



Voluntary Initiative – Response to the Revised NAP Consultation

25th February 2021

The Voluntary Initiative (VI):

The role of the VI is to promote the responsible use of Plant Protection Products (PPPs) through the adoption of an Integrated Pest Management approach in order to deliver responsible stewardship, encourage high quality decision making by growers, and thereby derive the best balance between agricultural productivity and protection of soil, water and the wider environment. The VI promotes such responsible use and decision-making processes in England, Scotland, Wales and Northern Ireland.

Voluntary Initiative Aims by 2025:

1. Drive Integrated Pest Management messages to be at the heart of decision making on farm.
2. Minimising the risks and impacts of PPPs to soil, surface and ground water.
3. Minimising risks and impacts of PPPs to wildlife.
4. Training and Education on IPM for all PPP users.
5. In consultation with Defra develop new metrics on PPP use and IPM
6. Work with Defra to establish science and evidence panels that deliver VI aims and contribute to Government policy objectives on PPP's.

2.5 Questions on Goal 1 – Better Regulation

Question 1 – In the context of maintaining current high levels of protection for human health and the environment, what can we do to make the regulatory system for pesticides simpler and more efficient?

The Voluntary Initiative acknowledges that post EU exit, the lifted and shifted UK regulatory framework for PPP's is both rigorous and robust. The VI believes that future regulation should be based on sound science and evidence rather than politics and emotion. Some organisations and pressure groups call for tighter control, but it must be remembered that the precautionary principle is already built into the UK PPP regulatory framework and the risk assessment framework is already extremely precautionary in nature. There is an opportunity to recognise development of lower residue chemistry and streamline the approvals process for more actives with a better environmental profile where science and evidence supports this approach. We suggest a discussion, with the VI, Defra and the Chemical Regulation Division (CRD), on the formation of a technical committee task and finish group to look specifically at the area.

Question 2 - What could we do to increase transparency about the way that evidence is used to inform decisions on the regulation of pesticides?

There is a need for consistency regarding the rationale behind decisions, for example, there are recent cases where the advice of the Expert Committee on Pesticides (ECP) and Health & Safety Executive/CRD have been ignored by Ministers. As in question 1, this highlights the need for decisions to be based on science and evidence.

In order to instil confidence in the regulatory framework, there is a need for publication of the science and evidence behind the decisions made to be shared more widely on the HSE/CRD website. Continued assessment of actives whilst in the marketplace, could lead to environmental markers and thresholds which would allow use, without recourse to the emergency authorisation process. As recently demonstrated by the withdrawal of three neonicotinoids, it could allow actives to remain available to growers but only when high incidence of pest or disease pressure is established or predicted, for example as demonstrated recently by the Rothamsted Insect Survey (RIS).

Question 3 - How can we best ensure that our regulatory systems keep up with innovation and scientific development including new technologies?

The VI is aware that there is a new research group within HSE/CRD that is dedicated to reviewing innovative developments with regard PPP application technology and associated areas of science. These include, for example low drift nozzle technology that can reduce drift, lowering risk to human health (operator and bystander risk) and the environment (reduction in off-target application). The same group will also assess other innovations such as drone technology and the possibility of using Unmanned Aerial Vehicles (UAV's), for example to spot spray particular areas of crop.

Question 4 - What actions could we take to expand and improve the current Biopesticides Scheme, to increase the availability of approved biopesticide products and better support potential users?

There is a real need for biopesticides to be appropriately defined since the term covers many different compounds, bioactives, organisms and extracts. Also, there is an underlying misconception that biopesticides are benign and "more natural". However, it is worth remembering that nicotine, pyrethrum and rotenone are biological compounds, none of which could be considered benign.

The VI sees the need for robust regulation around biopesticides. However, a number of biopesticides are developed by small and medium sized businesses, so the requirement for proportional risk data, will ensure innovation is not stifled, and products reach the marketplace.

Clear demarcation between biopesticides and biostimulants needs to be made. Biostimulants are currently subject to fertiliser registration processes and we see this continuing. In general, biostimulants tend to have less risk to the environment and human health, cost effectiveness is usually backed up by trials data.

Question 5 - What are the priorities for research to better understand the impacts of changes in regulation?

The VI would like to see what is the cost-benefit analysis of a change of regulation on UK food production?

Question 6 – What other suggestions do you have for improvements to the regulatory system for pesticides?

Sustainable economic & affordable food production

Some of our VI industry stakeholders suggested that there was a real opportunity for authorisation applicants to be required to submit uniform data packages (e.g. OECD Formats and Guidance Documents for Chemical Pesticide Registration) to make the registration process more defined and generic. Utilising regional/devolved country forecasts could allow actives to remain available for use should pests, diseases and weeds exceed agreed thresholds.

There is also the need for a “level playing field” with regard to unexpected consequences from the loss of PPP’s at the UK national level. Where PPP use has been withdrawn for environmental or health reasons, we need to avoid UK growers being at a competitive disadvantage by not having access to technologies that third countries have and where UK imports food from these third countries. The 25 Year environment plan talks about global leadership, so, offshoring our environmental footprint would seem unacceptable.

Protection for soil, water and wider environment

It is vital that UK growers can continue to produce safe, affordable, nutritious food whilst working to protect the wider environment and work towards the ambitions of the 25-Year Environment Plan. The VI would welcome product registrations that could evolve with threshold and prediction algorithms, which keep active ingredients available for targeted use when potential crop threats arise.

