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Commission recommendations for Lithuania'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 LITHUANIA'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 Lithuania. The recommendations are based on analysis of the state of play, the needs and the priorities for agriculture and rural areas in Lithuania. The recommendations address the specific economic, environmental and social objectives of the future Common Agricultural Policy 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 Lithuania, 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

Lithuanian's transition towards more resilient and sustainable food systems in line with the Green Deal and Farm to Fork Strategy targets will require certain socioeconomic changes. In Lithuania, the share in gross value added and the employment rate in the agricultural sector are higher than the EU average, but this situation is offset by the trends in factor income, which for Lithuanian farmers stands at only a third of the EU average, with significant differences between farms of different sizes. While productivity and income in 2005-2018 were increasing, convergence with the EU average has been slow and there are signs of over-reliance on area-based public aid. While investments have been increasing, land productivity did not follow as expected. This might indicate the need for further improvement of the production systems.

Lithuania is one of the EU Member States where CAP and national support schemes play a key role and have a high share (above the EU average) in entrepreneurial income. Redistributive payments have a positive effect on smaller farms, but could be further improved.

Lithuanian agriculture depends on a rather limited number of crops and the livestock/dairy sector. It has a highly concentrated processing industry (dairy products) and displays dependency on certain export markets. This being the case, Lithuania could explore further diversification of agricultural markets to gain value.

In addition to a certain volatility in the factor income, Lithuanian agriculture is prone to climatic risks and risks from animal diseases. These factors combined result in a high level of uncertainty for farmers and a low level of farm resilience. Despite this, the level of participation in risk management schemes is rather low and could be improved in order to enhance farm resilience.

There is a considerable need for investment support in the agri-food sector, where there seems to be insufficient availability of long-term loans and appropriate financing instruments. Lithuania could consider further developing financial instruments and their application in conjunction with other CAP financing.

The total value added in the food chain and the contribution by primary producers are increasing, but the gains offered by cooperation in agriculture are not being fully exploited. Despite large share of small farms in the country, the number and average size

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

of cooperatives are among the lowest in the EU and there are no recognised producer organisations. Further consideration could be given to quality schemes (mainly EU and national schemes) as a means to generate more value added.

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

Lithuania should devote more attention to meeting the environmental and climatic objectives. Agricultural greenhouse gas (GHG) emissions represent a significant share of total non-CO_2 greenhouse gas emissions, while the carbon sink capacity of grasslands and forests is decreasing. 'Carbon farming' approaches could be designed to incentivise, for instance, appropriate grassland management, and the rewetting and restoration of drained peatlands. The overall production of renewable energy in Lithuania, and in particular from agriculture, can be improved as it is below the EU average. On the other hand, Lithuania is one of the leaders in using forestry production for renewable energy, giving it an opportunity to contribute to the transition to a low - carbon economy in the EU.

Over the coming decades, expected climatic changes will bring significant changes in the conditions for Lithuanian agricultural production. The sector will be increasingly vulnerable to expected decreases in summer rainfall and increased winter storms and floods, as well as increased risk of pest and disease outbreaks. The CAP plan can play a key role in advising farmers and strengthening agriculture's resilience so that it can cope with increasing uncertainty. A wider application of risk management tools can also play an important role in fostering the resilience of agriculture and adapting agriculture to climate change.

Ammonia emissions from agriculture in Lithuania remain a challenge as part of efforts to reduce air pollution and the downward trend may not be sufficient to meet Lithuania's emission reduction commitments. Lithuania should take a clear and effective strategy for reducing these emissions. Low organic carbon content is of particular concern, affecting both arable soils and grazing land. These key issues can be addressed in synergy with activities under the Horizon Europe mission on soil health.

While there are no major issues with water quality and quantity in the country, a recent report highlights signs of eutrophication of surface freshwater and of the national Baltic Sea waters. Actions to prevent nutrient leakage and protect water quality must be underpinned by improvements to monitoring systems.

Although overall Lithuania's nature is in a good general state, there are areas of concern linked to biodiversity. Notably, the farmland bird index is declining sharply and the conservation status of grassland, wetland and forest habitats is mostly unfavourable. In addition, the share of landscape features and land laying fallow in the utilised agricultural area (UAA) is low and the country's Natura 2000 network not yet complete. The priority measures within the CAP strategic plan should take into account the needs identified in the prioritised action framework for 2021-2027 of Lithuania as well as in national species and habitats action plans. The multifunctional role of Lithuanian forests should be enhanced by supporting sustainable and resilient forest management including forest protection and restoration of forests ecosystems.

Areas under organic farming have been constantly increasing since 2012 and have reached the average EU level. However, the share of area under organic conversion out of the total UAA has dropped in recent years. The future CAP Strategic Plan should

provide adequate incentives for the uptake of organic farming practices to address a wide range of environmental issues and to reach the ambition set out in the Farm to Fork Strategy.

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

Lithuania is one of the EU Member States with the highest share of population living in rural areas. At the same time, Lithuania has been the hardest hit by depopulation and emigration, with population in rural areas shrinking by 8.8% in 2015-2019 the highest rate in the EU. Achieving a good employment rate in rural areas is more challenging compared to urban areas in Lithuania and to the EU average. Levels of poverty and inequality in Lithuanian rural areas are among the highest in the EU, and Lithuania is one of the most sparsely populated EU Member States. All these elements calls for actions and further consideration. There must be careful consideration of the work-life balance in order to deliver on gender equality in parental leave policies; in caring for children and childcare services; in informal care for older persons and persons with disabilities and in long-term care services.

While the gap between the total gross domestic product (GDP) per capita in purchasing power standard (PPS) in Lithuania and the EU average is closing, the benefits of convergence are unevenly distributed and mainly concentrated in the capital region. In 2017, production in rural areas accounted for only half of the EU average of the total gross value added (GVA). Forestry plays an important role in Lithuanian rural areas and, together with agriculture, provides opportunities for the development of the bio-economy.

Despite the challenging demographical conditions, young farmers, young female farmers and young farm managers in Lithuania as a percentage of all agricultural operators are above the EU average and the trend is upward. This can be seen as a positive achievement in the transition towards a green and modern agricultural sector. Regardless their higher level of skills, about half of young farmers run their activities on small farms (less than 10 ha). In addition to significant depopulation, which raises concerns about the future vitality of rural areas, the main challenges for Lithuanian young farmers are access to land (including legal restrictions on buying it) and access to finance.

Lithuania should consider strengthening the support for SMEs both in the agricultural sector and outside it it should do the same for the overall support to generational renewal in rural areas. Ensuring the protection of agricultural workers, especially precarious, seasonal and undeclared workers, will play a major role in delivering on rights of agricultural workers, as enshrined in legislation which is an essential element of the fair EU food system envisaged by the Farm to Fork Strategy.

The impact on human health from the use of inputs for crop and livestock production has become an important concern. The way farm animals are raised and transported is also increasingly at the heart of social debate. Lithuania has reported sales of antimicrobials in the lowest range of data provided by Member States and is below the EU average. On the other hand, further efforts are needed on animal welfare in general, as well as on farm biosecurity given the presence of African swine fever (ASF).

On the use of plant protection products, Lithuania has put significant efforts into making the use of pesticides more sustainable. However the challenge is to ensure the uptake of

integrated pest management practices by farmers in line with the ambition in the Farm to Fork Strategy on the sustainable use of pesticides.

Lithuania should make an effort to shift towards healthy sustainable diets, in line with national recommendations, as it has high rates of overweight people and obesity and a very high burden from non-communicable diseases due to dietary risk factors. This would simultaneously improve the overall environmental impact of the food system.

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

The transition towards a sustainable food system cannot be achieved without sharing of knowledge, innovation and digitalisation. A well-functioning agricultural knowledge and innovation system (AKIS) serving all the CAP objectives, should deliver ample knowledge flows between its actors. Lithuania has established an agricultural research, education and advisory system in the public sector. However, mainly due to underinvestment and insufficient interaction among those involved, Lithuania's AKIS appears fragmented and has a weak focus on farmers' needs. Private advisors seem to be little or not connected with the knowledge produced.

Despite the high share of farmers who have received full agricultural training, participation in adult learning in agriculture is low and there is an overall need to improve the skills development system. This is reflected in the fact that the share of funds allocated in Lithuania to measures linked to information, knowledge and innovation is below the EU average. Acting upon these weaknesses would support competitiveness and boost productivity, which, despite a recent pick-up, remains below the EU level.

Rural standard fixed and fast broadband coverages are below the EU average. There are significant gaps in urban / rural digital skills. The lack of basic services such as broadband access has a very high impact on population movements and reduces the attractiveness of the agriculture sector and rural areas.

1.5 Recommendations

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

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

- **Improving the viability of farms** with lower incomes, especially smaller farms with higher development potential, through a more targeted and effective distribution of direct payments, by applying, for example, the complementary redistributive income support for sustainability and the reduction of payments. The improved distribution should take into account the contribution of income support to the development of rural areas.

