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Policy support for organic farming in the European Union – past achievements and future challenges

Nicolas Lampkin*

Thünen Institute of Farm Economics
(Braunschweig, Germany)

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*Nicolas Lampkin, Thünen Institute of Farm Economics, Bundesallee 63, 38116 Braunschweig, Germany, n.lampkin@thuenen.de

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2. *Environmental impacts of the achieving the EU's 25% by 2030 organic land area target*, co-financed by the LIFE programme of the European Union, under the Climate, Infrastructure and Environment Executive Agency (CINEA), published as Lampkin and Padel (2023)
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Abstract

Organic farming has been supported in almost all EU Member States since the early 1990s by means of an EU-wide legal definition, agri-environmental conversion and maintenance payments, rural development marketing and processing grants, promotion funding, public procurement and research and information initiatives. Often the support has been combined in organic action plans, designed to integrate supply push and demand-pull measures. The latest CAP round (2023-2027) has delegated responsibility for setting organic farming policy to Member States, but with an EU Farm to Fork Strategy target of 25% of agricultural land area to be managed organically by 2030, and an expectation that Member States will implement policies and action plans for organic farming to help deliver this. This paper charts the development of organic farming in the EU since the 1990s, the motivations for policy support, and the types and levels of support implemented in the 2010-2020 period. It analyses how Member State plans for policy in the next five years compare with previous periods and whether they are able to meet the challenge of the 25% target.

Keywords Agri-environment policy, rural development policy, organic farming policy, European Union, Common Agricultural Policy, Farm to Fork Strategy

JEL code Q180 Agricultural Policy; Food Policy; Animal Welfare Policy

1 INTRODUCTION

Organic farming has existed conceptually for more than 100 years (Lampkin, 2021), but the sector has only experienced substantial growth since the 1990s, as a result of a combination of policy initiatives and market demand. These can be attributed to the increasing evidence and recognition of the environmental benefits that organic farming can deliver (Sanders & Heß, 2019), and consumer demand for food produced organically due to health, nutritional and food quality concerns. By 2021, organic farming in the EU accounted for 15.6 million hectares (9.6%) of agricultural land on 378 thousand farms, with a retail sales value of 46.7 billion € annually (Willer *et al.*, 2023). The growth in the sector has been consistent over the last 30 years, and the sector is expected to grow by at least a similar rate to 2030, maybe reaching 15% of EU agriculture based on past trends (EC, 2021a). However, EU policy-makers have set a much more ambitious target, for 25% of EU farmland to be organic by 2030, as part of the Green Deal Farm to Fork and Biodiversity Strategies (EC, 2020a, 2020b). Member States have been encouraged to reflect this ambition in their CAP Strategic Plans and organic farming policies. Three separate studies have analysed the policy support given to organic farming in the 2010-2020 period (Lampkin & Sanders, 2022), the provisions for organic farming included in the 2023-2027 CAP strategic plans (Lampkin & Rehburg, 2023, in progress), and the potential environmental and production impacts of achieving the 25% targets (Lampkin & Padel, 2023). Aspects of these studies are reviewed here to provide an understanding of future challenges and opportunities for the sector, and the policy responses that might be involved.