2.6 Questions on Goal 2 – Promoting the Uptake of IPM

Question 7 - How can we best develop and support management and advisory services to deliver an increase in the uptake of IPM?

Throughout the consultation document, there seems to be a suggestion that IPM offers a paradigm shift for UK agriculture and horticulture. However, as highlighted by our VI Champions, a lot of farmers are already doing IPM, through the use of rotations, varieties, thresholds, they see it as part of their existing IPM-based approach. Many economically and environmentally sound decisions are based on such approaches. In addition, it should be understood that IPM is not a process, but more of an attitude of mind. Clear IPM guidance and clear messages from future ‘agri-environment scheme options’ will lead to a proactive, progressive journey for the agricultural and horticultural sector.

An important factor missing from the definition of Integrated Pest Management, as set out in the consultation document, is the omission of the word “economic”. Economics form a key part of sustainability. Again, as our VI Champions acknowledged, without financial considerations, profit and business sustainability is threatened. Economics must be reviewed in our current PPP use and the IPM approaches suggested in the revised National Action Plan. These include cultural, mechanical

and biological alternatives to chemical use. By inference, the NAP document suggests these alternatives should be used whatever the cost. Will the market or government support and underwrite such steps? ***The VI recommends that the original definition of IPM as set out in Article 3 of the Sustainable Use Directive (SUD), including “where economically and environmentally justified” be stated in the revised NAP.***

With regard the development and support of management and advisory services, there is a need to develop advice services on a local scale, since IPM decisions, for example in Scotland would be completely different to those in Cornwall. It may be possible to expand on the AHDB Monitor farms that already exist and integrate, for example, with resources such as the VI Champion network to provide key peer-to-peer knowledge transfer at a local scale. Such an approach has been taken in France through the Ecophyto programme, but this has required financial support from government and there does not seem to be a similar aspiration or commitment from Defra or the devolved administrations in the current revised NAP consultation document. Delivering local messages, tailored to regional farming activity and challenges, should deliver a bigger impact and influence behaviours.

The VI provides strong industry partnerships, capable of developing and disseminating coordinated information on national campaigns via our network of sponsors and stakeholders. The VI is developing closer collaboration with the Amenity Forum, facilitating the dissemination of IPM best practice in the amenity sector.

Question 8 – What else could we do to ensure that pesticide users are fully informed about the benefits and practicalities of IPM approaches?

There is a real need to ensure that messaging about the benefits and practicalities of IPM approaches are delivered at both regional and local level (see also Q13). Working with organisations such as AHDB, LEAF, CSF, CFE, agronomists and the farming Unions, the VI is well placed to capitalise on and integrate efforts on existing AHDB Monitor farms, with the VI Champions network helping to raise awareness of such benefits and practicalities.

The VI’s ongoing work and close connections to the water industry are collated within the VI Water Group. Reducing risk of PPP’s reaching water is a priority for the VI and we continue to refocus our efforts in this area. We have plans to integrate the VI Champion network with the CSF Catchment Lead officers across the 7 major catchments in England. Within Wales, the VI and our Champions work directly with Welsh Water, NRW, and other key stakeholders. Similarly, in Scotland and Northern Ireland, we work with SEPA and Daera and other key stakeholders within the devolved countries of the UK.

The VI recommends some strategic investment in AHDB monitor farms and integration with the UK-wide network of VI Champion to deliver IPM Environmental Land Management advice to a wider group of on farm advisers. Such hubs could provide examples of best practice for better informed decision making around the use of plant protection products.

Question 9 – How can the promotion of recognised standards be used to encourage the uptake of IPM, in amenity, agriculture and more widely?

In the agriculture and horticulture sector, there is a need to raise standards on two fronts, both in

terms of practical measures and in an educational context. Practical uptake of IPM could be encouraged through investment (as recommended in Q8) and wider collaborations to promote and enhance existing VI supported elements, such as the National Sprayer Testing Scheme (NSTS), the National Register of Spray Operators (NRoSO) and VI IPM Plans. This would help improve IPM uptake on farm through wider promotion of the revised VI IPM Plan through continued incorporation into assurance schemes across the UK. The revised VI IPM Plan now provides a baseline metric, giving an IPM score that can be compared year on year to measure on-farm progress. Through both NRoSO and the introduction of the new grassland specific IPM Plan, the VI is targeting grassland growers to instil a need for more IPM-based approaches to their pest, disease and specifically weed management issues. ***We recommend agri-environment scheme options to buffer water courses, continue to be offered in ELMs and a sprayer testing incentive for 'smaller throughput' boom sprayers be introduced.***

Likewise, practical aspects of IPM are being evaluated and updated as part of the NRoSO training programme. In regard to safe and responsible use of PPP's it is suggested that a major module of the 2021/22 Annual Training Event (ATE) will be "IPM for Spray Operators".

Following on from the Agricultural Engineers Association sprayer testing scheme, which started in 1997, the NSTS has been in place since 1st January 2003. The scheme has made great strides to ensure equipment is well maintained and provides safe and accurate application of PPP's. The introduction of regulatory requirements ensures that this progress is maintained, but the VI believes there will need to be improvements regarding the regular testing of boom sprayer equipment in grassland areas of the UK. Whilst PPP applications may not be as frequent or widespread as in arable areas, a proportionate solution is required to minimise off target movement of PPPs used on grassland.

The Voluntary Initiative are in active discussions between AHDB, BASIS, LEAF, City & Guilds and Lantra, for improved education around IPM and its continued adoption in our farmed landscape.

