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Generational renewal in the EU agriculture: impact of subsidies, land and credit markets, and institutions

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Introduction

Generational renewal has been already since 1980s one of the serious concerns of the Common Agricultural Policy (CAP) of the European Union (EU). To reverse aging of farmer population the CAP relied on providing financial incentives to young people to establish new farms or to take over control of farms from older generation - parents.

In the programming period 2014 – 2020 6.42 billion EUR was earmarked for young farmers, 3.8 billion EUR from the rural development pillar and 2.62 billion EUR from the CAP direct payments pillar. In the current programming period of the CAP Member States were required to devote at least 3 percent of the budget for direct payments specifically to young farmers and financial instruments were promoted by the Commission to fight aging of the population of farmers. The discussion on the CAP post 2027 considers generational renewal as one of the key challenges for the EU agriculture as it is stressed in Strategic Dialogue on the Future of EU Farming and in the Vision of EU Farming (EC, 2024; EC, 2025).

The farmers' population is relatively old and young farmers are supported because they can better fulfill strict requirements of the EU on agricultural and food production than older generation of farmers (Sponte, 2014, Defrancesco et al., 2008, Hamilton et al., 2015). Main contributions of young farmers are reported in introducing innovations and new technology adoption to agricultural production and marketing (Jansuwan et al., 2022, Gkatsikos et al., 2022, Elbasi et al., 2023, USDA, 2024).

Young farmer in the EU is defined as a farmer of maximum 40 years old, has an effective control over the holding and must have appropriate training and/or skills (EU Regulation

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2021/2115). 20% of managers of farms (3 850) in Slovakia and 11.9 % in the EU were young farmers in 2020 (Eurostat, 2023). Gender imbalance in Slovakia vis-à-vis the EU is visible from Table 1. However, the dominance of men among farm managers is also reported for other countries in Central Europe, such as Slovenia (Fertő and Bojnec, 2024) and even more Hungary (Fertő and Bojnec, 2025; Baráth et al., 2025).

Table 1. Share of Young farmers in Slovakia and EU in 2020.

Age (in Years)	Slovakia					EU	
	Male	**Female**	**Total**	**Male in %**	**Female in %**	**Male in %**	**Female in %**
65 +	3 300	790	4 090	17%	4%	21%	13%
55 – 64	4 190	840	5 030	21%	4%	17%	7%
45 - 54	3 900	700	4 600	20%	4%	16%	6%
40 - 44	1 720	350	2 070	9%	2%	6%	2%
35 – 39	1 320	350	**1 670**	7%	2%	4%	1%
25 – 34	1 530	360	**1 890**	8%	2%	4%	1%
Below 25	240	50	**290**	1%	0%	1%	0%
Total	**16 200**	**3 440**	**19 640**	**82%**	**18%**	**68%**	**32%**
				100%		100%	

Source: Eurostat

The share of young farmers on total number of applicants for CAP support in Slovakia was 4% in year 2023. Young farmers in Slovakia normally have farms with area less than 100 hectares. Out of total 726 young farmers in 2023, 195 farms had farm size between 0 and 5 ha, 321 between 10 and 50 ha and 112 between 50 and 100 ha. As can be seen from Table 2, the area operated by young farmers tends to increase for farms greater than 50 ha. The largest farm operated by a young farmer is up to 2 500 ha.

Table 2. Number of Young farmers and farm size distribution in Slovakia

Farm size in ha		**2023**		**2022**		**Change 2023/2022**
From	To (including)	Area in ha	Number of farms	Area in ha	Number of farms	Increase in No. of ha(+) / Decrease in No. of ha (-)
0	10	1097	195	1128	215	-31
10	50	8580	321	10257	387	-1 677
50	100	7934	112	6257	88	+1 677
100	250	9504	65	5343	36	+4 161
250	500	6456	18	4872	14	+1 584
500	1 000	6086	8	2083	3	+4 003
1 000	2 500	12090	7	3056	2	+9 034
2500+		0	0	0	0	+0
Total		**51747**	**726**	**32996**	**745**	**+18 751**

Source: Agricultural Paying Agency in Slovakia, IACS

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Land market

4,4 million people in Slovakia own agricultural land. An average size of agricultural parcel reaches 0.5 ha, and the number of parcels amounts to 8.4 million. A land parcel is owned on average by 12 persons. There is 100.7 million of agricultural land ownership relationships in Slovakia (MARD, 2019). The extreme land fragmentation causes significant transaction costs in Slovakia.

Because an agricultural land parcel is owned by many owners, some of the owners are unknown, some are absentee, and their address is not known. In many instances, co-owners live in different cities or even countries and there are often legal conflicts between some of the co-owners. Some co-owners are deceased, and their property is in the inheritance process.

Current extreme fragmentation of land ownership in Slovakia is based historically from Hungarian in heritage law, which applied in Slovak territory and according to which land was inherited by all children equally. For 40 years of socialism private property rights to land were delinked from the land use by socialist cooperatives and state farms. During this period, usage relations to agricultural land took precedence over ownership of agricultural land.

The land owned by state and land of unknown owners is managed by Slovak Land Fund (SLF). SLF manages about 20.5 percent of agricultural land (6.4 percent of state land and 14.1 percent of land of unknown owners, SLF, 2022), which it rents out to farmers. SLF is obliged by the law to give preference to young farmers and small farms. However, SLF rented only very small area to small farms or young farmers.

Financing gap of young farmers

Young farmers face limited access to capital (fi-compass, 2020b, fi-compass, 2023). In Slovakia, the financial gap in 2017 was estimated to range from 140 million EUR to 521.8 million EUR. Approximately 60% of this gap pertains to farms up to 20 hectares, while about 35% concerns young farmers. About 60% of the funding gap is related to long-term investment loans.

According to a representative survey by the European Investment Bank (EIB), between 62% and 66% of rejected yet viable loan applications from Slovak farmers came from those under the age of 40. Similarly, 28% of discouraged (not submitted) loan applications also originated from young farmers. The financial gap for young farmers in Slovakia is estimated at 25.3 million EUR to 110.4 million EUR annually.

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The significant share of the total agricultural financial gap attributed to young farmers can be explained by the high barriers to starting farms, limited access to land, a lack of credit history, and the low level of collateral young farmers are able to offer banks.

Methodology

We analysed the impact of support to young farmers (treatment) on their performance as measured by the average treatment on the treated (ATT), which is a widely applied method in the literature for counterfactual impact analysis of policies.

In experimental conditions the impact of policies is measured by randomized control trials, which helps to draw causal conclusions. One group of young farmers would receive support while the other would not. The results would be compared between the groups and the results would be due to policies because the groups are statistically identical or very similar in all other parameters except for the policy uptake.

The young farmers that applied for support are significantly different than young farmers that have not (selection bias).

We created pairs of farms that are very similar, and they differ mainly in obtaining support for young farmers. This enabled us to draw causal conclusions regarding the impact of policies to support young farmers on results indicator (profit, productivity, and employment). Detailed description of the counterfactual analysis is for example in paper by Michálek, Pokrivčák and Ciaian (2019).

To investigate the effects of constraints on generational renewal we also used survey among young farmers and focus group discussions.