- **Strengthening the competitiveness of the agricultural sector** by ensuring sustainable productivity growth and by addressing the food markets of the future, where demand for more sustainable and high quality food will increase. Support,

including through the financial instruments, should be targeted at investments, practices and knowledge-building which can achieve a **transition to more sustainable production and processing** and widespread productivity growth. Lithuania should also focus on stimulating diversification to produce higher value-added products.

- **Capturing a higher share of value added for farmers in the food supply chain** by stimulating all forms of producer cooperation, notably in sectors with small producer size – in particular, and by encouraging cooperatives to seek recognition as producer organisations.

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

- **Reducing agricultural emissions of greenhouse gases** by fostering climate-friendly farming methods, with a particular focus on the livestock sector, nutrient management, peatlands and carbon-rich soils, and promoting the production of on-farm renewable energy.

- **Assisting the adaptation of agriculture to climate change** by promoting adaptive and draught resilient farming practices, such as promotion of practices enhancing soil health and its carbon content, soil's ability to retain water and application of longer and more diverse crop rotation. Relevant investments and landscape-level solutions involving multiple farmers will also be necessary.

- **Reducing pressure from the agricultural sector on natural resources** by cutting ammonia emissions, increasing soil organic carbon content, better nutrient management and increasing nutrient use efficiency **(in line with the related EU Green Deal target)**.

- **Contributing to the EU Green Deal target on high-diversity landscape features on agricultural land, while more generally improving conservation of biodiversity on farmland** in line with the Prioritized Action Framework for CAP funding. This will involve stepping up conservation measures, habitat management measures and habitat restoration for farmland birds by using the possibilities offered by the Green architecture.

- **Ensuring resilient and sustainable forest management and promote the efficient use of biomass** to contribute to a low carbon economy. Multifunctional forest management should furthermore encompass forest protection and restoration of forests ecosystems in order to enhance ecological services and biodiversity.

- **Contributing to the achievement of the EU Green Deal target on organic farming** by re-establishing support for conversion to and maintenance of organic farming.

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

- **Raising entrepreneurship in rural areas and improving/diversifying rural incomes** - including from forestry, rural tourism and untapped potential offered by the bio-economy.

- **Improving the socio-economic development of rural areas** by facilitating access to good quality public services, such as childcare, education, healthcare and other, thereby fostering economic development, job creation and diversification in rural areas. In doing so it will be important to ensure synergies and complementarities between the EU and national funds.

- **Improving animal welfare and farm biosecurity,** including through ambitious measures to promote best livestock management practices, especially for pigs, laying hens and male dairy calves.

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** while **addressing rural/urban gaps in broadband coverage and in basic digital skills** – through appropriate CAP support which complements funding available from other sources.

- **Enhance AKIS integration and its overall performance** by better integrating information, knowledge, advice, innovation and research and stepping up investment to foster knowledge development and flows among its actors (particularly farmers, researchers and advisors). This would involve increasing efforts in knowledge exchange, training and cooperation with an enhanced focus on farmers' needs, improving links between public and private advisors, investing in advisors' training and skills and promoting their integration in interactive innovation projects.

2. ANALYSIS OF AGRICULTURE AND RURAL DEVELOPMENT IN LITHUANIA

The agricultural sector in Lithuania is characterised by relatively favourable production environment, but due to structural constraints low and considerably varying income as well as low levels of farming sector concentration. Agricultural sector plays an important role in terms of the economy and jobs, and it still attracts young managers and occupies an important place in country's export structure. Rural areas in Lithuania are lagging behind in terms of economic development and jobs and are heavily hit by poverty and depopulation, and still very much depend on primary agriculture.

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

Average farm income amounts to 54% of the average salary in the whole economy, which is slightly lower than the EU average (47%). However, from 2012 this gap has been increasing, which is linked both to increasing earnings in other sectors and a decrease in farm incomes[1]. The share of direct payments amounts to on average 44%, while total subsidies (Pillar I and Pillar II) – amounts to on average 71% in the farm factor income in 2014-2018[2].

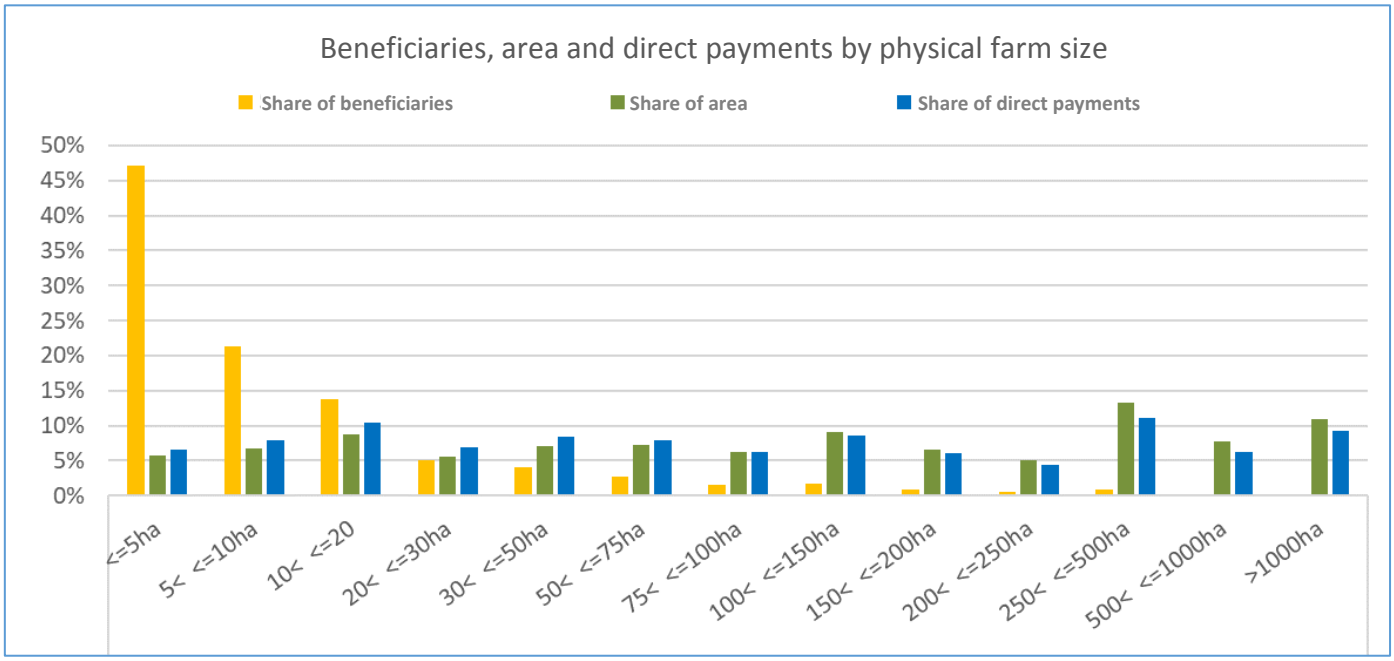
Lithuanian farmers earn on average relatively low factor income[3] [4], which is about a third of the EU average income. However, there are significant income disparities depending on farm size, agricultural sector, or type of area.

The agricultural factor income increases with physical farm size: while small farms (5 to 20 hectares[5]) earn very low income, farms of 200 hectares and above earn close to the EU average income. Income distribution according to the economic farm size follows the same pattern[6], whereas the unit amount (direct payments and transitional national aids) per hectare follows the opposite trend – decreases with both physical and economic farm size (thanks in particular to the redistributive payment) (see graph below where the share of direct payments for the smallest farm sizes is higher than the share of area). As a result, farms below the national average size (around 20 hectares) receive about 20% higher direct payments per hectare[7]. However, the income of these farms remains significantly lower than the national average. Higher than the national average unit amounts per hectare (direct payments and national aids) are paid to farms in areas facing natural or specific constrains (ANC) and to cattle and dairy farms, with lower income than average, whilst cereal, oilseed and protein crop farms and granivores farms (with generally higher income than average) receive lower than the average unit amounts[8]. Regarding the type of area, the current ANC payment utilized by Lithuania, makes a partial compensation for the difference in income as compared to non-ANC areas. This is mainly due to the fact that milk and cattle farms, which on average are smaller and have lower income (low raw milk price plays a role here, see analysis under 2.2), are more prominent in ANC areas. In fact, farm income in ANC areas is on average about 40% lower than the income in non-ANC areas in 2014-2018[9].

Furthermore, it should be noted that a significant share of direct payment beneficiaries have a lower economic size than EUR 4 000[10] and that a majority of them are semi-subsistence farms[11].

Farm income strongly fluctuates in sectors highly dependent on exports and particularly prone to climatic risks or animal diseases (cereals, crop production and pig farms in particular). Despite the progress made in recent years in deploying risk management

instruments, their uptake has not been at the desired levels in terms of land coverage nor in number of participating farms. By the end of 2019, only 0.4% of farms participated in risk management and by the end of 2018 only 2.5% of the total arable land was covered by insurance[12]. Possible obstacles that result in a low uptake include a lack of insurance culture, products' availability and over-reliance on off-farm income that persists among small farms, which on the other hand is also an income diversification strategy for these farms[13].