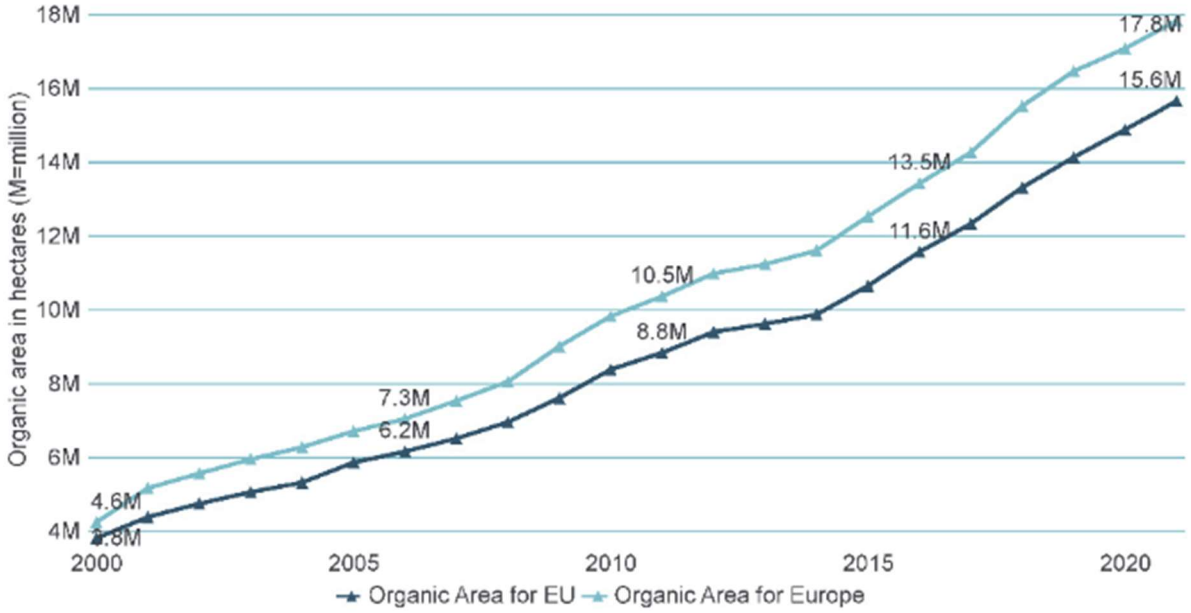


Figure 1 Growth of organic production area in Europe and the EU (Mha UAA; 2000-2021)

Source: Willer *et al.* (2023)

2 METHODOLOGY

Statistical data on the development of the organic sector in Europe is readily available from published sources including Eurostat[1] and FIBL Statistics[2]. These have been supplemented by data collected from individual Member States on the levels of support given to organic farming, including per hectare conversion and maintenance payments, in the CAP programming periods for 2007-2013 and 2014-2020, now extended to 2022. Using a combination of data sourced from Member States and from EU-level databases, the total expenditure on organic farming payments in 2018 has been estimated, and the supported areas compared with certified areas (Lampkin & Sanders, 2022). Eurostat data has also been used to undertake an Excel-Spreadsheet based modelling exercise to estimate production impacts, reductions in nitrogen use, and the associated impacts on greenhouse gas and ammonia emissions for the organic land in 2020 and projections for 2030 if the 25% target is achieved (Lampkin & Padel, 2023). This is intended as a preliminary assessment ahead of more in-depth modelling using CAPRI in the EU-funded OrganicTargets4EU project[3]. As part of this project, which started in 2022, published CAP Strategic Plans and organic action plans for all Member States are being analysed to compare planned policies for 2023-2027 with the previous periods and to assess the likely impacts on the development of the organic sector in the period to 2027 and beyond (Lampkin & Rehburg, 2023 in progress).

3 RESULTS

3.1 Production and environmental impacts of reaching 25% organic farming in the EU

In addition to baseline results for 2019 or 2020 depending on availability of statistical data, three scenarios for 2030 were modelled by Lampkin and Padel (2023):

- 'business as usual' based on linear growth trends extrapolated from 2016-2020 actuals
- 1.75 times the linear growth trends to deliver the 25% target
- equal 25% shares for each land use

The linear growth scenarios reflect the current land use patterns of the existing organic sector, with grain legumes, vegetables, permanent crops and grassland over-represented and arable crops including potatoes under-represented, compared with agriculture in general. The equal shares scenario is more a reflection of current overall agricultural land use.

Similar calculations were undertaken at national level, with conversion rates adjusted to take account of initial levels of organic sector development, but when summed at the EU level gave similar results to the models based on EU totals, so the national results are not reported separately here, but can be found in the original report (Lampkin & Padel, 2023).

The results reported here are normally compared with a default scenario of no organic farming, so that changes between 2020 and 2030 need to be taken as the difference between the 2020 baseline calculation and the 2030 scenarios.

Achieving the 25% target would increase organic land area in the EU from 15 to 40 Mha. The quantity of organic crops produced would increase from 24 to more than 80 Mt, but this represents a reduction in total EU crop output of 5-10%, depending on the scenario and assumptions concerning future productivity growth due to research and better quality land

[1] https://ec.europa.eu/eurostat/web/agriculture/data/database
[2] https://statistics.fibl.org/
[3] https://www.organictargets.eu/

coming under organic management. Relative yields for a range of crops was estimated using Eurostat output data, with organic yields ranging from 107% of conventional for durum wheat to 61% of conventional for standard wheat, and many other crops in the 80-90% range. The overall output reduction results are consistent with modelling exercises undertaken using CAPRI (Barreiro Hurle *et al.*, 2021; Pignotti, 2022).