Results and Discussion

Administration of start-up grants

In the programming period 2014–2022, young farmers in Slovakia were supported under the Rural Development Program through Measure 6.1: Aid for Starting Business Activities for Young Farmers (start-up grants). This support was provided to assist young farmers in starting their businesses and implementing their business plans.

The aid consisted of a flat payment of 50,000 EUR per young farmer, distributed in two installments over a maximum of five years. 70% of the support was paid upon signing the

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Agreement, and the remaining 30% was paid after the implementation of the business plan. The Agricultural Paying Agency (APA) announced three calls under Measure 6.1.

A total of 2,411 applications were submitted, requesting 120.55 million EUR. Of these, 952 applications were approved, amounting to 47.61 million EUR in funding.

Out of the 952 approved projects, 925 were implemented. As of January 2024, 24.92 million EUR had been paid. Young farmers primarily applied for support for small farms. The average farm size of successful applicants was 17 ha in the first call, 29 ha in the second call, and 24 ha in the third call.

The administration by the APA paying for the 2015 call took five years. The 2020 call required over 3.5 years, while the 2022 call was completed within 22 months.

Comparison of matched supported and not supported young farmers in Table 3 shows that the start-up grant had a positive effect on labor productivity, number of employees, and revenues per ha. On the other hand, profit per ha declined more in supported farms than in not-supported farms of young farmers.

Table 3: Effect of start-up grants: comparison of supported (treated) and not-supported (not-treated) young farmers

Year	Method	Revenues	Profit	Labor productivity	No of employees	Revenues per ha	Profit per ha
2018	Not Treated	294813	2726.3	85700.5	3.79	1044.5	79.1537
	Treated	45173.8	4725.8	34440.4	0.4930	1051.6	103.0
	Difference	249639	-1999.5	51260.1	2.49	-7.0926	-23.8902
	p-value	0.0179	0.6028	0.0594	0.0760	0.9730	0.6252
2021	Not Treated	380460	32303.2	83247.1	3.18	1350.9	218.3
	Treated	83646.8	15521.5	41409.3	0.6806	1528.7	174.1
	Difference (1-2)	296814	16781.7	41837.8	3.12	-177.8	44.1731
	p-value	0.0401	0.2864	0.0031	0.1107	0.6108	0.5862
Reative change	Not Treated	29%	1085%	-3%	-16%	29%	176%
	Treated	85%	228%	20%	38%	45%	69%
Absolute change	Not Treated	85647.00	29576.90	-2453.40	-0.61	306.40	139.15
	Treated	38473.00	10795.70	6968.90	0.19	477.10	71.10
Effect	Effect	-47174.00	-18781.20	9422.30	0.80	170.70	-68.05
	Significance of effect	0.0627	0.8792	0.5739	0.9180	0.4037	0.4419
	t-statistics	-1.95	-0.15	0.57	0.1	0.85	-0.78

Source: Authors' work

Comparison of matched supported and all farms in Table 4 shows that start-up grants had a positive effect on all indicators (labor productivity, number of employees, revenues per ha, profit per ha, total revenues and total farm profit. Results are statistically significant for labor productivity only.

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Table 4: Effects of start-up grants: comparison of supported young farmers and all other farmers

Year	Method	Revenues	Profit	Labor productivity	No of employees	Revenues per ha	Profit per ha
2018	Not Treated	39446.6	3995.9	28926.5	0.5855	2481.5	228.4
	Treated	34383.3	3694.9	24561.2	0.7351	3137.5	158.8
	Difference	5063.3	301.1	4365.3	-0.1495	-656	69.5864
	p-value	0.348	0.7981	0.3426	0.331	0.2994	0.6911
2021	Not Treated	55888.4	4573.5	31891.3	0.44	2383.6	-41.9293
	Treated	53407	6168.8	31262.9	0.7208	3232.1	39.1034
	Difference (1-2)	2481.4	-1595.3	628.4	-0.2808	-848.5	-81.0328
	p-value	0.8106	0.6408	0.9221	0.0127	0.367	0.7233
Reative change	Not Treated	41.68%	14.45%	10.25%	-24.85%	-3.95%	-118.36%
	Treated	55.33%	66.95%	27.29%	-1.95%	3.02%	-75.38%
Absolute change	Not Treated	16441.8	577.6	2964.8	-0.1455	-97.9	-270.329
	Treated	19023.7	2473.9	6701.7	-0.0143	94.6	-119.697
Effect	Effect	2581.9	1896.3	3736.9	0.1312	192.5	150.6327
	Significance of effect	0.1629	0.3326	0.0419	0.8950	0.4077	0.5156
	t-statistics	1.41	0.98	2.08	0.13	0.84	0.66

Source: Authors' work

Survey and focus group results

Young farmers rated start-up grants in the programming period 2014-2022 negatively. Key criticisms included poor timing of start-up project calls, lack of regularity, poorly designed eligibility conditions, and the complexity and bureaucracy of drafting and submitting applications. A total of 42 respondents (39%) hired consultants to draft their applications, while 25 respondents (23%) relied on advice from friends. Only 7% of respondents received assistance from the APA. The complexity of the application process discouraged 12% young farmers from applying. The evaluation process of proposals was deemed slow, with 79.8% rating the speed of evaluations negatively. However, respondents were less critical of the transparency and objectivity of the evaluation process.

Respondents criticized the bureaucracy by the APA during project implementation. Nevertheless, most respondents acknowledged that the funds they received significantly contributed to the development of their farms. Communication with the APA during project implementation was rated predominantly negative by respondents.

91% of respondents expressed a desire to acquire more agricultural land. The main barriers to obtaining additional land identified by young farmers included long-term leases of state-administered agricultural land (34%), fragmented land ownership (27%), high rental rates or land prices (20%), and bureaucracy (17%). 62% of respondents attempted to obtain land

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from the SLF during the 2014–2022 period. However, young farmers reported negative experiences in acquiring land from the SLF. According to respondents, the process was slow and burdened with bureaucratic administration procedures.

Young farmers have a significant demand for additional capital to develop their businesses, with 91% of respondents indicating a need for extra funding. During the 2014–2022 period, 76% of respondents applied for a loan or credit. However, 47% did not secure financing from a bank, relying instead on family or acquaintances (40%) or other non-bank entities (7%). Only 29% applied for a loan from a bank, with 12% seeking personal loans and 17% applying for farm-related loans. Meanwhile, 24% of respondents did not seek any loans or credit during this period. The main challenges young farmers face when obtaining loans, apart from interest rates, include the need for collateral (often requiring family assets), banks' reluctance to lend to young farmers, and the lack of specialized financial products tailored for young farmers.

Conclusion

Generational renewal is supported by the current Common Agricultural Policy with start-up grants and specific direct payments to young farmers. We have evaluated the effects of start-up grants on parameters of farms of young farmers using counterfactual analysis. Effects of start-up grants are small and statistically mostly insignificant. The start-up grants positively impacted labor productivity, employment, and revenues per hectare for young farmers, but profit per hectare declined more in supported than in non-supported young farmers, with no statistically significant results. When comparing supported farms to all farms, the grant showed positive effects on all financial indicators. However, statistical significance was only observed for labor productivity.

