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Commission recommendations for Czechia's CAP strategic plan

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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

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1. COMMISSION RECOMMENDATIONS FOR CZECHIA'S CAP STRATEGIC PLAN

In the framework of the structured dialogue for the preparation of the common agriculture policy (CAP) strategic plan, this document contains the recommendations for the CAP strategic plan of Czechia. The recommendations are based on analysis of the state of play, the needs and the priorities for agriculture and rural areas in Czechia. 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 Czechia, 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

Czechia's agriculture sector is characterised by its dual structure where large holdings occupy more than 90% of agricultural land. Most of the land is rented and many original land owners are no longer involved in farming activities. Entrepreneurial agricultural income stands at around 112% of the average national income. This is higher, than the EU average, although there are significant differences between farms. On the other hand, the average gross wages in agriculture sector reaches only 80% of the average gross wages in the whole national economy. Agriculture as such plays a modest role in total employment (2.4%).

Czechia has an agricultural trade deficit in sectors such as poultry, pork and fruit and vegetables, these being the main imported commodities.

Czech agriculture is facing major challenges in terms of: (i) the level of innovation; (ii) cooperation between farmers; (iii) offsetting up producer organisations in certain sectors; and (iv) creating short supply chains. The use of EU quality and organic schemes should be explored as they could help improve the position of farmers in the value chain and increase their added value. Despite the efforts of the national authorities, cooperation among farmers and between farmers and other market players in the agri-food chain is insufficient. In addition, the support available under the current rural development programme to develop short supply chains was hardly used.

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

Under the European Green Deal, Czechia's agricultural sector is encouraged to take urgent action on to the management of natural resources and on climate change mitigation.

Although the agricultural sector's share in total greenhouse gas emissions remained stable (and well below the EU average), net agricultural emissions have increased since early 2010. This is driven by increasing non-CO_2 emissions from livestock (enteric fermentation) and from agricultural soils combined with a dramatic decrease in CO_2 removals from forests in the land use, land use change and forestry (LULUCF) sector (in 2018, forests even emitted

[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.

more CO_2 than they absorbed). In terms of emissions per unit in non-CO_2 sectors, Czechia is still above the EU average. The agricultural/forestry sectors are relatively energy intensive but they are also relatively efficient in terms of energy production, and substantially above the EU average where livestock (anaerobic fermentation) energy sources are concerned. Reducing ammonia emissions from agriculture continues to be an important goal for the Czech farming sector. Around 90% of ammonia emissions come from agriculture and Czechia has been found to be at high-risk of non-compliance with the emission reduction commitment for ammonia, for both 2020-2029 and 2030 and beyond[1].

As in other EU countries, Czechia's agriculture and forestry sector are exposed to climate related risks due to a substantial change in weather patterns in the last few years, typically taking the form of mild dry winters and hot summers with heavy rain. These are some of the factors causing droughts, which have major effects on the forestry sector where a large area of spruce forest is being felled due to the presence of bark beetles.

Regarding the Water Framework Directive (WFD), some water bodies do not have good status and do not meet the EU objectives. Czechia has one of the highest portions in the EU of groundwater bodies failing to achieve a good chemical status. Nitrate pollution is particularly problematic in regions with high a surplus of nitrogen, and is the number one pollutant responsible for the country's failure to achieve good chemical status in groundwater. Agriculture is one of the biggest pressures affecting surface waters and is the biggest pressure affecting ground waters.

The conservation status of agricultural habitats is broadly assessed as unfavourable. Natural habitats are usually quite small and fragmented, occupying mostly marginal areas, with ongoing degradation and loss. The biodiversity situation in Czechia is continuously worsening across the board.

A substantial proportion of productive agricultural land is managed in an intensive, profit-oriented way. The agricultural sector should adopt more sustainable management practices such as conservation/zero tillage and ensuring soil cover during winter. Czechia has the highest average size of agricultural holdings in the EU and practising large-scale agriculture is a major cause of natural habitat decline. Extremely low coverage of agricultural land with landscape features like grass margins, shrub margins, single tree bushes, lines of trees, hedges and ditches has a negative environmental impact on habitats and on low water retention in such a large-scale agriculture.

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

Rural areas account for around 37% of Czechia's total territory and are home to 21% of its population. The rural employment rate is relatively high (73%), through with a substantial gender gap (82% for men and 66% for women). On the other hand, at 11,6%, the poverty rate in Czech rural areas is one of the lowest in the EU. Careful consideration should be given to the specific needs of women in agriculture and rural areas in order to ensure gender equality and close the gender gaps in employment, pay, pensions and decision making.

As Czechia has one of the lowest unemployment rates in the EU, many inhabitants in rural areas easily find work opportunities in sectors other than agriculture, which is reflected in the high job vacancy rate in agriculture. This creates further demand for foreign labour, especially for seasonal agricultural workers. Ensuring the protection of agricultural workers, especially the precarious, seasonal and undeclared ones, will play a major role in upholding

the rights enshrined in eu lawsthat are central to a fair EU food system envisaged by the Farm to Fork Strategy.

Czechia's agricultural sector is characterised by an ageing farming population. In 2016, more than half (58.8%) of all farm managers were aged 55 and older, while only 4.4% of farmers were younger than 35.

Access to land and capital, together with administrative barriers are the main obstacles for new entrants. Agricultural training especially for young farmers remains a challenge.

The forestry sector has been substantial logging of spruce forestsdue to the bark beetle calamity of the last years. This is a major environmental concern. It is therefore essential to encourage sustainable long term forest management and afforestation, and enhance multifunctional management, forest protection and the restoration of forest ecosystems to improve the condition of forest habitats and species, in order to enhance ecological services and biodiversity and to build resilience to threats arising, for example, from climate change.

Sales of antimicrobial veterinary products have steadily decreased and are below the EU average. However, e certain animal welfare shortcomings that are related to farm conditions remain, for example the continued practice of pig tail docking. Improving farm biosecurity is important to protect against the risk of African swine fever (ASF). Overall, the risks associated with pesticide use are decreasing, but the volumes of sales of the more hazardous pesticides as a proportion of total pesticide sales remains high. More should also be done to ensure that all professional users of plant protection products apply integrated pest management. Furthermore, Czechia has a very high rate of non-communicable diseases due to dietary risk factors and efforts are needed to support the shift a more healthy sustainable diet in line with national recommendations.

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

A well-functioning agricultural knowledge and innovation system (AKIS)[2] is key to structuring knowledge flows to respond to the growing information needs of farmers. Such a system can speed up innovation and increase the value of existing knowledge to achieve all CAP objectives.

The Czech AKIS is relatively strong. Yet its full potential to stimulate innovation on the ground, and therefore support the transition to a more sustainable food production is hampered by the slow roll-out of interactive innovation projects that, aim to fully involve farmers in the knowledge building, exchange and innovation process.

Advisory services in Czechia are currently financed exclusively from national sources. There is a need for stronger[3] and interconnected advisory services, better links between public and private advisers and investment in their training and skills, and the involvement of farmers in developing innovation projects that help them meet their needs. The future role of farm advisers should therefore include providing tailored advice on sustainable management choices, including support for preparing and implementing European Innovation Partnership (EIP) projects.

While rural development programme funding planned for knowledge transfer, advisory services and cooperation (EIP) was just above the EU average, the uptake is rather low.

The digitalisation of rural areas is key for preventing further population movements to cities, improving the quality of life in rural areas and preventing the negative consequences of the COVID-19 crisis. It is also important for the green transition to more sustainable and competitive agricultural practices. Broadband coverage of rural areas in Czechia remains a challenge.

1.5 Recommendations

To address the above interconnected economic, environmental/climate and social challenges, the Commission considers that the Czech 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

- **Strengthening the competitive position of the agri-food sector** by improving the access to land and support processing and marketing of agricultural products with high added value (for example organic products or under EU and national quality schemes) and encouraging producer groups and co-operatives to seek recognition in sectors where there are currently no recognized producer groups established. In doing so it will be important to ensure synergies with other EU and national funds.

- **Fostering the development of short supply chains**, by supporting projects to facilitate marketing through digital platforms, direct home delivery from the farms and local open markets.

- **Improve the viability of farms through** better addressing the income gaps among farm sizes, sectors and territories. Recommended approaches include: strengthened redistribution by applying, for example, the complementary redistributive income support for sustainability, the round sum payment for small farmers and the reduction of payments, which reflect actual support needs in light of the economic, social and territorial objectives.

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 accelerating the conversion of conventional farming to organic through adequate conversion and maintenance schemes.

- Step up efforts to **reduce greenhouse gas emissions from agriculture** by supporting practices to improve soil management e.g. retaining crop residues on fields, reduce till of arable land, diversify and prolong crop rotations, and stimulate a more efficient input use. Enteric fermentation of livestock should be addressed by adopting low emission feeding strategies, in line with the EU Methane Strategy. Integrated land use systems such as agroforestry and carbon farming approaches to increase carbon sequestration should be promoted. Also, efforts to reduce energy reliance of agricultural sector should be strengthened.

- Promoting the development of agricultural practices that limit substantially NH_3 emissions from agriculture and that improve the management of nitrogen fertilizers and organic manures, including in view of improving groundwater and surface water quality and thereby **contributing to the EU Green Deal target on nutrient losses**.