The number of livestock is estimated to increase from 5 to 15 million livestock units (LU), although the structure of the livestock sector would change substantially depending on the scenario. In broad terms, ruminant livestock numbers would increase on arable land due to increased use of grass/clover leys and lucerne, but would fall on permanent grassland due to reduced stocking rates and reduced reliance on concentrate feeds, giving a reduction overall. Much bigger reductions in pigs and poultry would be likely, due to the land-based nature of organic production. These reductions are consistent with changing consumer attitudes to milk and meat products, and the actual buying behavior of organic consumers, most recently document in a large-scale study in France (Kesse-Guyot *et al.*, 2022).

While reduced yields would reduce total EU crop output, this would be mitigated, potentially fully, by the reduced demand for livestock feed. This result contrast with other studies, e.g. Smith *et al.* (2019), which assume unchanged demand for crop products, and therefore potentially significant food security and environmental implications. The results of our study, albeit preliminary in nature, suggests that the food security and per unit product-based environmental concerns, including bringing additional land into cultivation and leakage of benefits to other regions, are often overstated.

As a result of the changes in input use, land use and livestock numbers, 25% organic farming in the EU could, according to our modelling, result in:

- 2.7 Mt less synthetic nitrogen fertiliser being used, or 26% of the total that might be used in the EU if there were no organic farming. This compares with the 0.9 Mt (8.5%) reduction in N-fertiliser use attributable to the organic area in 2020. The difference between the two – 1.8 Mt or 18.6% of actual EU27 fertiliser use in 2020 – means that achieving the 25% organic target could also almost deliver the 20% fertiliser reduction target in the farm to Fork Strategy as a co-benefit. This reduction is important for water quality, biodiversity and greenhouse gas (GHG) emissions, with potential reductions of up to 25 Mt CO_2e in agricultural emissions including 9.5 Mt CO_2e manufacturing sector emissions due to the energy use for N-fertiliser production and distribution.
- Up to 68 Mt CO_2e reduced agricultural greenhouse gas (GHG) emissions, or 15% of total EU27 agricultural GHG emissions, annually, due to the substantial reductions in nitrogen fertiliser use and livestock numbers as well as the increased use of temporary grass-clover leys in organic rotations. This compares with a reduction of 24 Mt CO_2e (5% of EU27 total) emissions from existing organic farming in 2020 and is equivalent to a 1.6-1.7 t CO_2e (60%) reduction per hectare of agricultural land managed organically. These figures include a component of carbon sequestration due to the 50% additional temporary grassland in organic rotations in the linear trend scenarios, but which would not occur in the 25% equal share scenario. The emissions reduction from N-fertiliser manufacturing and distribution (9.5 Mt CO_2e) would be an additional benefit, as these are not normally included in agricultural emissions.
- 90-95% reduction in pesticide use on organic land, equivalent to 20-23% reduction in overall EU27 pesticide use – delivering at least a third of the 50% reduction target in the Farm to Fork Strategy. Due to methodological issues relating to the use of active substances as a basis for measuring pesticide use, and the absence of good quality

data, a full assessment of pesticide use reduction potential was not possible in our models. However, a specific assessment of copper (Cu)-based fungicides was undertaken. This concluded that Cu use in organic farming was declining and was less than 4 tonnes of active substance in 2020. This represented 30% of total Cu use in the EU27, and only 50% of the potentially permissible use of Cu fungicides in organic farming. 70% of Cu use in EU agriculture takes place on conventional farms.

- Up to **450 kt reduction in ammonia (NH_3) emissions**, or 13% of total EU27 NH_3 emissions, annually, with significant impacts on air quality and reduction in indirect GHG emissions. This compares with the 157 kt (5% of EU27 total) reduction delivered by organic farming in 2020.
- **30% increase in biodiversity on organic cropland**, or a 5-10% increase in total EU farmland biodiversity. This is a complex assessment to make with relevant statistical data lacking, so these estimates should be treated with caution. There is further potential biodiversity gain to be achieved with the integration of natural habitats and landscape elements in organic systems supporting beneficial insects and pollinators, which is consistent with the EU Biodiversity Strategy's target of 10% of farmland to be prioritised for nature restoration by 2030.