Source: European Commission. *Income support breakdown.* [Distribution of direct aid to farmers – indicative figures 2018 financial year.]

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

Lithuanian agricultural sector is undergoing structural changes that have an impact on sector's competitiveness. Lithuanian farms used 2.93 million hectares for agricultural production in 2016, 3.5% more than in 2005. The total number of agricultural holdings has declined in 2005-2016 by more than 40% whilst the average farm size has almost doubled and in 2016 stood at 20 ha[14]. However, despite the biggest majority of those who left the sector were small agricultural holdings, the farm structure remains dominated by farms below 20 ha (82% of total number of farms in 2018[15]).

Agriculture plays an important role in the Lithuanian economy. The gross value added (GVA) produced in the agricultural, forestry and fisheries sector accounted for 3.3% in 2019 (compared to EU average of 1.8%). The employment in agriculture was also higher than the EU average (6.2% and 4.1% respectively). The total agriculture output in the country is dominated by crop sector (65%) followed by livestock sector output (33%)[16].

Among the Baltic States, Lithuania is the most important producer of cereals. Total production of cereals is at least at 5 million tonnes for the last 5 marketing years (excluding 2018, with severe draughts). Soft wheat is by far the most important cereal produced, representing 75% of the total cereal production (DG AGRI).

The number of livestock units decreased over time in Lithuania from around 1.3 million in 2005 to 850 000 in 2016. Number of dairy cows in 2011-2019 decreased by more than 30%[17]. However, raw milk deliveries have generally increased in the last decade.

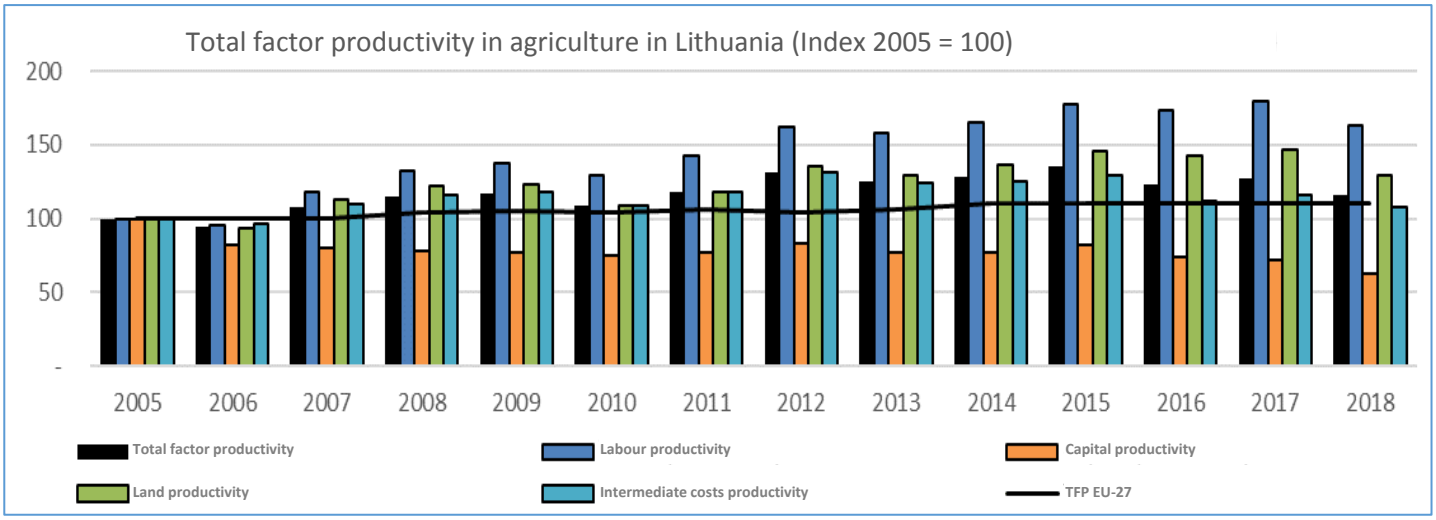
Lithuanian dairy sector is characterised by very small farms (in terms of heads and milk output FADN) and a highly concentrated processing industry. Milk prices in LT are traditionally the lowest in the EU (together with Latvia), and among the most volatile. Lithuania was one of the MS most affected by the introduction of the Russian import ban.

Pig sector in Lithuania is affected by the reoccurring outbreaks of African Swine Fever[18]. This virus has serious economic implications, both due to the direct consequences for affected holdings and indirect consequences for other pig holdings in the country, resulting from restricting biosecurity measures.

Increasing productivity is important to boost the competitiveness of the sector. Despite the high average annual growth rates in total factor productivity recorded in 2007-2017 (+2.8%), the gross agricultural production per hectare of UAA (at EUR 880 in 2018) remained well below the EU-27 average of EUR 2 410[19]. High outflow of labour force was the main driver for the increase in labour productivity. The total factor productivity in 2018, measured as a 3-year moving average index where the EU value in 2005 equals 100, was higher in Lithuania (122) than the EU average (110), but in 2014-2017 was stagnating[20].

Owing to a positive trade balance with countries outside the EU, the overall agri-food trade balance (intra and outside EU) in agricultural and food products since 2012 has been positive and relatively stable. Commodities, especially wheat, dominate in the export structure[21].

Despite the considerable growth in farm investment that in 2012-2018 increased 1.6-fold and in 2018 the total value of investment stood at EUR 640 million[22], there is a considerable unmet demand for investment support in agri-food sector. The financing gap is estimated between EUR 962 million and EUR 2.2 billion[23].



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

2.3 Improve farmers' position in the value chain

The share of the value added in the food chain for primary producers in Lithuania is above the EU average and it increased in 2008-2012 from 34% to 50%, after which it declined to 38% in 2016[24]. The total value added in the food chain in Lithuania in absolute terms is increasing steadily after the crisis in 2008 up to 2015. The structures in the food chain are very asymmetric. Lithuanian agriculture is characterised by small

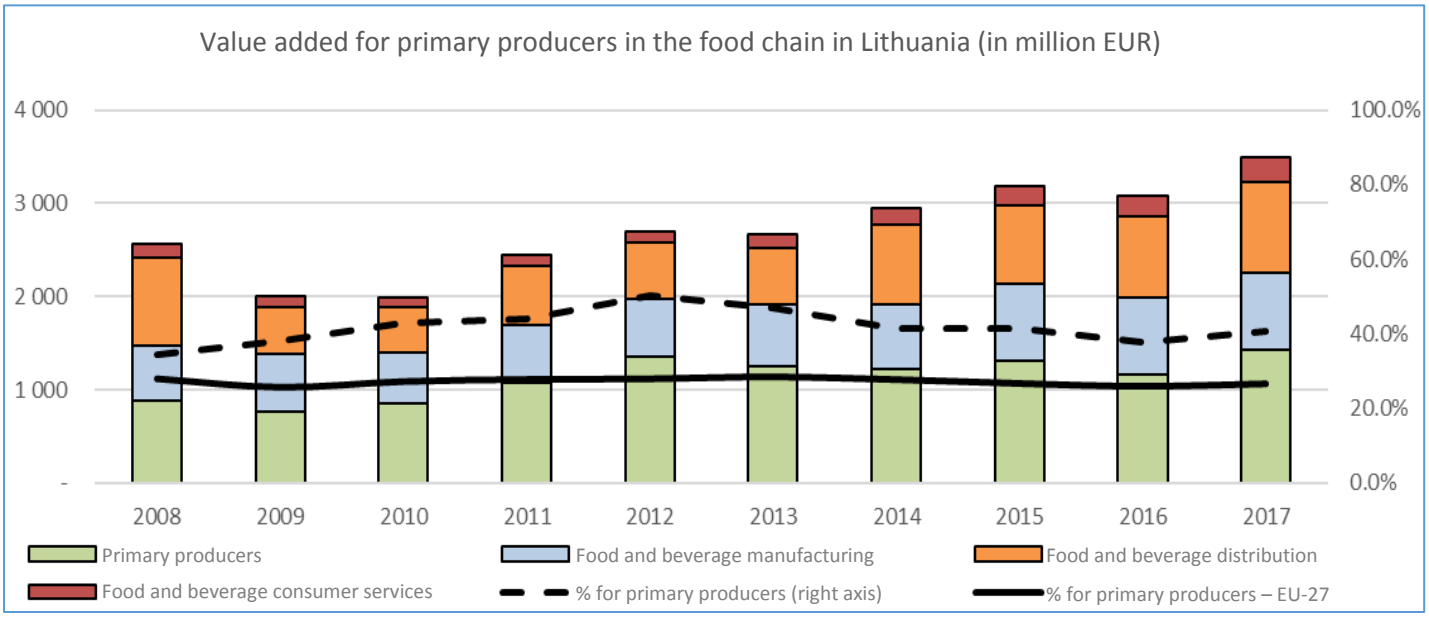
farms and is fragmented. In 2016, more than three quarters of the country's farms had less than 10 ha of UAA used. Contrary to the primary sector, country's food processing industry and retail sector is characterised by high levels of concentration.

