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Raising Farm Labour Productivity in the EU: Lessons for the Post2027- CAP

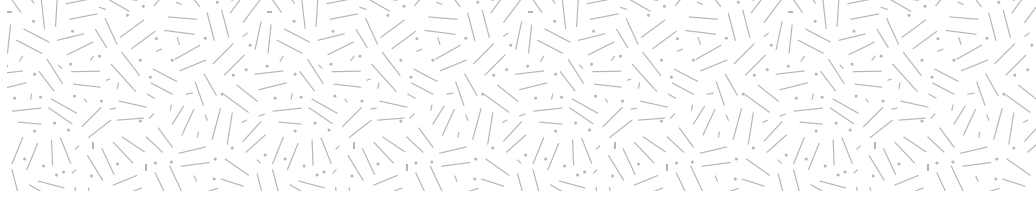
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Key Messages

- **Growth in agricultural labour productivity is slowing down across the EU.** In the median EU country, national labour productivity growth fell from 2.0% a year in 2010–2019 to 0.8% in 2020–2024, even though the workforce shrank faster (–0.8% to –1.1% a year), because value added went from growing 1.3% a year to falling 0.4%. Austria and Poland are exceptions where value added kept growing; Hungary is closer to the typical pattern, with value added falling and the workforce shrinking faster still (Figure 1).
- **The two instruments most clearly linked to higher value added are decoupled payments and advisory support.** Decoupled payments (DABIS) are linked with faster productivity growth by increasing value added, an effect that fades from +0.18 percentage point after one year to +0.03 after five. Coupled income support (CIS) and early retirement schemes show the opposite: coupled support goes with value added growth 0.14 to 0.21 points a year slower, and early retirement with value added growth 0.58 to 0.82 points a year slower, at every horizon. Knowledge-sharing and advisory support (AKIS) has by far the largest estimated effect on productivity of any instrument (+0.69 percentage points a year after one year, +0.63 after five, both through value added), though it is estimated off a very small budget base (0.3% of value added) and the effect need not scale linearly if spending rises.
- Payments for natural constraints (ANC) go with more people staying in farming (employment growth 0.04–0.07 points a year faster per point of value added paid), with no measurable effect on value added or labour productivity. They should therefore be judged on keeping land farmed, not on productivity. Organic support points the same way only at five years, so we draw no conclusion from it.





Why agricultural productivity matters now

Competitiveness and productivity are explicit objectives of the post-2027 Common Agricultural Policy (CAP). Labour productivity is a key driver of productivity growth: it is the fastest-growing component of European agricultural productivity, and labour accounts for 22.8% of production costs on average. Yet much of the recorded rise has come from fewer workers rather than from more value added. Because labour productivity is value added per worker, it rises when the workforce shrinks faster than value added grows, and the agricultural workforce has shrunk steadily with an ageing farm population. The Commission's vision for agriculture and food calls for more farmers, and independent agenda-setting papers such as the BrightSpace / LAMASUS / Act4CAP vision (Havlík et al., 2025) have likewise emphasised the need to strengthen the workforce.

LAMASUS examined how the EU could support labour productivity growth using CAP instruments. Its findings are especially relevant to the Commission's proposals for the 2028–2034 financial framework, where the classic pillars are set to be reshaped: support would be delivered through National and Regional Partnership Plans in which Member States choose the instrument mix, and the ceiling on coupled income support would rise from 13% to 20% of a Member State's direct payments, with an additional 5% for sectors and regions in need (European Commission, 2025).



Growth in labour productivity can be split into: 1) growth in value added, and 2) change in workforce (number of jobs). Value added is measured in 2015 prices; the workforce counts all persons employed in agriculture, forestry and fishing, family and hired, by head rather than by hours worked.

Decomposing the growth of labour productivity

We compare a typical decade, 2010–2019, with the crisis years 2020–2024¹, a period characterized by repeated droughts, COVID-19, and the energy and fertiliser price shock after Russia's invasion of Ukraine.

¹ The CAP framework was largely unchanged across both periods; the 2014–2020 rules were extended through 2022, and the new Strategic Plans started only in 2023.

