



AdvisoryNet**PEST**



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Deliverable 7.2:

Analysis of the policy and
institutional framework



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Glossary

Throughout the work of this report, a number of different terms have been used. It is important to set out what the definitions of those terms are, before they are used within the report. It should be acknowledged that there is no agreed definition for biocontrol or biopesticides across the EU. This is presently being considered by the European Commission.

Term	Definition used
Biocontrol	• “Biocontrol comprises using living organisms or natural substances to prevent or reduce damage caused by harmful organisms (animal pests, weeds and pathogens). There are 4 categories of approaches to biological control based on the use of control agents such as: • macro-organisms (insects, nematodes), • micro-organisms (viruses, bacteria or fungi), • chemical mediators (pheromones), • natural substances of mineral, plant or animal origin” (Busson et al, 2016).
Biopesticides	• Biopesticides can often be included within the scope of biocontrol products. The definition of biopesticides, and the nuances of what is within the scope of biopesticides, can be defined at country level. The European Environment Agency, within their section on CHM biodiversity, defines biopesticides as: • “pesticides made from biological sources, that is from toxins which occur naturally. [They are] are naturally occurring biological agents used to kill pests by causing specific biological effects rather than by inducing chemical poisoning... A biopesticide's mechanism of action is based on specific biological effects and not on chemical poisons (European Environment Agency, Date Unknown).



Term	Definition used
CAP	“Launched in 1962, the EU’s common agricultural policy (CAP) is a partnership between agriculture and society, and between Europe and its farmers. It aims to: • support farmers and improve agricultural productivity, ensuring a stable supply of affordable food; • safeguard European Union farmers to make a reasonable living; • help tackle climate change and the sustainable management of natural resources; • maintain rural areas and landscapes across the EU; • keep the rural economy alive by promoting jobs in farming, agri-food industries and associated sectors. The CAP is a common policy for all EU countries. It is managed and funded at European level from the resources of the EU’s budget” (European Commission, Date Unknown A).
Low-risk PPPs	Low-risk plant protection products are those that meet the approval criteria of plant protection products, alongside the additional low-risk criteria of Annex 2, point 5 of Regulation 1107/2009. The development and use of low-risk PPPs are advocated to both producers and farmers.
Member States	Member States refers to the 27 countries within the European Union. The United Kingdom is included within the scope of regulations passed and implemented before 2020. After 2020, the UK retained EU legislation but there is potential for divergences to emerge with any updates or amendments to present and future legislation.



Introduction

The use of Plant Protection Products (PPP) in agriculture has the potential to cause harm to the environment through impacts on “soil, water, air pollution and biodiversity” and human health (European Commission, 2020A). The EU created regulations, directives, and targets to improve the safety and reduce the use of PPPs. The EU has strived to ensure that the use of PPPs is conducted in a safe and legal manner across Member States¹. In response to the scientific evidence of the impact of intensive use of pesticides, policy interventions over the last 50 years have had a significant impact on pesticide use in Europe. An example of this is that the Directive 91/414/ EEC saw significant reductions in the number of active substances available on the market (European Commission, 2020B).

This report provides an overview of the policy and institutional framework that exists for pesticide regulations. The scope of the project concerned the European Union (EU) and United Kingdom (UK) pesticide regulations and institutional targets which aimed to reduce pesticide usage, safeguard the environment and ensure safe use.

This report has focused on the PPP regulatory framework that was created in 2009, alongside the 2005 Maximum Residue Levels legislation. Since 2009, several regulations have been passed to ensure that the approval process of PPPs was rigorous, that pesticide use was better monitored, and that steps were taken by Member States to ensure that farmers used pesticides in a more sustainable way.

This deliverable sets out the framework that was developed, with regulations passed at the EU level and then implemented at the Member State level. The different pieces of legislation and targets are set out within the deliverable and several strands of Member State implementation, including efforts to increase IPM uptake and fostering Novel Approaches, have been analysed.

