

Brussels, 18.12.2020
SWD(2020) 369 final

COMMISSION STAFF WORKING DOCUMENT

Commission recommendations for Bulgaria's CAP strategic plan

Accompanying the document

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND 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) 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} -
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{SWD(2020) 393 final} - {SWD(2020) 394 final} - {SWD(2020) 395 final} -
{SWD(2020) 396 final} - {SWD(2020) 397 final} - {SWD(2020) 398 final}

Contents

1. COMMISSION RECOMMENDATIONS FOR BULGARIA'S CAP STRATEGIC PLAN	2
1.1 Foster a smart, resilient and diversified agricultural sector ensuring food security.....	2
1.2 Bolster environmental care and climate action and contribute to the environmental- and climate-related objectives of the Union.....	3
1.3 Strengthen the socio-economic fabric of rural areas and address societal concerns	4
1.4 Modernising the sector by fostering and sharing of knowledge, innovation and digitalisation, and encouraging their uptake.....	5
1.5 Recommendations	6
2. ANALYSIS OF AGRICULTURE AND RURAL DEVELOPMENT IN BULGARIA	9
2.1 Support viable farm income and resilience across the EU territory to enhance food security	9
2.2 Enhance market orientation and increase competitiveness including greater focus on research, technology and digitalisation.....	10
2.3 Improve farmers' position in the value chain.....	12
2.4 Contribute to climate change mitigation and adaptation, as well as sustainable energy	14
2.5 Foster sustainable development and efficient management of natural resources such as water, soil and air.....	16
2.6 Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes	18
2.7 Attract young farmers and facilitate business development in rural areas	21
2.8 Promote employment, growth, social inclusion and local development in rural areas, including bio-economy and sustainable forestry	22
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.....	23
2.10 Cross-cutting objective on knowledge, innovation and digitalisation	25

1. COMMISSION RECOMMENDATIONS FOR BULGARIA'S CAP STRATEGIC PLAN

In the framework of the structured dialogue for the preparation of the common agricultural policy (CAP) strategic plan, this document contains the recommendations for the CAP strategic plan of Bulgaria. The recommendations are based on analysis of the state of play, the needs and the priorities for agriculture and rural areas in Bulgaria. 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 Bulgaria, in its CAP Strategic Plan, to set explicit national values for the Green Deal targets¹, taking into account its specific situation and these recommendations.

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

The shift to a sustainable food system presents both important economic opportunities as well as challenges for Bulgarian farmers. Analysis of changes in the organisational structure of Bulgaria's agricultural sector in the recent years shows positive trends such as increasing farm size, increasing levels of specialisation and concentration of production and improved market orientation. Nevertheless, the structure of the sector continues to be characterised by the predominance of micro and small farms with low income (mostly in the dairy, meat, fruit and vegetables sectors) and a limited number of big farms with much higher income levels (mostly in the cereals sector).

Agricultural income is on average close to the income in other economic sectors. However, variation between the small and large income classes in agriculture is substantial and the dependence of agricultural income on direct payment and payments for areas with natural constraints payments is significant. To support agricultural income more efficiently, Bulgaria should continue improving the effectiveness of the direct payments and other income support tools. This can be achieved in particular through better targeting of farms with higher income support needs and of territorial differences.

Despite its increase, the average economic size of farms in Bulgaria is lower than the EU average. There are significant differences in the economic potential of specialised farms, with a clear advantage for those specialising in arable crops, pigs and poultry production. The average net income is increasing but is still lower than in many EU Member States. This is due to the predominance of low value added production, lower productivity, extensive farming and lower efficiency. In addition, in Bulgaria labour productivity in agriculture is about half of the EU's.

Bulgarian agriculture faces problems of low profitability, most notably in cost-intensive sectors (e.g. livestock and fruit and vegetables production), where production is shrinking. The marketing of agricultural products is below the EU average due to a large number of small semi-subsistence farms with difficulties in accessing markets and a low level of organisation. The agricultural sector holds a significant place in the country's overall trade balance, representing almost one fifth of exports in 2017, although unprocessed products with low value added still dominate exports. Bulgaria demonstrates

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.

high export potential for rose and lavender oil, honey, pig meat and poultry. Significant potential lies also in the use of quality schemes and organic farming, as a path to generate more value added. However, the very weak cooperation among stakeholders in the organic farming sector is a clear obstacle to the development of niche products.

The agri-food value chain shows a certain inefficiency and tends to favour processors and traders. The main reasons for this are the low level of organisation of farmers, limited vertical integration with the processing sector and the unused potential for developing short supply chains.

Some sectors of the food industry have become dependent on import of raw materials, most notably of milk, meat and fruit and vegetables. This trend may also lead to loss of external markets due to Bulgarian primary production's lack of a comparative advantage.

The agricultural sector faces significant human resources challenges. 62% of the work force left the sector between 2005 and 2017. The vast majority of farm managers have low qualification and lack specialised education.

Despite the challenges, there is a clear potential for development.

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

Bulgarian agriculture's performance on sustainable management of natural resources and climate change mitigation has been uneven. Bulgaria reduced green house gas (GHG) emissions compared to 1990, although the most recent years and medium-term projections show an upward trend. The increase has been driven by agricultural soils, which are also a prevailing source of non-CO₂ agricultural emissions. However, Bulgaria remains an EU country with a relatively low emission intensity of production, apart from in the area of manure management.

At the same time, Bulgaria is experiencing a decrease in net GHG removals in LULUCF sectors, mainly due to the changing structure of forests. While the share of areas of grassland in agricultural land remained stable, GHG removals from grasslands decreased significantly in the last decade. Carbon stocks could be enhanced, based where appropriate on carbon farming approaches, through: (i) improved forest management; (ii) support to sustainable production and use of biomass in the bio-economy; (iii) catch and cover crops; or (iv) the conversion of arable land to grassland.

Energy use in agriculture/forestry remains much lower than the EU average. While the production of renewable energy showed a strong increase and per unit production from vegetal sources exceeds the EU average, the possibilities for sustainable renewable energy production from anaerobic sources could still be used more efficiently.

Bulgaria is one of the EU's most hail prone countries. Like in other countries in the southern regions of the EU, increasing heatwaves and lower precipitation due to climate change make Bulgarian agriculture vulnerable to higher yield variability and heat-induced stress for animals, though there are also some opportunities linked to increased productivity or new crops.

Despite the high proportion of Bulgarian territory being part of the Natura 2000 network (over 34%), nearly 20% of which is agricultural land and over 50% is forest, the share of land under contracts supporting biodiversity and/or landscape and forests is lower than the average EU level. The state of farmland biodiversity requires urgent attention as

exemplified by the worsening status of farmland birds¹, while intensive agricultural practices are identified as one of the greatest pressures on protected habitats and species.

Bulgaria is also one of the Member States with the highest loss of land with high nature value (HNV) due to intensification of farming. Addressing these challenges will require fostering sustainable farming practices to reduce pressures on farmland biodiversity combined with habitat management measures for wild pollinators, farmland birds, and the Turtle dove in accordance with the Prioritised Action Framework.

Despite recent improvements, the share of land dedicated to organic farming is much lower than the EU-27 level and the opportunities provided by this type of farming, including in terms of positive benefits to biodiversity, are still to be explored.

Compared to EU levels, agriculture in Bulgaria accounts for a relatively lower share of the country's ammonia emissions to air, although these emissions have increased in the last couple of years.

In terms of soil quality, Bulgaria is in the category of EU Member States with lower content of organic matter. Its soils are deficient in phosphorus, and would benefit from a rebalancing fertilisation practices. Rebalancing would also benefit climate and air quality. The country has relatively abundant freshwater resources but all river basin districts face water quantity related problems. Prioritising practices that specifically address soil and local water quantity challenges will be important in the successful green transition of Bulgarian agriculture. This would strengthen the ongoing transformation to more organic production, thus contributing to the reduction of pesticides and nutrients and increasing production of bioenergy.

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

Rural areas represent about 22% of the territory of Bulgaria, while intermediate areas cover 77%. Many rural areas face the twin challenges of rapid population decline and low GDP per capita. The GDP per capita in predominantly rural areas is the lowest in the EU and the country remains the EU Member State with the highest risk of rural poverty and social exclusion. At the same time, ensuring the protection of agricultural workers, especially precarious, seasonal and undeclared workers, 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.

Limited employment opportunities and lower quality of life are key factors for the depopulation of rural areas. Infrastructure and services (e.g. water supply and sewage, schools, etc.) are often limited and of poor quality². Although the percentage of young farmers in Bulgaria is above the EU average, it is evident that attracting them to the profession is hindered by numerous factors such as difficult working conditions due to low technological development of the sector, insufficient own capital for investing in innovation and modernisation of farms, and difficult access to credit.

Despite the positive effects of support provided under the two pillars of the CAP, young farmers face difficulties in preparing bank loan applications, project proposals and business plans. The capacity of the national agriculture advisory service (NAAS) to provide easily accessible and competent advisory/consulting services is not always sufficient.

The low level of training and education is one of the most acute issues in rural areas. The number of young people not in employment, education or training in rural areas is still significantly higher than the national average (26% vs 15% in 2018). The rate of farm managers below 35 years with at least basic training is one of the lowest in the EU and only 4% of agricultural producers have specialised education and/or training in agriculture. The lack of next generation access (NGA) broadband connection and the limited availability of broadband connection additionally hinder access to training and support.

A positive tendency is the increasing demand for, and orientation towards environmentally friendly agricultural practices. The existing laws in this field can be strengthened and measures for sustainable use of pesticides can be improved. Improvements are needed also on the sales of antimicrobials where Bulgaria is above the EU average, on farm biosecurity management and farm registration and animal identification in view of the presence of African Swine Fever. Improvements are also needed on animal welfare.

Data on sales of pesticides show that candidates for substitution comprised a relatively high and stable proportion of total pesticide sales in Bulgaria in the 2015-2017 period. This indicates that Bulgaria is not on target to meet the Farm to Fork target of a 50% reduction in the use of the more hazardous pesticides by 2030.

Bulgaria should also make an effort to shift towards healthier diets as it has a very high prevalence of non-communicable diseases due to dietary risk factors.

1.4 Modernising the sector by fostering and sharing of knowledge, innovation and digitalisation, and encouraging their uptake

A well-functioning agricultural knowledge and innovation system (AKIS) should deliver a conducive environment to respond to the growing information needs of farmers. This can lead to quicker innovation and better valorisation of existing knowledge to achieve the CAP objectives.

