *Accordo di Partenariato 2014-2020. Italia. Sezione 1A*. 2017. p. 105.

[137] European Commission. *Commission Staff Working Document. Country Report Italy 2020*. SWD(2020) 511 final. p. 43.

[138] See endnote 95.

[139] Food and Agriculture Organization (FAO). *FAO 2020 Global Forest Resources Assessment*.

[140] The indicator *C.13 Employment by economic activity* shows a constant share of forestry in employment of 0.2% in 2010-2017. See endnote 112.

[141] Similarly, the indicator *indicator C.15 Labour productivity in forestry* shows an increase between 2012 and 2018 of 13% in Italy (11% for EU-27). European Commission. *CAP context indicator C.15 Labour productivity in forestry.* Based on EUROSTAT [for_eco_cp] and [for_awu].

[142] European Commission. *Forests, forestry and logging*. Eurostat statistics explained. Table 3: Economic indicators for forestry and logging, 2005 and 2017 (current basic prices), Figure 1: Output of forestry and logging by type, 2017 (million EUR, current basic prices) and Table 4: Employment and apparent labour productivity in forestry and logging, 2005 and 2017.

[143] Roughly 1 300 000 000 m3 over bark of growing stock in forests available for wood supply.

[144] Roughly 32 500 000 m3 over bark in forests available for wood supply. The net annual increment is the average growth in volume of the stock of living trees available at the start of the year minus the average natural mortality of this stock.

[145] See endnote 142. Table 2: Timber resources.

[146] European Commission. *Jobs and Wealth in the European Union Bioeconomy*. Knowledge centres and data portals. Results from a collaboration between the JRC and the nova-Institute. https://datam.jrc.ec.europa.eu/datam/mashup/BIOECONOMICS/index.html To note that data on turnover are no longer available.

[147] European Medicines Agency, European Surveillance of Veterinary Antimicrobial consumption (ESVAC). *Sales of veterinary antimicrobial agents in 31 countries in 2018 – trends from 2010 to 2018 Tenth ESVAC Report.* EMA/24309/2020.

[148] Directorate General for Health and Food Safety (European Commission). *Final report of a fact-finding mission carried out in Italy from 08 November 2018 to 16 November 2018 in order to gather information on the prudent use of antimicrobials in animals*. 2019. DG(SANTE) 2018-6371.

[149] Directorate General for Health and Food Safety (European Commission). *Letter from Commissioner Kyriakides to Italy regarding the Farm to Fork (F2F) Strategy on Sustainable Food Systems*. 2020. Ares(2020)2643693.
Directorate General for Health and Food Safety (European Commission). *Final report of an audit carried out in Italy from 13 November 2017 to 17 November 2017 in order to evaluate Member State activities to prevent tail-biting and avoid routine tail-docking of pigs*. 2017. DG(SANTE) 2017-6257.

[150] Directorate General for Agriculture and Rural Development (European Commission). Market dashboard on eggs. 2020.

[151] Directorate General for Health and Food Safety (European Commission). *Letter from Commissioner Kyriakides to Italy regarding the Farm to Fork (F2F) Strategy on Sustainable Food Systems*. 2020. Ares(2020)2643693; Directorate General for Health and Food Safety (European Commission). *Final report of an audit carried out in Italy from 13 November 2017 to 17 November 2017 in order to evaluate Member State activities to prevent tail-biting and avoid routine tail-docking of pigs*. 2017. DG(SANTE) 2017-6257.

[152] Istituto Superiore per la protezione e la ricerca ambientale (ISPRA). *Indicatori di rischio armonizzato*.

[153] EUROSTAT, [aei_fm_salpest09] and [apro_cpsh1].

[154] Directorate General for Health and Food Safety (European Commission). *Final report of a fact-finding mission carried out in Italy from 03 to 11 May 2017 in order to evaluate the implementation of measures to achieve the sustainable use of pesticides*. DG(SANTE) 2017-6006; Directorate General for Health and Food Safety (European Commission). *Letter from Commissioner Kyriakides to Italy regarding the Farm to Fork (F2F) Strategy on Sustainable Food Systems*. 2020. Ares(2020)2643693.

