

SUBMISSION TO THE CONSULTATION ON THE DRAFT UK NATIONAL ACTION PLAN FOR THE SUSTAINABLE USE OF PESTICIDES

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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?

REDUCE THE USE OF PESTICIDES: The overall framing of this section in the draft NAP prioritises simplicity, streamlining and ease of regulation, over maintaining and then improving regulatory approaches for the benefit of people and wildlife. We would like to see this prioritisation adequately addressed. There is a lack of focus on direction of travel – namely that any regulation should be supporting an ambition to reduce use of and harm from pesticides urgently – not facilitating easier use. This NAP should also be setting the scene for future pesticide policy that goes even further, and taking large steps towards it. In 2020 Lord Goldsmith stated that Government ambition was to “move as far as we can away from the use of pesticides at all...we want to minimise and eventually phase out the use of pesticides”. This ambition is not reflected in this draft.

The highest and most effective solution to protect human health and the environment is to drastically reduce pesticide use overall, and truly only use them as a very last resort. The post-Brexit regulatory system should be built with that vision at the centre, from the outset, in a clear and coherent way.

APPROVALS SCRUTINY: The EU approvals process is one of the most robust in the world and should be used as a baseline to prevent regression against standards. But there is also an opportunity here to improve it to provide better protection for people and wildlife. There is a concerning governance and capacity gap in pesticides regulation post-Brexit. If the UK will not be able to share risk assessment data on new or renewed products with the EU, then there needs to be a significant increase in funding and independent scrutiny of decisions that are made along with transparency about data and organisations or individuals involved in these decisions.

The NAP must set out more detail as to how commitments to maintaining current high levels of protection will be guaranteed, especially in light of Defra’s recent derogation on a neonicotinoid treatment which undermines the promises made in the NAP and demonstrates the need for such a commitment.

PRECAUTIONARY PRINCIPLE & HAZARD-BASED APPROACH: The draft NAP commits to the Precautionary Principle which is welcome, however it also talks about ‘levels of risk’ which is concerning. We would strongly advocate for a retention and strengthening of a hazard-based approach to approvals – not a risk-based approach. This is due to the fact that risk is very difficult to accurately assess. Unrealistic assumptions about fate (real-world impacts on non-target organisms for example) and exposure (the assumption that neonicotinoid treated seed is always buried for example) mean that a risk-based approach does not adequately protect people and wildlife. Therefore a hazard-based approach is the precautionary route.

VOLUNTARY MEASURES HAVE FAILED: Currently, there is too much focus on best practice and on voluntary measures (e.g via the Voluntary Initiative (VI)), which systemically fall short. In the more than 20 years the VI has been in existence, there has been no progress in reducing pesticide use and impact in any meaningful way, and in fact the VI does not list a reduction in pesticide use as one of its key aims. The evidence of the ongoing deterioration of our environment clearly shows that voluntary measures have failed.

AMBITIOUS TARGETS: A clear commitment to a direction of travel by setting ambitious targets to reduce use of and reliance on pesticides in all areas, understanding and addressing

the harm they cause is a must. Ambitious targets should take into account both amount of pesticide (including weight and regularity of application) and the risk/toxicity to people and wildlife, or “toxic load” and we will deal with the detail in the questions under Goal 4.

Bringing in clear legislation that will regulate the behaviour of all those that use pesticides and allow for those that contravene to be held accountable is vital. This needs to include repercussions of misuse or abuse of pesticides, and clear guidance on use. Detail is covered in Goal 3.

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

On the UK’s future pesticide policy more broadly, transparency on which literature and evidence base is being used to develop these policies should be available for independent scrutiny.

Transparency on product approval, renewal and emergency derogation is vital – even more so now it is separate from the EU approvals process. Independent scrutiny of the application, the risk assessment, and all toxicology data and evidence should be made possible by all the relevant information being made public - and input actively sought - in advance of approval, renewal or emergency derogation decisions being made. We also suggest it would be helpful for Defra to work with the Department of Health and Social Care, to develop an open access registry of publications containing all pre-clinical evidence around pesticide compounds in specific diseases – that is open for researchers to publish new findings. The draft NAP references transparency, but is not specific enough about what should be transparent, or what the timelines should be. For example, in the recent neonicotinoid derogation, most of the information is not commercially confidential and should have been made available before the decision – that way all stakeholders can be fully informed. Keeping the information secret fuels suspicion about the decision and causes more of a burden on the HSE and others, because stakeholders can only obtain the information by submitting Freedom of Information (FOI) requests.