Currently, the fragmentation of the Bulgarian AKIS and the lack of strategic coordination among its components detracts from the flow of knowledge and innovation. The number of institutes and organisations is high, but activities are hard to trace and their quality is unclear. Cooperation and links with support provided by other structural funds (e.g. ERDF-financed centres of competence and excellence or the new state agency for research and innovation) should be ensured in order to have a better added value for the Bulgarian economy.

The planned rural development programme budget for knowledge exchange, training, advice and innovation for the current period (2014-2020) is quite limited and spending seems difficult. No European innovation partnership operational groups have been reported yet. Moreover, considering the relatively low level of education and professional training of Bulgarian farmers, the lack of innovation support services and insufficient capacity in the national advisory service, the Bulgarian AKIS's shortcomings may limit the ability to transition towards a greener and more digital agriculture, as intended by the Farm to Fork Strategy.

It is essential to improve links between public and private advisors and to invest in their training and skills. Advisors should be supported to help capture individual grass roots innovative ideas and to develop them by setting up and implementing EIP operational

group projects. Such “innovation support services” will become obligatory for Member States post 2020³.

A stronger AKIS could also support an increase in the digitalisation of Bulgarian farms and rural areas, which are now lagging behind other Member States and the non-rural areas of the country. The availability of a flawless broadband coverage will be crucial to enhance the uptake of digital technologies and to improve the digital skills of Bulgaria’s rural population.

1.5 Recommendations

To address the above interconnected economic, environmental/climate and social challenges, the Commission considers that the Bulgarian CAP strategic plan needs to focus its priorities and concentrate its interventions on the following points:

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

- **Improving the viability and profitability of the sector** by supporting optimisation of farm structure, development of sectors such as vegetables, orchards and herbivores, and investments in modernisation of production.
- **Enhancing the competitiveness and market orientation of the sector**, notably by supporting higher availability and uptake of technology, innovation, marketing initiatives, professional training of farmers and increased use of risk management instruments.
- **Improving the viability of smaller and medium-sized farms with higher development potential**, through a more effective targeting of income support, with the application, for example, of the complementary redistributive income support for sustainability and the reduction of payments.
- **Improving the position of farmers in the food supply chain.** Recommended approaches include: supporting the processing and marketing of agricultural products with high added value (for example under EU and national quality schemes); and enhancing the position of the farmer by stimulating knowledge exchange and encouraging various forms of cooperation, in particular between organic farmers.

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

- **Addressing the increasing trends of non-CO2 greenhouse gas emissions and ammonia from soils, notably brought about by increased fertilisation.** To this end, Bulgaria should improve soil organic matter and preserve soil fertility by encouraging longer and more diverse crop rotations, appropriate soil cover, better management of residues, more balanced and efficient nutrient management, and alternative measures to address the remaining cases of open burning of agricultural residues. Bulgaria should consider combining these measures with more ambitious soil management techniques to reverse soil erosion in the regions most affected by this problem.

- **Reducing air pollution and non-CO2 greenhouse gas emissions by improving manure management** (application, storage) and by using manure for the sustainable production of biogas, in line with the EU Methane Strategy.
- **Improving farm and forest sectors' adaptability to climate change** by supporting farm/drought resilience plans; water savings through crop adaptation, environmentally sound water reuse, and efficient irrigation systems in regions depending on irrigation; valorising/increasing presence of landscape features such as trees that allow protection against hail or other extreme weather events.
- **Contributing to the EU Green Deal target on high-diversity farm landscape features** by supporting suitable farming practices, including the creation and maintenance of landscape features on agricultural land and increasing support to maintain and enhance High Nature Value farmland. These efforts should also support the restoration and maintenance of protected habitats and species including those identified in the prioritized action framework (PAF) for CAP funding.
- **Fostering a sustainable management of forestry land and afforestation, enhancing multi-functionality, forest protection and restoration of forests ecosystems** to reach good condition of habitats and species linked to the forests and to build resilience to threats such as climate change impacts. To this end, forest management strategies that maximise species, genetic and structural diversity should be promoted.
- **Contributing to the EU Green Deal target on organic farming** by supporting conversion to and maintenance of organic farming, for the benefit of wildlife and ecosystems (as well as potential economic gains).

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

- **Creating employment opportunities and improving conditions for business development in rural areas** through targeted investments in bio-economy, forestry, increased NGA broadband coverage and improved access to finance for new entrants and young farmers.
- **Reducing poverty, depopulation and social exclusion in rural areas** by continuing to support strategic longer-term investments in infrastructure (e.g. rural roads and sewage systems) and in services (related to medical provision, education and leisure). All such support should take into account the dynamically changing situation in those areas and possible synergies with other EU and national funds.
- **Contributing to the achievement of the EU Green Deal target on sales of antimicrobials** by putting in place sizeable efforts to significantly reduce use of antimicrobials in livestock farming, considering that sales in Bulgaria are above the EU average, by using all available tools, including instruments under the CAP, to support farmers by e.g. promoting best practices on reduced and prudent use of antimicrobials, together with improved livestock management, biosecurity, infection prevention and control.

- Substantially improving **farm biosecurity and animal welfare** by supporting improved livestock management practices, especially for pigs, and by promoting best practices for improved animal husbandry, infection prevention and control.
- **Contributing to the EU Green Deal targets on pesticides** by strengthening the efforts to decrease the quantities and risks of the most hazardous used pesticides and by promoting the sustainable use of pesticides, in particular by ensuring the uptake of integrated pest management practices.

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 100% fast broadband connection coverage in rural areas**, while accelerating the development of digital and knowledge skills in rural areas and agriculture. Synergies with available funding from other EU and national funds should be ensured when addressing this recommendation.
- **Tackling fragmentation of the Agricultural Knowledge and Innovation System** by using interventions aimed at strengthening advisory services and interlinking them, including with the other AKIS components, encouraging knowledge-building and knowledge exchange, investing in innovation support services and the training of advisors and farmers. This would increase the uptake of sustainable farming practices, the level of digitalisation and the co-creation of innovations which can foster environmental sustainability and competitiveness of the agricultural sector.

2. ANALYSIS OF AGRICULTURE AND RURAL DEVELOPMENT IN BULGARIA

Bulgarian agricultural sector represents around 3% of the GDP and employs about 183 000 people, corresponding to 5.7% of the total employment in the country. The agriculture sector holds a significant place in the country's economy in terms of GDP and employment and contributes positively to the trade balance.

Since 1990, the sector is in transition and faces major challenges such as outflow of work force, decreased profitability of production, insufficient modernisation and innovation and lack of adequate knowledge and training of farmers.

Rural areas represent 22% of the territory of Bulgaria and are home to 13% of the population⁴. Compared to urban areas, they are characterised by higher poverty and population decline. Other challenges include ageing population and lower economic activity, accompanied by poor quality of basic services and outdated public infrastructure, social and cultural facilities.

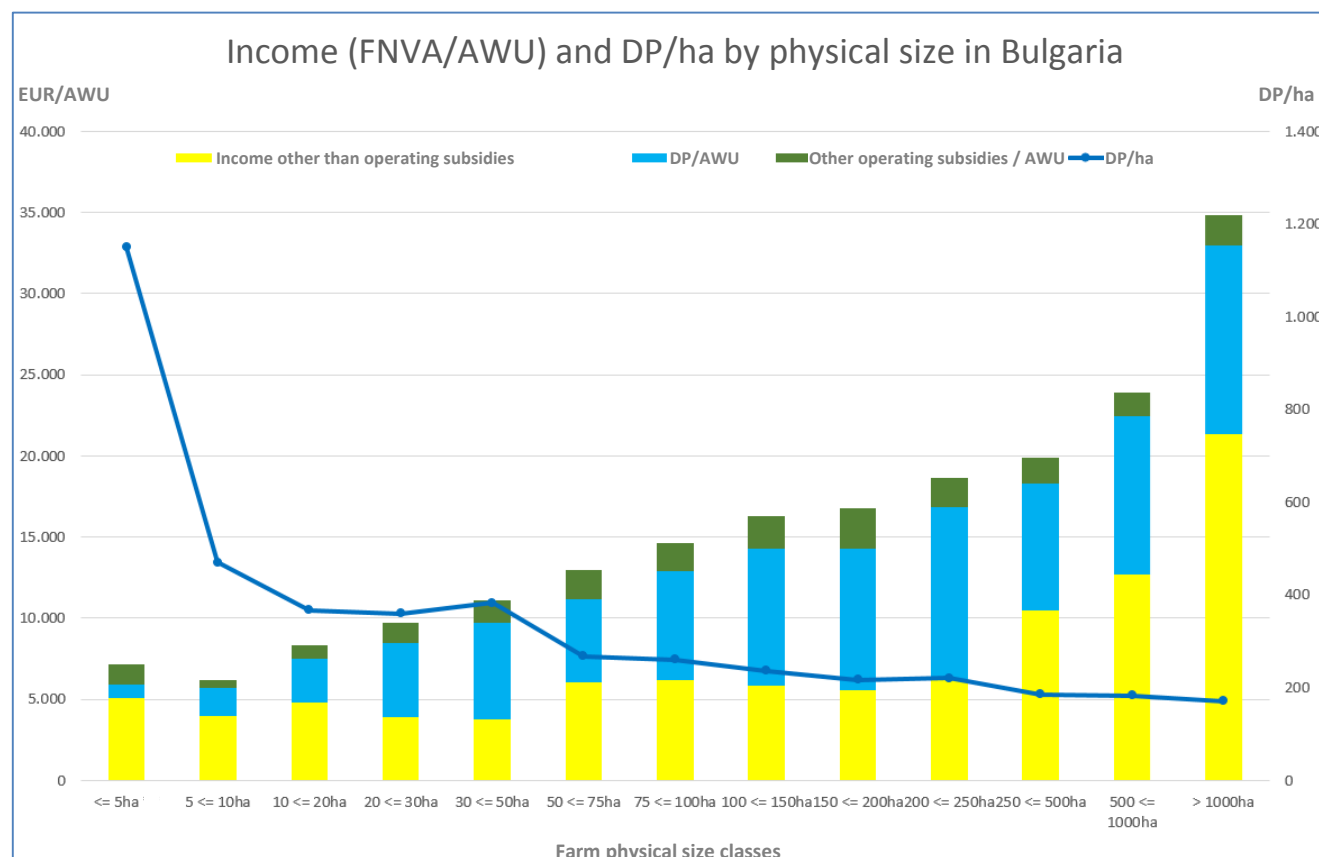
2.1 Support viable farm income and resilience across the EU territory to enhance food security

In Bulgaria, the average agricultural income is about 83% of the average wage of the economy. This is above the EU-average. The gap seems to close over the last years⁵.