[155] De Leo S. et al. *L'Italia e la PAC post 2020 – Policy Brief 9. OS9: Migliorare la risposta dell'agricoltura dell'UE alle esigenze della societa in materia di alimentazione e salute, compresi alimenti sicuri, nutrienti e sostenibili, sprechi alimentari e benessere degli animali*. 2019. pp. 31-35. Study performed for the Rete Rurale Nazionale 2014-2020.

[156] EUROSTAT, [hlth_ehis_fv1e].

[157] Defined as beef, lamb and pork, 123.53 g/per capita/d, net of waste in the EU 2010, GBD study 2017 and M. Springmann.

[158] De Leo S. et al. *L'Italia e la PAC post 2020 – Policy Brief 9. OS9: Migliorare la risposta dell'agricoltura dell'UE alle esigenze della societa in materia di alimentazione e salute, compresi alimenti sicuri, nutrienti e sostenibili, sprechi alimentari e benessere degli animali*. 2019. pp. 31-35. Study performed for the Rete Rurale Nazionale 2014-2020.

[159] Trisorio A. e Lauricella P.. *L'Italia e la PAC post 2020 – Policy Brief 6. OS6: Contribuire alla tutela della biodiversità, rafforzare i servizi ecosistemici e preservare gli habitat e il paesaggio*. 2019. Appendice, pp. 47-50. Study performed for the Rete Rurale Nazionale 2014-2020.

[160] EU SCAR AKIS. *Preparing for future AKIS in Europe*. 2019.

[161] De Leo S. et al. *L'Italia e la PAC post 2020 – Policy Brief. OS: Promuovere e condividere conoscenze, innovazione e processi di digitalizzazione nell'agricolture e nelle aree rurali promuovendone l'utilizzo*, 2019. Study performed for the Rete Rurale Nazionale 2014-2020.

[162] De Leo S. et al. *L'Italia e la PAC post 2020 – Policy Brief. OS: Promuovere e condividere conoscenze, innovazione e processi di digitalizzazione nell'agricolture e nelle aree rurali promuovendone l'utilizzo*. 2019. Study performed for the Rete Rurale Nazionale 2014-2020.

[163] Some examples are found on Innovarurale, *InnovaInAzione – Notizie ed Eventi*.

[164] Member State notifications to the Directorate General for Agriculture and Rural Development.
Innovarurale. *PEI-AGRI. Il contatore dei GO*. consulted in August 2020.

[165] Member State notifications to the Directorate General for Agriculture and Rural Development. August 2020.

[166] Member State notifications to the Directorate General for Agriculture and Rural Development. August 2020.

[167] Testo coordinato del Decreto-legge 13 agosto 2011, n. 138 (in Gazzetta Ufficiale - serie generale - n. 188 del 13 agosto 2011), art. 3 (5); Decreto del Presidente della Repubblica 7 agosto 2012 n.137, art. 7; Consiglio dell'Ordine Nazionale dei dottori Agronomi e dei Dottori Forestali, *Regolamento CONAF 3/2013*; Consiglio del Collegio Nazionale dei Periti Agrari e dei Periti Agrari Laureati, *Regolamento della Formazione Continua del Perito Agrario e del Perito Agrario Laureato*.

[168] Measure 2 of Rural Development Programmes in the programming period 2014-2020 is dedicated to helping farmers benefit from advisory services (2.1), to the setting up of farm management, farm relief & farm advisory services as well as forestry advisory services (2.2) and to the training of advisors (2.3).

[169] Member State notifications to the Directorate General for Agriculture and Rural Development, August 2020.

[170] European Commission. *CAP Indicator - Data explorer: CAP Output indicator OIR_14 Number of advisors trained*.

[171] Some examples can be found in CONAF. *Sistema Informativo dei Dottori Agronomi e dei Dottori Forestali. Visualizzazione eventi formativi del Catalogo CONAF*. 2020.