The gains offered by cooperation in agriculture are not fully exploited. The first producer organisation in dairy sector in Lithuania was established at the beginning of 2019. In 2018, around 200 agricultural cooperatives were operating in Lithuania[25], mostly not recognised as producer organisations. They bring together around 12% of all farmers in the country. Compared to the rest of the EU, the number of cooperatives in the country is low and the number of cooperative members is one of the lowest - vast majority of cooperatives (in 2016: 72%, in 2018: 57%) had less than 10 members[26]. Most of the cooperatives are engaged in primary production. The main obstacles hindering the development of cooperation are multifold: economic (lack of significant financial incentives to unite and gain greater economic benefits), managerial (lack of leaders and their inexperience, insufficient management funding, low remuneration of executives as compared to the private sector), and psychological (mistrust among producers, insufficient experience in teamwork)[27]. No inter-branch organisation has been recognised in Lithuania so far.

Lithuania has national legislation addressing unfair trading practices in place since 2009 that needs to be brought in line with the EU law.

Although the Lithuanian agri-food market is still dominated by long supply chains, the development of the local food system and short food supply chains through various forms of direct sales has accelerated in 2018. In 2016, 24.3% of farms participated in the survey on the structure of agriculture reported direct sales of more than 50%[28]. The turnover of food sold in farmers' market in 2017 represented only around 3.2% of the total food sales. Almost half of these sales (47.6%) were meat products[29].

Lithuanian consumers remain very price sensitive, however demand for high quality food products is increasing. Lithuania leads in terms of making use of Geographical indications (GI) among the three Baltic States. The main sector of GI is spirit drinks, which in 2017 accounted for 68% of the total GI sales[30]. Further development of EU quality schemes would allow strengthening farmers' position in the value chain, and therefore generating more value added.



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

In 2018, agricultural emissions of non-CO_2 greenhouse gases (GHG) in Lithuania amounted to 4.28 million[31] tonnes of CO_2 equivalents, up 1% compared to the year 2000. In terms of share, at national level agriculture represents a significant share (21%) of total non-CO_2 GHG emissions (EU-27 average is 10%) and slightly more than 1% of the total EU-27 GHG emissions from agriculture.[32] Since 2009, the share of agriculture in total GHG emissions increased compared to the period 2001-2008.[33] In 2013-2018, emission of non-CO_2 GHG remained stable. Some 44% of agricultural emissions in Lithuania relate to enteric fermentation of livestock, 38% to agricultural soils (fertiliser), and 14% to the management of manure. Emissions from soil management slightly increased in the last years (2013-2018). The enteric emission of methane (CH_4) and nitrous oxide (N_2O) per livestock unit ruminants is slightly above the EU-27 average (2.71 and 2.67 respectively).[34] As regards emissions from land use, change and forestry sector (LULUCF), grasslands in Lithuania acted as carbon sinks while croplands in 2018 had a net emission of 1.08 million tonnes of CO_2 equivalent[35]. In the last years, the emissions from croplands decreased, while grassland removals decreased (below the EU average); the carbon sink in forests has more-than-halved in 2013-2018 (from -9.7 to -4.7 million tonnes of CO_2 equivalent)[36]. According to the joint Research centre, peatlands cover around 3.8% of the total area of Lithuania and emissions from peatlands are significant[37].

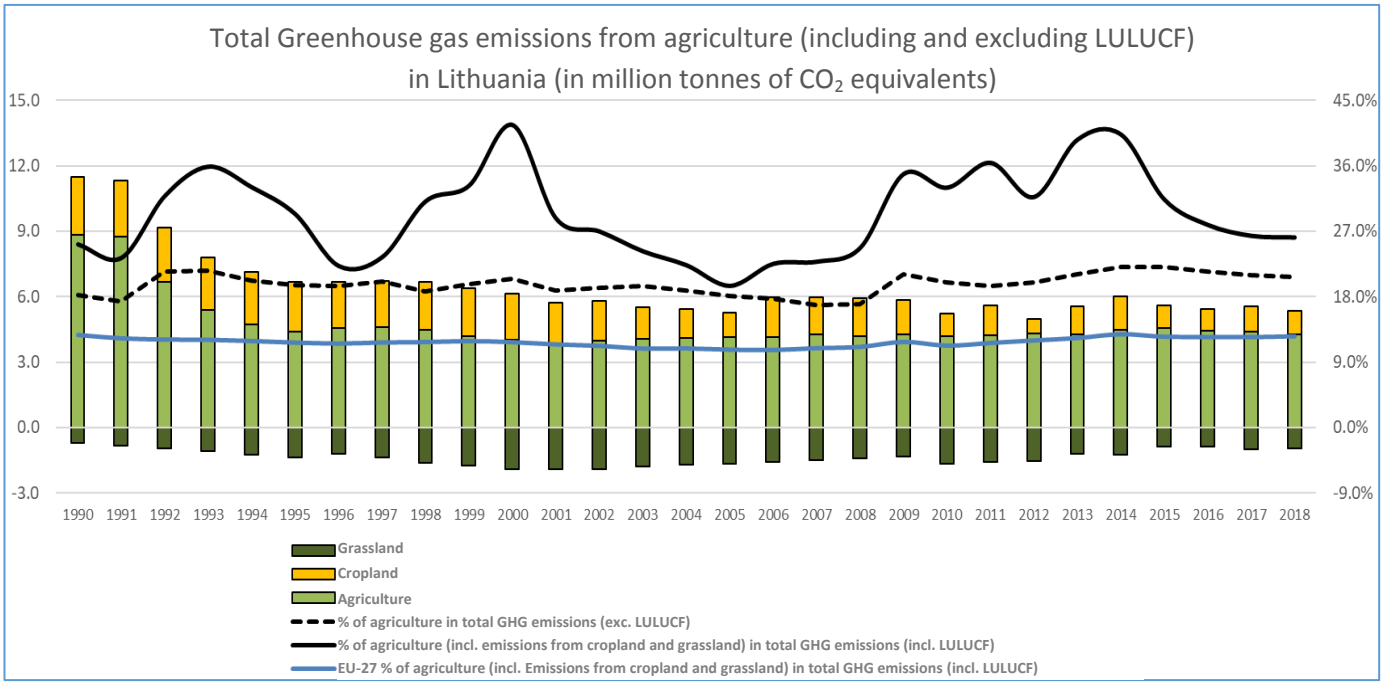
The share of agriculture in the production of total renewable energy in Lithuania is 10.3%, below the EU-27 average (12.1%), and increased by 25% in 2018 compared to 2013. A very significant percentage (82.2%) of renewable energy production came from the forestry sector, thus singling out Lithuania as one of the few EU countries where the share of renewable energy production from agriculture and forestry in total primary energy production is above 20%.[38] Energy consumption in Lithuanian agriculture and forestry as a share in total final energy consumption is 2%, slightly below the EU-27

average of 2.9%. In 2009-2015 there was an overall decline in the number of kg of oil equivalent use per hectare of UAA and forest area in the EU-28, to reach 2.5 kgoe/ha. Lithuania also registered a decrease (2.4 kgoe/ha), one very close to the EU average; in the same period, a 2.4% increase of the direct use of energy in food industry was registered.[39]

The National Energy and Climate Action Plan 2021-2030[40] sets the target for decreasing emissions in agriculture by 2030 at 9% compared to 2005 and lists actions for the agricultural sector until 2030. Planned actions focus on reduction and more effective use of conventional nitrogen fertilisers, better manure management and actions raising awareness and providing advice to farmers on sustainable farming methods, including targeted advice on GHG reduction potential at farm level. In addition, organic farming and insurance/ risk management tools for crops and livestock will be promoted. No specific measures are foreseen on peatlands and wetlands used for agriculture.[41]

The Rural Development Programme 2014-2020 recognises reducing GHG emissions as a key challenge; support is available for afforestation and for the greater use of renewable energy resources (in particular for production of biogas from agricultural waste).[42] Overall, 2% of agricultural land is under contracts targeting climate action (EU-27 average is 1%). However, their execution struggles.