The average agricultural factor income is regularly increasing since 2009. It increases constantly with farm physical and economic size. It shows highest values for Cereals Oilseeds and Protein farms (COP) and granivores farms, and lowest for horticulture, orchards – fruits, cattle, sheep and goat and mixed crops and livestock farms. The income is significantly lower in areas facing natural constraints (ANC), especially in mountains (by ca. 50%). At regional level, two regions (Yugozapaden and Yuzhen Tsentralen) have considerably lower income compared to the other four (Severozapaden, Severen Tsentralen, Severoiztochen and Yuhoiztochen). The last two results illustrate the income level disparities between territories.⁶

In the period 2015-2018, 20% of the beneficiaries farmed about 89% of the land and received 83% of the direct payments. Direct payments form 35% of the factor income whereas payments under Pillar II⁷ are around 7%. However the weight of rural development support is higher for ANC, in particular in mountain areas (at 20%). The average direct payment per hectare decreases regularly with increasing farm physical size, as illustrated by Indicator R6 *Redistribution towards smaller farms*. Bulgaria reinforces the unit amount of direct payments to smaller farms; nevertheless, there are still important income differences between small and large farms. Despite having the highest average direct payment per hectare, horticulture farms have the lowest income as well as a low share of direct payments in income. On the other hand, although the direct payment per hectare is among the lowest for COP farms, the share of direct payments for those farms is still high compared to other sectors more in needs, and their factor income is the highest. For cattle farms, direct payments and rural development support represents almost 100% of their income, but the income level is still among the lowest and the direct payment per hectares is only 131% of national average. The horticulture and cattle farms belong to the class of small farms (average hectare per farm is below 20 hectare), while the COP farms belong to the larger farms (average above 200 hectares)⁸.

In Bulgaria, the level of price, yield and income risk is considered higher than the EU average. Nationally funded schemes for crop and livestock insurance exist covering climatic and veterinary risks; however the uptake is very low (below 5%). Rural Development funded tools have not been developed due to lack of experience and trust.⁹



Source: DG AGRI based on FADN 2018

Directorate General for Agriculture and Rural Development own calculations based on FADN data

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

The Bulgarian agricultural sector represents around 3% of the GDP and employs about 183 000 people, corresponding to 5.7% of the total employment in the country¹⁰. The income per family worker was, in 2019, at about the same level as the average wage for the whole economy¹¹. Direct payments play an important part in farm income: 33% in 2018. In 2016, 7.4% of farm managers in Bulgaria were below 35 years old (5.1% in the EU)¹². Women accounted for 34% of the young farmers, the highest share in the EU.

Between 2013 and 2018, total factor productivity rose by 7.2%, mainly due to an increase in labour productivity (62% of the work force left agriculture between 2005 and 2017). Still, productivity lags behind EU average, with labour productivity at about half of the EU's average. The number of farms has more than halved between 2005 (535 000) and 2016 (203 000). Conversely, the average farm size increased from 10 to 25 hectares in the same period. Access to agricultural land is comparatively easy in Bulgaria (average farm size larger than the EU-average, lower cost than EU average) which should facilitate structural adjustment¹³. The prevalence of semi-subsistence farms has diminished, notably in pig and poultry meat sectors, but remains relatively high – with consequences in terms of market orientation and organization, as well as sectoral orientation¹⁴. The share of farms with more than 50% of regular labour from family members was at 95% in 2016¹⁵.

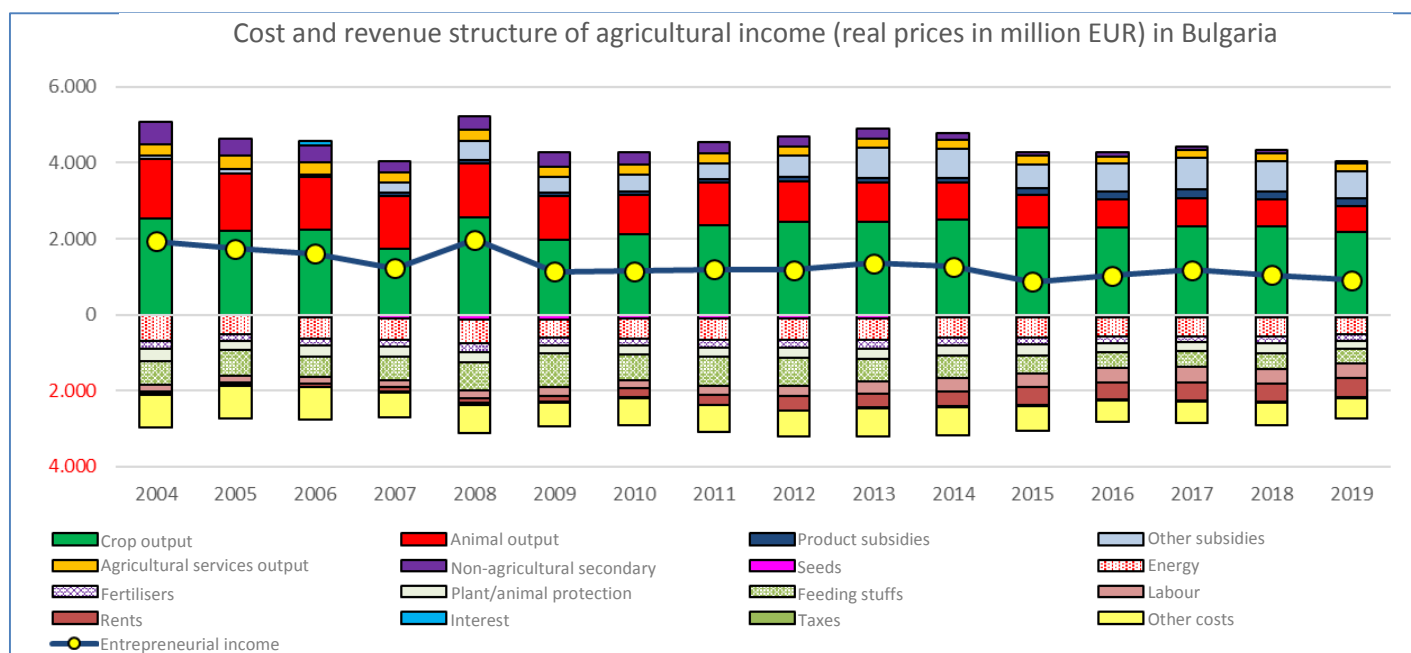
The agricultural area declined by 2%, from 5.12 million hectares in 2007 to 5.02 million hectares in 2016¹⁶. In the decade leading to 2016, permanent grassland decreased to the benefit of arable land, the number of livestock units and livestock density decreased and the area of extensive grazing remained stable.

Farmer investments (gross fixed capital formation) kept a stable trajectory for the last decade and a half, with a slight tendency to decline between 2015 and 2017. 74% of the output at production value in Bulgaria in 2017 comes from crop production. Cereals (32%) and industrial crops – oilseed, protein and tobacco - (26%) together form almost 60% of the total output, followed by milk 9%, vegetables and fruit 5.1%¹⁷. Entrepreneurial income, with ups and downs, shows a significant decline in the last 15 years of available data. The dependency on subsidies is higher than EU average, which might raise sustainability concerns¹⁸.

Bulgaria presents a positive agri-food trade balance with the rest of the EU and vis-a-vis the rest of the world. While the trade balance with the EU Member-States is stable, the balance with the non-EU world shows a downward trend after the peak of 2013¹⁹. The agricultural sector holds a significant place in the overall country's trade balance, originating almost one fifth of the exports in 2017, although unprocessed products with low value added still dominate exports²⁰. In 2018, the main export products in value were wheat (16.7%) and oilseeds, mostly sunflower (12.0%). Organic farming reached only 2.6% of total UAA in 2018²¹.

The low and insufficient level of innovation and R&D deployments has led to a decline in price competitiveness and a low level of profitability of agriculture. The use of innovative solutions by farmers and agri-processors under cooperation by using ICT, digital, and other new technologies is essential. Due to difficulties in accessing finance and information, as well as broadband availability deficiencies, the take-up of digital technologies (e-business, cloud computing services, big data, online sales etc.) by farmers and rural businesses is lagging behind.

Cost and revenue structure over time (as in statistical and analytical factsheets) from 2005 to 2018 split by different costs and output (revenue according to Economic accounts of Agriculture).



2.3 Improve farmers' position in the value chain

The share of the value added for primary producers in the food chain in Bulgaria is decreasing in favour of the food and beverage consumer services. In 2017, 52% of the value added in the food chain went to primary producers, which is twice the average in the EU (27% in 2017)²².

The farm structure in Bulgaria is characterised by a significant share of small agricultural holdings. In particular, this is the case for the dairy, meat, fruit and vegetables sectors.

The agri-food value chain shows certain inefficiency and tends to be in favour of processors and traders. The main reasons for that are the low level of organisation of farmers, low level of vertical integration with the processing sector and the unused potential for developing short supply chains.

Cooperation and collaborative approach to farming is lagging behind. There are historical and cultural barriers for farmers to cooperate. A large proportion of farmers are not integrated in the value chain and important differences are observed across the sectors. This also has contributed to the low development of vertical integration with the processing sector mainly due to the significant transaction and logistical costs including lack of necessary management skills.

There are 36 recognised producer organisations (PO) in Bulgaria²³. According to the Bulgarian Ministry of Agriculture, Food and Forestry, 0.29% of the cow milk and 0.02% of the sheep milk were marketed through POs. Regarding fruits and vegetables this percentage varies between 4.38 and 4.80% for the period 2016-2018. In 2019, however, only 1% of fruit and vegetables were marketed through POs²⁴.

Bringing farmers together would increase their chances to have stronger market positions and better outlets for their production, which will in turn lead to producers of primary agricultural products creating more added value. This would also increase the bargaining power when facing the processing industry and big retailers. No interbranch organisation

(IBO) has been recognised in Bulgaria so far: their development could also contribute to better vertical cooperation within the food supply chain.

Further attention could also be brought to quality schemes²⁵ (mainly to the Union and national ones) as a path to generate more value added. There is a potential in the EU quality schemes to strengthen the farmers position in the value chain. According to Bulgarian authorities there has been a gradual reduction in the production of protected wine with protected designations (protected designation of origin (PDO) and protected geographical indication (PGI)).