The output of this research is intended to identify focal areas for the AdvisoryNetPEST project to consider as part of network activities. These focal areas will also expand upon in the creation of policy briefs for the improvement of the pesticide regulatory framework across the EU and UK (Task 8.4).

¹ Throughout this work, the word Member States will be used to refer to countries in the EU. Until 2020, the UK was part of the EU as a Member State. As such, the words Member State would also refer to the UK for regulations passed for the use of pesticides before 2020. Where necessary, clarification has been provided for when the UK does not apply to the term Member State(s).

Review of the legislative framework

A scoping review was conducted to set out which regulations impact upon the use of pesticides and how the regulations were implemented by Member States.

The institutional Framework

The institutional framework by which PPPs are both approved in a rigorous manner and more sustainable methods are advocated can be complex. The framework predominantly follows a top-down approach, the EU passes regulations and directives which Member States must follow, with Member States having discretion over their implementation in country. Alongside this, targets are passed which Member States must aim to achieve, such as the promotion of Integrated Pest Management (IPM) and maintenance of National Action Plans (NAPs), mandated through the Sustainable Use Directive. Finally, a series of public and private schemes, alongside Advisory Networks help to promote the use of IPM and novel approaches to farms.

An outline of the process can be found below, and the structure of the framework is the structure that the subsequent analysis will follow:

EU passes a series of regulations which Member States must ratify and comply with.

EU passes directives and wider scheme targets which Member States have control over how they are achieved.



The Sustainable Use Directive compelled Member States to create NAPs and create a strategy for promoting the use of IPM.



Farms have the information disseminated and behaviour change supported through a range of instruments, including public schemes, private schemes, and advisory networks.

Key Legislation

There are several EU regulations and directives (Box 1) that impact upon reducing the use and risks of PPPs in agriculture. Although there is other legislation that can impact upon the use of pesticides, the regulations and directives presented below are those with the most significant impact and influence. The purpose of the 2009 regulations was to build upon the progress that had been made across pesticide regulations in the 1990's and ensure that countries that had declined their pesticide usage would maintain that steady decline, whilst countries who were starting to use more PPPs would not dramatically increase their use. The work of the 2009 regulations allowed for the PPPs that were

Box 1: European Union Regulations and Directives

Regulations

A "regulation" is a binding legislative act. It must be applied in its entirety across the EU.

Directives

A "directive" is a legislative act that sets out a goal that EU countries must achieve. However, it is up to the individual countries to devise their own laws on how to reach these goals.



approved were safer, whilst ensuring that Member States would seek to foster changes in pesticide behaviour, with farmers and advisors adopting IPM and alternative methods.

Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC

This regulation, alongside accompanying regulations, set forth the current pesticide institutional framework. It worked to subsume and adapt the previous PPP approval regulations under the scope of one regulation. The purpose of the regulation is to “ensure a high level of protection of both human and animal health and the environment and at the same time to safeguard the competitiveness of community agriculture.” This regulation ensured that the approval and renewal process of PPPs was robust and would help prevent PPPs of a higher risk. The approvals process would become relevant to products that protect plants or plant products against harmful organisms, influence the life processes of plants, preserve plant products, destroy undesired plants or parts of plants, or to check or prevent undesired growth of plants (drawn from Article 2.1). The PPPs are approved at the European level, with different Member States taking responsibility for being the rapporteur territory and evaluating their level of risk. Other Member States can choose to then authorise their use on their territory.

Regulation (EC) No 1185/2009 of the European Parliament and of the Council of 25 November 2009 concerning statistics on pesticides

This regulation is concerned with establishing data statistics of pesticide use within Member States. Each Member State was responsible for selecting relevant crops (as set out in Annex 2 of the legislation) that were most relevant to their countries (in tandem with article 4 of directive 2009/128/EC) to monitor for one year during a five-year period.

Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC

This regulation concerned the maximum residue levels (MRL) in or on food and feed of plant and animal origin. It set out the “upper legal level” of pesticide residue in or on food. It also stated that when a pesticide was approved for authorisation, the Member State would need to consider whether a given pesticide MRL would need to be modified or added to the register. Article 10 said that the judgement for MRLs was based on Member States assessing the given levels of risk, looking at elements relevant for the risk assessment, and considering whether the assessment of the “analytical method for routine monitoring proposed in the application is appropriate.”

Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides (Sustainable Use Directive) (SUD)

This directive required Member States to take practical steps for the sustainable use of pesticides to be achieved. This was predominantly done through requiring Member States to create NAPs, which would allow for targets and actions to be created at the national level. This directive also promoted the use of IPM, and alternatives to chemical methods, required systems for training and education, and promised harmonised risk indicators for the tracking of outcomes.

Failed legislation

Not all proposed legislation was passed by the EU. In 2023 the European Commission proposed





Regulation 2022/0196/COD. This would have solidified the SUD as a regulation and set forth the Farm to Fork targets as legally binding, with each Member State having the capacity to set its own legal targets within those aims. In addition, there would be additional requirements for “the monitoring of PPP residues and their metabolites in the environment and humans” (European Parliament, 2025). The legislation was proposed by the European Commission but was rejected by the European Parliament. The European Commission website reports that: “On 27 March 2024 the Commission withdrew the proposal since no agreement was foreseeable, in view of the rejection of the proposal by the European Parliament and the lack of progress of the discussions in the Council. The Sustainable Use of Pesticides Directive (2009/128/EC) remains in force” (European Commission, Date Unknown B).

Other relevant Directives

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive) (WFD), Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration (Groundwater Directive), and Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (recast) (Drinking Water Directive).

These directives are concerned with the ecological status of water, setting out to improve the quality of water bodies to good ecological status or better. The WFD set out a list of the priority substances that needed to be monitored by Member States. The Groundwater Directive then expanded upon the WFD by providing an explicit quality standard of 0.1 µg/L of active substances in pesticides within the groundwater. This was reiterated in the Drinking Water Directive, with the pesticides that are monitored set out from the approved list given in Regulation 1107/2009.

European Union Targets

Alongside the regulations and directives that Member States must adopt, the European Union also has two key landmark pieces of agricultural programmes which are relevant to pesticide use. Both the Common Agricultural Policy (CAP) and the Farm to Fork Strategy provide means to reduce the use of pesticides.

Common Agricultural Policy (CAP)

Within the CAP, the EU placed a large level of emphasis on the reduction of pesticides. Although the proportion of the EU budget that is spent on CAP has decreased over time, it still accounted for almost a quarter (24.6%) of the budget in 2023 largely due to the cost of CAP reforms and associated policy development (European Commission, 2025A). The latest iteration of the CAP can be used by Member States in several different ways to support farming and especially in the reduction of pesticide use and risk. An example of this is that Member States must use 35% of their rural development budget on actions to support the climate and environment and said that this included “the reduction of farmer’s dependency on chemical pesticides”.

As part of sustainable pesticide reduction initiatives under CAP, promoting IPM and biological control, investments could be made to support farmers in purchasing equipment for greater precision, and advice and training could be provided to support farmers in changing methods (European Commission, 2022).

Farm to Fork Strategy



The Farm to Fork Strategy is an EU strategy to reduce the impact that food production can have on the environment, while not having detrimental effects on farm production. As part of the work, Farm to Fork set clear targets for reducing the use of PPPs and the risks of harmful pesticides by 50% (European Commission, 2020A) before 2030. It was said that Member States should ensure that it is known that chemical pesticides should be used as a “last resort” and the principles of the IPM strategies should continue to be adopted by farmers. If that continues, the success of the targets can be realised (European Commission, 2024).

To support the attainment of the targets, Farm to Fork Strategy committed to revising the Sustainable Use Directive (although this failed at the legislative stage), supporting IPM provisions and reducing the length of the pesticide approvals process. Although there were clear targets for the attainment of the goals, the achievement of the targets, and which pesticides should be targeted, it was left to the discretion of the Member States (Silva et al, 2022).