The draft NAP talks about public-facing communications advising people of health and environmental risks relating to pesticides, but this should be strengthened to include public-facing communications about the rules and regulations surrounding pesticide use, and the consequences of breaching them.

The public has a right to know which pesticides are being sprayed and when, but this information is not currently available in the UK. Data that is available, is not updated regularly enough. Currently, data is only available up to 2016. According to best practice guidance, members of the public should receive prior notification before spraying takes place but this rarely happens. The NAP should introduce a requirement for all professional users of pesticides to notify surrounding residents before spraying and allow access to spray records, with sanctions if this does not happen. This is currently missing from the draft NAP.

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

Again, we can reduce the burden on the regulatory system by reducing the need for pesticide authorisation and use, instead focusing on working with nature and natural systems to innovate and manage pests. It will be challenging to devise a robust and fit-for-purpose regulatory system that keeps up with every innovation and development, so there are some core principles that should be adhered to. One is the Precautionary Principle – so products should not be authorised if there are reasonable grounds for concern that they are not safe,

and the impacts on people and the environment are not understood fully. It is also important to retain a hazard-based approach, which does not approve highly harmful products where they are only deemed safe if best practice is adhered to (the risk approach). Adhering to these principles would also reduce the regulatory burden. Hazard criteria should be passed over from the EU and kept up to date. It is crucial that the least harmful option should always be used, so new innovations should also be compared to previous products or technologies. The Government has a responsibility to communicate safer, natural alternatives as well as clear information on chemicals.

Finally, it is important to monitor the impacts of new products or technologies in the real world. For example, robotic weeding could be a useful tool in IPM and avoid unnecessary use of pesticides; but instead of eliminating all weeds, maintaining the threshold amount necessary for beneficial insects. It is also crucial that investment in, and regulation of, new technology prioritises innovations that will be affordable and accessible to all farmers - and not expensive technology designed for intensive unsustainable agricultural systems. Even with the best approvals process and regulation possible, unintended or unforeseen consequences can and do occur. Fast tracking innovation through deregulation is not the precautionary approach.

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?

On the scale of harm, biopesticides are usually less harmful than synthetic pesticides. Therefore, the costs of getting these approved and time taken should be lower to reflect that, which may help more biopesticides to become available. However, regulation for these should be just as robust to ensure no assumptions are made about their safety. The draft NAP portrays these as a solution in their own right, whereas they should still come after more natural approaches to pest control within an IPM plan.

As with pesticides, risk assessment information and data should be transparent. Clear communication on risks and best practice to farmers and land managers is vital.

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

As the UK develops its own regulatory system and approvals process, it will be vital to understand the real-world impacts of any changes. Although the EU system is relatively robust, there are a number of areas it does not address, and this is an opportunity to undertake research to see what will be possible. For example, the current regulatory process for environmental impacts only focusses on a small range of species, it only focusses on short-term and lethal effects (not significant sub-lethal like neonicotinoids on bees) and doesn't address the cocktail effect of multiple chemicals.

From a health perspective, despite the prevalence of pesticide cocktails, and the evidence that they can be more harmful than individual pesticides, the UK's regulatory system continues to assess the safety of one chemical at a time. Safety assessments of pesticide residues in our food are based on analysis of individual chemicals. The long-term health consequences of pesticide use are unknown, and health harms can be triggered many years before symptoms emerge. Logging, evaluating and researching how pesticides are used in combination – and their long-term impact – is a key priority to preserve the health of the population in the future.

Improvements could be made at approval stage and working out how to do some of these should be a priority. Funding is required to better address the assumptions made in the risk assessment process around environmental fate, health impacts and exposure of pesticides.