In both periods, **most of the productivity gain came from people leaving farming, but after 2020, output stopped growing.** Across the EU, labour productivity grew 3.1% a year in 2010–2019 and 1.9% a year in 2020–2024. Over the same two periods, value added in 2015 prices grew 0.9% and 0.1% a year, while the workforce fell 2.2% and 1.8% a year. The shrinking workforce accounted for about 70% of productivity growth before 2020 and about 95% after.

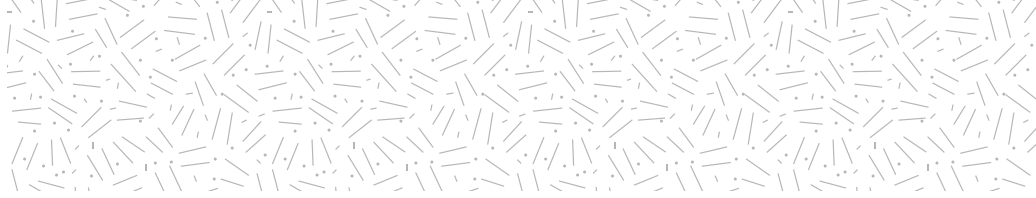
Regional catch-up has stalled. Before 2020, regions with productivity levels half that of their peers grew about 1.2 percentage points faster per year (Figure 1, left panel). Since 2020, this catch-up relationship has disappeared: lower-productivity regions no longer grow faster than the rest, so the gaps between regions are not narrowing.

We highlight three countries to show how labour, output, and productivity growth trajectories differ across the EU (Figure 1, right; national totals). Since 2020, Polish labour productivity grew 6.0% a year through workforce exit (–5.2%) with almost no growth in value added (+0.5%). In Hungary value added fell (–1.8%) and the workforce fell faster (–3.9%), so labour productivity still rose 2.1%. Finally, in Austria value added grew (+3.1%), with labour productivity up 5.9% and the workforce down 2.6%.

Figure 1: Productivity growth by starting level in 2010–2019 and 2020–2024 (left), and its split into value added and employment in Austria, Hungary and Poland (right)



Left: each point is a NUTS-3 region, shaded for 2010–2019 and solid for 2020–2024; regions in Austria, Hungary and Poland are coloured. Lines: least-squares fit of annual growth on the log of the starting level, over the central 90% of the level distribution, dashed for 2010–2019 and solid for 2020–2024; shaded band: 95% confidence interval of that fit. Right: national totals (value added and employment summed over each country's NUTS-3 regions) of annual growth in labour productivity, value added (in 2015 prices) and employment.



The decomposition matters for the post 2027 CAP: (1) A productivity target measured as value added per worker is met mostly by having fewer farmers. Keeping people in farming lowers measured labour productivity unless value added grows as well, so productivity should always be reported alongside value added and employment. (2) The post-2027 CAP cannot count on lagging regions continuing to catch up as they did before 2020. The policy question is therefore which CAP instruments raise value added, not only value added per worker. The next section tests this for different types of CAP instruments.

The impact of CAP instruments

The previous section showed that recent labour productivity gains came almost entirely from people leaving farming, not from higher output. This section asks which CAP instruments are linked to productivity growth, and whether that growth comes from higher output or from fewer workers. We examined ten CAP instruments using CATS payment data for 2008–2020. Each instrument was measured by its payments as a share of the region’s agricultural value added. For example, €1 million a year paid through an instrument to a region with €100 million of agricultural value added is a share of one percentage point. Figure 2 shows how much faster or slower, in percentage points a year, productivity, value added and employment grew one, three and five years after such a one-point increase. The estimates are associations for the 2008–2019 period, before COVID-19 and the recent crises, when conditions were comparatively stable.