There are several reasons for fiscally insignificant effects of start-up grants. First of all, the management and administration of start-up grants was very inefficient and long-lasting because of inexperience of the managing authority and paying agency with the new measure adopted in Slovakia. The smooth functioning of the call for proposals was negatively affected by changes in the government and COVID-19 pandemic. Furthermore, start-up grants were not a priority for the Ministry of Agriculture, according to young farmers involved in the process. Secondly, the size of start-up grants was small relative to the time span of the project. Lastly, we conclude that the red tape combined with inefficient land markets and

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credit markets create significant obstacles for development of farms of young farmers that are not overcome by fiscal stimuli.

To cope with the ageing of farming population EU member states need to deal with problems of young farmers with respect to access to land and credit as well as with the red tape. Survey and focus group results highlight that subsidies play a vital role for young farmers, though issues such as complicated application processes and slow evaluations often hinder participation. Access to land remains a challenge, with young farmers facing barriers like fragmented ownership, high costs, and bureaucratic inefficiencies, particularly when dealing with the Slovak Land Fund. Similarly, access to loans is problematic due to collateral requirements, banks' reluctance to lend, and a lack of tailored financial products, forcing many to rely on family or non-bank entities for funding.

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ANNEX: OTHER RELEVANT DATA

1. EU Central and Eastern European Countries

Central and Eastern European Countries (CEEC) are **11 countries** that joined EU in 3 different waves of enlargement. The largest expansion taking place on May 1, 2004, when Poland, Czechia, Slovakia, Hungary, Slovenia, Estonia, Lithuania and Latvia became members. It was followed by the accession of Bulgaria and Romania in 2007 and Croatia in 2013. The EU's eastward enlargement contributed to strengthening stability, economic growth, and democratic values in the region while also presenting challenges related to bridging economic disparities between old and new member states.

CEEC in the EU

1. **Poland** (2004)
2. **Czechia** (2004)
3. **Slovakia** (2004)
4. **Hungary** (2004)
5. **Slovenia** (2004)
6. **Estonia** (2004)
7. **Latvia** (2004)
8. **Lithuania** (2004)
9. **Romania** (2007)
10. **Bulgaria** (2007)
11. **Croatia** (2013)

1.1. Economic Development and Role of CEEC in EU agriculture

GDP per capita in EU CEEC countries remains below the EU average, ranging from 39.5% of the EU-27 average in Latvia to 94.8% in Czechia.

The agriculture and food industry employs 2.82 million people in EU CEEC countries, accounting for a higher share of total employment compared to the EU-27 average (3.3%). Only Slovakia (1.7%), Estonia (1.7%), and Czechia (1.9%) have lower shares.

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Table A1: GDP per capita and employment food industry in EU member states

Member State	GDP per Capita (EU-27=100)	Agriculture employment (1000 persons)	Agriculture employment (As % of total)
Belgium	117.7	38.9	0.8%
Bulgaria	**57.8**	**171.8**	**5.5%**
Czechia	**94.8**	**96.2**	**1.9%**
Denmark	130.1	58.0	1.9%
Germany	122.8	311.2	0.7%
Estonia	**85.3**	**11.3**	**1.7%**
Ireland	208.8	95.5	3.7%
Greece	64.4	440.4	10.6%
Spain	86.7	704.9	3.5%
France	103.9	660.2	2.3%
Croatia	**68.3**	**84.0**	**4.9%**
Italy	95.3	822.7	3.6%
Cyprus	93.2	8.9	2.0%
Latvia	**39.5**	**43.3**	**4.9%**
Lithuania	**86.7**	**67.1**	**4.7%**
Luxembourg	257.0	3.1	1.0%
Hungary	**74.7**	**183.7**	**3.9%**
Malta	107.3	1.6	0.6%
Netherlands	113.3	172.4	1.8%
Austria	123.5	140.0	3.2%
Poland	**77.6**	**1 337.8**	**8.0%**
Portugal	67.6	110.3	2.2%
Romania	**71.6**	**823.2**	**10.5%**
Slovenia	**88.3**	**40.6**	**4.1%**
Slovakia	**73.1**	**43.6**	**1.7%**
Finland	119.5	69.1	2.6%
Sweden	120.3	55.5	1.1%
EU-27	**100.0**	**6 786.8**	**3.3%**

Source: EC, GDP: 2019_2021 average, Employment: 2022

In 2020, there were 5 million farms in EU CEEC countries, accounting for 55.5% of all farms in the EU-27. Poland and Romania alone made up a significant share, with 4.19 million farms.

The Utilized Agricultural Area (UAA) in EU CEEC countries covered 49.9 million hectares, representing 32.1% of the EU-27 total. Poland and Romania together accounted for 27.5 million hectares of this area.

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Table A2: Number of farms and UAA in EU member states

Member State	No of farms (absolute value)	No of ha of UAA (absolute value)
Belgium	36 000	1 368 120
Bulgaria	**132 740**	**4 564 150**
Czechia	**28 910**	**3 492 570**
Denmark	37 090	2 629 930
Germany	262 560	16 578 460
Estonia	**11 370**	**975 320**
Ireland	130 190	4 498 990
Greece	530 680	2 822 890
Spain	914 870	23 913 680
France	393 030	27 364 630
Croatia	**143 920**	**1 231 500**
Italy	1 130 530	12 041 230
Cyprus	34 050	134 140
Latvia	**68 980**	**1 968 960**
Lithuania	**132 080**	**2 914 550**
Luxembourg	1 880	132 140
Hungary	**232 060**	**4 921 740**
Malta	7 650	9 800
Netherlands	52 640	1 817 900
Austria	110 780	2 602 670
Poland	**1 301 490**	**14 749 240**
Portugal	290 230	3 963 940
Romania	**2 887 070**	**12 762 830**
Slovenia	**72 470**	**483 440**
Slovakia	**19 630**	**1 862 650**
Finland	45 630	2 281 710
Sweden	58 790	3 005 810
EU-27	**9 067 300**	**155 092 990**

Source: EC, 2022

Labour productivity in agriculture in EU CEEC countries remains below the EU-27 average of 21 359 EUR/AWU. Among CEEC countries, Slovakia has the highest labour productivity (17 304 EUR/AWU), while Romania has the lowest labour productivity in agriculture (3 509 EUR/AWU).

In 2024, labour productivity in agriculture in EU-27 increased by 37.2% compared to 2015. Between 2015 and 2024, labour productivity increased in 7 out of 11 CEEC countries. The highest growth was recorded in Bulgaria (+66.8%), while Estonia saw the largest decline (-45%).

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Table A3: Labour productivity in agriculture in EU Member States

Member State	Agricultural factor income (real) per annual work unit (EUR/AWU)	Index (2015=100)
Belgium	52 396	128.8
Bulgaria	**11 530**	**166.8**
Czechia	**17 220**	**97.5**
Denmark	53 570	185.0
Germany	41 634	160.0
Estonia	**8 055**	**54.7**
Ireland	25 652	136.5
Greece	21 628	145.3
Spain	37 001	120.8
France	33 517	98.0
Croatia	**6 689**	**125.5**
Italy	32 898	149.7
Cyprus	18 198	110.8
Latvia	**9 805**	**150.3**
Lithuania	**6 165**	**91.5**
Luxembourg	36 388	165.7
Hungary	**9 243**	**113.7**
Malta	7 289	54.0
Netherlands	51 775	105.8
Austria	21 128	119.1
Poland	**7 538**	**152.8**
Portugal	16 037	147.1
Romania	**3 509**	**84.9**
Slovenia	**6 428**	**104.9**
Slovakia	**17 304**	**125.7**
Finland	25 290	127.9
Sweden	36 930	129.8
EU-27	**21 359**	**137.2**

Source: EC, 2024

Note: Agricultural real factor income measures the income generated by farming, which is used to remunerate borrowed or rented factors of production (capital, wages and land rents) as well as own production factors (own labour, capital and land).