As the Commission's Farm to Fork Strategy calls for a more plant-based diet with more fruits & vegetables and better animal welfare, Bulgaria could build on its relatively large crops sector and help farmers expand plant-based production, especially by focusing on fruits and vegetables for human consumption.

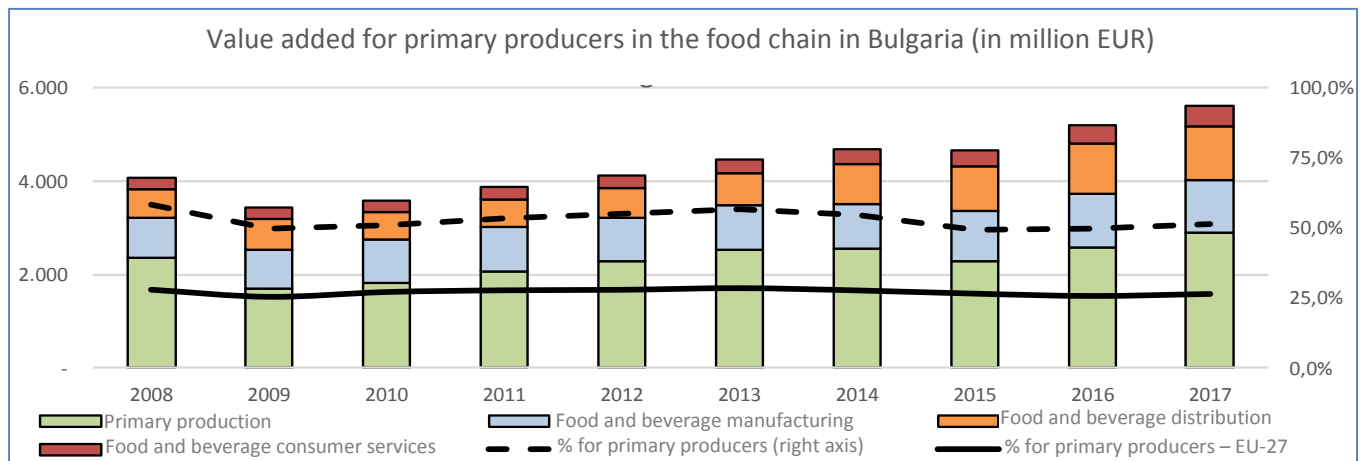
The total area under organic farming is increasing in Bulgaria (2.6% of total utilised agricultural area (UAA)), although it is less than the EU27 average (8%)²⁶ in 2018. The share of UAA under conversion to organic is decreasing and in 2018 was the lowest noted since 2014, which strongly limits the potential for growth. The areas cultivated with organic production methods have been growing in Bulgaria mainly in mountain territories (90%) and in small family farms. On top of that, the very weak cooperation among stakeholders in organic farming is a clear obstacle to the marketing of niche products. Organic products account for 7.6% of the total food market in Bulgaria in comparison to conventional products. In recent years, the share of organic livestock has increased in the country.

Achieving Farm to Fork objective of sustainable food systems will require adequate and adapted strategy on how to address constantly growing demand for organic foods. This should include correct identification of potential in local food production and food chain structures that shall be further strengthened and developed.

In order to strengthen the position of micro and small-sized farmers in the food supply chain and certain sectors, there is a need to facilitate the pooling of farmers through knowledge, management skills (of a marketing organisation) and good practices in the marketing of products through cooperation.

Bulgaria already protects the position of farmers in the food supply chain through its national unfair trade practices legislation²⁷. Further steps forward need to be taken in relation to the price setting with traders and intermediaries and the practice of misleading labelling.

Value added in the agri-food chain split by primary producers, processing, distribution and services + share to primary producers from 2008 to 2017 and share to primary producers at EU level.



Source: 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

Non-CO₂ agricultural emissions of greenhouse gases (GHG) (without the land use land use change and forestry (LULUCF) sector) amounted to 6.4 million tonnes of CO₂ eq. in 2018, representing 11% of total Bulgarian GHG emissions, slightly higher than the average EU share (10%). This corresponds to a decrease of nearly 50% compared to 1990 levels. However, since 2005 emissions have been rising: by 24% in the period 2005-2018 (EU: -0.74%) and 12% in the period 2013-2018 period (EU: +1.80%).²⁸

Specific to Bulgaria is a high dominance of agricultural soils in agricultural emissions (65%, EU: 38%). The remaining 23% stem from enteric fermentation of livestock (EU: 44%), mainly cattle, 9% from manure management, 2% from rice cultivation and 1% from field burning of agricultural residues (2018). Emissions from soils increased by 22% in the 2013-2018 period (EU: +2%)²⁹ alongside with intensified crop production and increasing mineral fertilisation and are the driver for the increase in agricultural emissions.

However, the emissions of CH₄ and N₂O per hectare of UAA in Bulgaria are the lowest in the EU (about half the EU-28 average, 2015).³⁰ Focusing on the sources, manure emissions of GHG per Livestock Unit (LSU) (0.55 TCO₂eq/LSU) are higher than EU average (0.48 TCO₂eq/LSU) (2016) while the per-unit emissions from ruminants (enteric) and from soils are below EU average (2016, 2018 respectively).³¹ Following a decline around 2010s, the areas of permanent grassland and their share in UAA stabilised in 2013 reaching 28% in 2018 with 1.4 mln ha, which situates Bulgaria below EU average (31%)³². In contrast, the areas and the share under the direct payment system indicate a positive trend (increasing to 13.5% of agricultural land in 2019).³³ Peatlands cover only about 0.5% of soils in Bulgaria.³⁴ Concerning the land use, land use change and forestry (LULUCF) sector, besides the significant role of forest as a CO₂ sink, where agricultural soils are concerned grasslands act as a sink of CO₂ while croplands add to emissions. Both forest and grassland removals have been declining in the last 20 years while the role of cropland reversed into a source of carbon in late 2000s. In the period 2013-2018, grassland removals fell by 27% (EU: by 9%).³⁵ Production of energy from forest and agriculture increased by 47% between 2013 and 2018 with an increase in

several related agricultural sources, the stronger being the anaerobic fermentation (+7123%). By 2016, production from anaerobic fermentation per livestock unit remained below EU average (2.28 Gigajoule, EU: 3.93) while by 2018 the per hectare production from vegetal materials and residues exceeded the EU average (1.61 Gigajoule, EU: 1.04). The share of agriculture and forestry in total renewable energy production increased to 66% in 2018 from 59% in 2015, mainly driven by increasing production from agriculture (6.6% share in renewable energy in 2018 compared to 1.5% in 2015). The sector's contribution is higher than EU average which also relies slightly more on agriculture (EU: 12%) and less on forestry (41%)³⁶.

In 2018, agriculture and forestry accounted for 1.9% of total energy consumption in Bulgaria, below EU average of 2.9%.³⁷ The energy consumption per ha of UUA/forestry of 20.9 kgoe/ha³⁸ (36.8 kgoe/ha if only UAA is taken into account³⁹) was the second lowest in EU. Instead, the energy use in food production, accounting for 2.6%, is about EU average (2.9%). Overall, the energy use remained relatively stable compared to 2008.⁴⁰

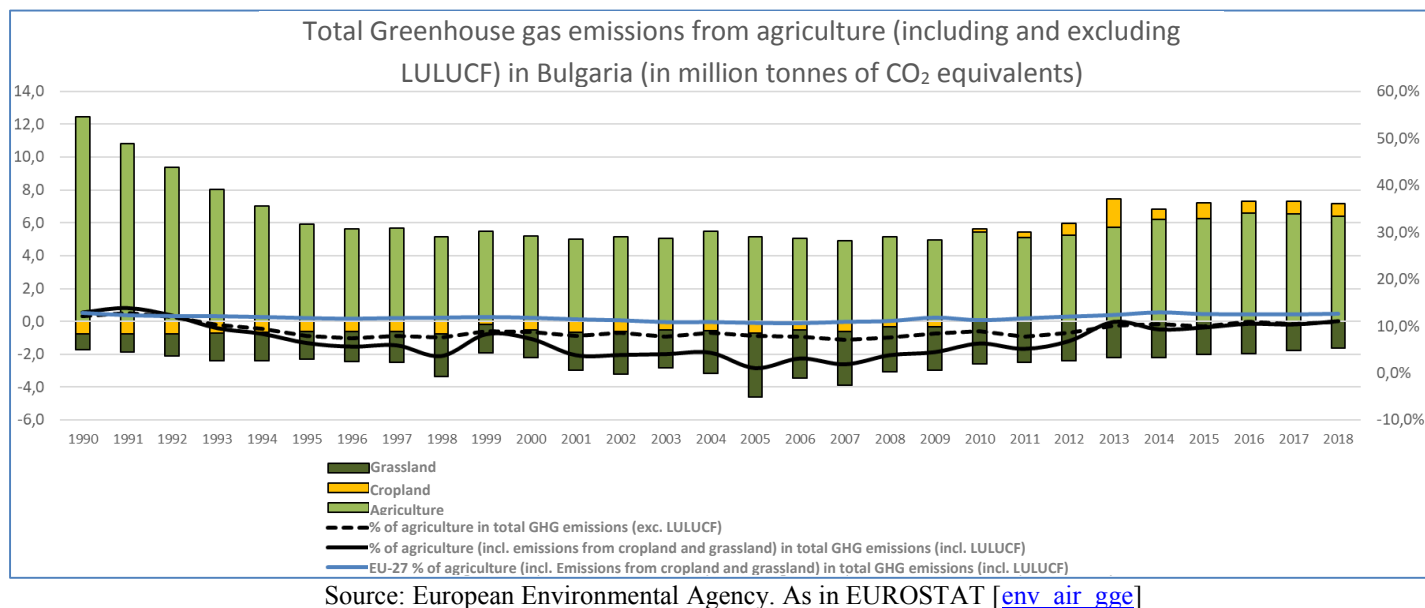
In 2018 Bulgaria dedicated some 5% of its Rural Development Programme expenditure under priority 5 promoting resource efficiency and supporting the shift towards a low carbon and resilient economy. This translated into 0.6% of agricultural land under management commitments targeting reduction of GHG and/or ammonia emissions.⁴¹

In terms of climate adaptation, like other countries in the Southern region of the EU, Bulgaria faces increased heatwaves in spring/summer, droughts, and less rainfall in winter/spring with a reduction of optimal crop areas and increasing risk of soil erosion. Bulgaria is also the most hail prone EU countries. This makes its agriculture vulnerable to higher yield variability (negative impact on main crops of winter wheat, corn, sunflowers), heat stress for animals in mountain regions, hydric deficits in spring/summer (impact e.g. on horticultural production in the south dependant on irrigation and water allocation). In contrast, opportunities could come from increased productivity such as vineyards, if water is ensured, new crops and increased pasture production through warmer winter. Depending on forests' species adaptability, changing climate could impact forests' composition and productivity exacerbated by other natural disturbances and invasive species, with potential threats for rare habitats⁴² (see also point 2.6).