In addition, post-approvals monitoring should be improved to understand short and long-term effects of approved chemicals when they are out of a lab and reacting with other environmental stressors. Work was underway to look at this in 2020, but has not yet concluded, and the process at the time did not make any adequately resourced recommendations for rolling this out, or how the results would be evaluated and acted upon.

Related to post-approvals monitoring, it is worth noting that neonicotinoids were found to be harmful due to a major review by the European Food Safety Authority (EFSA) not the normal approval process. This is a concern now that UK will no longer be involved in EFSA reviews.

For health, acute poisoning incidents are dealt with inadequately and there is no attention paid to chronic impacts. Both rural and urban residents are exposed to pesticides which are directly applied in their locality (be it for agriculture in the countryside or weed control in towns and cities), and the impacts on health from this are not monitored.

Overhauling the monitoring of health impacts will be vital to understand any changes in regulation. Our recommendations are in detail under question 24.

Finally, as the direction of travel should be moving away from pesticides and towards alternatives including IPM and agroecological approaches, research priorities should be testing these alternative approaches and disseminating the findings so farmers can find out and share what works. This should include nature-friendly farmer-led research and peer-to-peer learning on demonstration farms.

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

An independent body, encompassing both environmental and human health concerns should be formed to look at pesticide regulation and link the environmental and health elements. This would ensure that the Department of Health and Social Care is part of the decision making as well as Defra. It would also remove the bias of vested interests of groups such as the Pesticides Forum which has significant representation from the agro-chemical industry. This independent body should be able to take a view on decisions that have been made with advice from the UK Expert Committee on Pesticides (ECP) and the Health and Safety Executive (HSE). Currently, now the UK is outside of the EU, the same groups that make decisions, scrutinise these decisions – a clear conflict of interest.

Researchers and practitioners involved in developing non-chemical alternatives could be included in this independent body. This would enable a link-up between regulatory decisions and those providing alternatives, at a faster pace to farmers and other land managers, and would also help with transparency.

Regulation around greater restriction of highly hazardous pesticides (HHPs) would have a significant impact also.

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?

Conventional, innovative, and organic farmers will play a crucial role in the uptake of IPM. Given that the majority of pesticides are used for agriculture, any effort to reduce pesticide-related harms must include a package of support for UK farmers and land managers to adopt genuine IPM systems based on agroecological principles. This must be based on an emphasis on growing a robust and healthy crop, with pesticides used only as a last resort if at all. The fact that IPM features so heavily in the draft NAP, and frames that this needs to happen in order to “minimise the negative impacts of pesticides and, over time, reduce pesticide use” is very much supported. However, the timescales for this ambition need to be explicit, and the strong measures required to drive pesticide reduction in UK farming are missing. These include but are not limited to:

- i. the creation of an independent advice and research facility for farmers and agronomists, to include an increase in funding for research into agroecological farming systems (including organic farming), in order to provide farmers with an alternative and reduce the reliance on chemicals.
- ii. the adoption of a clear definition of what constitutes IPM and what practices cannot be counted as IPM.

Overall we feel the commitments to ensuring that IPM uptake is increased, and that the IPM is genuinely aiming to reduce pesticide use, are weak and need to be strengthened.

One of the most important elements missing from the draft NAP is a clear and legal definition of what IPM actually means in practice, and how genuine IPM should and does lead to a meaningful reduction in pesticide use. The FAO definition* of IPM is a useful starting point. Simply completing an IPM plan or adopting one or two measures alone and calling this IPM is not going to deliver the benefits needed for people, the environment, or farmers. It is also misleading, and not true IPM. There is also insufficient mention of the benefit of nature-based pest management techniques in the draft.

IPM needs to be considered in both the short and long-term. Only making changes to address pest issues in the short-term will have limited impact and not result in meaningful pesticide reduction. Longer term IPM measures should focus on cultural control such as soil health, rotations and in-field wildlife habitat. The definition needs to address this.