Member State Implementation

Member States differ in scale and agricultural practices, and in the diversity and abundance of their rural environments. Although the regulations, directives, and approvals were set at the EU level, the practical implementation is undertaken by individual Member States. Individual Member States are responsible for ensuring that the regulations are enforced and progress is made in ensuring that PPPs are safe in their use.

In this report, the implementation of relevant legislation was reviewed in four countries: France, Greece, Hungary and the UK. These four countries, each represented within the AdvisoryNetPEST consortium, have different agricultural outputs and levels of pesticide use, allowing for a level of representation for the broader European network. The process of Member State implementation was analysed through the legislative process, the creation of National Action Plans (NAPs) and the emphasis upon IPM.

Member State Implementation of Legislation

The regulations and directives were ratified into law at the national level. For example, Greece passed its NAP under Article 18 of Law 4036/212, and Hungary passed the Decree of the Ministry of Agriculture and Rural Development No 43/2010 (IV. 23.) on plant protection activities. This reflected the need for the implementation of the regulations to be carried out at the individual Member State level².

In addition to implementing the regulations passed at the EU level, Member States could also pass additional legislation to support the attainment of their targets. Recognising the importance of national legislation to enhance enforcement, France passed Law No. 2014-110, which banned the use of pesticides in public green spaces. It also passed a law that prohibited those who advised farmers from selling pesticides. Both measures were taken to strengthen the existing regulatory framework, ensuring a greater level of public health, making it harder to use pesticides, and removing incentives to sell them.

Additional legislation could be introduced to make the existing regulations more robust, but it could also be created to allow for greater innovation in reducing pesticides. There was no regional variation in the regulations passed within France, Greece, and Hungary, but there was the potential for regional policies to tackle local issues. The UK had regional variation because of its devolution agreements; England, Northern Ireland, Scotland, and Wales could choose to enact different policies to achieve the sustainable pesticide goals. The NAP of the UK was created through collaboration among the constituent countries of the United Kingdom.

National Action Plans

As part of the requirements of the Sustainable Use Directive, each country was required to submit NAPs. The plans would set out the ways in which each individual Member State would aim to meet targets for the sustainable use of pesticides. There was an expectation that the NAPs would be updated and renewed. All the countries (France, Greece, Hungary, UK) which were analysed

² Although the UK left the EU, the regulations were retained under UK law. The only discernible difference between the retained EU law and the amended EU exit regulations was that the statutory authority changed from the European Commission to the UK's Health and Safety Executive. As part of the exit deal, Northern Ireland remained under the current EU regulatory framework. When the UK left the EU there was parity between the approved pesticides of both unions. Since that point, it was possible for changes to exist within the regulations, or implementation of the regulations, on either side, and divergence to be created between the EU and the UK (Health and Safety Executive, 2025).



had renewed their NAPs, although the timeframe for this varied. Although there was no requirement for the UK to renew the NAP following their departure from the EU in 2020, its renewal of the UK NAP in 2025 shows the importance of the targets and objectives to reduce pesticide risks. Not every country within the EU has renewed their NAP.

Several common themes were identified across the NAPs reviewed, although there were different degrees of emphasis upon areas such as:

- Alternative approaches to using PPPs, particularly highlighting the role of IPM.
- How monitoring and enforcement will be conducted.
- Training and research for providing farmers with advice on how handle equipment, alongside understanding the environmental impacts of using PPPs.

What targets and indicators are being used to measure success. National actions evolved between the old and new iterations of the NAPs, and the differences between countries reflected the needs and priorities of the Member States in reaching their PPP objectives, alongside the agricultural contexts of those countries.

Dissemination of Information

The way in which information and support for changing PPP practices can vary by countries. All the policies were passed at the public level but the extent to which the private sector was involved within the creation of sustainability schemes and certification that advocated for the sustainable use of pesticides could vary. When different countries were analysed, it was found that the level of government involvement for behavioural change could also vary.