- **Enhancing biodiversity conservation, improving the conservation status of farm and forest habitats in line with the priorities defined in the Prioritised Action Framework** and **contributing to the EU Green Deal target on farm high-diversity landscape features** by introducing those elements in the areas where they are lacking and maintaining them where they already exist.

- **Contributing to resilient farming systems**, in particular by using varieties and species more resilient to pests, by using risk management tools such as crop insurance and by **increasing the organic matter** in soils (retaining crop residues on fields, mulching, ridge and furrow, an appropriate timing of field operations to avoid soil compaction, etc.) to protect the soil from erosion and to **retain water in soils**.

- **Contributing to climate change mitigation and adaptation in forests** by applying sustainable forest management adapted to current and projected climate change impacts to strengthen the resilience of forest ecosystems in general and reforest felled spruce forest due to bark beetle calamity. Enhance the resilience of forest to climate change (e.g. by supporting the use of species and provenances, in particular native broadleaf species to be planted in diverse mixture).

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

- **Contributing to the EU Green Deal targets on pesticides** by strengthening the efforts to decrease the quantities and risks of most hazardous used pesticides and promoting the sustainable use of pesticides, in particular by ensuring the uptake of integrated pest management practices.

- Promoting best livestock management practices in animal welfare, especially for pigs, as well as better farm biosecurity measures.

- **Promoting the socio-economic development of rural areas** by supporting the development of economic activities in rural areas through mobilisation of activities in new sectors (i.e. developing the bio-economy) with an appropriate mix of interventions.

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

- **Increase the sustainability and economic performance of rural areas** and offer more opportunities for rural economy and communities by stimulating the development of high-speed broadband facilities in rural areas to achieve the 2025 objective of 100% fast broadband coverage, in line with the **EU Green Deal target on broadband.** In doing so it will be important to ensure synergies with other EU and national funds.

- **Strengthen AKIS integration and encourage the emergence of interactive innovation projects**, by fully using the opportunities of EU support for knowledge, innovation and digitalisation, with particular focus on incentivising well performing, advisory and innovation support to develop emerging innovative ideas into solutions. Improve the links between public and private advisors and invest in their training and skills.

2. ANALYSIS OF AGRICULTURE AND RURAL DEVELOPMENT IN IN CZECHIA

Total utilised agricultural area is around 3,5 Mio ha of which 57% (2 Mio ha) is located in the areas with natural or specific constrains. Rural areas cover 37% of the territory with 21% of the population. However, these areas still face certain socio-economic problems such as lack of basic infrastructure, insufficient offer of job opportunities and therefore moving of population from small villages to large cities or their surroundings. Investment in processing of agricultural products and better broadband coverage of rural areas are elements, which could decelerate this trend. The Czech agriculture is typical by large ownership fragmentation and high share of rented land. Distinct dual structure of the holdings can be identified with large cooperatives on one side and smaller private holdings on the other. The average size of the holding 130.2 ha belongs among the largest in the EU. Around 96 thousands employees in agriculture represent 2.4% share on total employment. The main produced commodities are cereals, milk, oilseeds and meat (poultry, pork, beef). Czechia is a net importer of agricultural products (mainly pork, poultry, fruit and vegetables and dairy processed products).

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

The average agricultural income per worker more than doubled between 2005 and 2018, reaching EUR 16 900 per worker, which slightly exceeds the EU average.[4] Besides, it also exceeds, by 12%, average wages in the Czech economy, which is much more favorable than the EU average (i.e. -53%).[5] Similarly, the agricultural factor income almost doubled between 2005 and 2018 (from EUR 10 500 to EUR 18 600 per worker), slightly over (+11%) the EU average.[6] On the other hand, the average gross wages in agriculture sector reaches only 80% of the average gross wages in the whole national economy.[7]

EU subsidies play a key role in the farm income and thus in the viability of most farms. On average, around 77% of the factor income came from subsidies in 2018: 37% from direct payments, 17% from rural development payments and further 24% from other subsidies.[8] However, the variation is substantial, in particular for smaller holdings below 20 hectares that exhibit lower ratios, and for large farms with higher ratios.

The unit amount of direct payments (EUR 238 per hectare in 2018) show narrow dispersion per hectare[9] since the Single Area Payment Scheme, representing 55% of the direct payments envelope, practically covers the whole utilized agricultural area and pays a uniform rate (EUR 132 per hectare in 2018).[10]

There are only few and relatively weak measures aiming at the redistribution to smaller-sized than average farms. At the same time, their limited impact is in fact neutralized by other support decisions.[11] The highly concentrated distribution of direct payments (20% of the farms receive 89% of direct payments) mirrors the similarly high concentration of land (also 20% / 89%, which is in fact the 2nd highest in the EU).[12]

Nonetheless, an analysis of the factor income shows varying needs for income support, depending on the following factors:

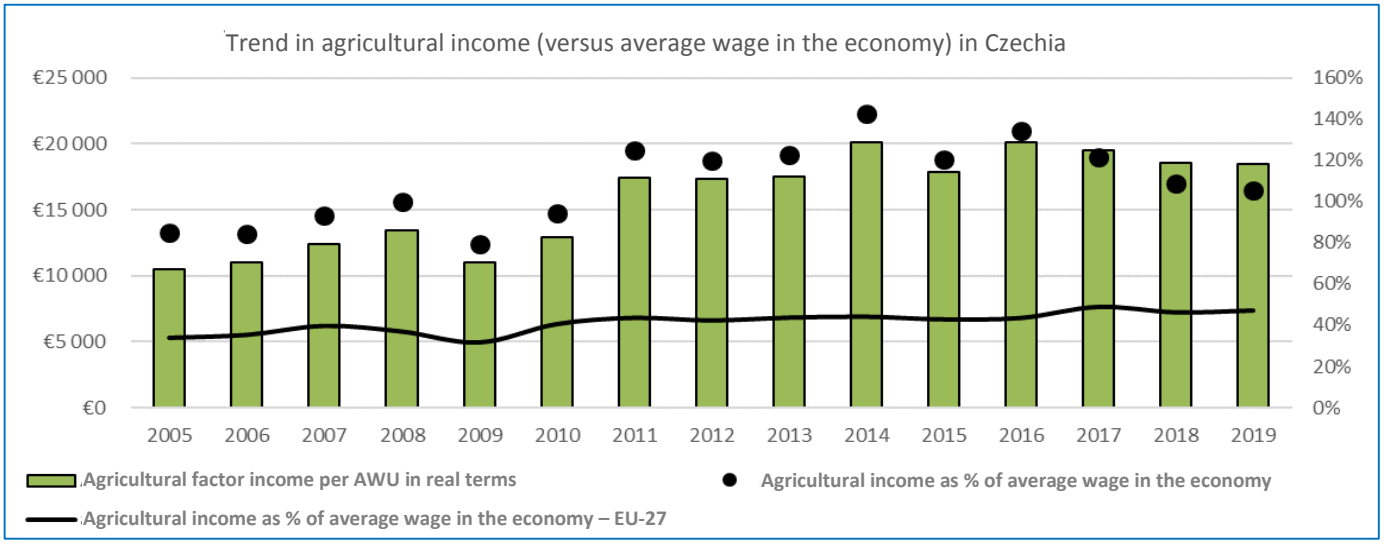
- Farm size: Disregarding intensive types of farming with no or minimal land (granivores in particular) with high factor income, farms up to 30 hectares display quite low values (often below EUR 5 000 per worker). The factor income per worker increases with the farm size; the holdings above 150 hectares (or EUR 250 000 in

economic size[13]) already generate relatively stable high values (EUR 23 000 to EUR 30 000 per worker). To note, these farms represent 11% of all farms, but cover 76% of the agricultural areas, 85% of the standard output, and are also substantial employers (with 2-3 times higher working units per farm than the EU average in comparable size classes).[14]

- Agricultural sector / type of farming: Sheep and goat, horticulture and fruits generate on average the lowest income levels. In contrast the arable crops sector show the highest factor income. Taking up 15% of the direct payment envelope, voluntary coupled support is granted in 8 sectors (besides sheep and goat and fruit and vegetables, also in the beef, dairy, protein crop, sugar beet, starch potato, and hop sectors). Some of these sectors (starch potato, protein crop, certain vegetables) already show signs of recovery, whereas in others (e.g. sheep and goat, fruits) the factor income remains low.[15]

- Regional differences: 57% of the agricultural area are located in areas facing natural or specific constraints (including 15% in mountain area), whereas increased support (under rural development) does not fully compensate for their handicap, especially in the mountain areas. These areas predominantly produce livestock.[16]

Risk management instruments and strategies are deployed, but with limitations. The (voluntary) indemnity based multiple-peril crop insurance against climatic risks shows relatively high (60-80%) uptake. Subsidized crop insurance contracts (financed from national budget) are also available. The supply of insurance products is relatively broad with 7 insurers. Insurance schemes covering phyto-sanitary risks exist against pests and diseases, voluntary public support livestock insurance is also available. The use of forward or futures contracts is marginal.[17]



Source: DG AGRI, based on EUROSTAT[18]

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

Agricultural output in Czechia amounted to almost EUR 5.1 billion in 2018 (an increase of 4% compared to 2017), representing about 2.2% of the county's gross value added and 2,7% of its total employment[19]. After a slight drop in 2015, agricultural output increased steadily in Czechia.