Helping farmers improve their climate performance would require stepping up training, advice, awareness raising combined with promotion of risk-transfer strategies.

The integrated energy and climate plan (IECP) of Bulgaria⁴³ projects 20% increase in emissions of CH₄ and N₂O in agriculture due to the expected growth of the sector. The plan attributes the decline of forest removals to their lower growth rate because of average age and the decreasing share of artificial afforestation and projects it to continue while the grassland removals are to increase slightly by 2030; no significant change in land uses and in the removal potential are nonetheless projected in this timescale. The IECP reports that the third national climate change action plan (implementation horizon beyond 2030) and the national air quality control programme (2020-2030) include measures aiming to reduce/optimize agricultural emissions and to raise climate awareness. These include crop rotation focusing on nitrogen-fixing crops, regeneration of degraded agricultural land through biological cultivation using indigenous grasses or anti-corrosion and soil erosion measures, irrigation/water/energy saving technologies, promoting extensive farming; measures to reduce methane emissions from fermentation

in livestock, better manure management practices and awareness activities concerning the use of vegetation residues and risks of after-crop burning.



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

Bulgaria is among the EU countries with the lowest share of UAA managed by farms with high input intensity per hectare (2016: 6%, EU: 29%) and while half of the land remains managed by farms with low input intensity (52%, EU: 39%) this share has decreased towards medium intensity farms.⁴⁴ Bulgarian agriculture is also characterized by the lowest livestock density per ha in the EU⁴⁵ (see point 2.6).

While the total use of mineral nitrogen and phosphate fertilisers increased by 56% between 2008-2011 and 2012-2015, Bulgaria is also one of the EU Member States where the use of nitrogen and phosphorous originating from animal manure decreased between 2008-2011 and 2012-2014 by more than 5%.⁴⁶ In parallel, despite overall low livestock density, the available information signals that local concentration of animals, where not corresponding to the available space and the local needs of the crops, creates surplus of nutrients with resulting impact on water and air.

Ammonia (NH₃) emissions from agriculture in Bulgaria decreased compared to 1990s level reaching 39500 tonnes in 2005 and 34000 tonnes in 2010 and 2011, with, however, the upward trend in the following four years and slightly lower emissions in 2017 and 2018 reaching in the latter year 37180 tonnes (6% reduction compared to 2005 levels). Since early 2000s the contribution of agriculture to the overall ammonia emissions oscillated around 80%; in 2018 agriculture was responsible for 83% of all ammonia emissions in Bulgaria (EU-28: 93%).⁴⁷

According to the 2018 data, livestock is responsible for 59% (EU-28: 73%) of all agriculture-related NH₃ emissions while crops for the remaining 41% (EU-28 23%).⁴⁸ Per 2017 data, 38% of the NH₃ emissions in Bulgarian agriculture came from the use of inorganic fertilisers, 16% from manure management in dairy cattle sector, 10% from the pork and 7% from laying hens sectors⁴⁹.

Despite the reductions, according to the Commission assessment⁵⁰, Bulgaria would be at high-risk of non-compliance with the ammonia reduction commitments established by the NEC Directive (3% for any year for 2020-2029 and 12% for any year from 2030 against 2005 baseline).

The state of soil in Bulgaria raises some challenges for agriculture. The cumulative soil organic carbon stocks, both of arable areas and grasslands, situate Bulgaria in the middle range of EU countries though the stocks decreased in the period 2009-2015, with the highest rate of loss in cropland stocks (0.14% loss in SOC stocks compared to the 0.04% at EU level) experienced in the south east part of the country.⁵¹ On average Bulgaria is in the category of the EU Member States with lower soil organic carbon (SOC) content (mean SOC of 18.3g/kg, EU-28: 43.1g/kg with MS data ranging from 14.9g/kg to 82.4g/kg, 2015)⁵². While conditions for creation of humus are favourable in the country, this is being offset by effects of intensive monoculture, incorrect rotation, limited organic and unbalanced nitrogen fertilisations and the remaining burning of arable stubble. According to LUCAS topsoil data, relative to other EU Member States, Bulgaria has also one of the lowest phosphorus content in the agricultural soils⁵³.

The country's soils are relatively less affected by water erosion (2016): 4% of agricultural area is affected by moderate to severe water erosion (EU-28: 6.6% with MS values ranging from 0.0% to 32.8%). Bulgaria loses about 2.2 tonnes of soil per hectare annually compared to the average 2.5 tonne loss for EU-28 (MS ranging from 0.1 to 8.6). Notwithstanding, at local level, some provinces are marked by severe water erosion levels of around 10% and losses per hectare reaching 3.6 tonnes annually⁵⁴. Bulgaria (especially the eastern part) is one of the regions with the highest wind erosion rates in the EU⁵⁵. The agricultural practices need to change to address these issues given that in 2016, 45%⁵⁶ of arable land was left without winter cover and 57%⁵⁷ of tillable area was tilled conventionally. In contrast, soil sealing remains low compared to other EU Member States.⁵⁸

In 2018, only 2% of agricultural land in Bulgaria was under rural development contracts to improve soil management⁵⁹.

Approximately 45% of Bulgarian surface waters are in less than good ecological status and approximately 2% of surface waters fail to achieve good chemical status though the chemical status of the 64% of waters is unknown. For groundwater approximately 5% fail to achieve good quantitative status and 34% fail to achieve good chemical status. Diffuse pollution from agriculture is the most significant pressure on groundwater and the second most significant pressure on surface water. The most significant impacts come from nutrient pollution, organic pollution and chemical pollution.⁶⁰

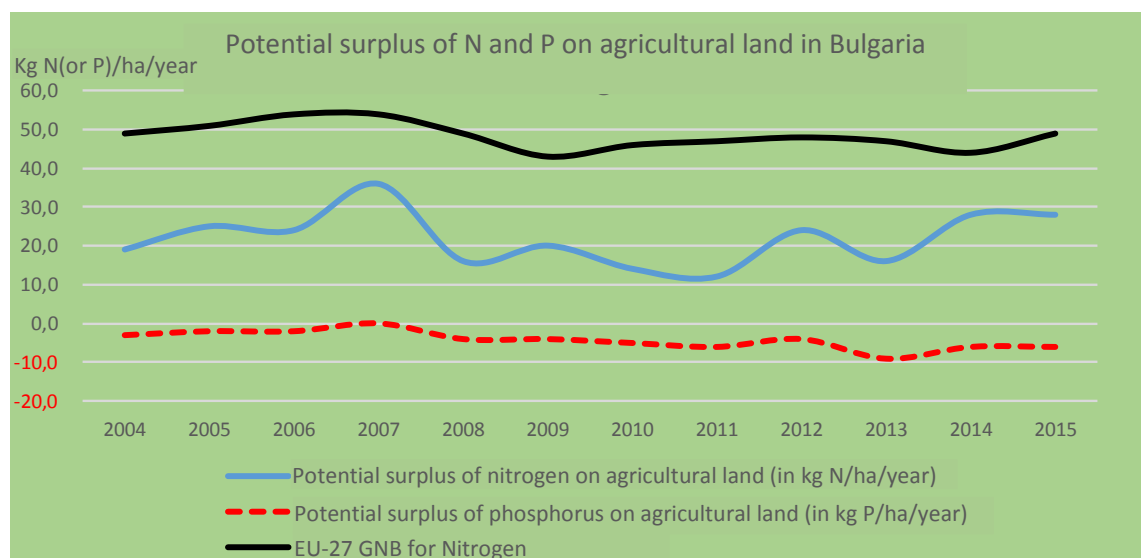
The status of groundwaters with regard to pollution by nitrates deteriorated between 2012 and 2017. While in 2012, 9% of groundwater stations were recorded to be of poor quality and 26% of moderate, the figures for 2017 were 11% and 29%, respectively; thus the share of high quality waters decreased from 64% to 60%.⁶¹

The nitrogen surplus in Bulgaria has been fluctuating between 42 kg in 1996 and 12 kg N/ha/year in 2011. From 2015, it remained below the EU average (49 kg N/ha/year), however, the most recent data (2017) indicate a substantial deviation of nitrogen surplus amounting to 66 kg N/ha, partially due to a large increase in the consumption of N-fertilisers. 2017 data is also different to the observations of previous years in that it records a positive phosphorus balance (1 kg/ha/year); the negative balance has indeed been diminishing since 2013.⁶²

Bulgaria is the 6th country in EU-27 in terms of availability of renewable freshwater resources (annual average of 14,3 million m³ per 1000 habitants).⁶³ As reflected in the evolution of Water Exploitation Index + (WEI+), at country level the annual use of renewable freshwater resources (a difference between water abstraction and return after use to the environment) has oscillated around 2% of renewable freshwater since 1995.⁶⁴ Taking account of seasonal variations, in some southern parts of the country the WEI+ could reach up to 15-20%⁶⁵ (20% or more implying water stress). Overall, the assessment of the Second River Basin Management Plan for Bulgaria concluded that all river basin districts face water quantity related problems.⁶⁶

In 2017, irrigation was responsible for 11.4% of the total water abstraction.⁶⁷ Based on the 2016 data, the share of actually irrigated areas in UAA (2,1%) was limited compared to the EU-27 average (6.5%), but with regional variations and concentration in the southern part of the country. The share slightly increased (by 2.6%) compared to 2010.⁶⁸ Considering irrigable areas, that is areas equipped for irrigation, they comprised 3% of the Bulgarian UAA (2016) compared to EU-28's 8.9%, with the highest share of 9.7% UAA in the southern region of Juzhen tsentralen. The irrigable areas decreased compared to 2005 (4.1% of all UAA, 19.9% in the Juzhen tsentralen region) and, with regional variations, remained relatively stable compared to 2010 (3.1%).⁶⁹ According to available information the existing irrigation infrastructure is largely outdated and in bad condition.