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1.2 Environmental performance of agriculture in EU CEEC

Agriculture is a significant source of greenhouse gas (GHG) emissions, particularly methane (CH_4) from livestock and nitrous oxide (N_2O) from fertilizers. The EU-27 total agricultural emissions amount to 367.2 million tons of CO_2 equivalent, with agriculture accounting for 11.2% of total emissions.

Table A4: Agricultural emissions in EU countries (2020)

Member State	Agricultural emissions of greenhouse gases (1000 t of CO2 equivalent)	Share of agriculture in emissions of greenhouse gases (%)
Belgium	9 323	8.7
Bulgaria	5 809	12.1
Czechia	7 730	6.8
Denmark	11 831	27.8
Germany	51 744	7.1
Estonia	1 534	13.5
Ireland	21 421	36.5
Greece	8 362	11.0
Spain	34 330	12.7
France	65 333	16.8
Croatia	2 606	10.3
Italy	33 020	8.7
Cyprus	531	6.2
Latvia	2 179	20.7
Lithuania	4 297	21.4
Luxembourg	687	7.6
Hungary	6 859	10.9
Malta	86	4.1
Netherlands	18 346	11.2
Austria	7 148	9.7
Poland	32 725	8.8
Portugal	7 220	12.5
Romania	17 740	15.9
Slovenia	1 743	10.9
Slovakia	2 096	5.6
Finland	6 070	12.7
Sweden	6 445	14.0
EU-27	367 214	11.2

Source: CAP Context indicator 45

Latvia, Lithuania and Romania have a high share of emissions from agriculture, making them key focus areas for sustainable farming and emission reduction strategies. Poland, Romania, and Hungary are the largest agricultural emitters in CEECs, but their agriculture's share of

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total emissions is relatively moderate. Czechia and Slovakia have the lowest share of agricultural emissions, indicating a more industrialized agricultural systems and food economy.

Livestock production

Most CEEC countries have significantly lower livestock production measured by LSU/ha than the EU-27 average (0.7 LSU/ha). Below average is Bulgaria, Estonia, Latvia, Lithuania, Romania, and Slovakia having only 0.2-0.3 LSU/ha. Slovenia stands out with 0.9 LSU/ha, above the EU-27 average, showing more intensive livestock production. With 0.7 LSU/ha, Poland matches the EU average.

Table A5: Livestock units per hectare in EU-27 Member states

Member State	Total UAA (ha)	Total LSU (LSU)	Index (LSU/ha)
Belgium	1 368 120	3 663 330	2.7
Bulgaria	4 564 150	1 002 060	0.2
Czechia	3 492 570	1 600 600	0.5
Denmark	2 629 930	4 163 830	1.6
Germany	16 595 020	16 255 160	1.0
Estonia	975 320	292 400	0.3
Ireland	4 920 270	6 319 360	1.3
Greece	3 916 640	1 961 620	0.5
Spain	23 913 680	16 565 200	0.7
France	27 364 630	19 021 480	0.7
Croatia	1 505 430	752 900	0.5
Italy	12 523 540	9 255 260	0.7
Cyprus	134 140	229 950	1.7
Latvia	1 968 960	474 480	0.2
Lithuania	2 914 550	718 290	0.2
Luxembourg	132 140	163 320	1.2
Hungary	4 921 740	1 894 000	0.4
Malta	9 800	31 850	3.3
Netherlands	1 817 900	6 262 880	3.4
Austria	2 602 670	2 233 700	0.9
Poland	14 784 120	10 013 520	0.7
Portugal	3 963 940	2 426 540	0.6
Romania	12 762 830	4 385 970	0.3
Slovenia	483 440	454 600	0.9
Slovakia	1 862 650	606 130	0.3
Finland	2 281 710	950 050	0.4
Sweden	3 005 810	1 652 290	0.5
EU-27	157 414 160	113 350 770	0.7

Source: Eurostat, 2020

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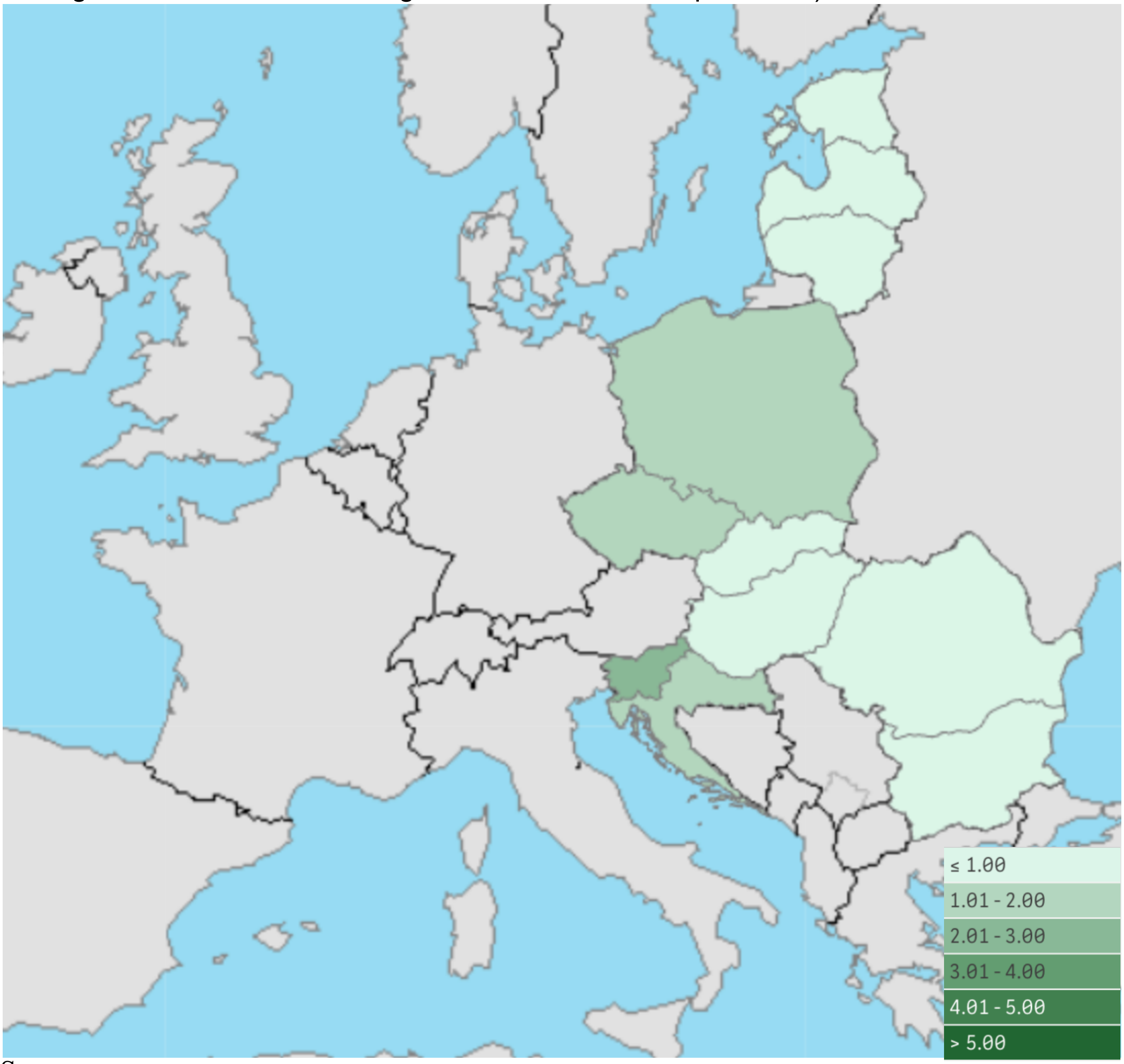
Map A2: Emissions from livestock per hectare of UAA (enteric fermentation and manure management, 2018-2020 average, in tonnes of CO2 equivalents)