The current advanced IPM provision is through the Agricultural Specialism module in the BASIS, Biodiversity and Environmental Training for Advisors (BETA), Certificate in Conservation Management

Other courses that deliver elements of crop IPM are,

BASIS Certificate in Crop Protection:

- IPM in Agriculture;
- IPM in Commercial Horticulture;
- IPM in Vegetables;
- IPM Amenity Horticulture;
- IPM in Stored Combinable Crops.

BASIS Certificate in Advanced IPM and Crop Protection:

- Cereals;
- Field Vegetables;
- Grassland and Forage Crops;
- Potatoes;
- Sugar Beet.

With the increasing development of more regenerative farming practices, the role of Integrated Pest Management has assumed more importance with the introduction of the 25 Year Environment

Plan and evolving ELM scheme. ***The Voluntary Initiative suggests a need for improved training and a certification model around IPM, where individuals have no previous IPM training. Where appropriate, updates on IPM through CPD is advocated and there may be merit in an agricultural environmental/advisers register. Cost to the industry and previously acquired learning from conservation management certification will need to be considered.***

The VI is currently discussing with other industry stakeholders that the current BETA Conservation Management Certificate Holders (Level 5) would automatically qualify for all elements of advice within ELMS.

The VI is liaising with BASIS to establish clarity of IPM within existing BASIS Crop Protection Courses and to update the provision of IPM and environmental training and accreditation.

The Voluntary Initiative is in discussions with NRoSO, City and Guilds and Ei Operator (training provider) to increase the level of IPM within the current PA1 and PA2 certificates and CPD annual training for **NRoSO spray operators**.

We feel this approach covers:

- Advisers and agronomists
- Farmers and farm managers
- Sprayer operators

With regard to the amenity sector, the Amenity Standard was launched in 2019, but in discussions between the VI and the Amenity Forum, there is recognition for the need for a coordinated approach across the industry. The importance of safe amenity areas within the urban climate cannot be underestimated with regard human health and environmental care. The VI would support legislation to ensure that all Amenity Contractors have to be 'Amenity Standard registered' before carrying out works for or on behalf of any publicly funded organisation.

Question 10 – What suggestions do you have for a communications campaign to encourage more uptake of IPM?

The messaging around principles of IPM needs to be clearer than has been highlighted in the NAP consultation document. There is a need for economics to be discussed as highlighted in Q7. The National Action Plan seems to be suggesting a redefining of the established definitions of IPM and reorganising its eight principles. Both Barzman *et al.*, 2015¹ and Defra's own commissioned review of Evidence on Integrated Pest Management Final Report (Adamson *et al.*, 2020²) clearly state the need for economics to be considered.

In order to establish clear messaging in future communication campaigns, Defra needs to be clear on any new definitions and principles, so messaging and communication is consistent. If economics are

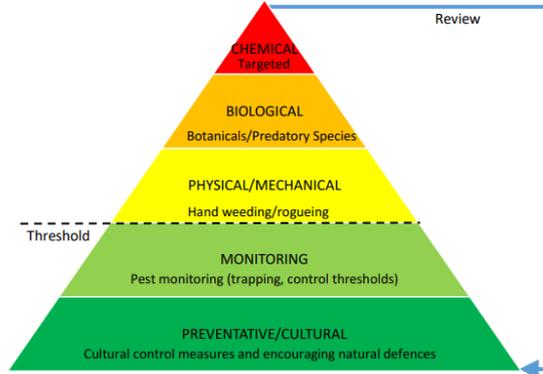
¹ Barzman, M; Barberi, P; Birch, A; Boonekamp, P; Dachbrodt-Saaydeh, S; Graf, B; Hommel, B; Jensen, J E; Kiss, J; Kudsk, P; Lamichhane, J R; Messean, A; Moonen, A C; Ratnadass, A; Ricci, P; Sarah, J-L; Sattin, M. (2015). Eight principles of integrated pest management. *Agronomy for Sustainable Development*. 35. Doi 10.1007/s13593-015-0327-9

² Adamson, H; Turner, C; Cook, E; Creissen, H E; Evans, A; Cook, S; Ramsden, M; Gage, E; Froud, L; Ritchie, F; & Clarke, J. (2020). Review of evidence on Integrated Pest Management. Defra (03/03/2020).

to be removed, Defra need to explain the rationale and offer an alternative economic model to the industry.

At a recent NAP consultation meeting, most VI Stakeholders agreed that the “Triangle” representation of IPM included in the draft document was not a true representation of IPM.

Figure 1. Integrated Pest Management: 5 step approach to pest control.



The reliance on thresholds may be applicable for a few pests (particularly in protected crops), but for the vast majority of UK cropping conditions, thresholds are poorly understood or not even determined. In addition, physical/mechanical and biological control may only be applicable in certain row crops or protected/orchard systems. There are “easy win” economically justified interventions such as cultural/variety control that may have more effect in more broadacre arable crops. Many Stakeholders suggested a circular diagram representing IPM would be more representative.

Communicating this clear message to the public is important to identify and emphasise supply chain value to IPM grown crops. Minimal inputs to maximise food production and maximising resource use efficiency are important for affordable food. Through an integrated IPM-based approach there is the possibility to minimise environmental impact from PPPs whilst allowing growers to farm sustainably.

Question 11 – How could we use financial support schemes to offset risks associated with IPM?