2% of Bulgarian agricultural land was under rural development contracts to improve water management in 2018⁷⁰.



Source: 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

As an overall picture of the biodiversity in Bulgaria, the indicators used to assess the biodiversity (and the protection of areas) show an unfavourable negative trend with figures generally lower than the EU averages. This is mainly due to an increase of farming input intensity (even if it remains relatively low in comparison to most of the MS) as well as conversion of land to more arable land. The maintenance and support of low and medium intensity farming practices in the country, such as organic, integrated and conservation agriculture, is very important as these practices significantly contribute to the conservation of the habitats of valuable plant and animal biological resources.

Some favorable indicators for the biodiversity (for example the areas under extensive grazing) are more a consequence of the less developed production system in the country in comparison to most the rest of the EU.

The forest area increased from 3.7 million hectares in 2010 to 3.9 million hectares in 2020, which means that forests cover 36% of the land (compared to 45% average for EU-27). Meanwhile, the growing stock (standing trees in the forests) increased from 646.5 million m³ over bark in 2010 to 766.9 million m³ over bark in 2020. The natural grassland share is about 4% which is higher compared to the EU27 (about 2%).

At the same time the average growing stock per hectare “density of the forest” increased from 173 m³/ha in 2010 to 197 m³/ha in 2020. It means that not only the forest area has increased but also the amount of living wood on it.

Bulgaria is among the EU countries with the lowest share of UAA managed by farms with high input intensity per hectare (2016: 6%, EU: 29%) and while half of the land remains managed by farms with low input intensity (52%, EU: 39%), the share of medium intensity farms is increasing. As regards grazing, 27.4 % of the total UUA ((the value for the EU27 is 19.8%) is dedicated to extensive grazing (with the highest % in *Yugozapaden region* with 62%), this value being stable over the period of analysis. For livestock density⁷¹, Bulgaria has the lowest in the EU (0.2 against 0.8 for the EU; for comparison the figure is 3.4 in the NL in 2016).

The farmland bird indicator decreased from 89 to 80 between 2005 and 2015⁷² showing a similar trend as for the EU. In 2018, the index slightly increased to 80.7. The percentage of species and habitats of Community interest related to agriculture decreased regarding the ‘favourable’ status from 2012 to 2019 (from 53% to 38%)⁷³.

The conservation status of grassland habitats shows a ‘favourable’ status in 2012 for about 15% only (21 % for the EU27)⁷⁴, that decreased (as for the EU in general) to 8% (20 % for the EU27.). While in 2012 no ‘unfavorable bad’ status were recorded, 5.1 % got this status in 2018 (2.7% for the EU). In terms of the proportion of Environmentally Sensitive Permanent Grassland (ESPG), less than 15% only is declared by farmers under greening (2018)⁷⁵.

The share of land under contracts supporting biodiversity and/or landscape and forests amounts is lower than the EU average (12% against 15 %).

The share of UAA dedicated to organic farming is much lower than the EU 27 level (2.6 % against 8%) with less support than for the EU: 57% of the organic farming in Bulgaria benefits from CAP support against 65% for the EU-27 (in 2018). The share of UAA under conversion to organic has decreased in the last four years which limits the potential for growth⁷⁶.

The implementation of the Ecological Focus Areas indicates a substantial share of arable land allocated to Nitrogen fixing crops, a share much higher compared to EU average. Regarding the fallow, it represents (in 2018) a share of 3.8% (while for the EU it is 4,1%). The catch crops are much lower than for the EU, as are the landscape elements (0.2 % against 0.5% as % of UAA).

Natura 2000 sites network⁷⁷ in 2018 occupy 34,5 % of the territory (45% in Yuzhen Tsentralen region) which is much higher than the EU figure (19.8 %). The agricultural area under Natura 2000 is much higher than for the EU (19.3 % against 9.9 %). The

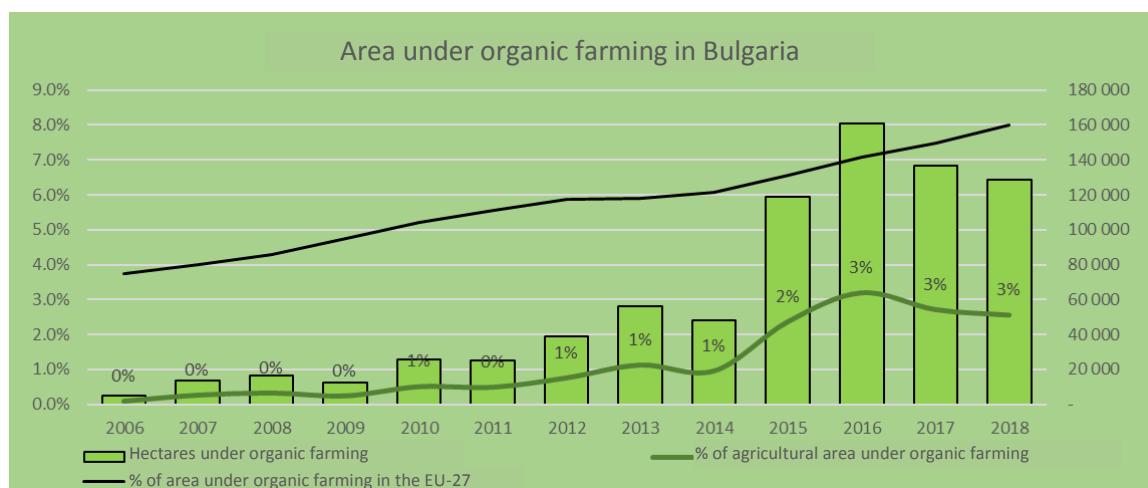
forest under Natura 2000 represents about 54% (31% for EU27). The 2019 Environmental Implementation Review for Bulgaria identified three key priority actions for the Natura 2000 network, namely: completion of the SAC designation process with site-specific conservation objectives and measures for habitats and species in all Natura 2000 sites; establishment of efficient management structures for the Natura 2000 network with sufficient administrative and financial capacity and completing the process of full implementation and integration of nature directives into other sectoral policies.

High nature value (HNV) farmland accounts for 32% of UAA in Bulgaria⁷⁸. However, Bulgaria is one of the EU Member States with the highest loss of land with high nature value (HNV) due to intensification of farming⁷⁹. The biggest losses (>0,2% of UAA) are in the Danube plain and the region of Dobrudzha⁸⁰.

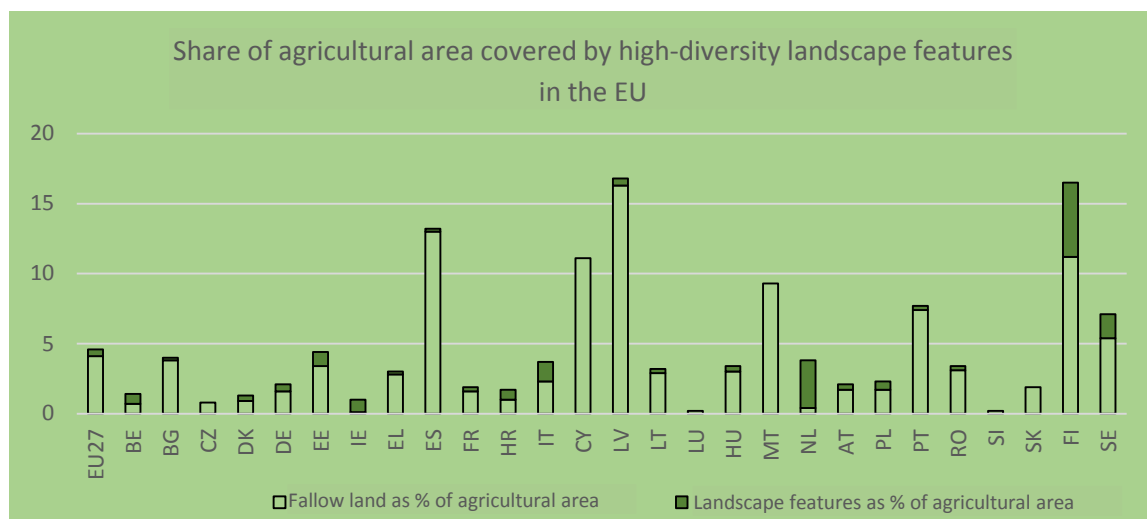
In 2015 only 2.5% of the forest and other wooded land (FOWL) was subject to minimum intervention to conserve biodiversity and 0% was under active management (6.8% for the EU).

For the ANC, only 27,6 % of the area in 2019 fall in this category (57.9 % for the EU) with about 19% due to mountains (17% for EU27 %).

Bulgaria has progressed in providing support for mapping and assessment of ecosystems and services and for valuation and development of natural capital accounting systems since 2017. However, implementation of nature protection legislation remains a challenge. Insufficient financing, inefficient spending of available financing and poor enforcement of environmental legislation and conservation laws are resulting in the loss of habitats.⁸¹



Source: EUROSTAT [org_cropar_h1 and org_cropar]



Source: DG AGRI based on Eurostat and JRC based on LUCAS survey.

** Linear elements considered here: Grass margins, shrub margins, single trees bushes, lines of trees, hedges and ditches. This estimation is to be taken with caution because of methodological caveats.*

2.7 Attract young farmers and facilitate business development in rural areas

In Bulgaria in 2016, 7.4% of farm managers were below 35 years old. Whereas the EU trend decreased between 2010 and 2016, Bulgaria saw an increase over the same period in the share of young farmers. Also the ratio of young managers to elderly increased over time. 34% of the young farmers are women, which is the highest share in the EU^{82,83}.