Once IPM is clearly defined, there needs to be an uptake target so that issues can be tackled along the way if targets are not met. The ‘IPM triangle’ which demonstrates the order in which pest control methods should be deployed could be a useful way to measure uptake. The triangle lists prevention, then cultural, then physical, then biological, then chemical, and the vast majority of actions taken should be in the first few methods, declining as it goes up the triangle. Measuring actions taken at each stage, and ensuring that they are moving down the triangle, could help measure the link between IPM measures and pesticide reduction.

It would also be useful to consider different types of pesticide (insecticides, fungicides, herbicides etc) individually when measuring uptake and reduction, as the issues and solutions will be different.

Advice for farmers needs to be independent of the agrochemical industry, so agronomists can provide unbiased advice on IPM. To this end, we welcome Defra’s intention to review evidence

on the extent to which impartiality has an effect on the advice that farmers receive. Agronomists with advice disconnected from pesticide supply, will need to have the training to be confident in advising IPM, but also farmers will need to be supported to take this advice where appropriate so that agronomists are not fearful of taking the blame for negative outcomes (especially when these are not related to the IPM advice).

* www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/en

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

Peer-to-peer learning is one of the most effective ways of showcasing the benefits and practicalities on farms of IPM approaches. Facilitating this via funding for farmer schools, demonstration farms or Innovative Farmer's field labs would help make this important information accessible to a wider group. This should be linked to the creation of an independent advice and research facility for farmers and agronomists, and increase in funding for research into agroecological farming systems, as outlined in answer 7.

The draft NAP puts a lot of reliance on increasing uptake of BASIS training, but for this to have impact, it needs to be overhauled to focus more on other pest control measures first, and pesticide use as a last resort – with different training sessions focussed on alternatives for different types of pesticide (insecticide, fungicide, herbicide). It should also teach the fundamental principles of healthy soil, biodiversity etc as natural pest control.

New metrics that allow farmers to input to monitor progress and demonstrate real-time benefits of IPM should be developed.

Finally, this should not just be about being fully informed, but current pesticide users should be fully supported to actually make that transition, as IPM often involves new skills, equipment and experience. Question 11 on financial support is key to this – particularly land management schemes.

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

In agriculture, the draft NAP puts a lot of emphasis on IPM plans in schemes such as Red Tractor and the Voluntary Initiative (VI). Neither of these are effective at encouraging a genuine reduction in pesticide use. The VI's IPM plans are more of a tick-box exercise with no more requirement than the regulatory baseline. A recognised standard for IPM, probably as part of an accreditation scheme, could be good if farmers were rewarded for making real changes, and if IPM was properly defined. It will be important to look at IPM in the short and longer term too – there will be some immediate changes that farmers can take that they should be rewarded for, but there will be other changes that incrementally lead to a reduction in pesticide use and so they should also be rewarded for this direction of travel. This would also be helpful for knowledge sharing of what to expect in terms of results in different timescales.

In amenity, the draft focusses on the Amenity Assured Scheme and the Amenity Forum which have failed to make any meaningful change. We believe that, other than some very specific reasons (such as targeted and essential invasive non-native species control that cannot be controlled by natural methods) amenity and amateur use of pesticides should be phased out as quickly as possible. IPM means using pesticides only when absolutely essential, and the vast majority of amenity and amateur uses are not essential. Many towns and cities are

already committing to this, but the NAP should commit to supporting and enforcing this nationwide, with a date (for example within three years) by which this will happen.

Finally, there is a gap in this section focussing on forestry. Pesticides (especially neonicotinoids) are widely and routinely used to plant saplings in commercial forestry. Foresters should abide by the same IPM principles as other land managers and be supported to do so. Schemes such as UK Woodland Assurance Standard can help with this, alongside better regulation and enforcement.

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

A campaign based around peer-to-peer learning (similar to Q8) so that farmers and land managers can see the financial and practical benefits of using IPM and reducing pesticide use would be the most effective. In particular, a campaign which encourages farmers to take part in farmer-led research so they can actively innovate and be engaged in IPM with crop specific communications would be of benefit. The NAP fails to mention the importance of using nature as a pest control and other agronomic functions, and how working with it can benefit soils, pollinators and other important elements on farms. Any communications campaign needs to be part of a comprehensive package of support (financial, independent advice, research etc) for farmers, local authorities, foresters and other land managers.