3.2 Policy support for organic farming in the EU

3.2.1 Historical perspectives on policy support for organic farming

Organic farming has been the subject of increasing policy support since the late 1980s, with a few countries introducing support for conversion to and continuation with (maintenance of) organic farming, in part as a response to the challenges with food surpluses in the 1980s. With the advent of a regulation defining organic farming (CoE, 1991) and the agri-environmental accompanying measures (CoE, 1992), conversion to and maintenance of organic farming were established as CAP Pillar 2 policy measures, later extended to cover prioritization for other RDP interventions including capital investment and processing and marketing grants, training and advice, and separately from Pillar 2 consumer promotion, public procurement and research (Lampkin & Sanders, 2022). In the last CAP programming period (2014-2020, extended to 2022), organic farming was allocated its own Article in the Rural Development Regulation (EU, 2013). By 2018, almost 8.8 Mha organic land were supported at an annual cost of nearly €1.8 billion (Table 1). All MS except the Netherlands provided conversion and/or maintenance support of this type, albeit with some more intermittent engagement where resources were limiting. Payment rates per hectare varied widely within and between Member States, reflecting regional conditions, political priorities and differentiation by crop or livestock species (Lampkin & Sanders, 2022).

3.2.2 Green Deal, Farm to Fork and Biodiversity Strategy targets

As part of the EU's Green Deal addressing climate change (EC, 2019), the European Commission published two key strategies in 2020 designed to contribute to its delivery. The Farm to Fork Strategy (EC, 2020b) set out a series of targets to enhance the sustainability of food production in the EU, including a 50% reduction in pesticide use, a 20% reduction in fertilizer use, and the 25% target for share of agricultural land to be managed organically. The organic target was also included in the Biodiversity Strategy (EC, 2020a) as was a target of 10% of farmland to be managed primarily for nature rather than food production.

Table 1: Uptake of and expenditure on organic farming support in EU Member States, 2018

Country	Total support payments (M€)	Total land area supported (kha)	% of 2018 national UAA supported	Average support (€/ha)	Total land area certified (kha)	% certified area supported	% of national UAA certified
AT	121	515	19.4%	234	639	81%	24.1%
BE	19	80	5.9%	243	89	89%	6.6%
BG	24	68	1.4%	354	129	53%	2.6%
CY	4	5	3.5%	805	6	76%	4.5%
CZ	53	506	14.4%	105	520	97%	14.8%
DE	300	1 150	6.9%	261	1 498	77%	9.0%
DK	41	223	8.5%	184	257	87%	9.8%
EE	18	186	18.9%	99	207	90%	21.0%
ES	159	1 045	4.3%	152	2 246	47%	9.3%
FI	56	274	12.1%	205	297	92%	13.1%
FR	180	1 040	3.6%	173	2 035	51%	7.0%
GR	97	248	4.7%	390	493	50%	9.3%
HR	33	94	6.4%	350	103	91%	6.9%
HU	21	115	2.2%	186	209	55%	3.9%
IE	8	72	1.6%	111	74	97%	1.6%
IT	386	1 098	8.5%	352	1 958	56%	15.2%
LT	36	184	6.2%	197	240	77%	8.1%
LU	1	5	3.8%	258	6	85%	4.4%
LV	28	261	13.5%	107	280	93%	14.5%
MT	0.002	0.01	0.1%	374	0.05	13%	0.4%
NL	0	0	0.0%	0	64	0%	3.5%
PL	47	342	2.4%	138	485	71%	3.3%
PT	25	206	5.7%	124	213	96%	5.9%
RO	42	183	1.4%	232	326	56%	2.4%
SE	75	355	11.8%	211	609	58%	20.3%
SI	10	46	9.6%	210	48	96%	10.0%
SK	17	158	8.2%	108	189	84%	9.8%
UK	18	338	1.9%	53	457	74%	2.6%
EU28	**1 821**	**8 798**	**4.9%**	**207**	**13 677**	**64%**	**7.6%**

n/a: not available

Source: Lampkin and Sanders (2022)

The setting of the 25% target for organic farming represented a major shift in the policy priority allocated to organic farming, and was reinforced by the expectation in the most recent EU Organic Farming Action Plan (EC, 2021b) that all MS would include strategic initiatives for organic farming in their CAP Strategic Plans covering the period 2023-2027.