[172] As EU level evaluations highlighted (evaluation on water and evaluation on habitats, landscape and biodiversity), the uptake of environmental practices and farmers' awareness on climate change and environment is strongly dependent on targeted training and advice on such themes, which may be missing in the Italian context. Furthermore, flows of knowledge and innovation at any AKIS level foster the uptake of new technologies and digital innovations, which are crucial for Italian farms to be competitive in the European landscape.

[173] The farm economic size is defined on the basis of the total farm's standard output. More details are found in ISTAT. *6° Censimento Generale dell'Agricoltura. Caratteristiche tipologiche delle aziende agricole*. 2013.

[174] ISTAT, *Dataset: Struttura delle aziende agricole. Tipo di dato: Aziende per titolo di studio del conduttore*.

[175] Measure 1 of Rural Development Programmes in the programming period 2014-2020 is dedicated to knowledge transfer and information actions. In particular, it supports vocational training & skills acquisition actions (1.1), demonstration activities & information actions (1.2) and short-term farm and forest management exchange as well as farm and forest visits (1.3).

[176] See endnote 174.

[177] European Commission. *Commission Staff Working Document. Country Report Italy 2020*. SWD(2020) 511 final. p. 53; European Commission. *Recommendation for a Council Recommendation on the 2020 National Reform Programme of Italy and delivering a Council opinion on the 2020 Stability Programme of Italy*. COM(2020) 512 final. p. 9.

[178] European Court of Auditors. *Opinion No. 6/2020 concerning the proposal for a regulation of the European Parliament and of the Council establishing a Recovery and Resilience Facility*. OJ C 350/01. 20-10-2020. p. 20.

[179] Such issues were already highlighted by ECA with regard to investments for infrastructures in rural areas during the programming period 2007-2013 (European Court of Auditors. Special Report. Eu support for rural infrastructure: potential to achieve significatnly greater value for money. 2016. Luxembourg: Publications Office of the European Union).
Over the course of the programming period 2014-2020, external evaluators still observed similar cases. As an example, the evaluation report of the RDP Lazio mentions that operations 4.1.3 and 4.2.2, incentivising investments meant to improve energy efficiency, did not attract as many beneficiaries as expected, most likely because of an overlap with other policies (COGEA Consulenti per la Gestione Aziendale. *Servizio di valutazione indipendente del Programma di Sviluppo Rurale 2014-2020 del Lazio. Rapporto Annuale di Valutazione*. 2020. p. 74). One of the evaluation reports of the RDP Lombardia, instead, highlights a low level of participation in measures incentivising renewable energies, due to two reasons: the absence of tariff concessions in the framework of a more general national energy strategy and a legislative gap with regard to the production and distribution of biomethane by livestock farms (Agriconsulting. *Servizio di Valutazione del Programma di Sviluppo Rurale 2014-2020 di Regione Lombardia a valere sul Fondo Europeo Agricolo per lo Sviluppo Rurale (FEASR). Relazione Annuale di Valutazione al 2017*. 2018. p. 12).

[180] European Court of Auditors. *Special Report 04/2020. Using new imaging technologies to monitor the Common Agricultural Policy: steady progress overall, but slower for climate and environment monitoring*. 2020.

[181] European Commission. *Digital Economy and Society Index.* DESI individual indicators – 1b1 Fast BB (NGA) coverage [desi_1b1_fbbc].

[182] European Commission. *Digital Economy and Society Index. DESI individual indicators – 1b1 Fast BB (NGA) coverage.*

[183] European Commission. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions. Connectivity for a competitive Digital Single Market – Towards a European Gigabit Society*. COM(2016) 587 final.

[184] Italy, Presidency of the Council of Ministers. *Strategia italiana per la banda ultralarga. Piano di investimenti per la diffusione della banda ultralarga*. 2015. The Italian rural-urban digital divide and the consequent poor access to basic services in rural areas leading to depopulation are also highlighted in the Commission 2020 Country Specific Recommendations to Italy and the 2020 Country Report issued in the context of the European Semester exercise.

[185] EUROSTAT, [isoc_sk_dskl_i].