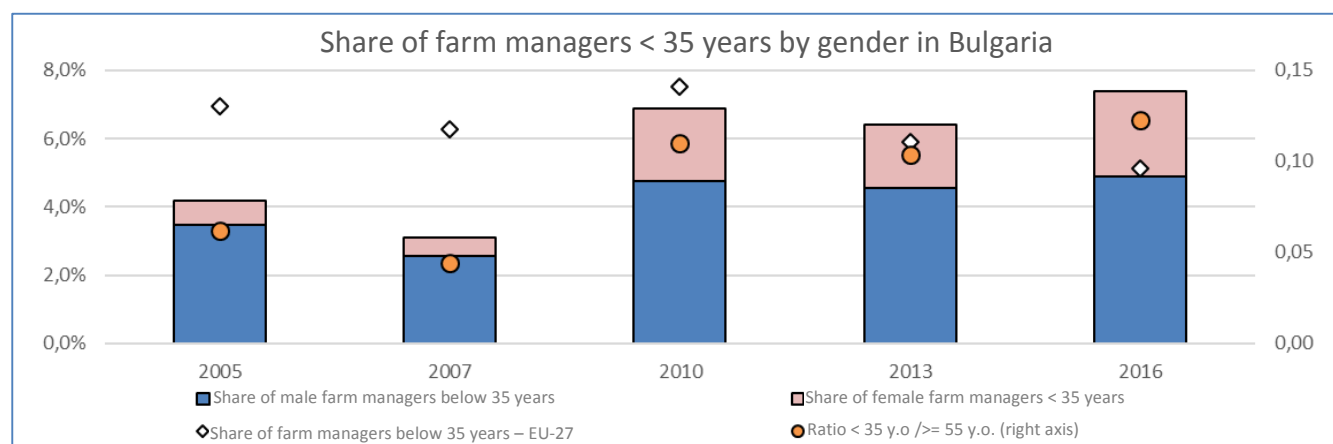
Almost 60% of young farmers in Bulgaria are looking for working capital loans. Young farmers and new entrants, in need of longer term finance to buy land and farm infrastructure to start their business, face particular difficulties in accessing finance. The main problems that hinder young farmers' access to finance are related to the lack of appropriate collateral and the lack of credit history and accounting records. Absence of banks specialised in agriculture finance, high interest rates and high collateral requirements pose difficulties in accessing finance. 33% of the group of young farmers demanded more attractive conditions for obtaining loans in the future, given the currently relatively high interest rates⁸⁴.

In order to manage risk, banks tend to allow lending mainly to farmers who benefit from the financial support of the RDP measures, with loans only being approved when grant support has been secured by the farmer. There is a general problem in Bulgaria with the initial funding and subsidising of start-up companies, including those in the agricultural sector and young farmers.

Annually, Bulgaria granted 0,1-0,6% of the direct payment envelope for the years 2015-2019 to young farmers under the first pillar of the CAP, which is less than the EU average of 1,3%. In addition, the amount by young farmers received in business start-up aid under rural development for the programming period 2014-2019 was 57 million EUR (out of EUR 112.5 million requested).

Young farmers lack help in the preparation of bank loan applications, project proposals and business plans, including the application for support under the RDP. Despite the existence of the recently downsized national agriculture advisory service (NAAS), the lack of necessary capacity and resources creates the need for an easily accessible and competent advisory/consulting service⁸⁵. 42% of the group of young farmers noted they need support when applying for bank loans requiring submission of a business plan.

The rate of farm managers below 35 years old with at least basic training is one of the lowest in the EU (23%)⁸⁶. A small number (only 4%) of agricultural producers (including young farmers) have specialised education and/or training in agriculture and most of the problems for farmers stem from a lack of or low level of education. There is a lack of infrastructure like next generation access (NGA) broadband connection (only 60% of households have broadband connection in rural areas, of which half NGA broadband)⁸⁷. This in combination with the unsatisfactory assistance of NAAS does not help farmers to set up and implement their projects, to get innovation support, educational and vocational training.



Source: EUROSTAT. [[ef_m_farmang](#)]

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

Bulgaria has relatively less rural (22%) and more intermediate areas (77%) than the EU-27 average (45% and 46% respectively)⁸⁸. 13% of the population live in rural areas, which is less than the EU average of 19%⁸⁹.

Many rural areas face the twin-challenge of rapid population decline and low GDP per head. In the period 2015-2019 rural population decreased by 4,5%, the tendency being even more prominent among those between 15 and 64 years. Depopulation and ageing are particularly prominent in the north-west and the north-central regions. The average GDP per capita in predominantly rural areas in Bulgaria for the period 2013-2015 was 32% of the EU-28 average, the lowest in the EU⁹⁰. While the GDP per capita in the intermediate regions is similar at 34% of the EU-28 average, GDP in urban areas equals the EU-28 average, thus demonstrating serious disparities between rural and urban regions⁹¹. Compared to the EU-average, the GDP per inhabitant in rural areas has remained rather stable in the period 2005-2017⁹². The rural poverty rate is going down over time⁹³ but nevertheless Bulgaria remains the EU Member State with the highest risk of poverty and social exclusion.

Limited employment opportunities and quality of life are often considered key factors for depopulation of rural areas. Access to services (such as childcare, good quality education, healthcare, housing, leisure and cultural activities) or the availability and quality of infrastructure (such as roads, rail, energy supply, access to internet) are important elements for ensuring quality of life in rural areas.

The employment rate in predominantly rural areas has been increasing⁹⁴ since 2013 but is still lower than the average employment rate in Bulgaria and well below the EU- rural employment rate⁹⁵. Female employment is generally lower than male one for all

categories of education⁹⁶. In 2016 the share of women in the agricultural labour force was 35%⁹⁷. The percentage of women-farm managers in 2016 was 25%, slightly below the EU average of 28%.

The rural unemployment rate remains an issue, especially its higher rate among young people (18%) and the related high rates of early leavers from education and training and young people not in education or training. Although decreasing since 2013, youth unemployment in Bulgaria is higher than the EU average⁹⁸. The number of young people not in employment, education or training in rural areas is also decreasing since 2014 and reached 26% in 2018 but is still significantly higher than the national average of 15%. The number of young people not in employment, education or training is considerably higher among Roma population⁹⁹. The average employment rate for Roma (49%) is also significantly lower compared to the general population employment rate in the country (67%).

Participation in cultural and sport activities in rural areas is much lower than the EU-average¹⁰⁰, while the level of crime and violence is higher¹⁰¹ than the EU average and started to decrease only in 2018. Despite the upward trend in the past 6 years, the percentage of rural households in Bulgaria having NGA broadband and broadband is still quite low¹⁰².

In 2017 16% of the rural population was covered by Local Development Strategies. Implementation of LEADER has contributed to setting up small businesses in rural areas and establishing successful partnerships in local communities¹⁰³.

In 2018, 9% of the total GVA came from rural areas. In 2015, around 56% of the total RE production in Bulgaria came from agriculture and forestry. Despite the upward trend in the production of renewable energy from agriculture and forestry per hectare, the situation has been rather stable as of 2012. In 2015, 35,9% of land in Bulgaria was covered with forests, which is lower than the EU-27 average of 39,8%¹⁰⁴. Productivity in the forestry sector is also lower than the EU-27 average (20 GVA in thousand EUR per person employed vs 50 in 2017)¹⁰⁵.

The turnover in bio-economy, the number of people employed and the turnover per person employed is slowly increasing. Nevertheless, in 2015 the turnover per person employed in the bio-economy in Bulgaria was considerably lower than the EU average¹⁰⁶. In 2015 agriculture and food, beverage and tobacco had the highest share of turnover in the bio-economy – 28% and 46% respectively.

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

There is an increasing demand and orientation towards the application of environmentally and animal welfare friendly agricultural practices.

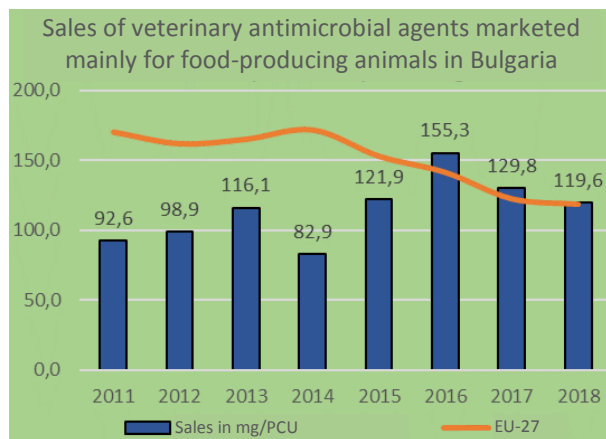
Bulgaria adopted its national action plan (NAP) for the sustainable use of pesticides, for the period 2013-2017. The plan has not been reviewed within a five year period as required and lacks quantifiable targets for the reduction of risks and the impact of pesticide use¹⁰⁷. According to the ESTAT calculation of the harmonised risk indicator 1 (HRI 1), the use and risk linked to pesticides decreased in Bulgaria by 17% in the period of 2011-2018, compared to a 20% decline in the EU.¹⁰⁸

Eurostat's analysis of data reported on the sales of pesticides under Regulation (EC) No 1185/2009 shows that candidates for substitution comprised a relatively high and stable proportion of total pesticide sales in Bulgaria in the 2015/2017 period. This indicates that Bulgaria is not on target to meet the Farm to Fork target of a 50% reduction in the use of the more hazardous pesticides by 2030¹⁰⁹.

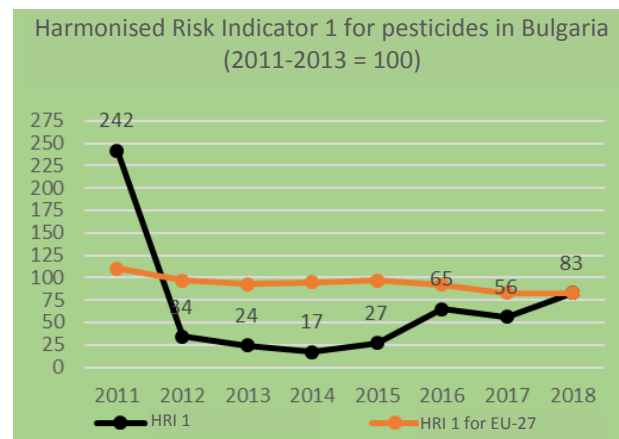
Although national legislation is in place and the NAP contains a range of measures and actions to achieve the sustainable use of pesticides, serious weaknesses were identified with regard to their implementation. Application equipment in use, including sprayers and other specific items, are not subjected to regular inspections. Also training and certification of plant protection products (PPP) do not meet the requirements of the sustainable use directive. There is also no transposition of the directive on the harmonised risk indicators in national legislation.

Antimicrobial resistance (AMR) linked to the excessive and inappropriate use of antimicrobials in animal and human healthcare needs to be addressed. While sales of veterinary antimicrobial agents were significantly below the EU average in 2014 and 2015, they have been considerably higher since, recording sales (slightly) above the EU average for the three most recent years for which data are available. This apparent increase may be linked (at least in part) to Bulgaria having made data collection on antimicrobials mandatory as of 2015. The increase is in particular related to cattle and pig sector. Awareness concerning AMR is generally very low and few effective initiatives have been taken by the national authorities to date. Bulgaria has an overall sale of antimicrobials of 119.6 mg/PCU¹¹⁰ (European surveillance of veterinary antimicrobial consumption (ESVAC) project), which is just slightly above the EU average of 118.3 mg/PCU in 2018 and well above the target of 50% reduction by 2030 at EU level.