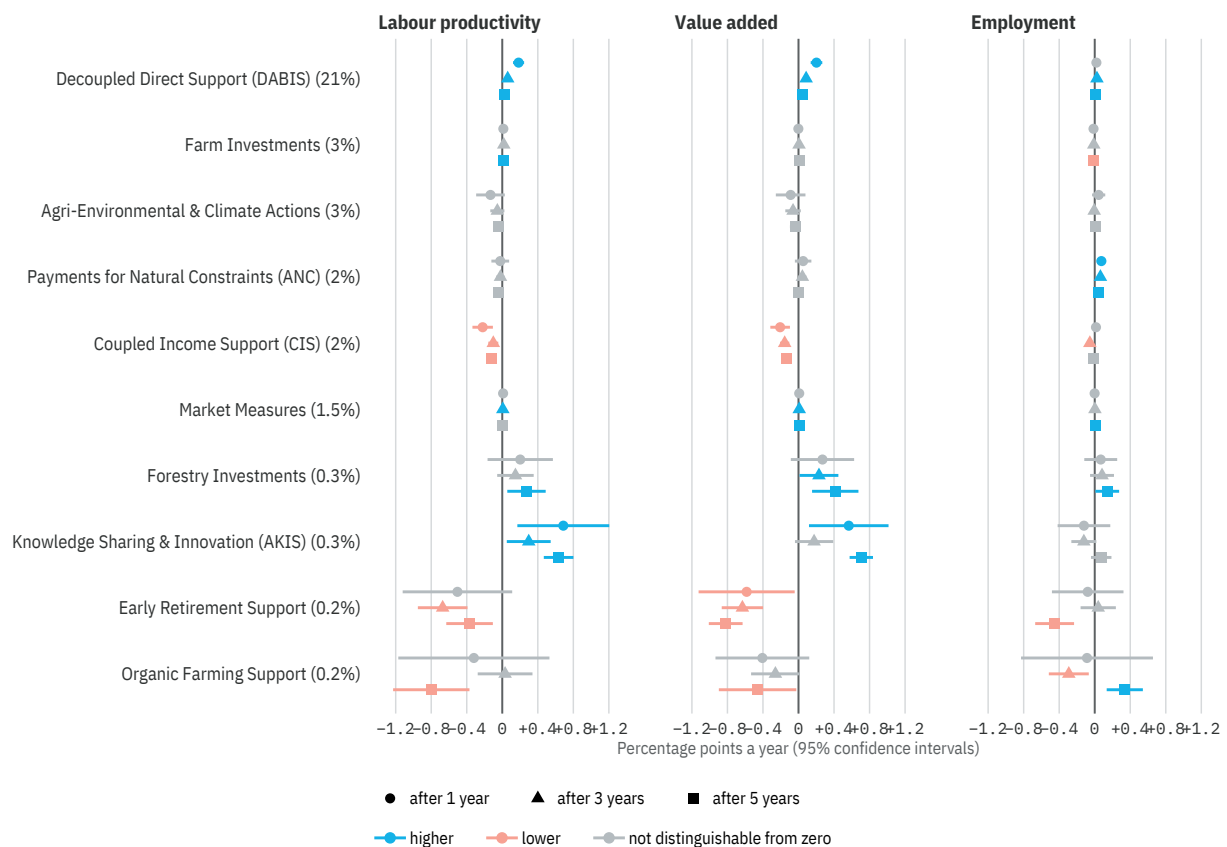
- **Decoupled Direct Support (DABIS)**, the largest instrument is correlated with faster productivity growth that fades over time: +0.18 after one year, +0.06 after three, +0.03 after five, all significant and mainly increasing agricultural output.
- **Agri-Environmental & Climate Actions** show no significant association with any outcome. **Farm Investments** go with slightly faster productivity growth after five years (+0.017 per percentage point) alongside fewer workers (−0.011), not more output.
- **Payments for Natural Constraints (ANC)** go with employment, not output: employment grows significantly faster, by +0.07 points a year after one year, +0.06 after three years, and +0.04 after five years per percentage point of value added paid. In contrast, differences in productivity and value added are not distinguishable from zero.
- **Coupled Income Support (CIS)**, averaging 2%, is DABIS’s mirror image: −0.22, −0.10 and −0.12 points a year at the same three horizons, again mainly through value added, and negative at every horizon. Both patterns are consistent with the paper’s own reading: decoupled support behaves like general liquidity, while coupled support is tied to specific sectors, some of them granted support because they are already struggling.
- **Knowledge Sharing & Innovation (AKIS)** shows the strongest estimated link to agricultural productivity, but its potential should be interpreted in