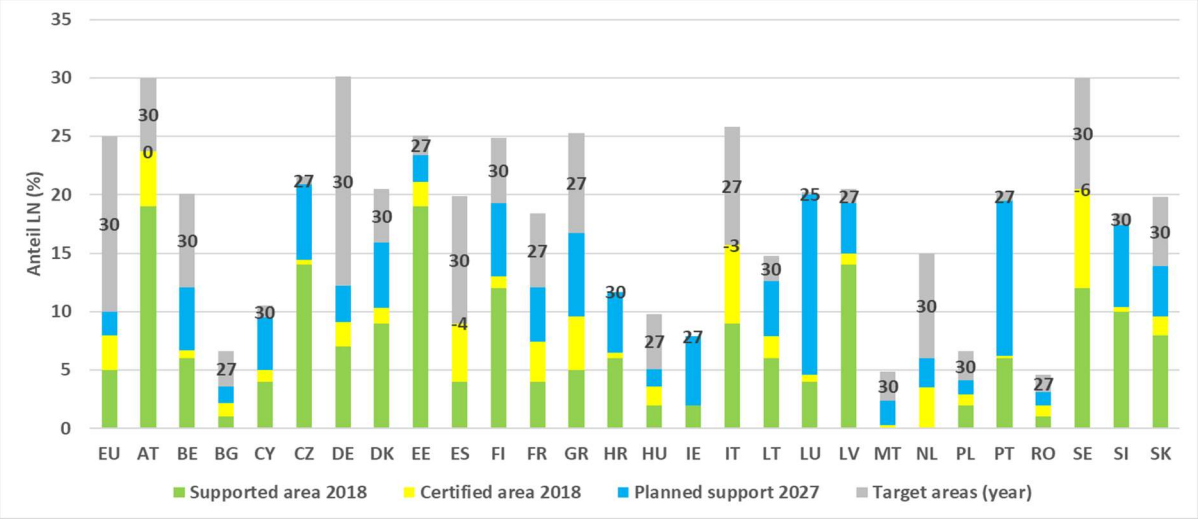
3.2.3 CAP Strategic Plans

For the CAP 2023-2027 programming period, Member States (MS) were required to produce national CAP Strategic Plans and agree them with the EU Commission (EU, 2021). This was intended to be part of a process of simplifying the CAP, in part by reducing the number of regional rural development plans submitted. It was also intended to pass to MS the responsibility for defining measures to achieve specific objectives, with the EU Commission role to ensure specific policy objectives were being delivered, and that the measures implemented were appropriate to meet these in the context of defined national needs and priorities.

The initial CAP Strategic Plans were submitted in late 2021 or early 2022 with negotiations taking place during 2022 and all 28 CAP Strategic Plans (2 for Belgium) being finalized and

agreed by the end of 2022[4]. An ongoing analysis of the initial and final CAP Strategic Plans (SPs) with respect to organic farming (Lampkin & Rehburg, 2023 in progress) indicates that:

a) All MS implemented policies to support organic farming, including the Netherlands which had not provided support under the previous two CAP programming periods.
b) Most, if not all, MS included detailed chapters on organic farming in their CAP SPs, with details of planned payment rates, eligibility conditions, estimated uptake and expenditure. For countries such as Spain, Italy, Germany and France, which had previously had regional rural development plans, substantial detail on regional variations in payment rates and expenditures were also included.
c) All Member States have set targets for organic land area to be achieved by 2027 or 2030 (Figure 2), in most cases in the CAP Strategic Plans, in a few in National Organic Action Plans. However, these targets are only likely to deliver 15% of EU UAA, short of the 25% by 2030 target.
d) Member States have budgeted for more than 3.3 billion € in annual support payments for organic farming by 2027/8, which compares with 1.8 billion € in 2018, an increase of 85% (Table 2). The supported land area is planned to increase by 93%, which falls short of 200% additional land area implied by the EU's 25% by 2030 target.
e) Some MS opted to use the new Pillar 1-funded Eco-Scheme mechanism to support either conversion (LT), maintenance (BE-Flanders, GR, FR-mainland) or both (DK, SE, NL). The remainder relied on traditional Pillar 2 agri-environmental measures, with some adopting a combination of approaches (BG, EE; LT, PT). Most MS plan, as previously, higher payments for conversion than for maintenance, but with several not differentiating between the two (AT, CY, FI, HR, LV, NL, SE, SI, SK). The planned payments per hectare for organic support have in many cases increased compared with the previous programming period, in some cases substantially, but the overall average expenditure per hectare is set to be 5% lower in 2027/8 than in 2018 (Table 2).
f) MS in general increased their provisions for organic farming, in terms of land area targets and support rates between the initial CAP Strategic Plan proposals and the plans finally agreed, in response to pressure from the European Commission as well as domestically.