45% of all EU exports of live ruminants exit the EU by road from Bulgaria to Turkey, with more than 5,600 consignments of mostly cattle in 2016¹¹¹. Based on the last audit report on animal welfare and transport inspections the authorities do not record or report cases when animals arrived in temperatures above 35°C. Another issue on animal welfare is the tail docking of pigs which is a routine practice, although this is prohibited as a routine measure by EU rules. In view of tackling the issue, Bulgaria has drawn up an action plan for improving controls over prevention of pig tail biting and avoiding tail docking in compliance with Directive 2008/120/EC of the Council of 18 December 2008 on laying down minimum standards for the protection of pigs.



Source: 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](https://www.ema.europa.eu/en/press-room/2020/01/wmt-2020-001).



Source (right graph): EUROSTAT [[aei_hri](#)]

Farm biosecurity is also a major challenge, considering that Bulgaria is listed among the countries affected by African swine fever (ASF) where farms with low biosecurity and poor controls pose higher risk for animal disease infections and spread. At present the country implements the adopted plan on control and prevention of spread of African swine fever in 2020. Nevertheless, strong action is still needed to establish, revise/upgrade biosecurity, registration of farms, animal identification and animal movements.

Bulgaria has a very high burden from non-communicable diseases due to dietary risk factors expressed as disability adjusted life year (DALYs) per 100,000 population attributable to diet¹¹². This DALY's value, as well as the high rate of overweight¹¹³, is influenced by a number of dietary factors. Bulgaria has a very high estimated consumption of red meat¹¹⁴ and a very low consumption of fruit and vegetables¹¹⁵. Efforts should focus on shifting towards healthy and 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.

Concerning food loss and waste no data is yet available. Moreover, the national waste prevention programme (2014-2020)¹¹⁶ gives little attention to food loss and waste occurring at the primary production level and the early stages of the supply chain. This could be tackled in the upcoming national food waste prevention programme as required by Article 29(2a) of the waste framework directive 2008/98/EC.

2.10 Cross-cutting objective on knowledge, innovation and digitalisation

The agriculture knowledge and innovation system (AKIS) is not fully functional in Bulgaria. It consists of numerous organisations but the information for their activities is incomplete which makes its analysis and management rather difficult. According to the 2014 Pro-AKIS Study it is moderate strong and relatively integrated.

The budget for agricultural research and development has significantly decreased over the years, which has resulted in a decrease in the number of employees and difficulties to attract younger scholars. The vocational training in the field of agriculture is carried out in a large number of high schools or universities but this does not always correspond to the needs of the business.¹¹⁷

In Bulgaria, only 9% of the total farm managers attained basic or full agricultural training in 2016. This share is increasing over time. Compared to the EU, the share of farmers that attained full agricultural training¹¹⁸ is little lower in Bulgaria. The share of managers with basic agricultural training is well below the level in the EU.¹¹⁹

Under the programming period 2014-2020, Bulgaria programmed 2.8% of their total rural development envelope (EAFRD + national contribution) under M01: knowledge transfer and information actions (1%), M02: advisory services, farm management and farm relief services (0,7%) and M16: Co-operation-EIP (1,2%). This is below to the EU-28 average of 3.6% but even that amount has not been fully utilised: actual spending dated second quarter of 2020 is 0% for M1 and 0% for M16, and 38% for M2.

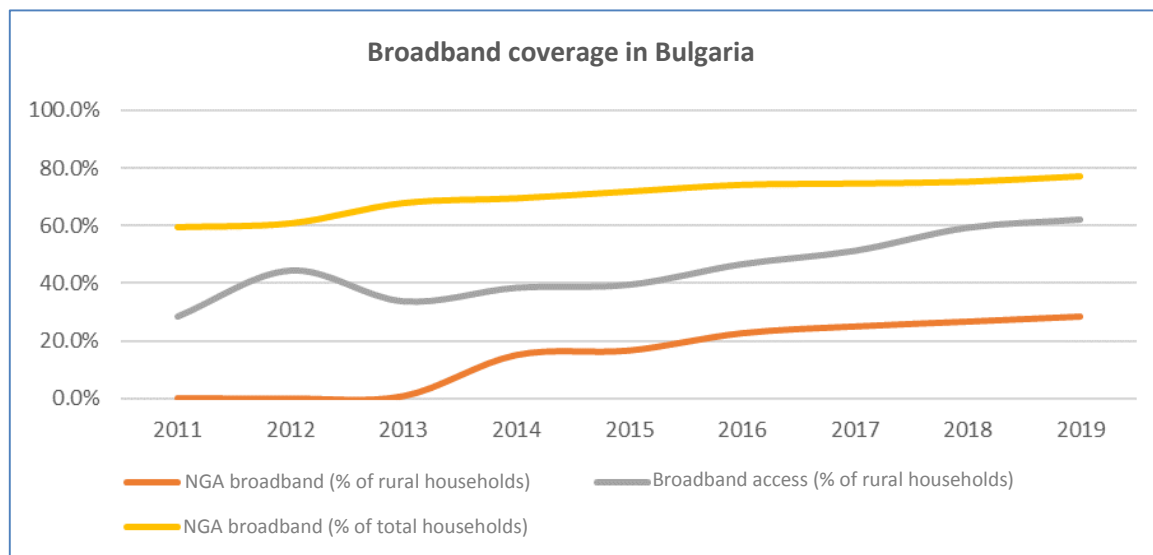
Bulgaria has an established national agricultural advisory service (NAAS), which provides free agricultural advice to farmers. Besides national funding, the activities and administrative capacity of NAAS are also supported through EAFRD. The number of farmers using the services of NAAS, as well as the scope of these services has been increasing over the years. A number of private organisations, scientific institutes or professional organisations are also active in providing consultancy services to farmers.

Bulgaria did not manage to use fully the opportunities provided by the EIP since EIP OGs could apply for funding only in 2020 for the first time. No Operational Groups have been notified yet. Little information is available about networking activities organised at the national or regional level to connect research actors, such as universities and partners of Horizon 2020 projects with farmers, advisors and rural businesses. The future national CAP network can play a much bigger role in promoting synergies between the CAP and European research area (ERA). The best way to do so is to keep in close touch with the Horizon Europe national contact point and to intensify the dissemination of the information on the EIP website. Moreover, when collecting and sharing of information, the CAP can finance interventions that help to make use of up-to-date scientific information for agricultural practices, for instance through the CAP network and its knowledge platforms and knowledge reservoirs, and by setting up advisory back-offices where the latest knowledge and innovation is collected and shared with the field advisors and the farmers. Modernisation is a key element of the support provided to farmers. Nevertheless, the degree of introduction of new production methods, digitalisation and automatisisation of processes is very low, with big differences between regions, sectors and types of farms¹²⁰. For example, significant synergies and better impact can be achieved by linking CAP actions to activities on soil health living labs (experiments and innovation in laboratory on the ground) and light houses (places to showcase good practices), demonstration and soil monitoring under the forthcoming Horizon Europe mission on soil health.

Bulgaria ranks last in the EU in the digital economy and society index (DESI) for 2020, in spite of some steps taken to drive forward the country's digital transformation. It is well below the EU average for all dimensions, with internet user skills and take-up of broadband at the bottom of the ranking. As far as the infrastructure is concerned, Bulgaria performs significantly below the EU average on the availability of fixed broadband, while for 4G coverage it is once again at the bottom of the DESI ranking. A

steady and swift effort in increasing the low NGA coverage of households in rural areas should be a high priority area of investment. Fast internet is a key enabler for job and business creation in rural areas, as well as for improving quality of life by supporting services in areas such as healthcare, education, entertainment and e-government. Investments in NGA broadband can also facilitate access of farmers to advisory services and to online integrated support for transition to more sustainable practices.

Bulgaria has not yet opted for the use of satellite-based means to monitor CAP implementation and is currently not part of EU projects dealing with the uptake of new technologies for the modernisation of CAP administrations, CAP controls and interactions with farmers.



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

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- ² Мишев, П., Александрова, Св., Стоянова, З., Харизанова, Хр., Харизанова, Цв., Казакова, Я, Кабаджова, М., Димитрова, А. *Резюме на доклад Анализ на социалното и икономическо развитие на селските райони*. 82 стр. (SWOT анализ, SO8)
- ³ On the basis of Article 13(4)(e) of the Commission proposal for the CAP Strategic Plan Regulation (COM(2018) 392)
- ⁴ BG rural area factsheet. 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 Bulgaria 56,7% of the territory are rural areas and 23,3% of the population lives in rural areas. Source: Eurostat.
- ⁵ Directorate General for Agriculture and Rural Development. Common Agriculture Policy 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.
- ⁶ Directorate General for Agriculture and Rural Development own calculations based on FADN data.
- ⁷ RD support except investment support.
- ⁸ Directorate General for Agriculture and Rural Development own calculations based on FADN data.
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- ¹¹ European Commission. CAP context indicator C.26 Agricultural entrepreneurial income. Based on EUROSTAT [[aact_eaa04](#)] and [[aact_ali01](#)]
- ¹² European Commission. CAP context indicator C.23 Age structure of farm managers. Based on EUROSTAT [[ef_m_farmang](#)]
- ¹³ Институт по аграрна икономика, *Анализ на състоянието на селското стопанство и хранително-вкусовата промишленост. SWOT анализ*. Юни 2020. 78 стр.
- ¹⁴ Институт по аграрна икономика, *Анализ на състоянието на селското стопанство и хранително-вкусовата промишленост. SWOT анализ*. Юни 2020. 78 стр.
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- ¹⁶ European Commission. CAP context indicator C.18 Agricultural area. Based on EUROSTAT [[apro_cpsh1](#)]
- ¹⁷ https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/by_country/documents/analytical_factsheet_bg.pdf
- ¹⁸ Институт по аграрна икономика, *Анализ на състоянието на селското стопанство и хранително-вкусовата промишленост. SWOT анализ*. Юни 2020. 78 стр.
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- 39 EUROSTAT. [tai04]
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- 115 consumption of ≥ 5 portions is below EU27 average and one of the 2 additional criteria is met: a) 1-4 portions below EU27 average, b) 0 portions above EU27 average, https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_ehis_fv3c&lang=en
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