In France and Greece, the level of government involvement was high. This was reflected in the national legislation, the organisations involved in sharing information, and the way in which CAP funding was used for training, guidance and incentives to carry out best practice. In contrast, both Hungary and the UK had a greater mix of public and private mechanisms to incentivise farmers and advisors. Those two countries had public sector initiatives, such as education training, and grants for carrying out IPM principles, and Hungary had CAP schemes to monitor pesticide use. Private schemes operated to provide certification or to provide research and development for alternative pest management methods. Examples of these private schemes in the UK include LEAF Marque, the Soil Association or Fair to Nature, all of which require IPM principles or restricted the use of pesticides as part of their scheme.

The differences between private and public dissemination schemes could also be found with the advisory networks wherein different countries have different organisations and independent advisors/agronomists that provide information, advice and support to farmers for understanding and complying with the regulations, alongside understanding new approaches that can be taken. Within some Member States, such as France, the use of Advisory Networks was embedded into the NAP as part of their plan and publicly funded. Within other countries, the use of Advisory Networks is less formalised but still an important part of the challenge of reducing PPP usage and ensuring that, when PPPs are used, they are used safely. Several Horizon 2020 and Horizon Europe projects have sought to foster networks to support farmers in making IPM plans and support farms in their implementation.



Member State Implementation – Analysis

The following two sections provide an overview for how IPM and novel approaches have been implemented across the Member States. The literature used to support sources followed a Rapid Evidence Assessment approach, alongside citation chaining and relevant literature that was known before the project began. The analysis shows how the two approaches have been utilised, existing evidence for their uptake and presents potential challenges for their continued uptake.

Uptake of IPM

The adoption of advanced IPM strategies, incorporating a range of approaches to prevent or mitigate pest damage to crops is the main mechanism to facilitate pesticide reduction. Such IPM strategies prevent the overuse and unnecessary application of pesticides without incurring significant yield losses" (Creissen and Meador, 2022), underpinning its fundamental role in policy (Creissen et al, 2021; Lefebvre, Langrell, and Gomez-y-Paloma, 2014), particularly through the Sustainable Use Directive 2009/128/EC. The SUD sought to promote the use of IPM through the creation of NAPs. The NAPs of each Member State aimed to set out how IPM would be encouraged and created measurable targets that they would aim to deliver upon. Even when the NAPs had not been updated for a long time-period, each country was still working through a NAP.

The purpose of the SUD was to use National Action Plans to improve the use of IPM in farming. There are signs that IPM is both known and being implemented. A European Court of Auditors report found that 81% of the 33 farmers they interviewed were both "familiar with IPM and that they applied the principles on their farms" (2020). This could also be found in an example provided by the UK and Ireland, where a randomised sample of UK and Irish arable farmers found that "all" farmers were carrying out some level of IPM activity but only 6.7% of the farmers scored above 85 out of a 100 on their level of IPM output, as set out in the author's marking criteria (Creissen et al, 2021). That would suggest that even when IPM is carried out, there is still a level of variability in which principles are chosen to be adopted. A survey of LEAF farmers, a farming scheme that provides support for carrying out IPM, found that certain measures were more popular than others. Crop rotation was the most popular measure, with 94% of respondents doing it. The authors of the survey report said that the use of crop rotation was also the result of the three-crop rule introduced in the 2015 CAP (Doonan, 2017).

Although there is evidence that IPM is known and implemented, and there are examples that can be found, it would be difficult to quantify this on a European scale. IPM principles are not always checked on farm visits, and implementation of individual approaches does not provide a true measure of wider IPM implementation, meaning that the proportion of users is difficult to ascertain. When the European Court of Auditors visited several countries for its work evaluating the Regulation 1107/ 2009, it found that inspections did not check IPM use (2020).

Several factors have been found to be drivers for IPM; larger farm sizes and a positive attitude to crop advice recommendation were more likely to be associated with higher IPM adoption, (Creissen et al, 2021), along with "farm type (arable specialists scored higher than mixed farmers), using an agronomist (increased uptake), farmer age (younger farmers had higher IPM scores), and farmer education (having a formal education increased score)" (Creissen and Meador, 2022).