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

The draft NAP is very non-committal about the role the new post-Common Agricultural Policy land management schemes will play in supporting IPM. For England, there are phrases in the NAP such as “we expect IPM to be part of ELM” and “SFI is likely to include some IPM actions”. This is absolutely the primary financial mechanism that should support farmers to undertake the correct series of IPM measures that will enable them to reduce their reliance on pesticides. IPM should be embedded in all three components of ELM, and standards in the SFI component should allow farmers and land managers to integrate a suite of measures that are key IPM practices and also deliver public goods. Farmers and land managers should be paid to put in place these measures in the land management schemes of all four UK countries, and should have to demonstrate efforts towards IPM and non-chemical methods to be in receipt of these subsidies. Subsidies should embed the Polluter Pays principle and incentivise good practice. In combination with a fiscal mechanism such as a pesticide tax or levy, and support of markets to reward reduced pesticide or organic practices, it should become more economical to reduce pesticide use, than to use chemicals prophylactically. Money from such measures can be used to go back into IPM research, thus helping to reduce pesticide use further. A pesticide tax based on how toxic a chemical is, has been proven successful in Denmark.

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

The R&D section in the NAP only lists existing projects. There is no commitment to increase R&D into non-chemical alternatives. Any commitment to progressing anything is “advancements in agricultural technology”, and the only case study involves drones. There is nothing on nature-based pest management solutions or agroecology. Whilst technology undoubtedly plays a beneficial role in the future of agriculture (especially that which supports genuine pesticide reduction such as weeding robots mentioned in question 3), it shouldn't be at the expense of funding farmer-led research into natural pest control measures. ‘Innovation’ does not just mean technology, for example using agroforestry to control pests and add

resilience to the farm business is innovation. More research is needed to help farmers get best results with agroecological techniques e.g. best habitat type and location to boost natural predators.

The government should properly fund IPM research, that is tested in field, working with the organic sector and innovative conventional farmers. It is vital that funding is increased to support research that delivers public goods, otherwise technology will always be skewed towards “profitable” technology from large agri-tech businesses, and not that which is most beneficial to most farmers.

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

A clear definition of IPM and what measures or combination of measures constitute adoption of an IPM approach is needed. This should include reference to thresholds, below which use of pesticides is unnecessary and not compatible with an IPM approach.

Goal 3: Ensure those that use pesticides do so safely and sustainably

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?

This question should be primarily about enforcement. Harm from pesticide use can come from correct use (tackled by reducing use or phasing out), misuse of pesticides (tackled by enforcement and training), and abuse of pesticides (a crime which needs better enforcement). These need to be tackled differently.

Action on reports of misuse or abuse are very ad hoc currently and the draft NAP does not make it clear how enforcement will be improved. The draft NAP in fact says government will “work with industry over the next 12 months to develop our system of enforcement”. Industry should not be self-regulating or enforcing, and so it is important the government also works with the Crown Prosecution Service (for abuse cases), and with other stakeholders. Currently HSE is more focussed on compliance than enforcement. There is no mention of Wildlife Incident Investigation Scheme (WIIS) in this section. WIIS is currently not capturing all incidents, and has had no real increase in budget in recent years so needs proper investment, with action following reports and prompt publishing of data. Making pesticide users aware of consequences should help improve compliance.

The NAP recognises enforcement in amenity settings needs to be improved, and makes a couple of suggestions but gives no concrete commitment to applying them.

The risks to health and the environment of pesticides should be clear upon purchase for any user.

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

This would only be beneficial if the certification followed adequate training on non-chemical alternatives to pesticides in addition to legal use and health and safety concerns, both in terms of public and environmental health.

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

Amateur pesticide use (along with amenity use) should be phased out along with public communications about alternative ways to manage pests (or live with them in some cases). Given that there is a huge number of people managing gardens, public areas and allotments without pesticides, it demonstrates they are not nearly as necessary as their current prevalence suggests. In the meantime, retailers should have to provide much clearer information on harms posed to people and the environment by using these products. In the draft NAP many of the things said to have improved, do not really mention real-world impact on pesticide use e.g. on internet sales “HSE worked with major internet retailers to make them aware of their obligations”.