Source: European Environment Agency

Organic farming

The EU's Farm to Fork and Biodiversity Strategies aim to have 25% of agricultural land under organic farming by 2030, a significant leap from the 10% of UAA recorded in 2021. In response to this ambitious goal, support for organic farming has been strengthened in the CAP Strategic Plans (CSPs) for the 2023–2027 period compared to the previous programming period.

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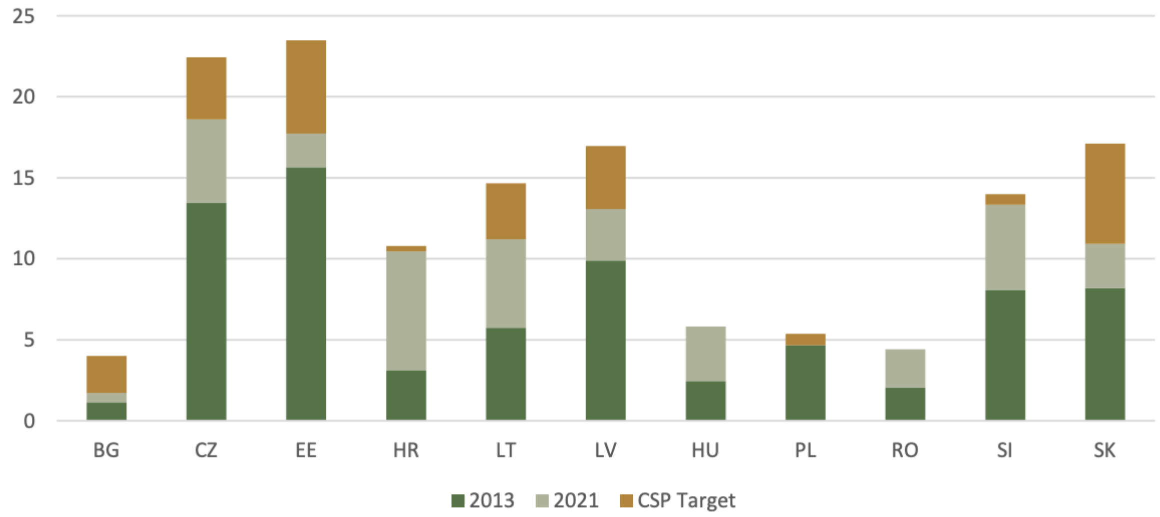
In CEEC, the organic farming targets for 2027 vary widely**, ranging from** less than 5% to nearly 25% of UAA. This variation reflects differing national ambitions and capacities to expand organic practices across the region. Countries with some of the largest agricultural areas—such as Hungary, Poland, and Romania—have set relatively modest percentage targets at the national level.

Figure A1: Status and targets set for UAA under organic farming (% of UAA)



Source: Frelih Larsen et al., 2024 based on Eurostat, 2024 and EC, 2024c.

1.3 CAP 2023-2027 in EU CEEC

EU Member States have allocated a total budget of 317.5 billion EUR for the CAP 2023-2027. This includes EU funding, Member States' co-financing, and additional national contributions. Of this amount, EU funding accounts for 270 billion EUR.

The EU CEECs have allocated a total of 89.3 billion EUR, representing 28% of the total expenditure across all EU-27 countries.

Table A6: Total EU-27 CAP Budget (in EUR)

Member State	CAP Budget 2023-2027 = Total Public Expenditure + Additional National Financing
Austria	9 344 049 624.64
Belgium-Flanders	1 895 335 627.39
Belgium-Wallonia	1 857 432 883.17
Bulgaria	7 835 936 461.29
Croatia	3 772 313 847.17
Cyprus	474 460 230.00
Czechia	7 896 816 333.50
Denmark	4 931 655 885.05
Estonia	1 621 186 165.18
Finland	8 403 597 375.75
France	51 905 454 810.75
Germany	35 507 765 584.40
Greece	13 347 253 075.00
Hungary	14 596 907 967.61
Ireland	9 787 274 613.40
Italy	36 661 741 856.71
Latvia	2 739 018 963.48
Lithuania	4 219 659 831.71
Luxembourg	468 303 725.68
Malta	161 066 515.99
Netherlands	5 088 414 153.67
Poland	24 966 724 933.49
Portugal	7 316 954 493.71
Romania	15 754 144 104.50
Slovakia	4 113 921 348.45
Slovenia	1 783 271 200.35
Spain	34 518 913 010.28
Sweden	6 519 974 675.25
EU-27	317 489 549 297.57
CEEC	89 299 901 156.73
CEEC share	28.13%

Source: EC, CAP 2023-2027 Performance dashboard

The CAP 2023-2027 sets out ten specific objectives (SOs) designed to promote a sustainable and resilient agricultural sector across the EU. Objectives 1-3 focus on economic goals, objectives 4-6 address environmental priorities, and objectives 7-10 support rural development, public health, and knowledge transfer.