One of the key tenets of the ability for farmers to adopt IPM principles is the perceived risks of doing so (Finger et al, 2024). The economic viability of enacting IPM principles can be unclear, with the success and costs being dependent upon the region and crops that are impacted (Doonan, 2017; Finger, 2024). There might also be trade-offs where the yield is affected but this is mitigated by the reduced costs of purchasing less pesticides (Finger, 2024). Whilst some reports said that IPM could allow for

“environmentally friendly external inputs which should allow maintaining crop production, if possible, with fewer resources” (Hatt and Osawa, 2019), others were concerned that farmers did not have cost-effective alternatives to pesticides (Deguine et al., 2021, as cited in Finger et al, 2024). Costs could be one cause of perceived risks to adopting IPM, others could include the additional time required to carry out the work (Bjørnåvold et al, 2022) or the belief that the “investment” of knowledge and upskilling required to carry out IPM was significant, although many of the “measures are simple to understand and implement”. (Creissen and Meador, 2022).

How those perceived barriers are overcome can be dependent on the steps taken by the individual Member States NAPs, with some having measures to provide education, while others sought to provide financial incentives to mitigate the costs of changing their production. Work Area 4 of the AdvisoryNetPEST project addresses the role of specific pesticide Agricultural Knowledge and Innovation Systems (AKIS), allowing for the different organisations that interact with farmers and advisors to be understood and how information of the requirements can be disseminated.

The barriers can also be addressed through the efficiency of the decision-making process of the farmers and the advice they receive from advisors. For IPM to be implemented by farmers they need access to both knowledge of IPM and the necessary tools to implement it. The H2020 IPM Decisions project created an open access platform to support better access to and consultation of decision support systems (DSS) for IPM. The IPM Decisions platform brings pest forecasts and risk assessments together from multiple providers, enabling farmers to work with their advisors to identify the relative risk of given pests at a given farm location. By reducing the ambiguity of future pest risks, advisors can support farmers in applying pesticides according to need, avoiding unnecessary applications and reducing overall pesticide use. The platform also enables users to compare and adapt DSS, addressing the current lack of trust in such systems - a key barrier to their uptake (Ramsden and Brinks, 2024). As an open resource, the IPM Decisions can continue to be advocated within the advisor networks fostered by AdvisoryNetPEST.

The sister project to IPM Decisions was IPMWORKS. An obstacle to the adoption of IPM principles that was identified by the project was that farmers “cherry-pick IPM practices to solve acute problems” on their farms, rather than integrating a holistic IPM approach to their farm management (Wustenberghs, Wigboldus, and Triste, 2025). IPMWORKS created a network of demonstration hubs to enable collaboration and prove the cost-effectiveness of IPM. This network reached in excess of 10,000 farmers between 2020-2025, through the demonstration events and has, so far, been able to show reductions in the treatment frequency index of 30% (IPMWORKS, 2025).

Farmers can be encouraged to adopt IPM through better decision-making and demonstrations of the use of IPM; there are also ways in which farmers can be incentivised through the corporate sector. One way this has been understood is through global certification schemes, such as Global G.A.P, which allows for different themes to be identified to be fostered by farmers to ensure that they are compliant and certified at different levels of management practices, such as plant protection fertiliser and water management, and biodiversity. Other farming schemes, such as LEAF certification require farmers to be Global G.A.P certified to apply for their schemes, providing evidence of a baseline level of compliance (Lefebvre, Langrell, and Gomez-y-Paloma, 2014). Both LEAF and Global G.A.P run along the themes of farming sustainably and, therefore, cover a wide range of subject areas. Neither is centred upon just IPM principles, nor are those principles necessarily understood by the average consumer. This can lead to the problem that the marketability of IPM measures can be constrained (Lefebvre, Langrell, and Gomez-y-Paloma, 2014). If farmers are not assured that changing their practices would lead to discernible changes in consumers purchasing practices it can be more difficult to adopt them.