Like other Nordic countries, the Lithuanian agricultural sector is vulnerable to risks stemming from climate change such as decreases in summer rainfall and increased numbers of floods as well as increased risk of pests and diseases.[43]



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

Concerning air quality, ammonia (NH_3) emissions from agriculture in Lithuania amounted to 35.95 Gg (1 000 tonnes) in 2018. Some 92.4% of NH_3 emissions in Lithuania come from agriculture. Animal husbandry and manure management are responsible for 55% and crop production (fertilisation) for 45% of these emissions[44]. Despite the emission levels are below the current emission ceiling of 84 Gg, the

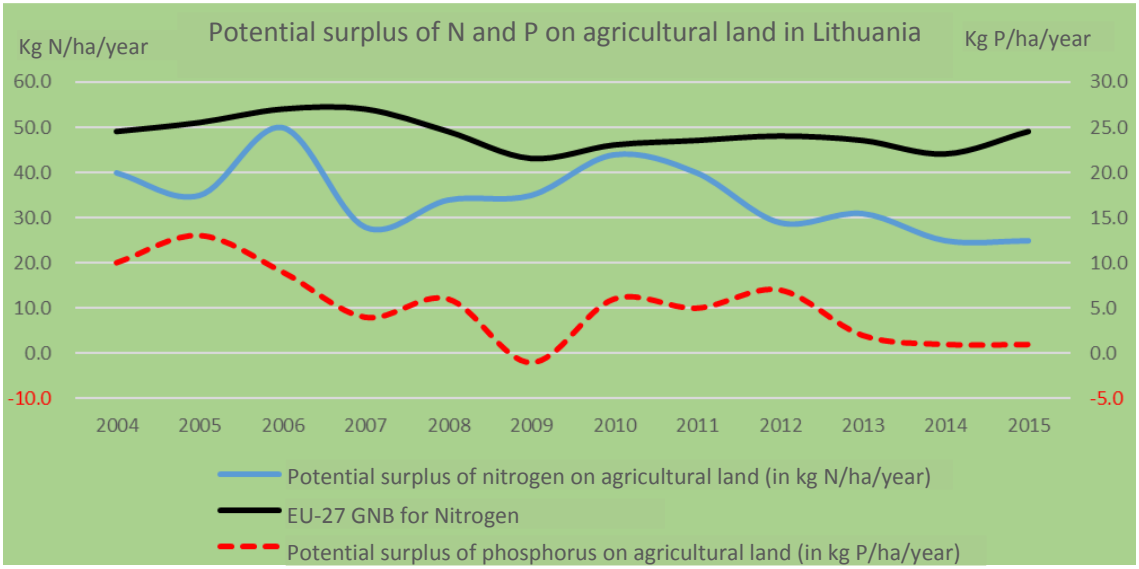
downward trend may not be sufficient to meet Lithuania's emission reduction commitments (compared with 2005 levels) set by the National Emissions Ceilings Directive[45] for 2020-2029 and for any year from 2030.

The main threat to soil quality in Lithuania is the low soil organic carbon content. It has a negative impact on agriculture productivity and can have negative and transboundary impacts on biodiversity and ecosystem service. Lithuania has a low average soil loss rate by water of 0.5 t ha^{-1} yr^{-1} (much less than the EU mean). Lithuanian arable land is heavily affected by loss of organic matter caused by the natural climate conditions and long-term intensified tillage. In 2016, 88% of tillable area was tilled conventionally, only 1% was under zero tillage[46]. Almost half of the arable land was left without soil cover during winter (47% in 2016[47]). The mean soil organic carbon in arable lands is 25 g/kg[48] which is lower than the mean EU (43.1 g/kg). Grazing land in Lithuania has 2.25% of total organic carbon, but is still very poor and amongst the lowest values in the EU[49]. Despite these challenges, only 8% of arable land in Lithuania was under contracts to improve soil management and/or prevent soil erosion in 2018[50].

In 2015, 90% of surface waters[51] and 100% of groundwater[52] were in good chemical condition. The nitrogen surplus in Lithuania was 25 kg N/ha in 2015[53], almost half the EU average (46.5 kg N/ha) and this indicator constantly decreased since 2010, reaching levels comparable to the early 1990-s. Phosphorus surplus has decreased from 13 kg P/ha in 2005 to 1 kg P/ha in 2015 and remains around the EU average of 0.5 kg P/ha[54]. Nitrates concentration over 50 mg nitrate/l were reported in 1,6% of ground water monitoring stations and concentration over 25 mg nitrate/l were reported in 0,6% of the fresh surface water monitoring stations during the period 2012-2015[55]. However, nitrates pollution increased in 58.5% of groundwater stations and 15.5% of fresh surface water stations during the period 2012-2015[56] and the average value of nitrogen pollution at country level presents an increasing trend[57]. Around half of freshwater (52%) was of high quality in 2015 and 2017, eutrophication of surface freshwater raises concerns after the recent report of a slight deterioration in eutrophic and hypertrophic status (from 47% to 49%)[58]. However, this must be seen in the regional context. Eutrophication is a shared problem with other states around the Baltic Sea with extremely high levels of waters in the region assessed to be below good eutrophication status (97% for open sea area and 86% for coastal waters). Based on the integrated assessment, the entire national Baltic Sea waters of Lithuania are considered below good status[59].

Seen in combination with farm intensity coverage, the area with low input intensity per hectare decreased in 2004-2016 from 79% to 66%, whereas the area with medium input intensity increased from 18% to 30% in 2016[60]. However, these are intensity levels significantly below most of the EU Member States. The water quality also could have been hampered by the increase of plant protection products by 48% in 2015-2016, as a result of the increase in sales of plant growth regulators. However, in 2018 pesticides sales had again fallen to 61% of the 2016 level[61].

Water quantity risks in Lithuania are low. Water abstraction levels are among the lowest for EU Member States (i.e. 493 000 m^3 in 2017). Less than 0.1% of the total utilised agricultural area was irrigated in 2016 (data are missing for water use from streams, wells and ponds, which are very common)[62] and the Water Exploitation Index plus (WEI+) for river basin districts is very low (2010-2015 data, the highest value 2.64%). In 2018, less than 0.3% of agricultural land in Lithuania was under contracts to improve water management[63].



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

While natural ecosystems in Lithuania show an overall good conservation state with no major ecological problems[64], agricultural areas are affected by a decline in biodiversity. Data on the farmland bird index show a declining trend that is particularly pronounced in the past five years (the Index was 74.5 in 2013 and 59 in 2018 whereas the value for EU-27 in 2018 was 70) [65].

In early 2017, 13% of Lithuania's territory was covered by Natura 2000 sites (EU average 18.1%)[66]. Similarly, the share of agricultural area in Natura 2000 is significantly lower (5% in 2018) than the EU average (11%)[67]. The reporting on the conservation status and trends of species and habitats under the EU Habitats Directive (2013-2018), shows that no grassland habitats were in favourable conservation status while 78% were in bad status (or unknown).[68] There was no change compared to the previous period (in 2012 the majority of grassland habitats was in an unfavourable-bad conservation status (56%), the rest was assessed as unfavourable-inadequate (44%)[69]. For wetlands, only 12.5% of wetland habitat types present in Lithuania are currently in favourable conservation status, 25% are in poor status, the remaining 62.5% are in bad status, 12.5% out of which further declining[70].

The prioritised action framework (PAF) indicates that the main pressures for grasslands are conversion to other land uses (forests, arable land), land use intensification and intensive use of grasslands (frequent mowing, overgrazing), abandonment of meadows and pastures, use of pesticides, drainage) all impacting on the populations of species linked to grasslands. For cropland and permanent crops, the main pressures identified are monoculture areas without natural landscape elements, excessive use of chemicals, all impacting on the populations of farmland bird species. In terms of capacity building of managing authorities, the main difficulty identified is the low involvement of Natura 2000 managing authorities in the implementation of CAP measures.

According to data on farming intensity in 2015 however[71], the majority (58%) of UAA is farmed with low input intensity; only 11% of the total UAA is farmed with high input intensity, significantly below the EU average of 32%. Data on areas of extensive grazing

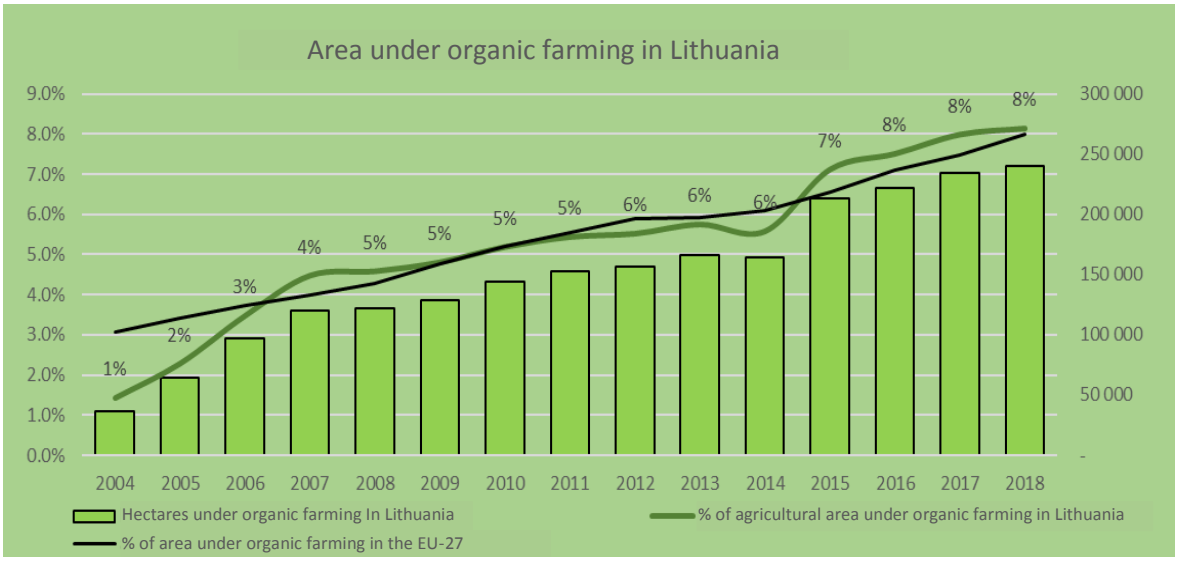
show that 40% of the UAA is devoted to extensive grazing, significantly above the EU average of 29%[72]. One fifth of farmland is under high nature value systems of farming[73].