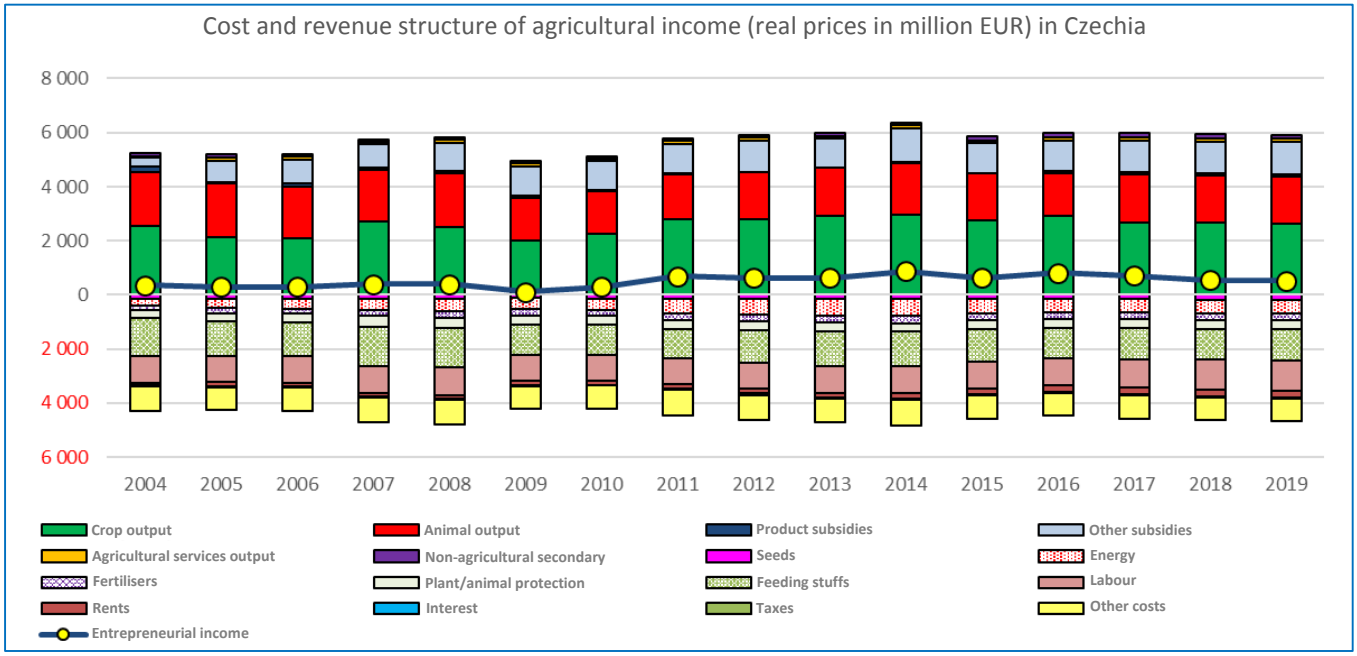
The total number of farms declined between 2005 and 2016 from about 42 250 to 26 530 farms. The average farm size increased from 85 hectares to 130.2 hectares over the same time period (partial impact of the change in the methodology of data collection). While almost 90% of the farms are considered to be very small to medium-sized, large-sized farms manage 70% of the UAA. Czechia has the highest average farm size in the EU, at 130.2 ha[20]. Therefore, like several other Central and Eastern Member States, Czech agriculture has a dual structure. Land ownership is strongly fragmented.

The agricultural area declined from 3.6 million hectares in 2005 to 3.455 million hectares in 2016[21]. More than 45% of the total value of agricultural production came from cereals, industrial crops and forage plants, while milk and livestock accounted for 36%. The volume of production of cereals in Czechia stood on average at 7.997 million tonnes during the 2014–2018 period[22], which fully covers domestic consumption. However, the harvested area of cereals is in decline since the early 2000s and the cereals yield, although increasing over the long run, has been declining since 2016. The number of livestock units (LU) decreased between 2005 and 2016 from 2.07 million to 1.76 million LU. In terms of the main animal products sectors, beef production in Czechia has increased, the number of dairy cows declined but milk yield continued to increase. Cereals (22.7%), milk (20.5%), industrial crops (15.4%) and forage plants (10%) are the most important sectors in terms of production value in Czechia in 2017.

The total factor productivity (TFP) is increasing in Czechia. Labour productivity increases mainly due to the outflow of labour (-25% between 2005 and 2017)[23]. The capital productivity (returns on investments) and land productivity (developments in land rents and yields) have been relatively stable over the past decade (although increase of land rents has been recorded in particular during 2008-2018 period).

The acquisition of new machinery and equipment in the primary sector has increased by 27% from 2012 to 2017. Investments of Czech farmers are driven by technological modernization, the construction or re-construction of technical facilities, the purchase of farmland (prices have more than doubled over the last decade) and climate change adaptation measures. The estimated needs for credit for the agricultural sector that has not been met is estimated in Czechia at EUR 326 million.[24]

Czechia runs a significant trade deficit in agriculture, which has been increasing since 2014. In 2018, the deficit amounted to EUR 1.7 billion, which was more than double the 2014 level. Intra-EU trade is largely predominant, accounting for 96% of the trade deficit in 2018. The deficit is driven by the import of key primary products, such as poultry, pork, fruits & vegetables and processed dairy products. Spring malting barley is one of the most important Czech export commodity (malt, beer and grain for malting) representing 5% share of the total world export of malt.



Source: EUROSTAT [Economic Accounts for Agriculture]

2.3 Improve farmers' position in the value chain

The share of the value added generated by the food supply chain captured by primary producers fluctuated between 22.1% in 2009 to 29.4% in 2014[25]. This share is a little higher in Czechia than the EU-average. In 2015, 27.6% of the value added in the food chain was captured by primary producers in Czechia.

There are 43 recognized producer organizations (POs) in Czechia and no recognized inter-branch organization[26]. The relative importance of recognized POs in Czechia is one of the highest in the EU in term of entities recognized per million of holdings (third after Germany and France). Recognized POs in Czechia are operating in six sectors, most of them in F&V (22) and dairy (19) sectors. The vast majority of the POs have been recognized after 2010 and are co-operatives. The economic importance of cooperatives per sector expressed by their market share in the relevant domestic market are the following: cereals, wine below 10%, fruit and vegetables, milk between 60 and 70%. The benefits stemming from a POs membership in terms of bargaining power would be particularly evident in the case of Czech small farmers. The RDP has not been used to support producers' organizations.

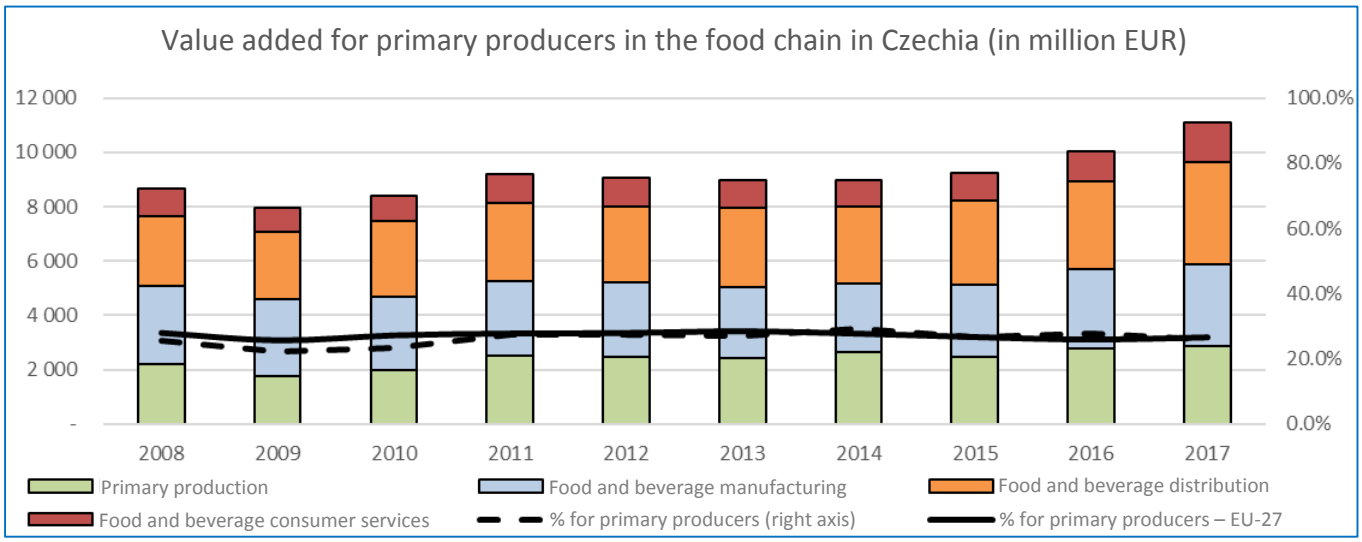
In 2016, 3/5 of the producers co-operatives involved in "crates delivery" provided home delivery of their products, directly to consumers[27]. The major part of deliveries were realized in Prague and the surrounding of the Central Bohemia Region and in other urban areas. Co-operatives, which did not offer direct sale to consumers predominantly, represented small family farms unable to cover the costs of distribution. Product categories subject to direct sale covered fruits & vegetables, eggs, fruit juices, dairy products and meat.