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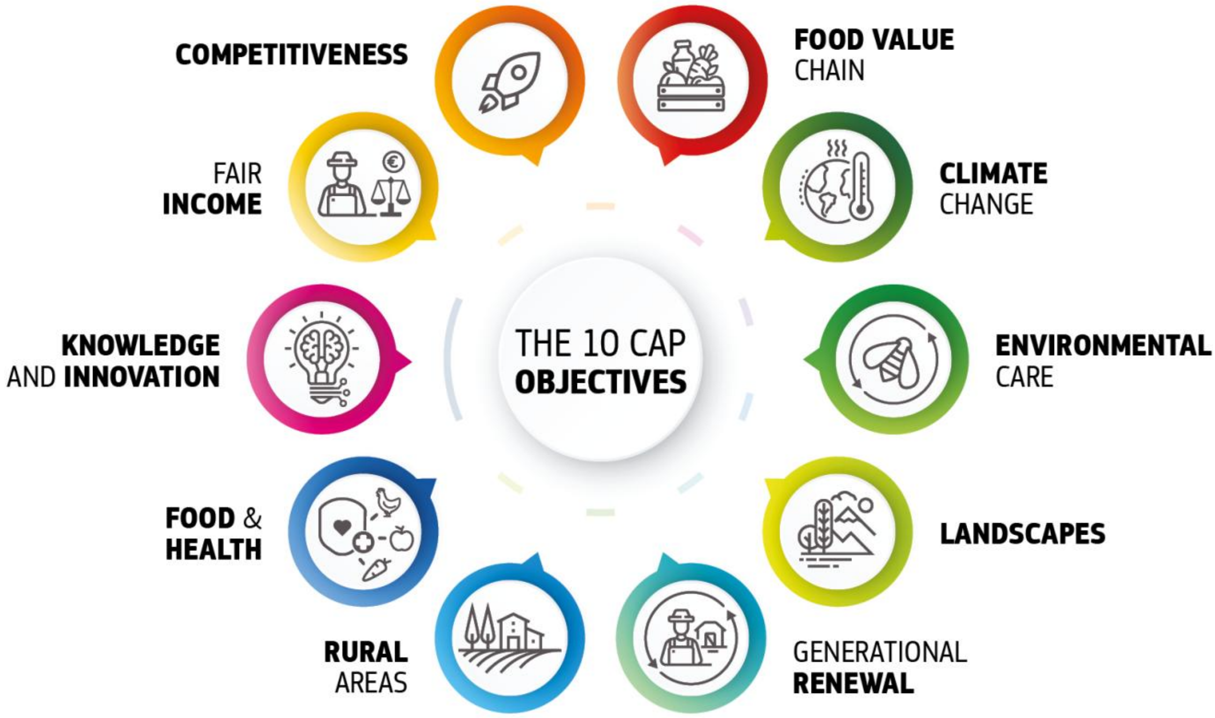

1. **Ensure fair income for farmers**

   CAP aims to support farmers' incomes to ensure a stable and sufficient livelihood despite market fluctuations and production challenges. Direct payments and rural development funds help mitigate income disparities between regions and farming sectors. This objective ensures that agriculture remains a viable profession and prevents rural depopulation.

2. **Enhance competitiveness**

   To strengthen the EU's agricultural sector, CAP promotes innovation, modernization, and investment in technology. It encourages sustainable production practices that improve efficiency and reduce costs while maintaining high food quality standards. By supporting research, digitalization, and market access, CAP helps farmers compete globally.

3. **Improve the position of farmers in the food chain**

   CAP reinforces farmers' bargaining power in the food supply chain by promoting producer organizations, fair trade practices, and transparency. It addresses unfair trading practices and ensures that farmers receive fair compensation for their products. Strengthening cooperation and contracts helps balance power dynamics between producers, processors, and retailers.

4. **Contribute to climate change mitigation and adaptation**

CAP supports actions to reduce greenhouse gas emissions, enhance carbon sequestration, and promote climate-resilient farming practices. Investments in precision agriculture, agroforestry, and improved land management help farmers adapt to changing climate conditions. This objective aligns with the EU's Green Deal commitments to reduce the environmental footprint of agriculture.

5. **Foster environmental care**

   CAP promotes sustainable land use, water conservation, and pollution reduction through eco-schemes and best agricultural practices. Funding is allocated to farmers who implement measures such as soil conservation, agroecology, and reduced pesticide use. By encouraging responsible resource management, this objective ensures that agriculture contributes to a healthier environment.

6. **Protect biodiversity and restore ecosystems**

   CAP supports nature conservation efforts by incentivizing farmers to preserve habitats, maintain landscape features, and protect pollinators. Programs encourage organic farming, crop diversification, and the restoration of degraded lands to boost biodiversity. These efforts ensure that agricultural landscapes remain rich in wildlife and resilient to ecological threats.

7. **Support generational renewal in farming**

   CAP provides financial incentives, access to land, and training programs to encourage young farmers to enter the sector. It addresses challenges such as high investment costs and succession planning to ensure the long-term sustainability of EU agriculture. By supporting new entrants, CAP fosters innovation and secures the future of rural communities.

8. **Promote vibrant rural areas**

   The policy invests in rural development initiatives, infrastructure, and services to enhance the quality of life in farming regions. It supports job creation, diversification of rural economies, and social inclusion to prevent rural depopulation. By improving connectivity, education, and healthcare, CAP strengthens rural resilience.

9. **Ensure food and health quality standards**

   CAP enforces strict food safety, animal welfare, and public health standards to protect consumers and maintain trust in EU agricultural products. It promotes sustainable farming methods that reduce pesticide use, antibiotic resistance, and food

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contamination risks. Through labeling and certification schemes, CAP ensures transparency and product integrity.

10. **Encourage knowledge sharing, innovation, and digitalization**

    CAP fosters research, education, and technology transfer to modernize farming practices. It supports digital tools such as precision farming, smart irrigation, and data-driven decision-making to enhance efficiency and sustainability. Knowledge exchange programs help farmers adopt best practices and innovative solutions.

CEEC Countries prioritize income support (SO 1-3) over environmental (SO 4-6) and rural and knowledge based (SO 7-10) investments. Their lower allocation to environmental sustainability and rural innovation could pose challenges for long-term agricultural resilience and climate adaptation.

SO 1-3: Income Support, Competitiveness, Food Value Chain

CEEC countries allocate a higher percentage of financial resources to income support and competitiveness compared to the EU-27 average (41.47%). Poland (52.17%), Lithuania (53.30%), and Croatia (50.59%) allocate significantly above the EU-27 average, emphasizing strong direct payments to support farmers' incomes. Czechia (48.74%) and Latvia (49.98%) also exceed the EU-27 benchmark, while countries like Slovakia (39.76%) and Slovenia (36.04%) remain slightly below.

SO 4-6: Climate Change, Environmental Care, Biodiversity

Financial allocations exclusively assigned to climate and biodiversity objectives vary widely across CEECs, with Czechia (10.10%) and Sweden (13.48%) standing out, whereas most CEECs remain below the EU-27 average (2.84%). However, financial allocations also assigned to other SOs show that CEEC countries generally invest less in environmental sustainability than Western European nations. For instance, Czechia (56.75%) and Hungary (71.17%) allocate significantly below the EU-27 average (86.37%).

SO 7-10: Generational Renewal, Rural Areas, Food & Health, Knowledge & Innovation

Financial exclusively assigned allocations for rural development and knowledge transfer in CEEC countries are mostly below the EU-27 average (5.44%), with Slovakia (11.92%) being an exception. Financial allocations also assigned to other SOs for rural and knowledge

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support show mixed results, with Hungary (52.03%), Latvia (58.16%), and Romania (24.83%) investing notably in these areas.