Numbers indicate target year, -ve values indicate 2027 planned support less than 2018 certified area

Figure 2: Official targets for organic land area share, 2025-2030, of which planned supported 2027, and certified and supported 2018

Source: Lampkin & Rehburg (2023 in progress) and Lampkin & Sanders (2022)

[4] https://agriculture.ec.europa.eu/cap-my-country/cap-strategic-plans_en

Table 2: Comparison of planned 2027/28 supported organic area and expenditure with 2018 actuals

	Supported area (kha)			Expenditure (M€)			Expendture/ha (€)		
Country	**2018**	**2027/8**	**Relative**	**2018**	**2027/8**	**Relative**	**2018**	**2027/8**	**Relative**
AT	515	610	118%	121	154	127%	234	252	107%
BE	80	163	205%	19	46	238%	243	281	116%
BG	68	200	293%	24	101	416%	354	503	142%
CY	5	11	250%	4	5	143%	805	459	57%
CZ	506	750	148%	53	105	198%	105	140	134%
DE	1150	2384	207%	300	553	184%	261	232	89%
DK	223	403	181%	41	74	181%	184	184	100%
EE	186	150	81%	18	6	30%	99	37	38%
ES	1045	1257	120%	159	169	106%	152	134	88%
FI	274	580	212%	56	90	160%	205	155	76%
FR	1040	3384	325%	180	603	335%	173	178	103%
GR	248	846	340%	97	259	267%	390	306	78%
HR	94	279	296%	33	63	191%	350	226	65%
HU	115	279	242%	21	63	294%	186	226	121%
IE	72	337	468%	8	89	1116%	111	265	239%
IT	1098	1489	136%	386	298	77%	352	200	57%
LT	184	309	168%	36	64	175%	197	205	104%
LU	5	24	494%	1	8	656%	258	342	133%
LV	261	368	141%	28	33	117%	107	89	83%
MT	0,01	0	4175%	0,002	1	43639%	374	3913	1045%
NL	0	109	∞	0	22	∞	0	200	∞
PL	342	659	193%	47	250	530%	138	380	275%
PT	206	689	335%	25	86	338%	124	125	101%
RO	183	298	163%	42	57	133%	232	190	82%
SE	355	437	123%	75	73	97%	211	167	79%
SI	46	82	178%	10	22	228%	210	269	128%
SK	158	270	171%	17	36	212%	108	134	124%
EU27	8460	16369	193%	1803	3329	185%	213	203	95%

2027 land areas and 2028 expenditures normally used, as payments made in year following.
Planned expenditure values for France, Italy, Netherlands and Portugal have been estimated

Source: Lampkin & Rehburg (2023 in progress)

3.2.4 National Organic Action Plans

Organic action plans have been widely used at EU, national and regional levels since the mid-1990s (Meredith *et al.*, 2018; Lampkin & Sanders, 2022). Key features of organic action plans include:

- setting (relevant, ambitious and resourced) development targets, e.g. 25% of land area by 2030, but targets can also be market-focused and sometimes relate to information activities including research;
- recognising the dual role of organic farming as delivering both public goods (environmental and other benefits) and market products, and integrating policies to deliver both;
- identifying specific local needs/priorities as the basis for specific actions;
- building and strengthening public/private partnerships;

- integrating supply-push and demand-pull measures (Table 3), in order to resolve policy conflicts and maximise synergies, and to support stronger links between producers, food businesses and consumers.