IPM carries an inherent risk. As previously suggested, ***the VI would recommend financial support to the grower to underpin IPM risks*** included as a substantial part of an IPM-based focus in the Sustainable Farming Initiative and eventually integrated into a longer-term ELM system. Our VI Champions and other stakeholders iterate that in discussion with farmers and growers, many are keen to try and incorporate IPM solutions to tackle problems but lack a clear economic pathway and model to give them confidence to undertake such an integrated and regenerative farming approach. In association with LEAF and other VI Stakeholders, we would also envisage that technology optimisation, including precision application, would be a strong candidate for training, maintenance and improvement grant support.

The VI sees a need for more support for PPP handling areas, banded bowlers for PPP transport for contractors, closed transfer systems and biobeds/biofilters across all catchments in the United Kingdom. This will deliver improvements in water quality across more catchments. Such an approach will be discussed by the VI Water Group and CSF and we would recommend funding via emerging grant schemes.

Question 12 – What should government do to facilitate research on the availability of effective methods of pest control?

There is a need for closer coordination of both ongoing and newly funded IPM research, principally through AHDB and Innovation Centres. It should also include research institutes, agricultural universities and colleges throughout England, Scotland, Wales and Northern Ireland, so that research is targeted at a regional basis. Research and Development on effective thresholds would be an area that requires sustained future work to be meaningful, particularly with respect to economic justification. A coordinated KTE process, with a need for effective demonstrable IPM options, again at a regional level through monitor farms/VI Champions/CSF/ AHDB. This could be supported by regional governments, institutions and initiatives giving complete national coverage.

Question 13 – What other suggestions would you make to improve uptake of IPM approaches?

Sustainable economic & affordable food production

A focus for the VI with regard uptake of IPM is the need to account for “seasonality” and “regionality”. During VI NAP consultation meetings, our VI Champions impressed the need for local management solutions for local conditions. The views of our wider stakeholders across England, Wales, Scotland and Northern Ireland are important when considering a ‘National Action Plan’. Some of those present in our consultations have questioned how regionalised and adaptive a “National Action Plan” can be? The United Kingdom needs safe, secure and an affordable food production system. National targets around PPP legislation may seriously undermine certain geographical regions. The VI would strongly caution against blunt national targets. The VI would then strongly advocate encouragement and education for IPM as agents for change as detailed below. However, if the importance and functions of IPM within monitor farms are to be increased, there is a clear need for both strategic direction and resource. This will lead to economic food production and enhanced environmental protection, delivered with an IPM approach.

Protection for soil, water and wider environment

There are some key environmental messages regarding the uptake of IPM within an amenity context and the wider public. Legislation to ensure that all public works were carried out by companies/contractors that worked to the Amenity Standard would drive uptake and further focus IPM across the sector. As mentioned previously, an aspect of this could be the need for Amenity Sprayer Operators to do CPD as part of the Amenity Standard. With respect to communicating the importance of IPM to the wider public, clear messaging will be key. The VI and Amenity Forum are planning to hold a number of ‘information sharing meetings’ with a panel containing members from the RHS, Garden Centre Association, allotment organisations (e.g. The National Allotment Society and The Worshipful Company of Gardeners) to discuss the best way to communicate focused IPM messages. This will also give feedback to the Defra funded, ADAS study, that began in January 2021 focusing on IPM communication.

With regard the long-term environmental benefits of implementing IPM across agriculture, amenity and home and garden, the VI’s goal is to deliver long-term change. Short term IPM is a simple decision process taken when there is a perceived problem, and R&D can focus on specific problem in isolation of the whole farm. Government needs to create a narrative that evolving farming systems need to deliver environmental improvements and be required to be based on a more sustainable use of PPPs, but they also need to be economically driven. However, the goal of genuine IPM means long term planning, and a whole farm approach to pest management.

Prevention and suppression of pests should form the main focus of successful IPM management. This approach requires a much more nature-based approach to farming practices. This could reflect and build on cultural approaches that already exist, but there is a need to ensure that the natural processes introduced do not have unintended consequences. There will need to be recognition that alternative approaches may not be risk free, for example increased soil cultivations may lead to detrimental soil structure and erosion. Considerations need to be made around greenhouse gases and how that dovetails with UK ambition to meet net zero carbon by 2050. Many biopesticides are still in need of more development before they become viable alternatives. The VI would like to see a concerted effort, building resilience into farm platforms around healthy soils and healthy plants.

The VI would like to see direct reward for improved IPM within the Sustainable Farming Incentive and there is a danger that the initial focus on IPM within the Transition Paper does not translate into anything tangible before 2022.

The VI would like to see continued messaging and action, so both research and grant funding will be available for environmental and climate friendly farming.

2.7 Questions on Goal 3 - Safe and Responsible Use

Question 14 – How should we raise awareness of the health, environmental and legal risks of using professional products without having the correct training and certification?

Advisers and operators are required to hold a certificate of competence. The VI supports the legal requirement that professional pesticides should only be used by trained and certificated operators. Requiring the purchaser to be trained and certificated does not mean that the end user will be trained and certificated. To help explain the legal requirements around the purchase of professional pesticides, AIC developed a poster in 2013 for display at the point of sale. This aims to ensure that purchasers understand the training and certification requirements, where training is available, and the penalties for non-compliance. In meetings prior to this consultation, AIC indicated that they would be happy to review this poster if required to continue this messaging. In the majority of cases distributors in the UK only sell professional pesticides to customers with an account following recommendation for use by a BASIS qualified agronomist. The product is delivered in a specially equipped vehicle, by a trained driver (carrying the required paperwork) to a secure store. Professional pesticides are not sold on a cash sale basis from distribution points and distributors continue to exercise a strict duty of care by not supplying professional pesticides to individuals not known to them.