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

The draft NAP has good overall comments about making improvements to enforcement, but currently has no specific commitments or targets that can be tracked, and no demonstration

of impact of previous measures. There is a large section on cross-compliance but this does not address how this will be tackled in future land management subsidies.

Pesticides are a leading method for wildlife crime, especially raptor persecution. The draft NAP does not address this issue adequately. It is a police matter, but more join up is required, and the consequences should be that people who are convicted have their certificates of competence removed (zero tolerance), and extra scrutiny when abuse cases are reported. For misuse and abuse cases, the employer, land manager and user should all be liable for consequences.

Negative impacts from pesticides of course also occur even when used 'correctly', due to their toxic nature. To combat this, training and advice should be much more focussed on non-chemical methods first, and how to successfully implement IPM. There should also be restrictions on labelling to address harmful advertising. For example, herbicide labels frequently advertise the product's ability to kill species considered weeds, that are actually at risk of extinction.

There should be tracking information for in-person and online sales of pesticides, which can result in spot checks. When purchasing it should make it clear that there will be sanctions for improper use.

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

All councils must provide free and clearly advertised disposal sites for unused, obsolete or unwanted home and garden pesticides. Currently it is not easy to safely dispose of unused pesticides and containers. The manufacturer or distributor of pesticides should take responsibility for safely disposing of any unused agricultural pesticides and recycling of the containers.

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

A dedicated public-facing government webpage to inform people of changes to approved products should be created.

To increase compliance, amateur gardeners should be fully informed of the reasons for removal of the pesticides that they use. This should include making clear information available about the environmental and human hazards associated with each available product, and the alternative approaches open to them. For the benefit of gardeners motivated by competitive shows, organisations such as the Royal Horticultural Society should be consulted to devise new rules that would take a more tolerant approach to minor damage in judging. The help of the gardening media and celebrity gardeners will be vital here – similar to the campaign against peat compost.

A public awareness campaign for non-competitive gardeners highlighting the biodiversity benefits of not using pesticides would help people to understand the withdrawal of pesticide products.

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

Regular and frequent in person checks by enforcement officers. Maintaining the current annual check and calibration of farm spray equipment under National Register of Sprayer Operators (NRoSO).

Question 21 – What else should we do to ensure that pesticides are used safely and responsibly?

Trade unions represent thousands of workers applying pesticides – such as farm workers, estates and grounds workers, and street scene operatives – and their union safety representatives have a range of statutory rights. This is a valuable framework for communication, awareness raising, protection of human health, and enforcement, and detail on engagement with these trade unions should be included in the final NAP.

Overall, pesticide use should be reduced drastically to an absolute minimum, including a phase out and ban in amenity use pesticides. Advice, increased funding for training, compliance and enforcement should all be based around this fundamental aim.

Goal 4: Targets, Metrics and Indicators

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

Improving PUSSTATS to make it a more up to date and accurate reflection of pesticide use is important. Greater frequency of reporting and publishing, finer resolution geographic information, more data on treatment frequency and number of products and activities, and more easily accessible and transparent data and summaries of findings are all important. Ensuring the process is easy for farmers and they understand what it is for, is also vital.

Increased understanding of the impacts on pest pressure with reduced pesticide use and different alternatives would help with communication around it being possible to reduce use and still maintain profit, and help to target appropriate advice and further research.

On amenity, the draft NAP acknowledges the difficulties with obtaining data, although retail sales would help. A commitment to improve this is welcome, but only with the aim of phasing out use as soon as possible. Knowing where it is used and why will help to set a date for this ambition.