Czechia supported the development of short supply chain from the RDP budget during the 2014-2020 period (sub-measure 16.4 — support for horizontal and local marketing, and for promotion activities in a local context). The measure aimed at supporting cooperation of at least two entities leading to the creation and development of short supply chains and local markets. However, the implementation of this measure is very marginal (with an allocated budget of EUR 400 000) due to mainly administrative barriers and low interest from the side

of farmers. Within next programming period Managing authority will receive higher flexibility on the design of this measure.

Czechia has adopted national legislation to address unfair trade practices (UTP). The Czech legislation on UTPs is applicable on retailers in the agri-food sector, essentially prohibiting the abuse/exploitation of superior/significant bargaining power of a retailer against a Czech supplier. Compliance of the Czech national legislation with the UTP directive is to be verified.

Further development of EU quality schemes would allow strengthening farmers' position in the value chain, and therefore generating more value added.



Source: EUROSTAT

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

In 2018, agriculture non-CO_2 greenhouse gas (GHG) emissions in Czechia totalled 8,6 million tonnes of CO_2 equivalent, which represented some 7% of total national GHG emissions[28].

While the emissions decreased by 45% from 1990 levels (-21% for EU), they have been on the upward trend since the early 2010s (increase of some +5% between 2005-2018 against EU's -0.74%, and by some +8% in the period 2013-2018 compared to EU's +2% approx.). Some 49% of emissions relate to agricultural soils while 35% come from enteric fermentation of livestock, primarily cattle, and another 12% from manure management [29].

Soil non-CO_2 emissions have driven the increase of agricultural GHG emissions since 2010. The emissions per livestock unit (LU) and utilised agricultural area (UAA) of these three categories put Czechia above the EU average: 2016: 2.77 TCO_2 eq/LU for enteric fermentation (EU: 2.67); 2016: 0.58 TCO_2 eq/LU for manure (EU: 0.48); 2018: 1.20 TCO_2 eq/ha for agricultural soils (EU: 0.94).

Considering the land use, land use change and forestry (LULUCF) sector, the role of forests as a CO_2 sink, declining since early 2010s, reversed in 2018 when it became a significant source of CO_2 emissions. In terms of agricultural soils, cropland and grasslands have acted as a source and a sink of CO_2, respectively[30]. While emissions from croplands decreased by 46%

in the period 2013-2018 in contrast to EU average (EU: +12%), grasslands' removals reduced by 24% (higher than EU average reduction of 9%).

Following an increase during the 2000s and early 2010s, in 2018 the share of permanent grassland in UAA levelled around 28%, below the EU-27 average of 31%[31] (the share is similar for areas under the direct payment system[32]). Peatlands cover about 0.9% of Czech soils[33] and their restoration (together with wetlands and floodplains) can contribute to retain water in soil and prevent floods.

In 2018 16.6% of renewable energy in Czechia came from agriculture (EU: 12.1%) and 67.2% from forestry (EU: 41.4%), bringing the total to 84.8% of all renewable energy (87% in 2015). Production of energy from forest and agriculture increased by 11% between 2013 and 2018 (EU: 0.13%) with an increase in several related agricultural sources.[34] Per unit production of energy exceeds EU average both as regards vegetal materials and residues sources (1,58 Gigajoule/ha, EU: 1,04) and especially biogases from anaerobic fermentation (12,73 Gigajoule/LU, EU: 3,93).

Energy consumption in Czech agriculture and forestry (2018 data) as a share of total final energy consumption stands at 2.6%, below EU average of 2.9% (EU MS ranging from 0.6% to about 8%). In 2018, final energy consumption by agriculture/forestry per hectare of UAA amounted to 176 kg oil eq. above EU average of 168 kg oil eq. The consumption increased from 2013 by 1.5%. The energy use in food production (2018 data) of 2.4% is also below EU average (2.9%)[35] [36].

In 2018 Czechia dedicated some 0.3% of Rural Development Programme expenditure for support under Priority 5 promoting resource efficiency and supporting the shift towards a low carbon and resilient economy, much below the EU average of 5%.[37]

In terms of climate adaptation, like other countries in the continental region of the EU, Czechia is expected to face changing weather patterns (wet, warmer winters followed by spring frost, and hotter, drier summers, with more violent, localised heavy rain events and floods), and increasing risk of soil erosion. This makes Czechia's agriculture vulnerable to higher yield variability (negative impact of droughts on arable farming, especially in lowland regions, and on the yields of spring barley and wheat, as well as for grassland productivity, spring frost induced damage to fruits and vine)[38], increased heat stress for dairy cows, and risks of new/more pests/diseases/weeds due to higher temperatures and longer vegetation period. In contrast, opportunities could come from new crops/varieties, longer vegetation period's positive impact on grasslands and tuber crops and reduction of moisture loving pathogens[39].

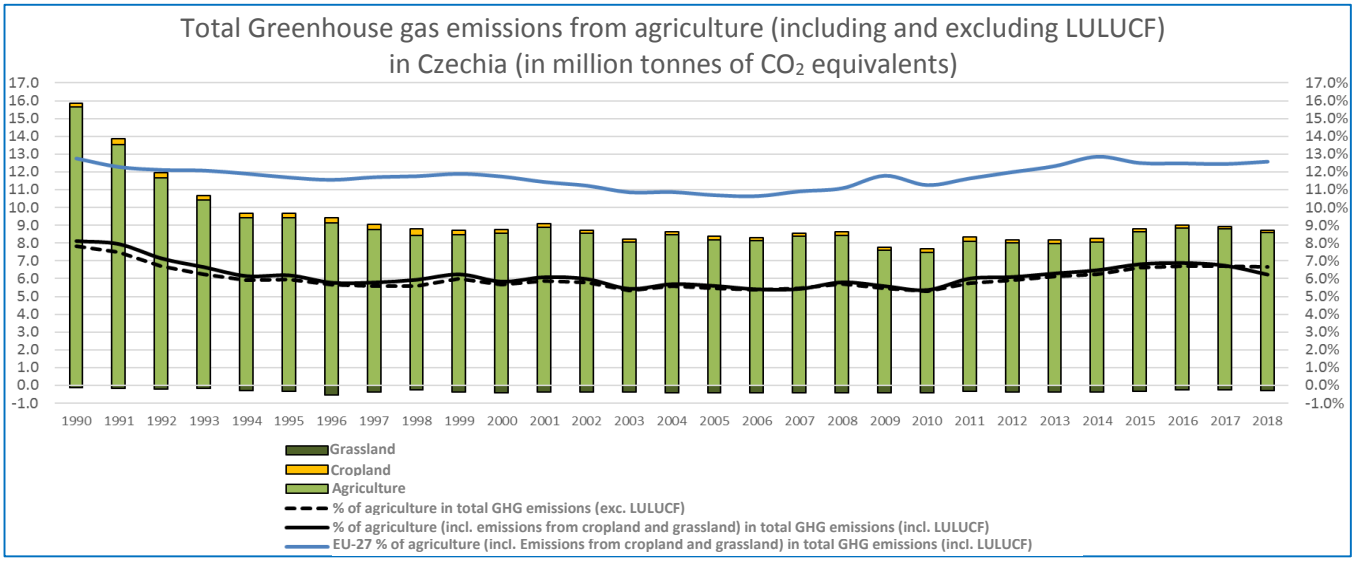
Based on current policies and measures, the National Energy and Climate Plan (NECP) of the Czech Republic[40] projects an increase by some 12% of emissions from agriculture by 2040, especially in manure management and enteric fermentation categories due to the expected increase in livestock population. For LULUCF, the projections show some 70%-100% loss of CO_2 removal capacity by 2040 depending on the age and composition of forests, and the NECP signals likely temporary emissions due to extraordinary logging to eradicate bark beetle pest.

The NECP notes that additional area for energy biomass may be limited given the projected decrease of agricultural (mainly arable) areas and the production variability by 2030. It also highlights the need to find a balance with higher demand for livestock feed and bedding, and recommends instead a more efficient use of land for energy production. Examples to foster

this shift include bio-methane production, the replacement of biomass in biogas plants with biodegradable waste. Wood biomass production by 2030 is also expected to be volatile due to the bark beetle pest and processing capacities. The NECP notes that it is desirable to develop the biogas plant sector especially in regions with low livestock intensity so that to contribute to the return of organic matter to the soil through digestate applied to agricultural land. Considering biodiversity and ecosystems, the NECP recommends prioritising protecting and restoring natural and near-natural ecosystems with high carbon-binding potential for climate objectives and indigenous/ecosystem-neutral species for renewable biomass.

The RDP support is mentioned in the context of 2014-2020 programming for organic farming, land management targeting nitrogen retention capacity and transition to cultures of higher retention potential, afforestation, permanent grasslands management, forest protection (fires, natural disasters).

The 2015 Czech National Adaptation Plan recognises agriculture and forestry as priority areas and lists several adaptation measures for both[41].



Source: 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

Agriculture represents around 90% of total ammonia (NH_3) emissions in Czechia[42]. CZ annual emissions of NH_3 from agriculture dropped significantly in the period 1990–2010 from annual 129 000 tonnes to around 70 000 tonnes. This is mainly attributed to the decrease in pigs fattening during this period. However, since 2010 the level of emission has been stable and oscillates significantly between 65 and 85 000 tonnes over the period 2010-2018.