However, there is a need for the regulator to enforce the current regulatory requirements for e-commerce sales where the customer is not necessarily known to the seller, the delivery point is not familiar and the courier / haulier may not be aware of what they are carrying and the end use may not be certificated. The regulator needs to apply the current regulations more robustly to online sellers and not add additional burden to those established businesses already complying.

Question 15 – What would be the benefits and challenges of introducing a legal requirement for certification of pesticide advisors?

Legislation requires only those who sell and supply pesticides to hold a certificate, so theoretically an adviser, by law, does not need a certificate. However, in practice, farm assurance schemes require

all PPP advisers to be a members of the BASIS Professional Register which requires both training and certification. The vast majority of PPP advisers in the agricultural and horticultural sector already hold The BASIS Certificate in Crop Protection and this includes 5800 on the register, 4300 with Crop Protection Certificate, 1500 Facts and Foundation Courses. However, a mechanism to drive certification and CPD in other sectors is needed. Although, the VI do not envisage any challenges to introducing a legal requirement for certification of pesticide advisers at this time, the revision of the NAP would allow the opportunity for this loophole to be closed, should Defra and the devolved administrations so wish.

Question 16 – What more should retailers be doing to inform amateur pesticide users about the actions they can take to control pests more sustainably?

Provide information and easy access to alternative approaches but explain that multiple applications may be required due to the possible lower efficacy of alternatives, for example in control of perennial weeds.

Promote biocontrols and mechanical/sticky traps for some insect pests as part of IPM.

Better labelling of Home and Garden products with respect to operator and environment and disposal of unwanted PPP and container.

The VI would be willing to help Defra with an IPM communication programme to all PPP users. This proactive approach will show strong leadership and clear messaging around the sustainable use of PPP's.

Question 17 – How can we best target inspection and enforcement to prevent unsafe and environmentally damaging pest management practices?

There is the ongoing issue of internet sales including the sale of professional PPPs to amateur users and also the growing issue of counterfeit PPPs and these require better regulation, inspection and enforcement.

When it comes to the “carrot” or “stick” argument, many of our VI Champions and Stakeholders argued that intentional unsafe and environmentally damaging pest management practices were uncommon. Although a small number of dedicated inspection/enforcement agents might be required, funding regional teams of IPM Facilitators, who working with the VI, can pick up on, demonstrate and disseminate beneficial IPM practices may be more beneficial and would certainly drive uptake. This could be expanded to regions that do not have Catchment Sensitive Farming Officers. Effectively funded demonstration farms with highly trained, knowledgeable staff running targeted events throughout the year on various aspects of IPM and best environmental practice. The VI intends to increase its collaboration with CSF, Natural England and regional delivery bodies for more sustainable use, to mitigate and reduce risk of PPP's in water.

In terms of enforcing legislation, reviewing the regulatory powers and reviewing budgets (more resource) of the Environment Agency (and equivalent organisations across the devolved nations) would allow refinement of the system within the existing structure.

The VI has long recognised that there is more work to be done in grassland areas of the agricultural sector to minimise off target PPP impacts. The industry may need to devise a more proportional

approach for testing grassland sprayers/spray operators. Since application practices are often less frequent and the quantity of PPP's passing through sprayers is significantly smaller. PPP's that may be applied to grassland areas, however, do cause some water companies issues throughout the year and a more targeted communication campaign would help. There is also the opportunity, for a more supported and incentivised training and testing programme in the Sustainable Farming Incentive. This could be based around the 'grassland and semi-improved grassland' soil, land and water buffering standards currently being proposed. This would also have environmental benefits since, in line with the aspirations of OFWAT, who focus on biodiversity, innovation and carbon reduction. A combination of water protection and biodiversity grants could address both issues. In addition, in grassland areas, there is less focus on PPP's and associated risks than on prevention of nitrogen pollution. There is a need for a joined-up approach on reduction in pollution from PPP's and nitrogen and this more collaborative approach is suggested above.

Question 18 – What kinds of challenges need to be addressed in order to ensure safe disposal of unused pesticides and pesticide containers?

Firstly, there is a need to ensure that triple rinsed PPP containers continue to be classified as non-hazardous for disposal.

Also, the VI sees three areas where intervention from government and local administrations could bring potential benefits. Firstly, for professional users, early notification of PPP non-renewals would help with planning to 'use up' product and reduce need for disposal. For example, recently, a more flexible and regional approach with chlorothalonil use by dates would have made large difference. Weather events and a lack of extension for on farm use made for some challenging decision making for growers. A localised, managed approach would have helped ensure that growers were able to use stocks and disposal costs were minimised.

At a recent NAP Consultation meeting, many of the VI stakeholders called for a coordinated, national programme for PPP amnesties. Currently, these are funded on a piece-meal basis by individual water companies. Although some water companies (such as the PestSmart scheme developed by Welsh Water or the "Farm to Tap" scheme operated by Severn Trent) have developed successful and well supported amnesty programmes, many water companies argue that they should not have to rely on their customers to have to pay to remove PPP's from water. In addition, clearer pathways to product withdrawal and disposal need to be established well in advance to cater for weather and business planning decisions.

Following on from the amnesty theme, there is a real need to highlight that PPP disposal is available at most council recycling facilities. The CPA has a free, easy to use website where the public can search for the nearest suitable recycling site (<https://gardenchemicaldisposal.co.uk/>).

Question 19 – How can we best make sure that members of the public know what to do when pesticide products are withdrawn from sale?