Implementation of Novel Approaches and Alternative Methods

The Sustainable Use Directive promoted the use of IPM principles and encouraged the development and integration of alternative approaches to reducing pesticide use. These alternative approaches were broad in scope, including improvements in decision making around selection and application of pesticides used, the increase in experimentation for innovative methods for pest management, and the technology that can be used. The use of novel approaches forms a part of the work of the AdvisoryNetPEST Project, and the promotion of their uptake has been highlighted.

The SUD indirectly encouraged the uptake of alternative approaches through the increase in low-risk pesticides (Helepciuc and Todo, 2021). This can be through different means, such as biopesticides and biocontrol's, with different countries choosing to promote different variants of non-chemical methods: for example, with France promoting biocontrol's and the Netherlands promoting biopesticides (European Court of Auditors, 2020). Biocontrol's are promoted within certain countries, such as France and, though they are not all classified as low risk, their use is still promoted above synthetic methods. The UK have sought to promote the innovation for biopesticides through reducing the fees to get the pesticides through the approvals process (UK Health and Safety Executive, 2025).

One reason for controls not all being low risk could be the broadness of the term, with the term biocontrol's encompassing many different non-chemical methods. There is presently no established definition for biocontrol's that works across all of Europe, with certain aspects, such as biopesticides being defined at country level. The International Biocontrol Manufacturers Association (IBMA) has worked to create a unified definition. The EU are in the process of creating a definition but, at present, one has not been adopted (IBMA, 2025). An example of where biocontrol's promotion can be understood is through the work of France's DEPHY network. This is a network of experimental sites and >2,000 farms that are committed to sharing data and reducing the use of phytosanitary products on their farms whilst maintaining economic performance (Ecophyto, 2020). Analysis of the vineyards under DEPHY network found that biocontrol use increased by 20% between 2010 and 2019 and the proportion of cropping systems that used it rose from 35.2% to 80.9%. Although the increase in biocontrol products was not the only cause, with decrease found across all pesticide types, it did support the reduction of pesticides across the DEPHY network quicker than the rest of France's vineyards (Fouillet et al, 2022).

It is important that farmers have access to the right methods for reducing pesticide use, and alternative approaches also extends to improved targeting of pest management tactics, such as improved technology and machinery, application equipment, and decision support systems. Efficiencies in pesticide spraying can be made as part of "precision farming technologies" (Finger, 2024). An example of the developments in this area is through the latest precision sprayers. The sprayer, whether through the surveys and/or the applications, are able to use "sensor cameras" to successfully distinguish between crops and weeds to allow for the most accurate spraying. It was said that this method can allow for a "50% reduction in the dose of herbicides used or applied compared to a conventional sprayer" (Szabo, Madai, and Nabadi, 2022). In addition, the authors noted that experimentation with the emergence of drones could provide new avenues for application savings. However, there would need to be changes as to whether drones would be allowed to be used within each country, under the rules of aerial spraying. Whatever approach taken, the use of precision farming technology needs to be properly integrated into a farm's holistic IPM strategy, to ensure that investments in new technology effectively contribute to the overall pest management approach.

The emergence of better equipment is recognised by farmers to "minimise impact" without having to make large changes to their practices (Bjørnåvold et al, 2022). A survey of winegrowers that were involved in the French DEPHY network found that 26% of the surveys said that the equipment chosen



was “an important lever for pesticide reduction” (Fouillet et al, 2022). While farmers might recognise the use of better equipment, it might require resource investments to purchase the necessary equipment (Doonan, 2017; Fouillet et al, 2022). The resource required to target PPP application, particularly if farmers do not possess precision technology, was also found to have an impact on the number of labour hours needed to carry out changes to methods (Doonan, 2017).



Guidance for advisory networks

This report provides an overview of the policy and legislative framework relating to European PPP approval process, monitoring, and sustainable use. The following topics have been identified as highly relevant for advisory networks.