Within agriculture, around 60% of emissions comes from animal production and 40% from crop production. The National Emission Ceiling (NEC) Directive[43] emission reduction commitment for Czechia is to reduce ammonia by 7% compared to 2005 levels for the years 2020-2029 and to reduce ammonia by 22% compared to 2005 level for 2030 and beyond. The Commission has undertaken an assessment of the risk of non-compliance with the emission reduction commitments under the NEC Directive, based on a joint analysis of the quality of projections, the credibility of the policies and measures selected for adoption in the National Air Pollution Control Programmes, and the projected margin of compliance. This assessment

concluded that, for both 2020-29 and for 2030 and beyond, Czechia would be at high-risk of non-compliance with the emission reduction commitment for ammonia.

Further reduction of animal production (numbers of animals) is difficult to foresee due to a need to ensure certain level of food security (beef, pork, poultry) and the number of animals have already stabilised during the last years. In addition according to the Strategy of the Ministry of Agriculture by 2030 (2016 report)[44], the number of animals are expected to further increase (+20% of pigs and poultry by 2030).

Instead, more investment in modern technologies is needed in particular in the light of very low (negligible) contribution of the Rural Development Programme to priority 5 – "promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy". Czechia is among 5 Member States with the lowest contribution within whole EU-27.

On the side of crop production, a pattern of increased consumption of nitrogen fertilisers is also obvious from 2010 (270 000 tonnes) to 2018 (352 000 tonnes of nitrogen)[45].

At the EU level, around 25% of the groundwater bodies are of poor chemical status primarily due to nitrates and/or pesticides concentration. According to the assessment of the 2nd River Based Management Plan (RBMP) 63% of groundwater bodies are in less than good chemical status. According to the European Environment Agency (EEA), the lowest groundwater quality is concentrated in areas where there is intensive agricultural production and, in some cases, heavy industry.

Nitrates are the pollutants that most commonly cause poor chemical status; they are the predominant groundwater pollutant throughout the EU (reported by 24 Member States and causing failure of 18% of the groundwater body area).[46] In Czechia, for the period 2012–2015, 11.6% of groundwater bodies were polluted with nitrates above 50 mg/litre.

In relation to the WFD around 78% of surface waters are failing to achieve good ecological status and approximately 31% of surface waters are failing to achieve good chemical status. For groundwater 10% are failing to achieve good quantitative status although 21% have unknown status and around 63% of groundwater bodies are failing to achieve good chemical status.

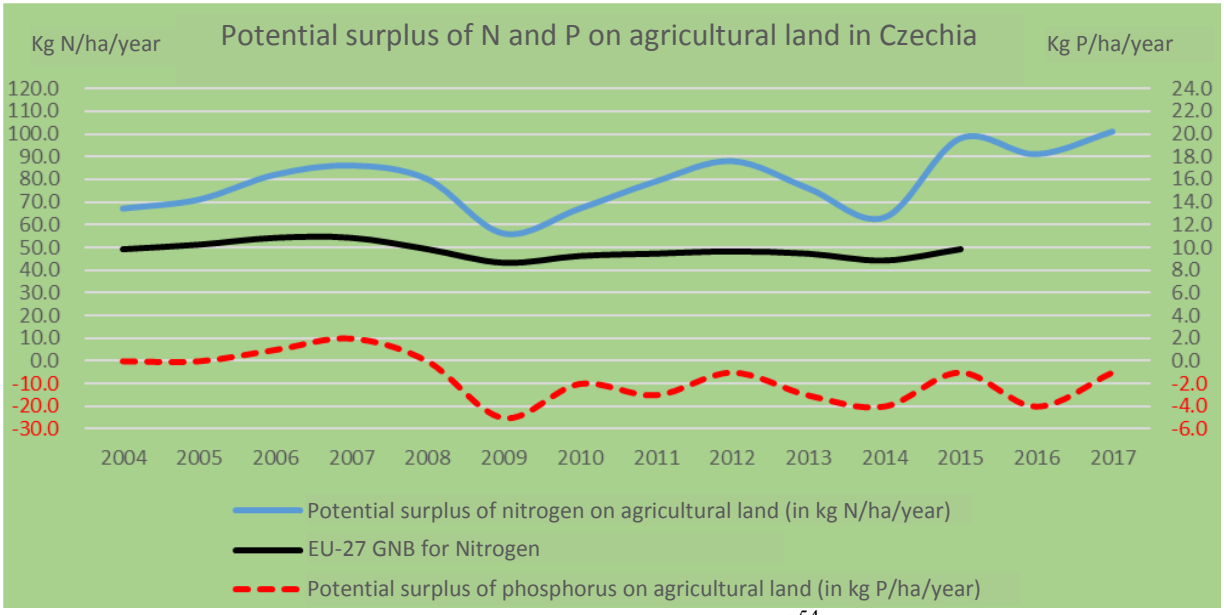
Agriculture is indicated as exerting a significant pressure on the water resources in Czechia. The country has reported diffuse source pollution from agriculture as a significant pressure.[47] Nitrates are the most significant pollutants causing failure of good chemical status in Czechia (followed by Alachlor, Metolachlor and Ammonium).[48]

In terms of the level of ambition, for groundwater, the number of groundwater bodies failing to achieve good status due to nitrates is expected to decrease by 2021 from 26 to 24 in the Danube, from 47 to 35 in the Elbe and from 8 to 2 in the Oder. The number of groundwater bodies failing to achieve good status due to pesticides is expected to decrease from 30 to 14 in the Danube, from 50 to 25 in the Elbe and from 13 to 8 in the Oder by 2021. For surface waters, nitrogen loads are expected to decrease by about 50% in the Danube and the Elbe and 75% in the Oder by 2021.

For surface waters, the number of water bodies failing environmental quality standards for pesticides originating from diffuse agricultural sources are expected to decrease from five to three in the Danube and remain unchanged in the Oder (three water bodies) by 2021.

High surplus of nitrogen has been identified within nutrient balance in Czechia. According to Eurostat data the average surplus was 79 kg N/ha of UAA (2013-2015) while EU average was 46.6 kg N/ha of utilised agricultural area (UAA). This puts Czechia well above all other "new" MS (EU-12) and on the 6th place within EU-27 in 2015 (after Belgium, Cyprus, Luxembourg, Malta and Netherlands). In 2016 and 2017 the potential surplus of nitrogen on agricultural land further increased to 91 kg N/ha and 101 kg N/ha respectively.[49]

The quality of soil, expressed as the soil organic carbon (SOC) in soils, is low compared to the EU average. The mean SOC in arable land is 20,6 g per kg (2015), compared to 43,1 g per kg for EU-28[50]. The average soil loss by water erosion is 1.6 t/ha per year against EU average 2.5 t/ha[51]. Around 1.5% of the agricultural soils in Czechia suffer from severe erosion (above 11 t/ha/year). The agricultural practices need to change to address these issues; 24% of arable land is without soil cover during winter[52], and 67% of tillable land is under conventional tillage[53]. In the future, such soil quality aspects can be addressed in synergy with activities under the Horizon Europe mission on Soil Health.



Source: EUROSTAT [aei_pr_gnb][54]

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

The enhancement of biodiversity protection and preservation of habitats and landscapes in Czechia remains a key challenge on farmland.

The Farmland bird index has strongly decreased from 157.4 in 1995 to 71.3 in 2018[55], following EU trends and linked *inter alia* to the increases in agricultural production intensity.

Natura 2000 covers 14.1 % of Czechia's territory, which is below the EU average (19.8%)[56]. In Czechia, 6.6% of agricultural land and 27.5% of forest areas are included in the Czech Natura 2000 sites. Within the current CAP, above 40% of Czechia's permanent grasslands, including all permanent grasslands within Natura 2000 areas but also twice as big area of permanent grasslands outside the network, are designated as environmentally sensitive permanent grasslands meaning that they cannot be ploughed or converted (EU: 18% of all permanent grasslands; 55% of permanent grasslands in Natura 2000 areas)[57]. Natura 2000 has

reverted abandoned pastures and meadows back into forests with a different species composition.

The conservation status of agricultural habitats is largely assessed as unfavourable-inadequate (57.1%) or bad (33.3%). The assessment over the period 2013-2018 shows that only 9.5% of agricultural habitats were in a favourable status[58]. The situation has deteriorated compared to the previous evaluation period (2007-2012) and remains worse than the EU average.

The Prioritized Action Framework indicates that for permanent semi-natural grasslands only 7 out of 23 habitat types are in a favourable conservation status, in 10 unfavourable types the trend is decreasing. For croplands, there are 7 bird species directly bound to them (*Emberiza hortulana*). Major threats are intense farming, biocides use, lack of winter and fodder crops, lack of bio-belts and fallow lands. RDP 2014 – 20 supports a measure "Bio-belts on arable land". However, the biggest challenge remains the size of cropland plots and lack of green infrastructure elements within them (including basic baulks removed during collectivisation of countryside as early as in 1950s – 1980s).

In Czechia, the area with "low input intensity" per hectare decreased between 2004 and 2017 from 40% to 28%, whereas the area with "high input intensity" has considerably increased from 13% to 47.6% in 2017 (above the EU average or 36%). Agricultural area of extensive grazing (grazing livestock production below 1 livestock unit per hectare of forage area) covers 39.9% of the total agricultural land. This share is higher than EU average (29%).