Highlight products when withdrawn through available publication channels and give clear disposal routes and message for such products. Signposting disposal information such as that given in Q18.

The VI response to cross sector working in Q13 could also include safer and more informed disposal and container rinsing messages in a Defra 'resourced' communication programme.

Question 20 – What further actions are needed to ensure that equipment used for application of pesticides complies with safety requirements?

Compliance with legislation is well established through NSTS (15,736 boom sprayers tested in 2020) and requirements for annual testing through assurance schemes (RT, SQC, etc), but as mentioned in Q9 and Q17 there is further room to improve sprayer testing in a grassland setting.

Provision for review of legislation around testing of Amenity equipment would be a potential improvement on current requirements.

**Question 21 – What else should we do to ensure that pesticides are used safely and responsibly?
*Sustainable economic & affordable food production***

The review of the NAP gives an opportunity to focus on the safe and responsible use of PPP's as part of an IPM-based approach. However, the VI cannot stress enough the need for any IPM interventions to be economically and environmentally justified and this is crucial with regard to the production of affordable, safe and nutritional food, whilst minimising the environmental impact of PPP's. Safe, responsible use is key to minimising impacts on human health and protecting soil, water and the wider environment. ELM incentives for better environmental practices could also improve farm profitability.

Protection for soil, water and wider environment

The VI suggests that the revision of the NAP provides an opportunity for the Code Of Practice (COP) for the use of PPP's to be updated, since this has not been done since the COP's inception in 2006.

The VI and our Stakeholders agree that there could be further provision and investment in biobeds and biofilters for safe disposal of dilute spray and tank washings on farm and that this should be supported through expanded capital grants. Currently funding for capital improvements are on a postcode lottery basis.

Legislation is tightly controlled within the agricultural sector, but there could be similar legislation introduced within the Amenity Sector to bring both sectors into alignment. To improve human health and protection of soil, water and the wider environment in urban areas, a better approach is required to ensure the Amenity Standard is in place for all public and local government funded works.

More government support and messaging for regenerative farming methods which help focus on IPM approaches and alter farming systems for food production. The industry is working towards business and environmental improvements that offer an expanded portfolio of products (biologicals and alternative crops). Regulation around plant breeding needs to allow crops and varieties to market so beneficial traits can help with a more sustainable use of PPP's.

2.8 Questions on Goal 4 – Targets, Metrics and Indicators

Question 22 – What are the priorities for data collection and research on pesticide usage?

In terms of current metrics, the VI can report that the VI/NFU IPM Plan that was launched in 2015 has had major impact in promoting an IPM-approach. Since 2015, 48,463 IPM Plans have been completed. However, in conjunction with the NFU, the VI has recently developed, funded and launched two new IPM plans for arable and forage growers and an IPM Plan specific to grassland farmers. These have been developed in conjunction with Henry Creissen of SRUC who developed an original “IPM uptake” model published in his 2019 paper³ in conjunction with growers in the Rep. of Ireland and all countries of the UK. For the first time, both IPM Plans provide the individual farmer/grower completing the IPM Plan with a metric, a score of their individual measure of IPM on a percentage scale of 0 – 100. The IPM Plans also make suggestions as to areas that a grower/farmer may consider in the future to improve on current practice. Of those who have completed the plan so far, the average score was 68.3%. A similar horticultural specific IPM Plan is currently in development and will be launched soon. The VI is interested to get feed-back on the new IPM Plans and will continue to encourage growers of the benefits of completing such a plan. Long-term, the VI hopes to continually revise and review the plans to capture data and measure IPM progress against current standards. Eventually much of this IPM-related data capture may be done automatically through integration with on-farm software such as GateKeeper or MuddyBoots.

It is useful to reflect on the other two VI indicator metrics that have formed the basis of the VI’s work for several years, namely NRoSO and NSTS. NRoSO continues to be the main route for the dissemination of new knowledge and IPM-based information targeted specifically at sprayer operators. Continued training ensures that the application of PPP’s is done as professionally and as carefully as possible. Well-trained sprayer operators ensure that the BASIS certificated agronomist PPP recommendations are applied correctly. This helps to maximise efficacy, minimise operator and bystander exposure and minimise environmental impact. Similarly, the requirements under the NSTS ensures that applications are delivered through equipment that is calibrated and checked regularly, maximising efficacy, minimising operator and bystander exposure and minimising risk to the wider environment. The current number of sprayer operators registered with NRoSO is 21,874. Similarly, 19,339 NSTS tests were completed on all application equipment during 2020.

The priority is that data collection and research on PPP usage has to be done in a meaningful manner. As mentioned for Q1 of the regulatory section, there is a need for a science and evidence-based approach. This was one of the main conclusions from the Fera report (appended to response) of the recent jointly commissioned VI/NFU research project. The study looked at Pesticide Risk Indicators (PRI) and future implications for the UK farming sector (“Pesticide risk indices: A review of practical implications for policy and interpretation – Rainford, Kennedy & Jones, 2020”). The report also concludes that beyond basic measures of PRI, basic input data and the complexity of indicators become increasingly complicated, as does interpretation and application of results. Some VI stakeholders believe that, although attractive as a concept, many PRI’s do not replicate the extensive and robust levels of risk assessment done by regulators during the authorisation process. The VI welcomes the revised NAPs ambition to set clear risk reduction targets by 2022 and offers to help develop this. The current Pesticide Usage Survey provides a useful baseline, but undoubtedly

³ Creissen, H; Jones, P; Tranter, R; Girling, R; Jess, S; Burnett, F; Gaffney, M; Thorne, F & Kildea, S. (2019). Measuring the unmeasurable? A method to quantify adoption of Integrated Pest Management practices in temperate arable farming systems. *Pest Management Science*. 75. 10.1002/ps.5428. <https://doi.org/10.1002/ps.5428>

could be improved to utilise innovations in data collection. The VI was pleased to see that several IPM-related questions were included for the first time in the 2020 Arable Crop Survey that is currently being collated. Some of the wider stakeholders that the VI has consulted believe that recording volumes alone is not a good enough metric, since this does not reflect the environmental profile or risk reduction of certain products.