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

A fit-for-purpose environmental post monitoring scheme focussed on biodiversity, soil and water is essential. The approvals process risk assessments only go so far and real-world impacts and interactions are not captured. A report from PAN UK & Soil Association on the cocktail effect*, highlights this as an urgent gap in research. There is also a growing body of evidence showing that pesticide cocktails can have significantly more harmful effects than individual chemicals. There is an urgent need to carry out pre-clinical research to understand the long-term health impacts across a wide number of diseases, particularly long-term chronic diseases related to combinations of chemicals and accumulation of pesticides. A recent study has shown that a certain insecticide touted as a 'safe' replacement for neonicotinoids and a commonly used fungicide combine to be more toxic to bees than when they appear alone. These studies provide compelling evidence that pesticide mixtures and the cocktail effect should be of major concern with respect to their effects on human health and the environment. Research could be funded by the pesticide companies directly or via a levy. Importantly, this monitoring should feed back into the approvals process to enable products to quickly be removed if they are posing a risk to the environment.

WIIS is mentioned and improvements to this scheme are important for enforcement purposes, but it does not give a realistic picture of the widespread impacts of pesticide use.

Understanding the scope of ecosystem services that pesticide use is disrupting, and the widespread economic and ecological impacts of this should be undertaken. Increased research into rising herbicide and pesticide resistance and how non-chemical alternatives can mitigate this is important.

The NAP claims UK bird populations have levelled off recently, but other data recently published (State of UK's Birds 2020) shows a 5% decline of farmland birds. This feels like cherry-picking data and so it is important that a wide range of data from a wide range of taxa, including wild plants and insects, is considered when monitoring impacts. For example, we know that applications of herbicides to arable fields are decimating arable plant species. An objective review of historical wildlife population trends in the context of the current ecological crisis would highlight the urgency required.

The draft NAP also links to the Pollinator Strategy as a solution, but this makes no firm commitments to support pesticide reduction and just links back to the NAP. Ensuring the two strategies link to monitor impacts on pollinators is important.

*<https://www.soilassociation.org/media/19535/the-pesticide-cocktail-effect.pdf>

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

It is important that the Department of Health and Social Care is working on pesticide harms, not just Defra. A research group should be set up covering both environment and health interests to ensure all aspects are covered, and a list of all health conditions related to pesticides be drawn up so research can be prioritised. It will be important to regularly revisit this as new evidence emerges. As with the environmental risks, cocktail effects and chronic exposure should be investigated – not just acute and direct.

Any research priorities should be linked to a new human health reporting and monitoring system. The current exposure and monitoring system for pesticides is not fit-for-purpose. Acute poisoning incidents are dealt with inadequately and there is no attention paid to chronic impacts. The current draft NAP states that the Government will “... *consider the potential for development of a human biomonitoring programme...*”. However, this is too loose a commitment, and does not go nearly far enough in terms of providing victims of pesticide poisoning with access to relevant information or redress. We are calling for the NAP to include a complete overhaul of the current reporting and monitoring system to: make it easier to access and use by both professionals and the general public; require less detail from poisoning victims; and move faster in terms of conducting investigations and publishing findings. If we are to gain a thorough understanding of the human health impacts of pesticides it is essential that there is an effective reporting and monitoring system in place which not only captures acute poisoning incidents but also tracks long-term (chronic) health impacts of pesticide exposure. There are examples of monitoring systems available which could be applied to pesticides, most notably linked to the use of pharmaceutical medicines.

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

We are very pleased with the commitment to set targets by the end of 2022 and would urge the government to stick to this promise, and develop an ambitious set of targets (including interim targets) tackling use and harm, with timescales. However, it is important that these targets are for reducing impact, not just risk as is currently worded. There should be accountability if these targets are not met. We are concerned that in the exec summary it says “establish appropriate *reduction* targets” but in the main text it just says “a target”. We would like assurance that the targets will be focussed on a reduction of use and harm. The targets will need to require a drastic reduction in pesticide use to an absolute minimum. This is to reflect a shift to genuine IPM where pesticides are not regularly used. The draft NAP covers load indicators well, and acknowledges the fact that impact and toxicity also need to be considered. The NAP should set out how any indicator framework will link across to those developed within wider outcome indicator frameworks, such as those in development for the 25 Year Environment Plan. Focussing first on phasing out highly harmful pesticides (HHPs) would be a way of having the most impact as quickly as possible. Having an independent body scrutinising progress and suggesting improvements if progress is lagging, is vital.