Table 3: Typical measures in organic action plans, by type and focus

Focus	Supply push	Demand pull
Public good	• Area support • Information, advice • Training, education • Professional events • Research, data	• Tax incentives (e.g. VAT) • Public events • School initiatives (farm visits, gardens, cooking)
Market	• Capital investments • Producer groups • Meet the buyer events • Supply hubs	• Organic regulations • Consumer promotion • Public procurement

Previous studies have documented the implementation of organic action plans in successive periods, including in the last decade (Lampkin & Sanders, 2022) (Figure 3, in blue). With the more intensive focus of organic support in the current decade, more MS are introducing action plans (Figure 3, in green). Lampkin and Rehburg (2023 in progress) are currently undertaking a comparison of the current/planned and previous organic action plans in EU MS.

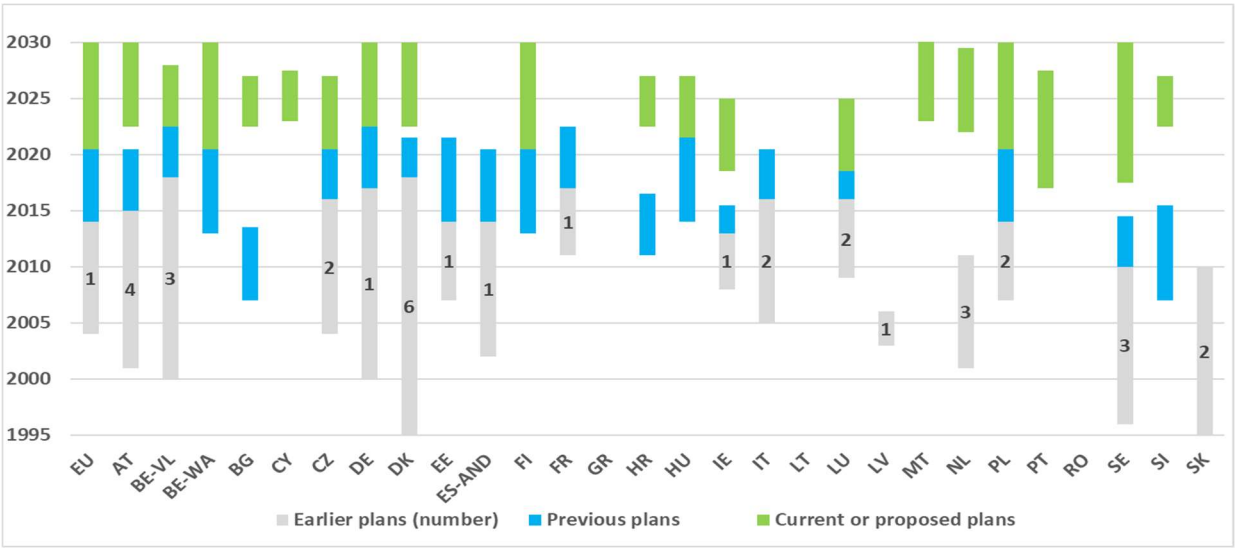


Figure 3: Overview of organic action plans in EU27 Member States, 1995-2030

Source: Lampkin & Rehburg (2023 in progress)

4 DISCUSSION AND CONCLUSIONS

Despite the substantial environmental benefits that 25% organic farming could deliver, with more limited impacts on food security than many critics have claimed, Member States plans fall well short of the aspirations of EU policy-makers. Delivering 25% would require a major increase in planned policy expenditure, as well substantial market developments if the market is to carry part of the burden. But there is also a major challenge due to the tripling of the number of producers to more than 1 million, with access to information (advice, training and research), certification and other services to be delivered. This is a transformational change that requires more than an incremental development of previous policies. It remains to be seen how far policy-makers will be willing to take this as Europe rebuilds in the aftermath of the Ukraine conflict.