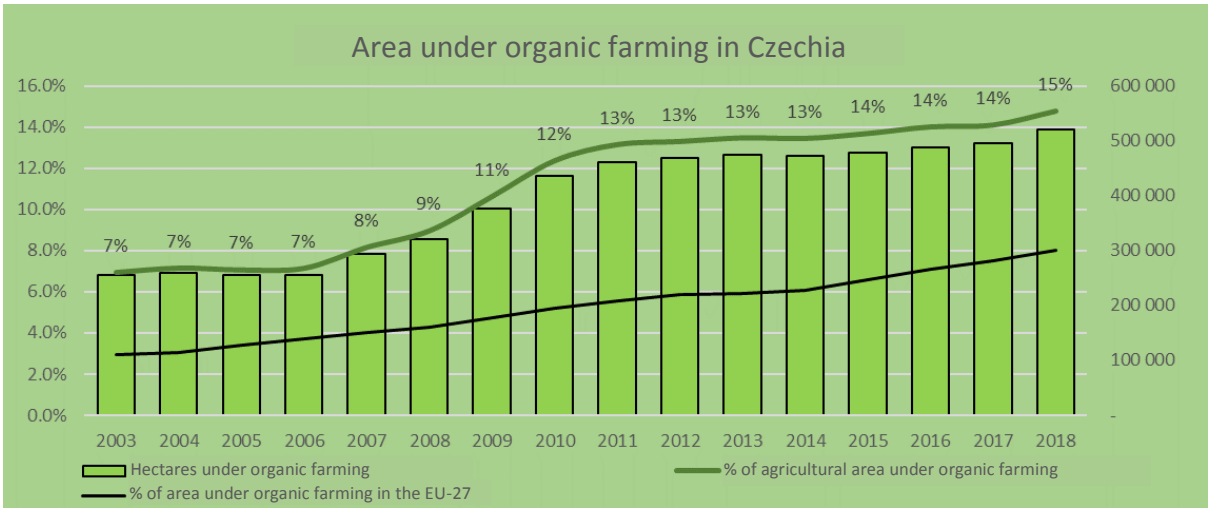
Substantial percentage of productive agricultural land is managed in an intensive, profit oriented manner. The average size of Czech agricultural holdings is the highest in the EU and practising large scale agriculture is a major cause of natural habitat decline. The uptake of ecological measures depends on the willingness of farmers. Up to 80% of agricultural land is leased, which means that it is usually managed by farmers with short-term contracts, who may be less directly inclined to sustainability objectives.

There is very limited coverage of agricultural land by landscape features like grass margins, shrub margins, single tree bushes, lines of trees, hedges and ditches in Czechia (close to 0% of the UAA vs. 0.5% in the EU). In addition, 0.8% of the UAA is fallow land which is also far from the EU average at 4.1%[59]. Within the current CAP, Czechia activated six types of landscape features under GAEC (ponds, ditches, trees in line, group of trees, isolated trees terraces) and specific to Czechia also grassed thalweg, boundary strips and wetland, which guarantee a way of maintaining them. These features can also be declared by farmers under the CAP greening's Ecological Focus Area (EFA) obligation. EFA obligation in 2019 translated into some 250 ha of landscape features/terraces which accounts for 0.01% of arable area under EFA obligation (EU: 0.23%) and fallow land accounting for 0.35% of that land (EU: 2.55%). As in several other Member States the EFA obligation is largely fulfilled with productive areas of catch crops and nitrogen fixes crops[60]. As the biodiversity strategy aims to have at least 10% of agricultural area under high-diversity landscape features, there remain a significant gap to bridge up to 2030.

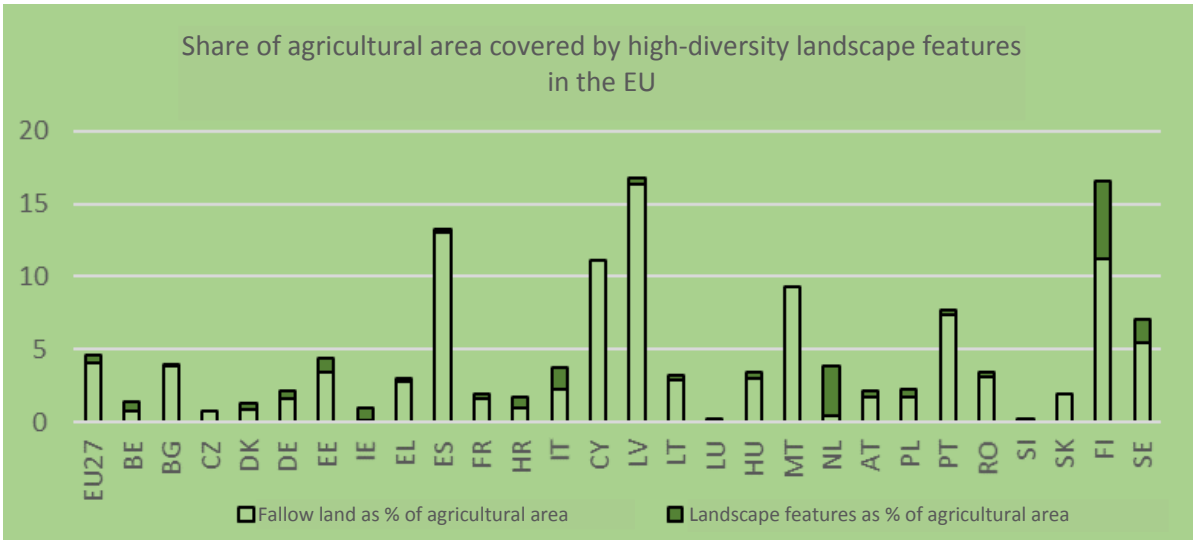
Forest areas account for around 35% of Czechia's total area, which is below the EU average (42%). Forested areas are steadily growing, 15% of Czech forests are in protected areas and almost 60% of the forested areas belong to the state[61].

The total area under organic farming is increasing in Czechia, covering almost 536 000 hectares in 2019. With 15.2% of the total utilized agricultural area under organic farming in 2019, Czechia has doubled the organic area since 2007 and is well above the average share of

agricultural land under organic farming in the EU in 2018 (8%)[62]. Based on the EU27 target of 25% of agricultural land under organic farming by 2030 set in the Farm to Fork strategy, Czechia still needs to continue increasing the area under organic farming in the coming 10 years.



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

The agricultural sector in Czechia is characterised by an ageing farming population. The share of farm managers below 35 years is 4.4% and is below the EU-average of 5.5%. Like in the EU, the share of farm managers below 35 years has decreased after 2010. In 2016, more than half (58.8%) of all farm managers are older than 55 years in Czechia. The ratio of young to elderly farmers is 0.08, meaning that for each young farmer, there are 13 farmers older than 55 years. The number of female young farmers remains quite limited in Czechia, with a ratio of young female managers to male managers at 16% in 2016[63].

Access to land is one of the main obstacles faced by Czech young farmers. Land prices have more than doubled over the last decade and this has made access to land difficult even if the prices stabilised within last two years. The increased demand for land together with the decrease of productive land is contributing to high land prices. The average size of a young farmer's farm (below 25 year) is of 58 ha and increases up to 127 ha for the age category between 25 to 34, and closer to the total average of 130 ha beyond.[64]

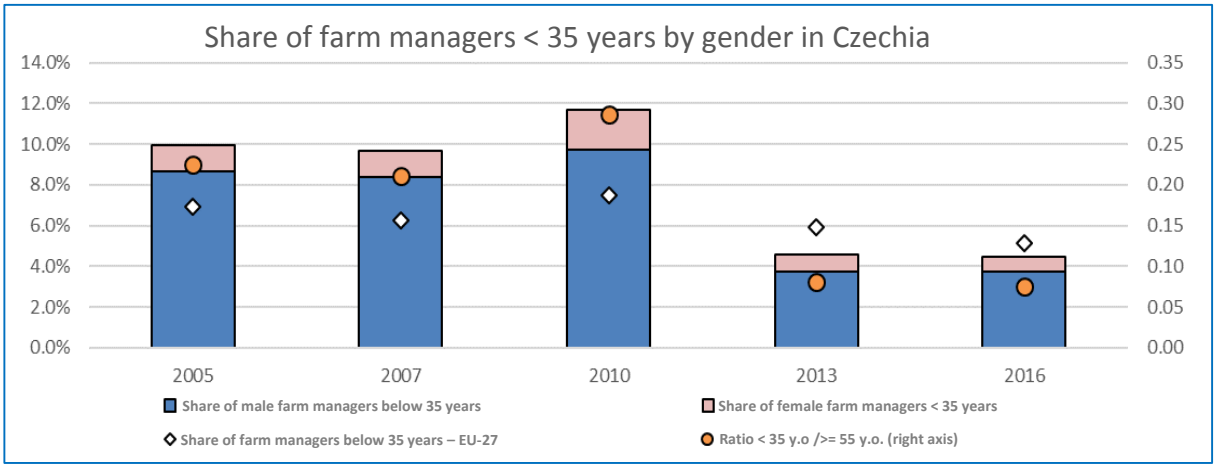
Low attractiveness of the farming sector together with administrative barriers stemming from national legislation that create difficulties in the setting up business act as an obstacle for young farmers.

Young farmers are significantly constrained in accessing finance. In addition to lacking credit history, young farmers also lack sufficient levels of collateral assets to secure a loan. They are often also charged higher interest rates compared to farmers that have been in business longer. For young farmers and new entrants, a lack of credit history has particularly negative consequences. It is considered an asset when a client can demonstrate their repayment capacity based on the previous loans they have received[65].