Table A7: Share of financial allocation by CAP 2023-2027 Specific Objectives in MS

Member State	SO 1-3		SO 4-6			SO 7-10	
	Incomme support, Competitiveness, Food Value Chain		Climate Change, Environmental Care, Biodiversity			Generational Reneval, Rural Areas, Food and Health, Knowledge and Innovation	
	Financial allocation exclusivelly assigned	Financial allocation also assigned to other SOs	**Financial allocation exclusivelly assigned**	Financial allocation also assigned to other SOs	Financial contribution to SOs from direct payments linked to conditionality	**Financial allocation exclusivelly assigned**	Financial allocation also assigned to other SOs
Austria	**31.09%**	35.88%	**1.33%**	119.47%	26.03%	**7.35%**	27.09%
Belgium-Flanders	**35.34%**	34.05%	**7.45%**	86.89%	33.27%	**4.07%**	23.91%
Belgium-Wallonia	**30.40%**	66.97%	**0.50%**	127.64%	43.47%	**0.51%**	71.41%
Bulgaria	**33.77%**	**37.78%**	**3.93%**	**74.05%**	**33.50%**	**14.36%**	**36.01%**
Croatia	**50.59%**	**26.16%**	**2.41%**	**70.95%**	**34.46%**	**7.86%**	**24.67%**
Cyprus	**41.94%**	36.95%	**5.05%**	73.43%	35.52%	**12.61%**	9.31%
Czechia	**48.74%**	**33.29%**	**10.10%**	**56.75%**	**30.49%**	**8.02%**	**7.65%**
Denmark	**67.17%**	21.70%	**0.00%**	79.51%	55.93%	**0.00%**	17.92%
Estonia	**47.55%**	**32.57%**	**2.12%**	**113.22%**	**38.14%**	**4.01%**	**53.88%**
Finland	**30.64%**	30.82%	**3.90%**	89.86%	21.90%	**13.93%**	6.11%
France	**44.75%**	30.22%	**2.36%**	102.77%	39.69%	**2.20%**	46.38%
Germany	**45.92%**	11.62%	**3.84%**	83.66%	45.32%	**9.89%**	18.48%
Greece	**38.96%**	42.87%	**1.30%**	86.76%	40.97%	**2.92%**	33.99%
Hungary	**42.58%**	**37.41%**	**4.08%**	**71.17%**	**32.29%**	**3.16%**	**52.03%**
Ireland	**43.63%**	37.87%	**2.67%**	121.58%	38.00%	**2.30%**	45.62%
Italy	**14.36%**	98.85%	**0.88%**	84.60%	35.93%	**5.90%**	34.44%
Latvia	**49.98%**	**44.31%**	**2.41%**	**93.17%**	**41.71%**	**1.20%**	**58.16%**
Lithuania	**53.30%**	**39.82%**	**0.91%**	**70.70%**	**45.31%**	**4.20%**	**18.56%**
Luxembourg	**40.32%**	29.65%	**0.37%**	134.32%	21.41%	**2.71%**	38.29%
Malta	**19.57%**	59.96%	**0.09%**	148.70%	18.67%	**8.29%**	91.80%
Netherlands	**40.89%**	25.27%	**0.37%**	151.15%	33.08%	**5.83%**	40.28%
Poland	**52.17%**	**25.96%**	**0.10%**	**72.56%**	**48.26%**	**5.09%**	**33.57%**
Portugal	**35.64%**	48.00%	**3.65%**	91.12%	35.50%	**0.27%**	53.21%
Romania	**38.31%**	**52.06%**	**2.81%**	**78.49%**	**40.75%**	**6.65%**	**24.83%**
Slovakia	**39.76%**	**49.32%**	**3.93%**	**84.17%**	**30.24%**	**11.92%**	**21.29%**
Slovenia	**36.04%**	**37.53%**	**2.11%**	**95.26%**	**26.56%**	**5.49%**	**27.64%**
Spain	**53.41%**	15.66%	**3.75%**	70.36%	46.76%	**3.38%**	21.91%
Sweden	**53.15%**	25.99%	**13.48%**	58.44%	36.59%	**9.88%**	31.98%
EU-27	**41.47%**	37.65%	**2.84%**	86.37%	39.54%	**5.44%**	32.38%

Source: EC, CAP 2023-2027 Performance dashboard

Note that the CAP 2023-2027 SOs can be also linked with the 17 Sustainable Development Goals of the United Nations (UN, 2015).

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1.2.1. Allocations per interventions in CEEC

The CAP allocations for 2023–2027 in CEECs focus significantly on income support under the European Agricultural Guarantee Fund (EAGF). Most countries dedicate a substantial portion of their CAP budgets to the Basic Income Support for Sustainability (BISS), especially Lithuania, Poland, and Bulgaria, where BISS forms the largest component. Complementary Redistributive Income Support (CRISS) and Coupled Support also feature prominently, particularly in Croatia, Romania, and Latvia, while the Complementary Income Support for Young Farmers (CIS-YF) remains a minor allocation across all countries. Eco-schemes, which reward environmentally beneficial practices, are gaining ground, with Slovenia and Estonia leading in their adoption.

Under the European Agricultural Fund for Rural Development (EAFRD), countries show varied priorities. Slovenia, Estonia, and Romania allocate significant funds to environment and climate (ENVCLIM) and investment (INVEST) interventions, signaling a commitment to sustainable rural development and modernization. Czechia and Slovakia stand out for their strong support of areas facing natural constraints (ANC & ASD), indicating efforts to maintain farming in less favorable regions. While cooperation and knowledge transfer (COOP & KNOW) receive smaller shares, they are present across all countries. Risk management (RISK) interventions are generally underfunded, suggesting a limited focus on insurance tools or income stabilization.

Overall, CEECs are balancing between traditional income support and increasingly ambitious rural development goals. While BISS and CRISS dominate much of the funding landscape, there is a clear trend towards enhancing environmental and climate resilience, particularly through eco-schemes and EAFRD environmental measures. Countries like Slovenia and Estonia are emerging as frontrunners in this transition, while others such as Bulgaria and Hungary remain more reliant on conventional direct payments. The varying shares reflect national priorities and capacities in implementing CAP reforms under the new programming period.

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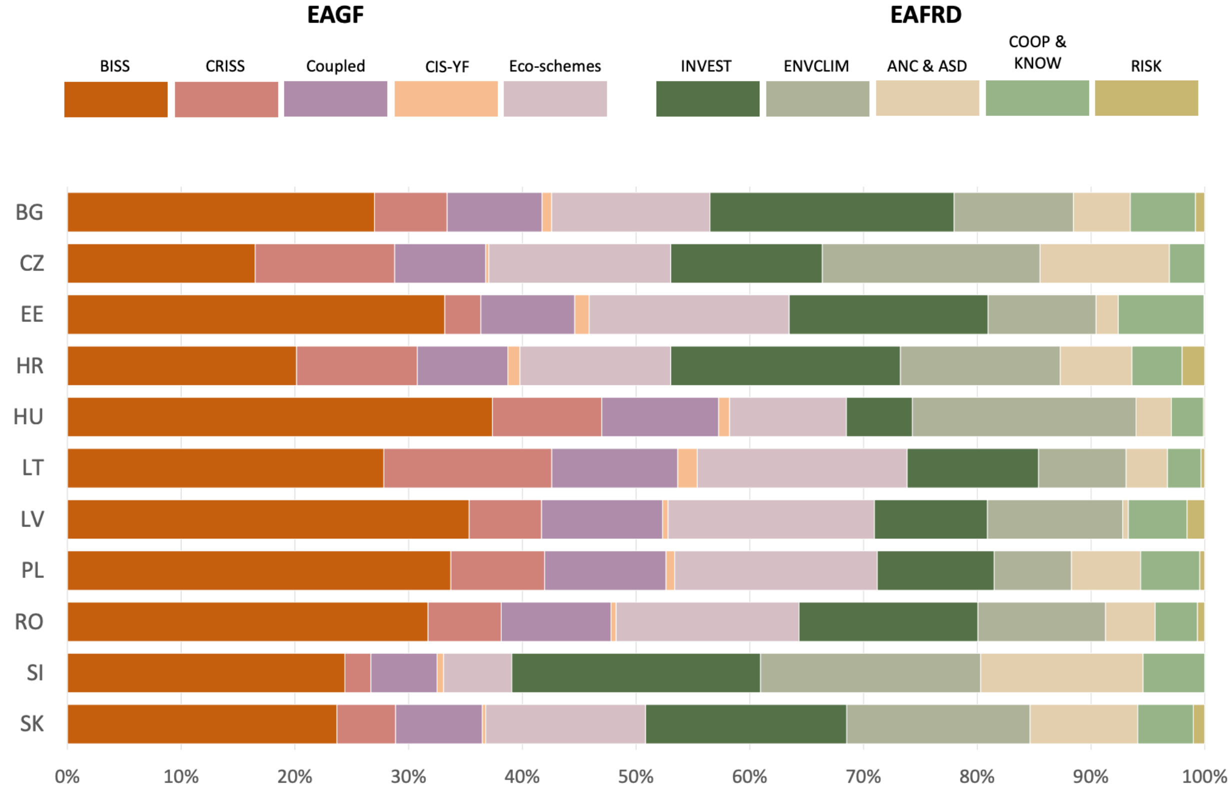
Figure A2: Total public expenditure (in %) for CSP interventions (2023 – 2027)