the context of its small budget. AKIS has the largest positive and significant coefficients per unit (+0.69 on productivity after one year and +0.63 after five), but it is also among the smallest instruments, at 0.3% of value added: a one-percentage point increase in spending would be far beyond what most regions currently allocate. The results therefore point to high marginal returns from a small investment, rather than suggesting that AKIS spending alone could drive large productivity gains. Moreover, regions that spend more on advisory and knowledge-sharing services may also be better at administering CAP funds generally, which this analysis cannot disentangle.

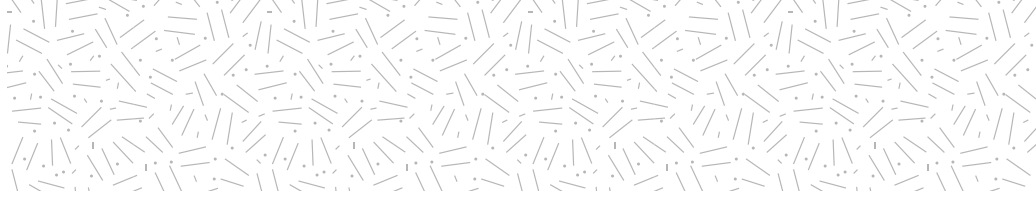
- **Market Measures and Forestry Investments** show positive associations, and **Early Retirement Support is correlated** with lower value added. **Organic Farming Support's** estimates change sign across horizons and outcomes. Given their small shares of value added and this inconsistency, we draw no policy lesson from the smaller instruments.

An interactive Explorer accompanies this brief, where the effects of CAP payments can be explored in detail.

Figure 2 How each of ten CAP payment instruments, mapped to their 2028–2034 MFF categories, is associated with labour productivity, value added and employment



Change in annual growth per percentage point of regional agricultural value added paid through the instrument, with 95% confidence intervals from heteroskedasticity-robust standard errors. Colour marks the direction in which the panel's own variable moves: in the employment panel a blue estimate means more workers, which is what makes measured productivity lower. Mean share of agricultural value added in brackets.



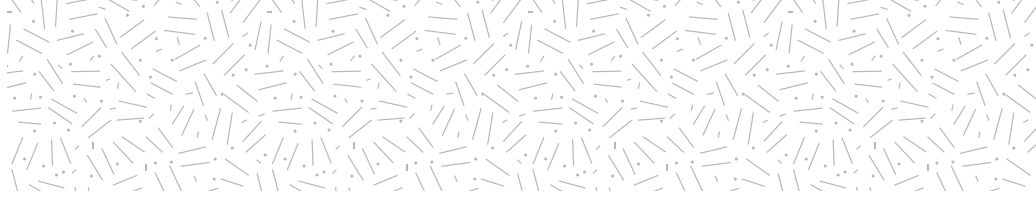
Data and methods

Underlying the statistical analysis in Figure 2 is annual growth in value added in 2015 prices per person employed in agriculture, forestry and fishing (NACE A), from Eurostat's ARDECO regional accounts, for 957 NUTS-3 regions from 2008 to 2019 (Figure 1 extends the series to 2024). Predominantly urban regions in which farming falls to 1% or less of regional value added in any year are excluded. Payments come from CATS as shares of each region's agricultural value added, with national co-financing added. Regions are compared with other regions in the same country and year, controlling for population density, grassland share, climate, farm size and other EU structural funds, and standard errors are heteroskedasticity-robust.

Two limits apply when interpreting the results. First, the ARDECO data reports NACE A as one aggregate and counts persons rather than annual work units. As a result, forestry and fishery are included in labour and productivity measures, and part-time workers are counted the same way as full-time workers. Second, the estimated relationships are associations, not causal effects. CAP payments are not allocated at random, and regions receiving more support may differ systematically from those receiving less. The estimates cannot establish that a particular instrument caused higher productivity. The policy options below therefore show where the evidence points and where piloting and evaluation should focus; they are not predicted effects. Moreover, the statistical analysis in Figure 2 covers only 2008–2019, as the post 2020 crises would distort the statistical correlations. Checks and code are documented in the methodological supplement.