Facilitating engagement with wider supply chains

While farmers and advisors are directly engaged in the promotion of IPM strategies for sustainable production, the benefits and compromises associated with increasing uptake of IPM are less well understood across the wider supply chains, including by the general public. This makes it more difficult to market more sustainably farmed products and capture the added value associated with more sustainably produced food. Advisory networks are primarily set up to support advisors and their associated farmers; however, a networks role should extend to ensuring network members are aware of, and engage with, the expectations of the full supply chain.

Promote holistic IPM Strategies

Holistic IPM, as defined in IPMWORKS, provides a practical framework for supporting farms adopting of a range of management techniques to reduce pesticide use. IPM resources, such as those developed through IPMWORKS, IPM Decisions, AKIS, or elsewhere, help improve implementation of holistic IPM through training and demonstrations, increasing adoption across farming landscapes. Advisory networks should prioritise exploitation of existing resources and approaches, to provide continuity of messaging, a framework for integration of novel approaches, and support for advisors looking to adopt more holistic IPM strategies with their farmers.

Curating training, definitions, and regulatory updates

Networks should function as a source of continued learning and professional development and promote standardised material and learning packages for the adoption and expansion of holistic IPM strategies. They should curate key definitions of key terms and provide regular updates for changes in the regulatory framework and AKIS resources. Given the requirement for chemical pesticides to be used as the last resort, it is essential that alternative approaches and key terms are well defined and understood. For example, the EU does not currently have a standard biocontrol or biopesticide definition, leading to inconsistent applications and results. Similarly, where regulatory updates are brought into effect, these should also be share with sufficient explanatory/training resources across advisory networks. Networks should have a proactive role in supporting the development of training and definitions, providing a forum for discussion and pathway for disseminating resources across supply chains.

Collating national and pan-European data and feedback for future regulatory changes

While advisory networks have different roles within different Member States, in all cases there is value in collecting standardise feedback. This enables advisors within networks to share knowledge gaps, trends in pesticide resistance, observations in PPP use, and wider insights from challenges they have experienced with farmers. When the feedback system is strong, this will support programmes and policies that are shaped by those who are most affected by the policies. Advisory networks should therefore advocate for the collection of relevant data on pest management and pesticide usage by advisors. Advisors would benefit by supporting identification of measures within IPM strategies that have been most readily adopted, and the associated impact on crop performance and environmental/human health. Wider data analysis would support more targeted support, funding and policy development, further benefiting farmers and their advisors. Member States could look to utilise the advisor networks

to allow their crop data to be collected or supplemented more efficiently and more regularly. Member States could also coordinate the advisory networks with the work of other EC initiatives, such as the Farm sustainability data network, and encourage the data collection through supporting wider collaboration with EU funded projects and initiatives that support advisors in their work. **Highlight information provided by the fast lanes of the approvals process**

The outcome of Regulation (EC) No 1107/2009 was to put a greater regulatory prioritisation for approving safe and increasingly low-risk PPPs. Alongside the approval of low-risk PPPs, the information and rationale for this could be provided to advisors so that they are aware of the importance of low-risk PPPs and ensure that they support farmers in purchasing lower-risk PPPs within their practices. If advisors are supported in identifying and integrating relevant PPPs approved through the low-risk fast lane of the approvals process, this could improve uptake and provide suppliers with the evidence for expanding their work upon those pesticides.

Highlight novel approaches and potential funding for trialling novel approaches

PPP use, and use of lower risk PPPs, will be reduced through the open trials and subsequent knowledge sharing of novel approaches. Advisory networks should connect advisors with funding streams that support on farm experiments trialling novel approaches, whether that be through the Member States public funding, EU funding opportunities (particularly through CAP) or private schemes. In addition, when advisors have found a novel approach that has worked, they should be encouraged to share reporting of the trial in a consistent, accessible format across advisor networks. Combining novel approach case studies with funding options for trialling the novel approach on a new farm would support more rapid uptake across advisory networks.



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