The Pesticide Forum indicators that are reported in the Forum's Annual Report, were based largely on the 2013 NAP and the VI would encourage that, along with the wider revision of the role of the Pesticide Forum *per se*, there is a need to review several of the indicators included.

Question 23 – What are the priorities for research on the environmental impact of pesticides?

There have been recent advances in this field, independent of the publication of the Revised NAP consultation. For example, the VI along with other industry and environmental organisations were involved in the TEMPEST consultation (A proposal for terrestrial monitoring of authorised pesticides) This project led by CEH and Fera, engaged in a consultation during 2019-20 and published its draft report in February 2021. As the report states "The proposed monitoring scheme (TEMPEST) will not be able to provide data on its own, to offer diagnostic answers as to whether pesticides are having an impact at the population, community or ecosystem level. Instead, the ambition would be that any programme should be able to identify changes in the status of our terrestrial environment, or particular parts of it, at an earlier level of organization. Any observed changes in status of TEMPEST components should be viewed as a trigger for further review and investigation." In the VI's opinion, this comprehensive report would form a good basis to consider future priorities for research on environmental impact of PPPs.

Question 24 – What are the priorities for research on the health impacts of pesticides?

The current regulatory process is robust and thorough regarding human health and best practice use of PPP's. Adhering to label recommendations should not have any adverse effects on operator or bystander health. Research into closed transfer systems and the ability for this technology to finally reach the market, should be encouraged. Continued use of Personal Protective Equipment is always recommended as is support for more effective closed PPP transfer systems.

More research into regenerative farming approaches and integrated management approaches will encourage and provide opportunity for the agricultural supply industry to widen their portfolio of crop inputs.

Question 25 – What suggestions do you have for ways of measuring our progress against the goals set out in this NAP?

The VI and our wider stakeholders believe it would be possible to set indicators and targets for progress that allow measurements to be pulled from a variety of sources – i.e. the new VI IPM Plan, NRoSO membership, NSTS tests completed, LEAF Sustainable Farming Review, Red Tractor assurance to name some examples. Working in collaboration with AHDB, we suggest that an IPM Hub be developed that will provide a forum for designers of such plans to harmonise metrics to optimise

data collection across the sector. The VI can see no reason why this should not include metrics from the Amenity and Home and Garden sectors in one central location.

With respect to our educational aspirations, BASIS is developing an IPM category within CPD training for BASIS Professional Register members. The VI is keen, with Stakeholder agreement, to help promote such a module. In the future this will provide metrics on the amount of uptake on the subject within the advisory sector. The VI are already in discussions with NRoSO to increase IPM content in sprayer operator's Continuing Professional Development. A number of, national, specifically dedicated operator events are planned to increase knowledge of IPM best practice and numbers attending could be quantified to measure progress.

2.9 Concluding Questions

Question 26 – How can we best bring together stakeholders with diverse interests to support delivery of the NAP, working towards a common goal of sustainable pest management?

VI, Amenity Forum and general public use

As the primary advocate and vanguard organisation promoting IPM, the VI should be central to delivery of the revised NAP. As an organisation working across the whole of the UK, the VI, in association with the Amenity Forum is well positioned to pull together stakeholders with very different aspirations who share the common goal of ensuring an IPM-based approach can deliver sustainable pest management and PPP use. The VI and Amenity Forum have already met several times in 2021 and are devising an action plan for even closer coordination and collaboration. The Chair's of the respective organisations are determined to see real progress on the Amenity Standard and better-informed decision making within the agriculture sector on Integrated Pest Management. A similarly joined up approach, with Defra, that increases knowledge around IPM, by the public, should also be encouraged.

Wide stakeholder engagement

The Voluntary Initiative through its sponsors, stakeholders and wider Steering Group has developed a wide diversity of engaged contributors. Industry commitments to reduce risks to human health and the farmed and natural environment through good training and raised IPM awareness are key parts of the VI Strategy. Economic and environmental sustainability are discussed in depth to determine future direction. Constructive dialogue with Sustainable Food Trust and Soil Association is important to inform on alternative approaches. The VI continues to engage with Pesticide Action Network and Royal Society for Protection of Birds to develop common ground where more sustainable use of PPPs can be developed. Such discourse will be essential to achieve the aims of the 25 Year Environment Plan.

The VI want to ensure that Defra recognise the importance of such a platform that allows Defra and devolved administrations, regulators and industry representation to be engaged in the **responsible use** of PPPs through the adoption of an IPM-based approach leading to higher quality decision making by farmers and growers.

Constructive involvement by Defra with practitioners and the Voluntary Initiative is essential to keep the industry engaged.

Resources

The VI would like to see a more effective use of resources facilitating a wider reach for the VI, that will lead to more sustainable use of PPPs through an IPM-based approach. There are several environmental challenges that require more attention, stronger collaboration with the Pesticide Forum would help, as would continued financial commitment for the VI from Defra.