Source: Frelih Larsen et al., 2024
Note: Not included in graph are sectoral interventions & technical assistance, accounting for less than 3% of total public expenditure

BISS, CRISS and CIS-YF

Decoupled income support, also known as hectare-based income support, constitutes a significant share of the CAP budget in EU CEEC—accounting for more than a third of the total CAP allocation (EAGF + EAFRD). Specifically, it represents 38% of the CAP budget in the region, broken down into 29% for BISS, 8% for CRISS, and 1% for Income Support for Young Farmers (CIS-YF) (Frelih Larsen et al., 2024). These three interventions are designed to provide income stability for farmers, with the aim of supporting sustainable practices, fairer income distribution, and generational renewal in the agricultural sector.

Degressivity and capping of BISS allow Member States to reduce or cap payments above certain thresholds and redirect the savings to the EAFRD. This can lead to fairer and more targeted income support, particularly in countries where a few entities control large land areas and receive a high share of payments. Degressivity starts above 60,000 EUR, and capping can be applied above 100,000 EUR. Four CEECs (Bulgaria, Litva, Lithuania, Slovakia) apply capping or reductions, and two (Slovenia, Slovakia) apply degressivity (EC 2023). However, others with some of the region's largest farms (Romania, Croatia, Hungary, Czechia, Poland)

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apply neither, resulting in more concentrated CAP payments that disproportionately benefit large holdings and investors.

Coupled income support ties payments directly to specific outputs, such as per animal or per hectare. Although the CAP has reduced such coupling over time to limit overproduction, it remains in place for certain sectors—mainly livestock (EC, 2022). In the 2023–2027 CAP period, coupled support has slightly increased, with nearly 10% of the CEEC CAP budget allocated to it, compared to lower levels in other EU-16 countries. About 63.5% of this support goes to livestock. Hungary, Lithuania, Poland, and Latvia allocate the highest shares, each dedicating around 10% of their total CAP budget to coupled payments.

Eco-schemes, funded through the EAGF, aim to support climate, environmental, and animal welfare goals. The European Commission requires 25% of the direct payments budget to be allocated to eco-schemes, unless over 35% of EAFRD funds are directed toward similar objectives. In EU CEEC, eco-schemes are the second-largest intervention, with a median allocation of 15.8% of CSP budgets—though Slovenia lags with only 5.8%. The Baltics (Lithuania, Latvia, Estonia) and Poland lead with 17–18% allocations. Since eco-scheme payments are annual, their impact is expected to be short-term. However, they offer opportunities to pilot new measures and assess farmer engagement.

Under the EAFRD, EU CEEC allocate the largest share of funding to **investment measures** (35%), a significantly higher portion than in EU-16 countries (13% vs. 9.7%). This reflects a strong focus on productivity in the region. Most EU CEEC devote over 10% of their budget to investments, with Bulgaria (20.8%) and Slovenia (21.3%) leading, while Hungary (5.7%) and Latvia (9.8%) allocate the least. In contrast, cooperation and knowledge interventions receive limited support, generally below 5%, except for Estonia (7.4%). Despite slightly lower average allocations, this is notable given the underdeveloped AKIS systems in EU CEEC compared to the EU-16 (EC, 2023). Green investments and knowledge-sharing are crucial for supporting transitions to more sustainable practices.

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Table A8: Budget under Investment measures in million EUR

Country	Modernisation	Rural area/ infrastructure	Irrigation	Forestry	Afforestation	Agro forestry	Climate	Environment/ Biodiversity	Other	Total
Bulgaria	547.9	673.8	100.0	41.0	20.0			201.1		1583.8
Czechia	608.1	57.8		166.7	0.9	3.9	80.0	111.6		1029.1
Estonia	203.5	15.0		8.0				51.4		277.9
Croatia	443.1	75.9	72.4	71.6			30.0	20.4		713.3
Hungary	295.4	98.0	17.2	73.2			48.3	19.9	9.6	561.7
Lithuania	338.0	21.1	40.0		7.0		56.3	4.0	5.0	471.3
Latvia	114.0	56.0		9.4			37.0	3.0	20.5	239.9
Poland	790.2	677.0		18.0	11.6	6.0	267.7	353.5	379.1	2503.1
Romania	1330.2	451.0	502.4					98.4	10.0	2392.0
Slovenia	273.9	9.0	20.6	36.8			17.1	10.0		367.3
Slovakia	520.0		32.0	30.0	0.3	3.3	30.0	88.8		704.4
Total	5464.2	2134.5	784.5	454.7	39.8	13.3	566.4	962.2	424.2	10843.8
Total share of INVEST	50.4%	19.7%	7.2%	4.2%	0.4%	0.1%	5.2%	8.9%	3.9%	100.0%

Source: Frelih Larsen et al., 2024

Interventions like **Areas with Natural Constraints (ANC) and Area Specific Disadvantages (ASD)** primarily aim to support farmer income, while also contributing to environmental goals. ANC targets mountain areas or land with natural constraints, while ASD includes zones like Natura 2000 sites and river basin areas. These payments account for 6% of the CEEC CAP budget, slightly below the EU average of 7%. Slovenia and Czechia allocate the highest share to ANC/ASD, and Poland the highest overall amount. Though these payments lack specific environmental conditions beyond baseline conditionality, countries can introduce such requirements. For example, Lithuania provides ANC support in erosion-prone, low-fertility areas where payment rules could promote extensive grassland management and reduce erosion.

Environmental, climate, and management-focused commitments (ENVCLIM) include measures supporting agri-environment-climate commitments (AECC), organic farming, animal welfare, and forestry. Although ENVCLIM is the most targeted category, it receives just 11.7% of the total CAP budget in EU CEEC, or about a third of EAFRD funding. Of this, 48% goes to AECC, 34% to organic farming, and 18% to animal welfare. Country approaches vary: Lithuania focuses almost entirely on organic farming, Romania leads in animal welfare spending, and both Romania and Croatia allocate more to animal welfare than AECC. Hungary prioritizes AECC, as do Slovenia, Estonia, and Czechia, while Poland and Latvia do not fund animal welfare under ENVCLIM.

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