Generally, there needs to be more measurable commitments. There are a lot of statements of intent, and options that may be explored. But in order to know whether progress is made, there needs to be more specific targets across all the goals in the final NAP.

Goal 5: Ensure that we work effectively with others to deliver the NAP goals

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?

The draft NAP fails to recognise that vested interests are unlikely to have the same ambition to reduce pesticide use. It will be important to work with industry, but it is for the government to set ambitious targets to reduce the harm caused by reliance on pesticides, and resist calls from industry that they can make products safer. Bottom-up support from an informed public was crucial in resisting the vested interests and profits of the tobacco industry, for example. Farmers need to be supported and advised so they can transition to more agroecological approaches and reduce the need for chemicals to produce food and make a profit. The scale of this support should reflect the scale of change needed, which we reiterate is significant. Their advice must be independent.

There is a whole section in the draft NAP on voluntary initiatives. Table 1 in the annex shows that these measures have not worked – both in terms of pesticide usage and wildlife declines. The number of people with IPM plans has increased, and the number of people trained, but this is meaningless if the definition of IPM is weak and piecemeal, and therefore has no impact. A combination of robust regulation and support has to replace the voluntary approach.

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?

The stated aim of the NAP is to **“minimise the risks and impacts of pesticides to human health and the environment, while ensuring pests and pesticide resistance are managed effectively.”** We welcome this shift from the 2013 NAP which does not mention reducing risk or impact. However, we urge the government to recognise that the way pest impact has been measured focusses largely on chasing the highest yields rather than economic thresholds for farmers.

We also welcome this commitment: **“Governments across the UK and internationally are clear that to improve environmental protection, reduce the risks of pesticide resistance and protect crops and infrastructure, we must reduce reliance on chemical pesticides and maximise the use of alternative lower risk methods. Development and promotion of IPM approaches are therefore central to our shared ambition.”** However, we urge the government to recognise how few farmers currently adopt these low risk methods at a whole farm level, and so the effort and funding to change this must reflect the scale of the challenge.

It is also good that the devolved administrations have been involved in the development, and urge that this collaboration continues to monitor progress, and to tackle any issues or complications arising around the UK internal markets bill, the common frameworks and the Northern Ireland Protocol.

However, there are significant gaps and areas we believe are not ambitious enough to make the tangible difference required. The NAP claims much progress has been made since 2013, but the areas where progress has been made are not those that demonstrate real-world impact.

Agriculture and amenity use are covered, but there is virtually no mention of forestry impacts. As there is a race to meet tree planting targets, this will increasingly become an issue and we urge you to add a section on how foresters will be supported to implement IPM and reduce reliance on harmful pesticides.

Following the recent news on emergency derogations for thiamethoxam on sugar beet, the case has highlighted the unacceptable reliance on harmful chemicals and how urgent it is that the NAP addresses this via regulation and support.

Furthermore, none of the questions asks for any suggestions about tackling pesticide resistance and its associated environmental impact (for example, increased glyphosate use in response to herbicide resistance). Effective management of resistance - through, for example, limits to frequency of pesticide application and greatly increased IPM - should be explicitly mentioned and embedded into the NAP.

The three top priorities should be:

1. Setting an ambitious pesticide reduction target, taking into account use and toxicity. We support and welcome the commitment to do this.
2. Support for farmers to take a whole-farm approach to pest management via IPM, and research into non-chemical alternatives. Technology plays a role here, but not at the expense of agroecological measures. The draft falls short of reassuring farmers that this support is coming in the form of independent advice and financial help in land management schemes. The NAP is lacking in any information about how nature can help with pest management, and what the wider benefits are of adopting these measures. Financially incentivising sustainable practices and the polluter pays principle should be central.
3. Phase out of amenity use of pesticides – there is no commitment at all in the draft for this direction of travel. Many towns and cities are doing it off their own back, but there is no nationwide target.

The NAP needs to be bold and ambitious in order to transition farmers and other land managers away from chemical pest control, and for the UK to play a significant role in tackling the nature and climate crises that we are facing.