Increasing engagement and education

The VI is building on and improving existing initiatives, in association with sponsors, stakeholders including LEAF, CFE, CSF, AHDB and the Agricolgy network. We will be collaborating closer to combine resources from the agricultural industry. The expanded IPM training and accreditation will ensure careful management and stewardship to ensure sustainable use of PPPs, resulting in continued protection of human health, soil, water and the wider environment.

The VI will continue to work with organisations such as NRoSO, City & Guilds, Ei Operator and other land-based education stakeholder organisations such as Lantra. The VI recognises the need to drive IPM uptake through education to operators, farm managers and advisers. The VI looks to work with others to transfer knowledge on IPM, not just in the agricultural, horticultural and amenity sectors, but through to the general public.

The area of IPM professional CPD is developing rapidly, the VI will help coordinate a focus on IPM in this area for advisers, agronomists and growers. It is important we build future training and skills with current providers such as BASIS, AHDB, LEAF, City and Guilds and NRoSO around evolving IPM accreditation and training. There will be a role for the newly formed Institute of Agriculture and Horticulture (TIAH) to signpost and coordinate training provision. The current crop protection system has several thousand trained advisers who are continually developing and improving their environmental skill set. The VI is encouraged by PPP distributors who regularly send their employees on the BETA Crop Protection Management Course.

Question 27 – Considering the NAP as a whole, what other comments and suggestions would you like to make in addition to those covered by previous questions?

Firstly, a comment on the “decoupling of agronomy advice” question posed by the NAP consultation (Page 24). All agronomists on the BASIS professional register have to adhere to a code of ethics. Agronomists are judged on the value they add to the farm / grower business and their technical capability, experience and attention to detail, not necessarily by their employer. This is demonstrated by agronomists who may change employer, but still maintain the majority of their client base whether they are self-employed or employed by a particular company. It is also a free market with farmers and growers having a choice of over 2500 agronomists across the UK. Under the current legislative guidelines, the VI does not consider that the agronomy model needs any external change, as such change will become market driven, there is already much recognition within the industry for more sustainable use of plant protection products and there are a number of organisations where farmers can obtain agronomy advice. Similarly, many smaller farms are provided with a range of services from the agricultural distribution network and catering for these businesses needs to be factored in. The industry should always look at ways of continuing to deliver good advice to farmers and the environment they work in, an environmental adviser’s register may recognise those in the industry who have developed their integrated farming approach.

More generally, the VI and the wider stakeholder group see the revised NAP as a unique opportunity for the UK to build on the successes gained from the 2013 NAP, to set ambitious goals to drive the UK to make better informed decisions through the integration of an IPM-based approach to all our farming systems. Revised training and accreditation will drive this ambition forward.

There is a real opportunity to capitalise on existing and developing infrastructure through financial incentives to drive best practise and continually improve operator and human health safety. The government has to also factor in the geographical flexibility required for Scotland, Northern Ireland, Wales and England, in the 5 key areas of this consultation.

More support for farmer-led research on a system's approach to reducing risks and reliance on PPPs. There has been much debate on whether a "land sparing" or "land sharing" policy would be the right track for the UK. If the UK did go down a land sparing route, some stakeholders question whether it would be acceptable to not look at how overall reliance on PPPs could be reduced. The VI suspects that, on balance, the "current model" of a mixture of sparing and sharing will be the best answer. The balance in agriculture is a combination of many livestock and arable husbandry practices and a consideration of all management interventions. Consideration of only PPP's or Biocontrols or mechanical interventions in isolation will not provide a solution. It is clear that IPM must be considered as one aspect of a wider Integrated Farm Management or Integrated Cropping System.

VI Key messages – Sustainable Use of PPP's NAP Consultation

1. Clarification from Defra, on the IPM Triangle and reorganisation of 8 core IPM principles.
2. Clarification from Defra, on the position of economics within IPM decision making.
3. IPM is part of a solution. The VI seeks clearer rationales around future farming systems, regionality, risks, government support and the trading environment. How does IPM fit in with a 'transition to new regenerative farming systems'?
4. The VI recognises the robust nature of CRD as a regulator based on evidence and science, but improvements could be made to emergency and minor use authorisations. There could be an opportunity to streamline the LERAP buffer system.
5. The VI advocates CPD IPM training and certification for operators, farmers, advisers, agronomists and industry representatives, where it does not already exist. With an IPM module/certificate to the fore.
6. There are the challenges, risks and opportunities around the use of biopesticides within a IPM approach. The industry should encourage the effective use of biopesticides and biostimulants in the marketplace, that are cost effective for the industry (registration) and farmers (cost of product). There should be clear differentiation between biopesticides and biostimulants.
7. The VI would like to see more support and geographical coverage for biobeds/biofilters, closed transfer systems (PPP handling) and other evolving application technologies. Grant support for 'smaller throughput boom sprayers' testing scheme.
8. Expansion of metrics used to assess and mitigate risks associated with PPP's. The addition of Pesticide Risk Indicators and the new scored VI IPM Plan are examples.

9. Closer working in amenity & general public use and sales. With the VI working with Defra on IPM campaigns across all sectors.
10. Resource, communication, and organisation. The VI has wide sector, utility, government, and regional engagement and looks to develop common ground with environmental NGO's on the sustainable use of PPP's. There is potential for increased interaction with the Pesticide Forum and the Defra pesticides team and this should be explored, as should collaboration on IPM messaging campaigns.