Data on the share of landscape features and land laying fallow in UAA show that 3.3% of UAA is covered by these elements (the target set in the Farm to Fork Strategy is 10% at EU level) [74]. On landscape features, Lithuania opted to exclude them from the protection under GAEC7 in the CAP 2014-2020. Similarly, landscape features could not be used to fulfil greening obligations. Farmers could choose land lying fallow (12% of the EFA area)[75]. Arable areas appear particularly affected by the lack of natural landscape elements and the PAF identifies precisely this factor as one of the main pressures on cropland[76].

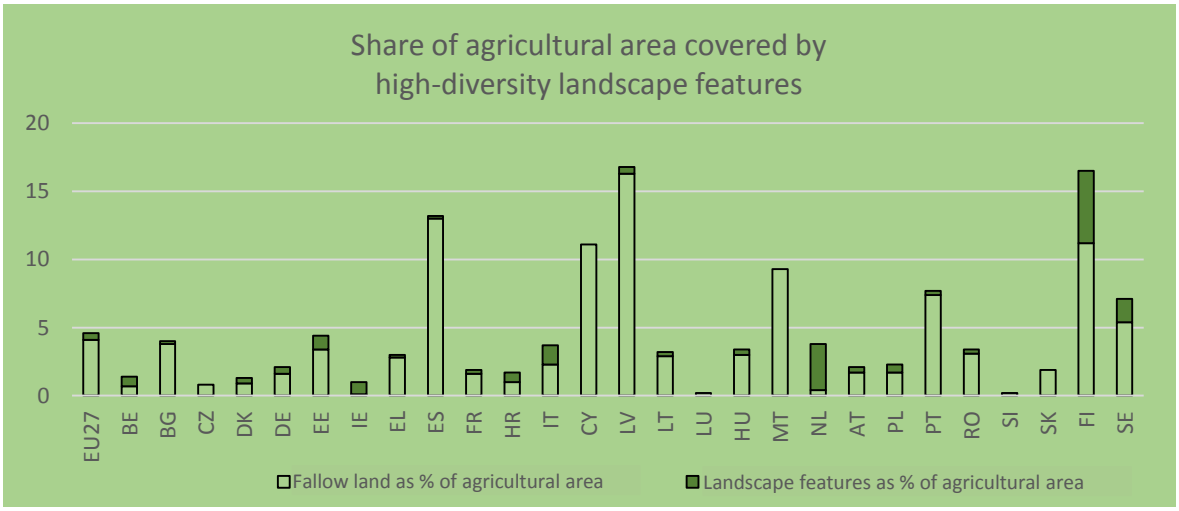
The Natura 2000 network in Lithuania is not yet complete. The currently delimited network is dominated by forest and semi-natural areas, which cover 67% of the network[77]. Only 8% of forest habitats in Natura 2000 are in favourable conservation status, 46% are in poor status, the remaining 46% are in bad status and half of them further declining.[78] The main pressures identified in the PAF are the cessation of traditional farming (grazing in forests and/or litter raking in pine forests), conversion into arable land and meadow sowing to cultivate grass.

The area under organic production has increased steadily since 2012 and more than doubled in absolute terms. The current share of UAA farmed organically is 8.1%[79], in line with the EU average of 8% (the Farm to Fork target is 25% at EU level). 76.8% of organic area receives CAP support (above average at EU level)[80]. However, area under conversion to organic is declining from almost 3% of total UAA in 2016 to less than 1% in 2018[81] which indicates that a declining rate of growth of organic area is to be expected.

The Rural Development Programme 2014-2020 of Lithuania includes measures supporting biodiversity and/ or landscape features but only 10% of farmland is under contracts for protecting biodiversity and/or landscape features, below the EU average of 15%[82].



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



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

2.7 Attract young farmers and facilitate business development in rural areas

Contrary to the overall negative trend observed in the EU, Lithuania exhibits positive trend in the share of young farmers among all farmers in the period 2005-2016. In 2016, it had 7.3% of farm managers below 35 years of age, which exceeds the EU average. Also, the ratio of young managers to elderly in Lithuania increased to 0.13 in 2016 (EU average is 0.09). Moreover, Lithuania has one of the highest share of female young farmers in the EU (28%)[83].

Young farmers in Lithuania are better educated. The share of farm managers below 35 years of age with at least a basic level of agricultural training (44%) is slightly higher than the average in the country (38%). It is also higher compared to the EU average[84].

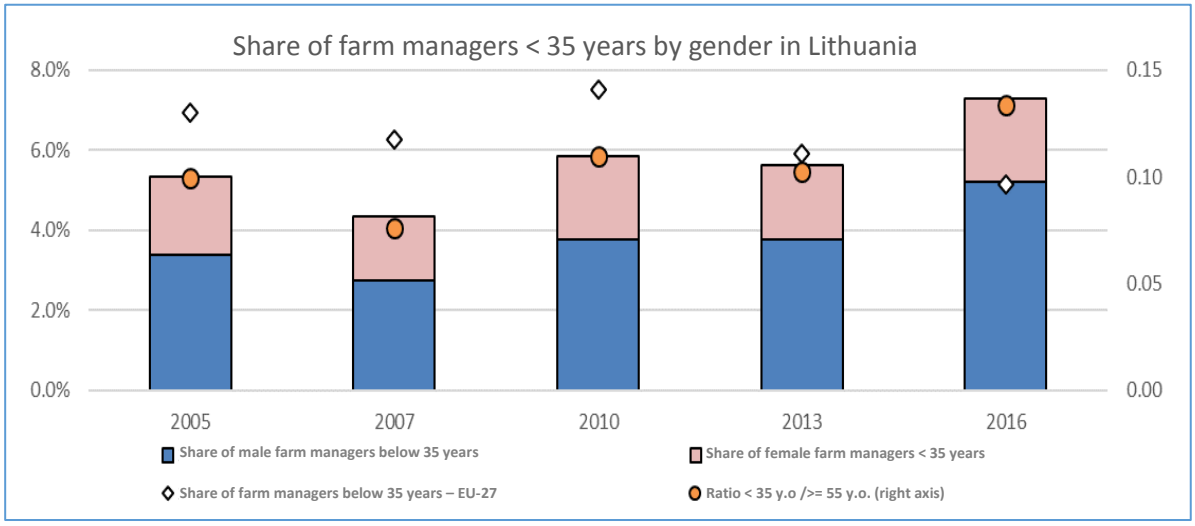
Young farmers (below 35) manage farms of bigger size, generate higher standard output per farm (which is growing at a higher rate than in other age groups of farmers), but have on average lower factor income compared to other age groups of farmers and considerably below the EU average[85]. The low factor income is heavily influenced by the increased competition for land and by the increased rental prices for arable land, which in 2011-2016 rose two-fold[86]. It should also be noted that despite the overall farm size of young farmers being larger compared to other age group farms, about half of young farmers (below 35) are small-scale farmers (up to 10 ha). This is why off-farm income is often essential for their farm business continuation.

The main challenges that the young farmers face in Lithuania are the access to land (including legal restrictions aimed at limiting access to land by foreign entities, but also having negative effect on local young farmers) and access to finance (the worst situation is for dairy farmers). As a result, 30% of discouraged applications for bank loans comes from young farmers, which is linked to the lack of collateral, business records, experience, etc.[87] Significant depopulation of rural areas (especially in the northern and southern parts of the country) is yet another general concern in view of future vitality of rural areas[88]. It is often linked to the poorer land quality and lower farm incomes in these regions.

The share of farmers benefiting from the supplementary young farmer payment (YFP) under Pillar 1 among all farmers was gradually increasing in 2015-2018 and is around the EU average, which is 7.5%. Lithuania spent almost the maximum allowed 2% of Direct payments envelope on YFP in 2018, which is among the highest results in the EU (EU average is 1.32%)[89]. Young farmers in Lithuania are actively participating in investment

aid offered by RDP 2014-2020. However, funds allocated for this support, which correspond to approximately 4% of the total envelope, are insufficient to cover young farmers' investment needs[90]. Additionally, there are at a lower scale applied national measures aiming at facilitating new businesses (e.g. INVEGA offers loans of up to EUR 25 000 for newly established young businesses).

The GDP per capita (PPS/inhab) in rural areas was amongst the lowest in the EU (12 362 in 2016); the GVA share in rural areas is half of the EU average (5% compared to EU-27 at 10.7%). The economic activity is unequally distributed between territories; rural areas are lagging behind. In 2016, some 2900 businesses were created in rural areas.[91]



Source: EUROSTAT [ef_m_farmang]

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

14%[92] of the total Lithuanian territory is classified as predominantly rural areas[93] compared to an EU average of 45%. Lithuania has the highest share of population in the EU living in rural area (56.2%[94] of population; this share has declined since 2010), having also one of the lowest average population density (46 inhabitants per km^2) and one of the EU countries most hit by depopulation and emigration[95]. Population in rural areas in 2015-2019 in Lithuania shrank by 8.8% - the most in the EU[96]. The age classes affected the most by this trend were everyone except the elderly (beyond 64 years).