Policy options

- 1. Reconsider coupled income support and early retirement schemes.** Both go with significantly slower output growth at every horizon we can estimate (coupled: -0.14 to -0.21 points a year; early retirement: -0.58 to -0.82), and early retirement's association turns negative for employment too by year five (-0.45), cutting against its own purpose. Two limits: coupled support is directed by law at sectors already in difficulty, so part of the association reflects where the money goes, and the coupled-support ceiling is a share of direct payments rather than of value added, so the proposed rise from 13% to 20% cannot be read directly off this estimate.
- 2. Prioritise advisory and knowledge support (AKIS), with decoupled payments (DABIS) as the steadier complement.** AKIS shows the largest productivity association of any instrument, working through output, but off a budget base of just 0.3% of value added; scaling it up is the most promising option to test in this set, though the estimate may not extrapolate linearly to a much larger programme. DABIS shows a smaller, well-established, if fading, positive association ($+0.18$ after one year to $+0.03$ after five). Forestry investment support shows a positive association across all three outcomes



by year five (+0.27 productivity, +0.41 value added, +0.14 employment), worth flagging for a small, currently under-used instrument, though its estimates are noisier than AKIS's or DABIS's given the smaller budget share.

3. **Productivity indicators will undervalue natural-constraint and organic payments.** They keep land farmed in mountainous and other disadvantaged areas and go with more people farming the same output, which any indicator with workers in the denominator counts as a loss. If the objective is preventing abandonment, these payments should be judged on land kept in use, not on productivity, since value added counts only marketed output, not the landscapes these payments help maintain. Organic farming support's five-year employment association points the same way, but is not consistent across shorter horizons, so we would not yet build policy on it.

Further information is available in the [Methodological Supplement](#) and results can be viewed in [The Productivity Viewer](#).

References

Biagini, L., Antonioli, F. and Severini, S. (2023). The impact of CAP subsidies on the productivity of cereal farms in six European countries: a historical perspective (2008–2018). *Food Policy*, 119, 102473.

European Commission (2025). Questions and answers on the CAP post-2027 proposal. Brussels, 23 July 2025.

Garrone, M., Emmers, D., Lee, H., Olper, A. and Swinnen, J. (2019). Subsidies and agricultural productivity in the EU. *Agricultural Economics*, 50(6), 803–817.

Havlík, P., van Meijl, H., Krisztin, T., et al. (2025). Sustainable agricultural sector: a key component of EU economic prosperity and security. An economic modellers' perspective. Joint perspective paper of ACT4CAP27, BrightSpace and LAMASUS. doi:10.5281/zenodo.16413131.

Krisztin, T., Renhart, A. and Piribauer, P. (2026). The impact of the EU Common Agricultural Policy on regional agricultural productivity. *Agricultural Economics*, in press.

Renhart, A., T. Krisztin, and P. Piribauer (2026) The Impact of the EU Common Agricultural Policy on Regional Agricultural Productivity. *Agricultural Economics*, 57 (6), e70148.

Rizov, M., Pokrivčák, J. and Ciaian, P. (2013). CAP subsidies and productivity of the EU farms. *Journal of Agricultural Economics*, 64(3), 537–557.



About

The LAMASUS consortium is built to deliver its overall ambition, and features world-leading interdisciplinary expertise in all domains necessary for the successful delivery of the project's objectives, including expertise in integrating knowledge across disciplines. The consortium harnesses the decades of experience in policy maker support on the science policy interface and has key expertise in econometrics, social sciences, and modelling of land-use, earth and climate systems, biodiversity, sectorial economics, and land management.

The LAMASUS consortium consists of 17 partners from 9 countries in Europe (Austria, Belgium, Germany, the Netherlands, France, Poland, Spain, Norway and Switzerland).

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**Co-funded by
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This project is co-funded by the European Union's Horizon Europe Research and Innovation programme and the State Secretariat for Education, Research and Innovation from Switzerland under Grant Agreement No 101060423.

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