Young farmers also face difficulties due to issues concerning access to knowledge and experience. In Czechia, the share of young farm managers with at least a basic level of agricultural training has been over 60% in the latest years and is above the EU average, especially when referring to full agricultural training[66].

Czechia is already implementing different instruments under the CAP to encourage generational renewal in the agricultural sector. Under the first pillar, CZ earmarked between 0.2% of the annual financial envelopes for 2015-2020 to the payment for young farmers. The Czech Rural Development Programme is supporting young farmers via Measure 6.1 with an allocation of 1.5% of total public amounts. The target of supporting the start-up of 1.250 young farmers in this programming period seems to be achieved since already 1 537 aid applications have been lodged by 31/08/2020.

In 2016, 16 913 new businness were created in the rural area. This figure has mantained similar during the latest years.[67]



Source: EUROSTAT [ef_m_farmang]

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

Czechia covers an area of 78 871 km^2 with a population of around 10,7 million inhabitants. Rural areas represent around 37% of the area (while EU-27 average is 45%) [68] with a stable share of 21% of the population (which corresponds to EU-27 average).[69]

The employment rate is relatively high in rural areas (73%) and higher than EU-27 average (68%).[70] Substantial difference is however in the employment of man (82%) and women (66%). The employment rate in agriculture is lower (2.2%) than the EU average (3.8%).[71] In respect of job vacancy rate, agriculture represented a third highest sector with a rate of 11.3% (after building industry and real estate services) in 2019.[72]

GDP per inhabitant (in purchase power standard) is stable in long term development and in urban areas is reaching 132% of the EU-27 average while in rural and intermediate areas is reaching 75% and 74% respectively. This approximately corresponds to EU-27 average (125%, 71%, 88%).[73]

The proportion of farm managers who are women is very low in Czechia reaching 12% while EU-27 average is 28% (2016)[74].

The poverty rate is the lowest in the EU – average 13.3% and 11.6% in rural areas while EU average is 23.5% and 24.4%.[75]

Community local development has been supported by measure M19 Leader (RDP) where 180 Local Action Groups have been established with available EU budget 115 Mio EUR.

Agriculture areas represent around 53% of the territory while forest covers around 35%.[76]

Forestry areas available for wood supply represent 86% of the forest areas (2,3 Mio ha).[77] Number of persons employed in the forestry decreased between 2005 and 2017 for about 20% while output of forestry (in current prices) more than doubled between 2005 and 2019[78]. Within the last 3 years substantial bark beetle calamity has caused increased logging which causes increased emissions in LULUCF sector especially after 2017 when forest land category switched from net removal to net emitter. According to the statistical data, spruce represents around 50% of the forest areas (1 mio hectares) of which 50% is invaded by bark beetle and will probably not survive the next years.[79] Substantial state aid has already been granted to the forest owners as compensation for damages since rural development programme does not allow appropriate financing. However, large reforestation/restoration will be needed with new resistant species within the next years.

Rural areas have potential in development of bioeconomy, which is still not sufficiently used. Turnover per person employed in bioeconomy has slightly increased between 2008 and 2017 (+7%) but is only around 67% of the EU average in 2017. However, contribution of agriculture to the bioeconomy in turnover increased significantly between 2008 and 2017 (+25%). Agriculture and food industry remain the main sectors in the bioeconomy, representing 2/3 of employment as well as turnover in 2017.[80]

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) spread is significantly increased by the use of antimicrobials in human and animal healthcare. Minimising the use of antimicrobials as well as avoidance of its inappropriate and excessive use is therefore a priority area in the Farm to Fork Strategy.

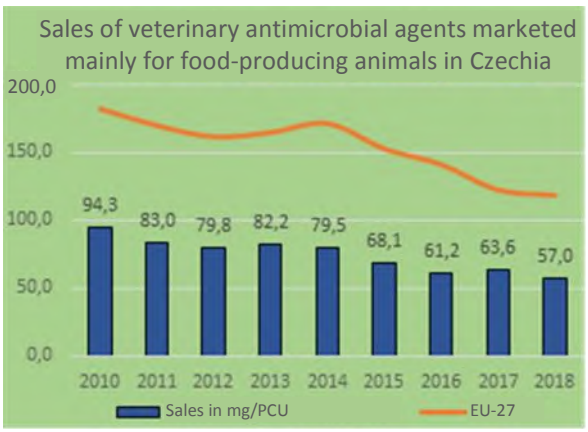
The sales of antimicrobial agents in Czechia showed decreasing trend in the years 2010-2018 (94.3 mg/PCU (population correction unit) in 2010, 57.0 mg/PCU in 2018 entailing a reduction of 40%) and remain well below the EU average of 118 mg/PCU. Czechia should continue to implement measures to maintain its downward trend for the overall sales of antimicrobials to contribute to the overall Farm to Fork target and ensure that all the necessary measures are in place for a smooth implementation of the new provisions of Regulation (EU) No 2019/6 on veterinary medicinal products applicable as from 2022.

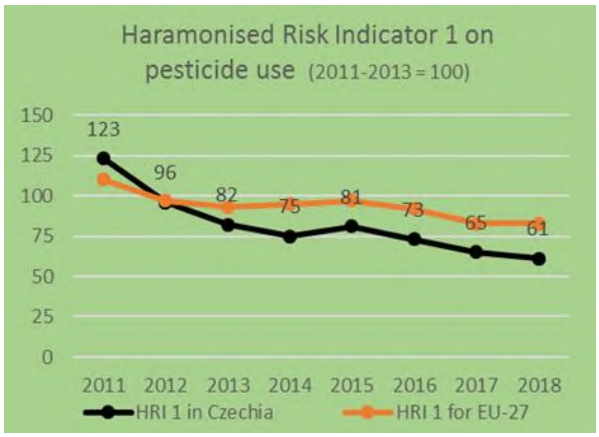
In terms of animal welfare, one of the main issues in Czechia is that the tail docking of pigs remains routine practice despite being forbidden by EU rules. Tails are usually docked to prevent pigs from stress-induced tail biting in response to negative environmental and management factors. The percentage of pigs reared with intact tails in Czechia has barely changed since 2016. The second issue concerns transport of live animals where exports by road take place during the summer months in extremely high temperatures. In terms of farm biosecurity, African swine fever is not present in Czechia but there is an increased risk, hence the need for the prevention of further spread of ASF. Czechia is also among the countries that need to revise/upgrade biosecurity, registration of certain farms, animal ID and animal movements.

The sales of pesticides in Czechia fluctuated between 2011 and 2017 with the majority of pesticides sold being 'herbicides, haulm destructors and moss killers' followed by 'fungicides and bactericides'[81]. Risk arising from pesticide use, based on the calculation of Harmonised Risk Indicator 1 (HRI 1)[82] showed a downward trend in the period 2011-2018 and in particular from 2015 onwards. The sale of low risk active substances has been on the raise though with some annual fluctuations. However, sales of the more hazardous pesticides i.e., the candidates for substitution remain high and stable in relation to total pesticide sales[83]. The HRI 1 figure, as in the graph below, shows a 39% reduction in the risk in the period (baseline 2011-2013) / 2018 (EU: -17%). HRI 2[84] values indicating emergency authorisations showed substantial year-to-year fluctuations with an overall increasing trend against the baseline years 2011-2013. The Czech authorities singled out as most problematic herbicides used to protect rape and maize[85].

Where placing on the market is concerned, Czechia experiences delays in approval/authorisation processes for plant protection products. The Regulatory Fitness and Performance programme (REFIT) survey revealed a limited availability in the Czech territory of products authorised as low-risk, for minor uses and for organic farming. There is also a lack of pesticides for minor uses/specialty crops.

Concerning the implementation of the Sustainable Use Directive (SUD), Czechia submitted a revision of the National Action Plan (NAP) covering years 2018-2022[86]. According to Commission findings on the implementation of the SUD, in Czechia there is insufficient enforcement to ensure mandatory implementation of Integrated Pest Management general principles by all professional users of pesticides. The 2017 overview report on the SUD also indicated delays in training and certification of operators in Czechia and difficulties with ascertaining the area under exceptional aerial spraying[87]. The revised NAP recognised the need for improving training, the duration of which is lower than in the vast majority of EU MS[88].





Source: DG AGRI after ESVAC, Tenth ESVAC Report (2020)

Source: EUROSTAT [aei_hri]

Czechia 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 diet[89] anda comparatively medium high incidence and estimated mortality rate of colorectal cancer[90], bothinfluenced by a number of dietary factors.

Czech diets are, for example characterised by high levels of sodium, sugared drinks, red and processed meat[91], and very low consumption of fruit and vegetables[92]. Some 46% of the population in Czechia indicates not to include fruit and vegetable in their daily diet, higher than the EU average (36%)[93]. The proportion of obese persons in the population (21% in 2017) increased since 2008 (15% in the EU). The overweight rates reported in Czechia (62%) have also been on the increase and belong to the highest in the EU (52% in the EU)[94].

Efforts should focus on shifting towards healthy sustainable diets, in line with national recommendations, in order to contribute to reducing 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.