Despite the steady growth of the organic sector, in terms of both markets and policy support, there are a number of questions that can be (and are often) asked with respect to the policies implemented:

- *What is the role of governments and markets in supporting the organic sector?* The multiple outcomes attributable to organic farming create challenges reconciling environmental and economic development policy objectives, often the responsibility of different government departments (Stolze & Lampkin, 2009). Some governments, e.g. France and the Netherlands, have argued that if the organic sector has grown to the extent it has, the market should be capable of delivering continued growth. But if a key deliverable of organic farming is environmental benefits, should these not be supported by society as a whole, not just organic consumers?
- *Is a systems-based approach, with multiple objectives, an efficient approach to generating environmental benefits?* This has been much debated among agricultural economists, with the Tinbergen Rule sometimes being interpreted to mean that there should be one targeted policy measure for each objective and that multi-objective policy measures are inefficient. An analysis of organic farming support in Switzerland (Schader *et al.*, 2014), however, found that using a multi-objective, systems-based approach such as organic farming could provide a cost-efficient baseline for agri-environment policy, with targeted measures being used to fill the gaps.
- *How can potential conflicts between area-based payments and markets be reconciled?* At various times there have been concerns that support for conversion to organic farming may result in growth in supply faster than organic markets can absorb, causing problems for established organic producers reliant on organic price premiums to maintain their financial viability. There are also concerns that the wide variations in support rates between and within MS, in particular in those countries with highly differentiated payment rates for individual crops and livestock categories, could distort market competition. This does require careful attention to be paid to policy design, both in terms of the level and differentiation of payments by product, and of the administrative context (eligibility conditions, combinability with and competition from other support measures, interruptions in availability of support due to budget constraints or implementation issues). In principle, if policy support is consistent in its availability, it can provide a stable backdrop and not disrupt market development.
- *How effective are land area and other targets in guiding the development of the organic sector?* It is not clear that targets directly influence farms to convert or businesses to engage with organic food, as decisions will also be taken in response to market signals and other exogenous factors. They can, however, act as a clear signal of political commitment and, more importantly, help to ensure that resources are

allocated at meaningful levels, as appears to be the case with respect to the Member States' responses to the EU organic targets.

- *Should organic price premiums be included in the calculation of maintenance payments?* Since the mid-1990s, organic support payments, like other agri-environmental payments, have been calculated on the basis of income foregone and additional costs incurred. For ongoing maintenance payments, the basis for these has normally been in comparison to conventional farming, as the choice to be organic is voluntary and farms can revert to non-organic status at any time. As part of this calculation, the EU Commission has required that premium prices for organic food are included in the calculation, potentially creating large differences between conversion payments, which do not include premium prices as products cannot be sold as organic, and maintenance payments. There is, however, little evidence that the costs of developing and utilizing organic market channels are considered in these calculations, and not all producers succeed in gaining access to organic premium prices. It can be argued that premium prices and the market benefits of certification reflect the entrepreneurial activities of farmers in response to consumer demand and should therefore not be attributed to conversion to/maintenance of organic land management.
- *Does the application of the income foregone principle for calculating payments reflect actual costs?* Payments generally do not reflect the full costs of conversion, in particular the lack of access to organic premium prices during the two conversion years, possibly longer in the case of permanent crops, or for livestock on farms adopting a staged conversion. Even if the income foregone calculations are accurate, intervention rates may well be lower than 100%, leaving producers carrying at least some of the costs. As this is potentially a significant barrier to uptake, might a better solution be to reduce the length of the period before full organic prices can be realized, while recognizing that the actual process of conversion is longer by maintaining longer-term support agreements (Lampkin *et al.*, 2017)?
- *Can a more results-based, differentiated approach be developed to reward the environmental benefits generated by organic farming?* In most countries, organic maintenance payments are paid at a flat rate, irrespective of the environmental benefits delivered. However, as Sanders and Heß (2019) have shown, although on average organic farmers deliver more environmental outputs, there is a wide range of performance among organic farmers. A more targeted and differentiated approach to payments could enable the best performers to be rewarded accordingly, consistent with the public money for public goods maxim. A research project assessing how this might work is currently nearing completion at the Thünen Institute[5].

This discussion paper has reviewed some of the key aspects of organic farming support in the European Union and identified a series of open questions that might benefit from further research and debate. There remains substantial scope for improvement in the design and implementation of organic support, which will be needed if the ambitions of the EU Commission and Members States are to be realized while at the same time ensuring the delivery of environmental, food security and public health goals.

[5] https://www.thuenen.de/en/institutes/farm-economics/projects/remuneration-for-the-environmental-benefits-of-organic-farming

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