The employment rate in rural areas was increasing since 2012 and although it reached the EU average of 68% in 2019[97], it remains below the total employment rate. In the 20-64 age group, the gap in employment between male (74%) and female (73%) is insignificant. The employment of women in this age group was by 6 percentage points higher than the EU average[98]. The unemployment rate in rural areas remained slightly below 9.1%, which is considerably above the EU-27 average of 6.3%. Youth unemployment rate in rural area in 2018 was 14.1%, which is in line with the EU-27 average[99].

The share of primary sector in employment in rural areas is almost double the EU average (24.7% and 12.7% respectively in 2016). Together with Latvia, Lithuania enjoys the highest share (45%) of women as farm managers in the EU.

There is a significant gap between rural and urban economies in Lithuania that is not closing over time. The GDP per inhabitant in rural areas in Lithuania represents only 44% of the EU average, compared to 110% in urban region[100].

As regards tourism, 89 813 bed-places were available in Lithuania in 2018, out of which 41 565 (46.3%) in rural areas. The development of rural- and ecotourism are recognised as strategic priorities in the Lithuanian Strategy for Tourism Marketing for 2016-2020[101].

Levels of poverty and inequality in rural areas are among the highest in the EU[102]. The risk of poverty or social exclusion in rural areas (2018, 40%) is double that of urban areas (20%)[103]. In terms of education, urban-rural disparities in access to quality education and in student performance are large with male students performing at lower levels. The enrolment in early childhood education and care of 3-6 years olds is around two times lower in rural areas than in urban areas (46.2% and 106.2% respectively in 2017[104]). In 2017, the median incomes of rural households were only 67% of those of urban households (among lowest in the EU). At almost 10%, the rate of severe housing deprivation for the rural population, though decreasing, remained above the EU average in 2017. Transport and health services infrastructure could not be analysed due to the lack of data. National studies show that health services in rural areas need improvement[105]. CAP interventions must be planned in synergy with other EU Funds in order to ensure better services for rural residents that are indispensable for vibrant rural areas.

There are more than 1 310 rural community organisations in Lithuania[106]. The entire rural population is covered by local development strategies. The majority of these strategies are focussed on job creation and solving social issues.

The forestry sector plays an important role in Lithuanian rural areas. Forests and other wooded land cover 35.1% of total area[107]. Forestry and forestry-based industry employed 12 100 persons in 2019[108]. In 2017, the proportion of gross fixed capital formation in forestry compared with value added was one of the highest in the EU (18%). Large coverage with forests and arable land gives opportunities for the development of bio-economy in Lithuania. Despite the dominance of agriculture in the bio-economy in terms of employment (48%[109]), the turnover in bio-economy related sectors shows no strong orientation and remains mixed. Although there has been an increase in the turnover in 2009-2015, the labour productivity remains very much below the EU average. A dedicated Bio-economy Strategy at national level in Lithuania is under development.

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

Antimicrobial resistance (AMR) is a priority area for the Farm to Fork strategy. In Lithuania, sales of antimicrobial agents in the past five years (2014-2018) averaged 35.2 mg/PCU, which is well below the 2018 EU average of 118.3 mg/PCU. In terms of species, cattle is the dominant category. All veterinary medical products that contain antimicrobial agents are prescription-only medicines and must be dispensed to veterinarians or farmers through wholesalers or pharmacies. Medicated feed is also subject to prescription by a veterinarian[110].

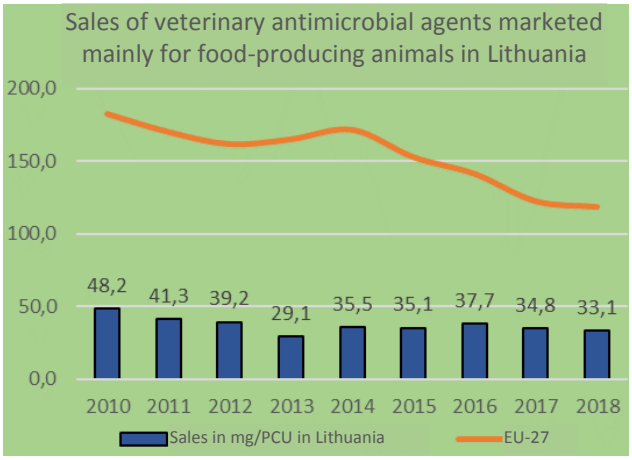
In terms of animal welfare, another priority area for the Farm to Fork strategy as essential for the sustainability of the food system, tail docking of pigs remains a routine practice in Lithuania despite being forbidden as a routine practice by EU rules[111]. The percentage of pigs with intact tails has barely changed compared to 2016. Lithuania is an exporter of

male dairy calves. It is difficult to achieve the high standards required for the transport of live animals, especially unweaned male dairy calves, when the animals are exposed to multiple animal welfare risks during long distance transportation. Therefore, efforts should be made to encourage local fattening. Efforts could also be made to promote animal welfare in the production of eggs under non-cage systems for laying hens[112]. Biosecurity is equally a challenge for Lithuania as it is listed among the countries affected by the African Swine Fever (ASF) where farms with low biosecurity and poor controls pose higher risk for animal disease infections and spread.

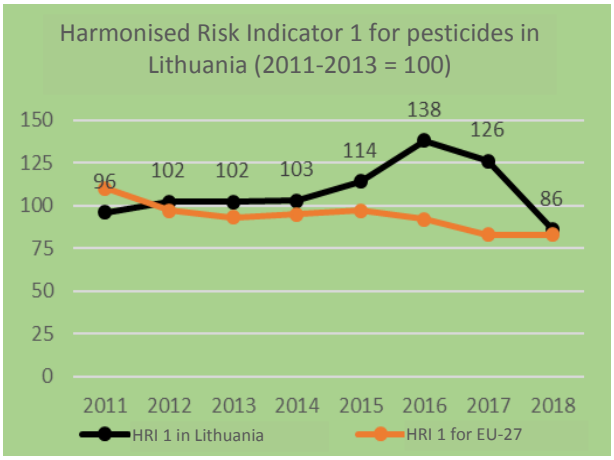
Ensuring the safety of pesticides and controls on their use is essential for sustainable food production. Lithuania has adopted its National Plant Protection Plan in 2012[113] and revised it in 2019[114]. The evolution of Harmonised Risk Indicator 1 (HRI1)[115] products shows a significant decrease (-14%) in the period 2011-2018, though slightly behind the EU average (-17%). HRI2 data (the most risky products) shows a sharp increase in the number of emergency approvals compared to baseline values. The 2019 audit on the implementation of the Directive on the sustainable use of pesticides acknowledges that Lithuania has put significant efforts into implementing the Directive.[116] Although actions have been taken by Lithuania to improve the exemption of pesticide application equipment and the control of Integrated Pest Management implementation at farm level, further effort is needed to ensure their full implementation[117].

Lithuania carries a very high burden from non-communicable diseases due to dietary risk factors expressed as Disability-Adjusted Life Years (DALYs) per 100 000 population attributable to diet[118]. This DALY's value is influenced by a number of dietary factors. For example, more than 40% of the Lithuanian population does not eat at least one portion of vegetables and fruits per day, which is higher than the EU average[119]. Efforts should focus on shifting towards healthy sustainable diets, in line with national recommendations, in order to contribute to reducing rates of overweight people, obesity and non-communicable diseases, while seeking to simultaneously improve the overall environmental impact of food systems. 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

Although the levels of food waste are estimated to be below the EU average[120], there is a margin for improvement in its reduction. In 2015, Lithuania produced 22.1 kg of waste per tonne of processed food, which is almost the double compared to Germany and more than fourfold compared to France[121]. Food losses are mainly generated in cereals and pulses commodity group[122]. Consumers in Lithuania are less informed on food shelf life marking and consumers' role in food waste reduction (Eurobarometer 2015). No data are available for actual food waste and food loss nor trends in consumption of organic products. It is expected that more data will be available after adoption and implementation of national food waste prevention programme (as required by Article 29(2a) of the Waste Framework Directive 2008/98/EC).