No data is yet available on food loss and waste in primary production and processing of food. Czechia's Waste Prevention Programme (2014-2020)[95] 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 functioning of the Agricultural Knowledge and Innovation Systems (AKIS) in Czechia has been characterized as relatively strong. [96] [97]

Under the programming period 2014-2020, Czechia programmed 4.2% of its total rural development envelope (EAFRD + national contribution) under knowledge transfer and information actions (measure 01), advisory services, farm management and farm relief services (measure 02) as well as Co-operation-EIP (measure 16). This is higher than the EU-28 average of 3.6%. However, measure 02 (advisory services) has not been finally implemented and according to its EAFRD declared expenditure (updated 25 August 2020), Czechia has largely underspent its respective budgets: 8% of its planned measure 01 budget and 35% of its planned measure 16 budget. [98] **99** [100]

In December 2020, 14 Operational Groups under the European Innovation Partnership (EIP-AGRI) were operating in Czechia, which quite low compared to the rest of the EU.[101]

There is also one fully operational Digital Innovation Hub in Czechia related to agriculture, hunting and forestry, in a total of 142 hubs amongst EU members.[102]

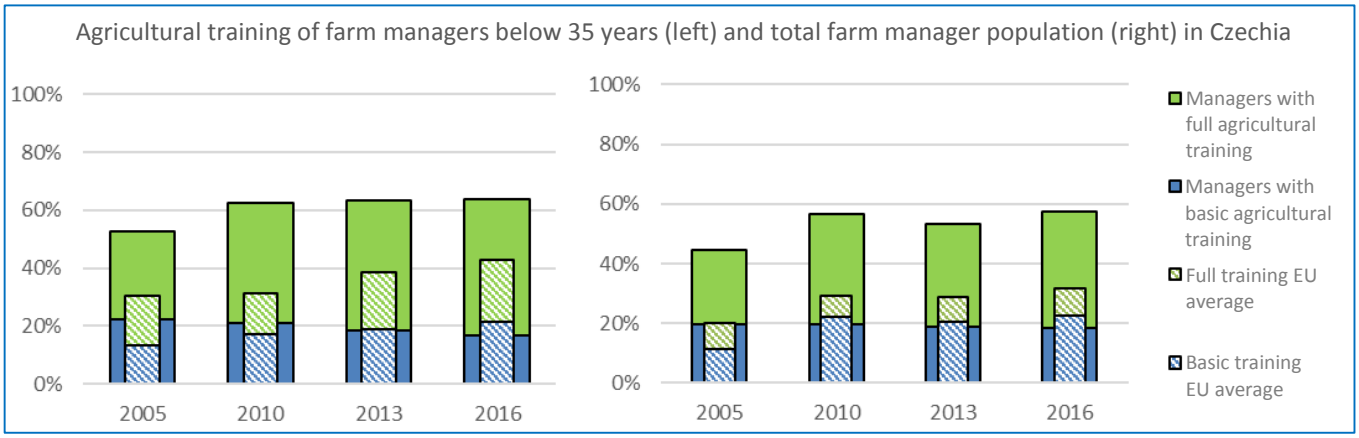
Member States have opted for different ways to set up their national rural network (NRN) structures. Managing authorities appear to play the central role in Czechia. In this case, the managing authority tends to be the overall supervisor of all bodies within the NRN structures, also developing and signing off the annual work plans. **[103]** There is little information available about networking activities organised at the national level to connect research actors, such as universities and partners of Horizon 2020 consortia 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. By collecting and disseminating information, for instance through knowledge platforms and workshops, the CAP network will facilitate the implementation of relevant research and innovation results. Moreover, the CAP can finance interventions that help to make use of up-to-date scientific information for agricultural practices, such as advising, training of farmers and advisors, knowledge exchange events, on-farm demonstration, etc.

In 2016, 42.8% of farm managers in Czechia had practical experience only, while 38.7% of farm managers completed full agricultural training. Farm managers with full training in Czechia are well above the EU average of 8.9%. The highest percentage of fully trained farm managers in Czechia is within young farmers (less than 40 years old) with 49.1% of them being fully trained. **[104]**

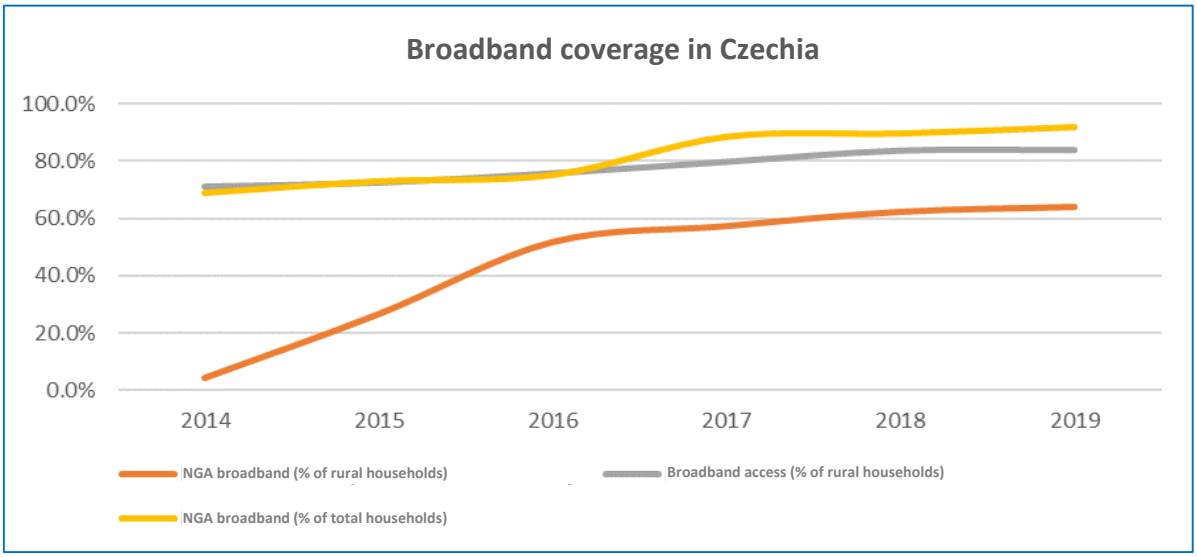
Under the rural development programme, transfer of knowledge was to be provided through the training of more than 3 800 participants[105].

Regarding connectivity as a whole, Czechia is under the EU average. Broadband coverage of rural areas remains a challenge, as around 5% of Czech rural households are not even covered by a fixed network. Although more than 60% Czech rural households are covered by Next Generation Access (NGA) technology, there is a gap between rural (64%) and national (92%) coverage. This may have negative impact on development in rural areas, which has been further accentuated by current crisis. [106] [107]

In addition, Czechia has not yet opted for the use of satellite-based means to monitor CAP implementation. Nevertheless, governmental organisations from Czechia are currently participating in EU projects dealing with the uptake of new technologies for the modernisation of CAP administrations, CAP controls and interactions with farmers.



Source: EUROSTAT [ef_mp_training]



Source: Digital Economy and Society Index report

[1] European Commission, *COM(2020) 266 final: REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the progress made on the implementation of Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants,* https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1596794534116&uri=CELEX:52020DC0266

[2] Brief " What is AKIS?": https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key_policies/documents/building-stronger-akis_en.pdf

[3] European Commission, COM(2018)392final of 01/06/2018: *Proposal for a Regulation of the European Parliament and of the Council establishing rules on support for strategic plans under CAP* - Art 13(2) (new obligation) requests that all advisors are integrated within the AKIS system (not in a separate advisory system, but serving or making use of other interventions too).

[4] 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.

[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. *CAP context indicator C.25 Agricultural factor income.* Based on EUROSTAT [aact_eaa04], [aact_ali01] and [aact_eaa06].

[7] Czech Statistical Office, registered number of employees and their wages in the Czech Republic; 2018 data.

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

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

[10] Directorate General for Agriculture and Rural Development own calculations based on Member State notifications via ISAMM.

[11] Directorate General for Agriculture and Rural Development own calculations based on CATS (Clearance of Accounts trailing System) data (2015-2017). CAP result indicator R6 Redistribution to smaller farms.

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

[13] According to the FADN definition, the "economic size" of an agricultural holding is measured based upon its total Standard Output (expressed in euro), i.e. the standard value of its agricultural output.

[14] Data with regard to physical size: Directorate General for Agriculture and Rural Development own calculations based on FADN data (up to 2018); data with regard to economic size: Farm Accountancy Data Network. FADN Standard reports. YEAR.COUNTRY.SIZ6 and own calculations (up to 2018).

[15] Farm Accountancy Data Network. FADN Standard reports. YEAR.COUNTRY.TF14 and own calculations (up to 2018).

[16] Farm Accountancy Data Network. FADN Standard reports. YEAR.COUNTRY.ANC3 and own calculations (up to 2018).

[17] Study on risk management in EU agriculture (Directorate-General for Agriculture and Rural Development (European Commission), ECORYS, Wageningen Economic Research; 24/08/2018).

[18] 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.

[19] European Commission. Eurostat, Economic Accounts for Agriculture (values at real producer prices).

[20] European Commission, Eurostat, Farm Structure Survey

[21] European Commission. Eurostat, Statistical Books, Agriculture, Forestry and Fisheries, 2018 Edition. Publications Office of the European Union, 2018

[22] Czech Statistical Office. Statistical Yearbook of the Czech Republic 2019,

[23] European Commission. Directorate General for Agriculture and Rural Development.

[24] Financial needs in the agriculture and agri-food sectors in the Czech Republic by fi-compass

[25] European Commission. Eurostat

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