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



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

2.10 Cross-cutting objective on knowledge, innovation and digitalisation

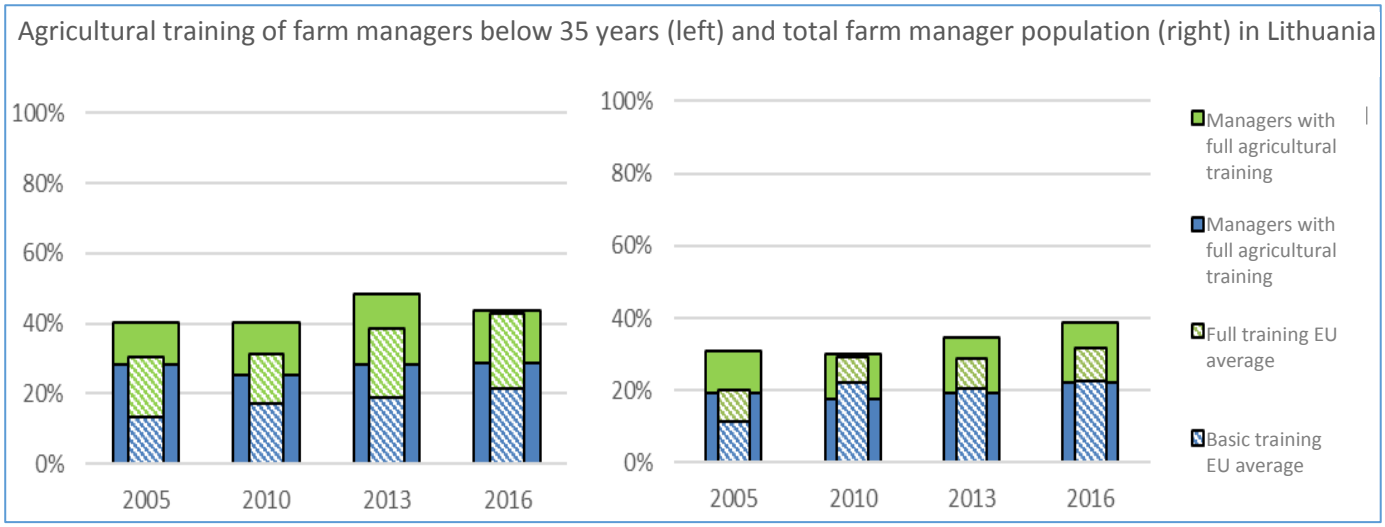
Lithuania has a well-established public sector agricultural research, education and advisory system. The advisory system is composed of 13 accredited companies and bodies (2020)[123] and is complemented by private advisory companies.

Lithuania's agricultural knowledge and innovation system (AKIS) appears fragmented (lack of coordination between actors and insufficient focus on farmers' needs)[124]. Better structuring of knowledge exchange processes and sharing of research and innovation data would avoid duplication of efforts, save costs and strengthen the impact of EU and national funding.

Innovation support services have become an obligation for Member States (Art 13(4). Advisors should be supported to help capture individual innovative ideas and to develop them by setting up and implementing European Innovation Partnership (EIP) operational group projects.

Despite the high share - compared to the EU average - of farmers that attained full agricultural training (39% and 32% respectively) and the stable number of managers with at least a basic agricultural training in the period 2013-2016[125], participation in adult learning trainings in agriculture is low and there is an overall need to improve the skills development system[126]. In the period 2014-2019, the total number of people participating in trainings funded under RDP 2014-2020 stood at 14.3 thousands[127], (ca 10% of the target for the whole programming period or ca 7% of the total farming population). This adds to the reported shortage of skills in rural areas, especially in digital and financial literacy[128].

The share of funds allocated by Lithuania in the programming period 2014-2020 to measures linked to information, knowledge and innovation (2.3%) was below the EU average (3.6%). The implementation of the Agricultural European Innovation Partnerships (EIP-AGRI) still lags behind. In 2014-2019, there have been only 5 EIP-AGRI (Operational Groups) projects implemented in Lithuania (out of 25 expected projects). The implemented projects include soil management (2), dairy production and farming techniques (2) and one project aimed at setting up an Innovation Support Service[129].

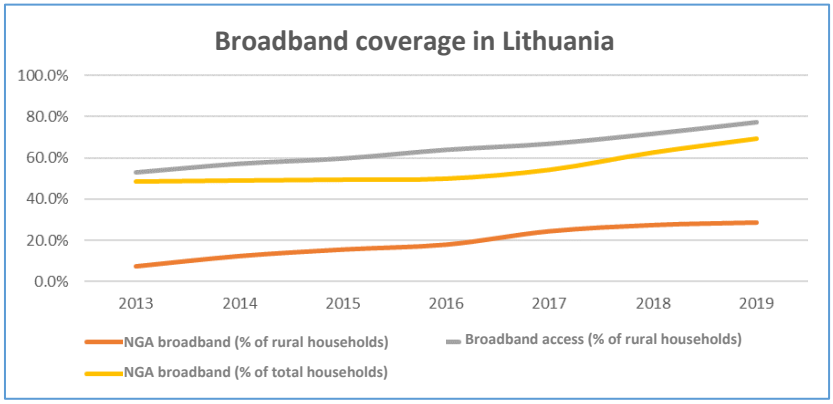


Source: European Commission. *CAP context indicator C.24 Agricultural training of farm managers.* Based on EUROSTAT [ef_mp_training]

In the period 2015-2017, in its effort to support knowledge exchange and innovation the Lithuanian national rural network organised a relatively high number of training/information sharing events. The network's website also hosts a dedicated section on EIP-AGRI projects. However, due to the lack of data, the extent of its contribution to achieving the objective of fostering innovation could not be established[130]. The future national CAP network can play a bigger role in promoting synergies with the European Research Area (ERA), for instance by keeping closer contacts with the Horizon Europe National Contact Point.

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

Rural standard fixed broadband coverage (77%, while increasing) is below the EU average (90%). The next generation access (NGA[131]) broadband coverage (number of rural households) in rural areas is also below the EU average (29%)[132]. In 2019, the gap in digital skills between city-dwellers and rural residents was 20 percentage points (among the highest gaps in the EU[133]). The lack of digital skills hinders the development of a digital economy and society.



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

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

[2] European Commission. *Share of direct payments and total subsidies in agricultural factor income (2014-2018 average).* https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/farming/documents/cap-expenditure-graph5_en.pdf. In case of Lithuania, ESTAT population better represents DP beneficiaries than the FADN. Therefore, when data is available – ESTAT is to be used. However, ESTAT takes into account all subsidies, including investment support and excludes transitional national aids. This makes the data more limited than the one of FADN, which allows to calculate only operating subsidies (including national aids).

[3] Farm factor income is calculated as a value of agricultural production minus variable input costs (fertilisers, pesticides, feed, etc.) minus depreciation minus total taxes (on products and production) plus total subsidies (on products and production)

[4] Farm factor income per worker in FADN is Farm Net Value Added per Annual Working Unit (FNVA/AWU)

[5] Directorate General for Agriculture and Rural Development own calculations based on FADN data (up to 2018). Figures for farms <5 ha are not fully representative due to FADN encompassing farms above certain econ. size only (in case of Lithuania FADN encompasses about 40% of all farms, which have the economic size of EUR 4 000 or higher).

[6] Farm Accountancy Data Network. *FADN Standard reports*. YEAR.COUNTRY.SIZ6 and own calculations (up to 2018)

[7] Background analysis by MS on income and targeting of DP: Directorate General for Agriculture and Rural Development own calculations based on FADN (Farm Accountancy Data Network) data (2015) and CATS (Clearance of Accounts Trailing System) data (up to 2017)

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

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

[10] Directorate General for Agriculture and Rural Development own calculations based on ESTAT data (2016). Farms below EUR 4 000 in Lithuania represent about half of all farms, but they cover only about 10% of utilised agricultural area.

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

[12] Rural Development Programme 2014-2020 of Lithuania. Annual Implementation Reports 2018 and 2019, measure M17.

[13] Directorate-General for Agriculture and Rural Development (European Commission), ECORYS, Wageningen Economic Research. *Study on risk management in EU agriculture*. 2017. https://op.europa.eu/en/publication-detail/-/publication/5a935010-af78-11e8-99ee-01aa75ed71a1

[14] European Commission. *CAP context indicator C.17 Agricultural holdings (farms).* Based on EUROSTAT [ef_m_farmleg]

[15] Fi-compass, 2020, *Financial needs in the agriculture and agri-food sectors in Lithuania*, Study report

[16] EUROSTAT. [aact_eaa01]

[17] EUROSTAT. *Bovine population* [APRO_MT_LSCATL]

[18] European Commission. *ASF regionalisation as per Commission implementing Decision 2014/709/EU and Commission Implementing Decisions concerning certain interim protective measures relating to ASF in Germany (Decision (EU) 2020/1391 and Decision (EU) 2020/1513).* Last update 21 October 2020. https://ec.europa.eu/food/sites/food/files/animals/docs/ad_control-measures_asf_pl-lt-regionalisation.pdf

[19] EUROSTAT. *Crop production in EU standard humidity* [apro_cpsh1] and *Economic accounts for agriculture – values at current prices* [aact_eaa01].

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

[21] European Commission. *CAP impact indicator I.06 Agricultural trade balance.* Based on EUROSTAT and COMEXT.

[22] European Commission. *CAP context indicator C.28 Gross fixed capital formation.* Based on EUROSTAT [nama_10r_3gva] and [nama_10r_2gfcf]

[23] Fi-compass, 2020, *Financial needs in the agriculture and agri-foodsectors in Lithuania*, Study report.
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